As confidentially submitted to the U.S. Securities and Exchange Commission on March 23, 2018.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

FORTY SEVEN, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**2834**	**47-4065674**
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

Forty Seven, Inc.
1490 O'Brien Drive, Suite A
Menlo Park, California 94025
(650) 352-4150
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Mark A. McCamish, M.D., Ph.D.
President and Chief Executive Officer
Forty Seven, Inc.
1490 O'Brien Drive, Suite A
Menlo Park, California 94025
(650) 352-4150
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public:
As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box: ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐
		Emerging growth company	☑

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act. ☑

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities being Registered	**Proposed Maximum Aggregate Offering Price(1)(2)**	**Amount of Registration Fee**
Common stock, par value $0.0001 per share	$	$

(1) Estimated solely for purposes of computing the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.
(2) Includes the aggregate offering price of additional shares that the underwriters have the option to purchase, if any.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment that specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities, and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS (Subject To Completion)
Issued , 2018

Shares

COMMON STOCK

Forty Seven, Inc. is offering shares of its common stock. This is our initial public offering and no public market currently exists for our shares of common stock. We anticipate that the initial public offering price will be between $ and $ per share.

We intend to apply for listing of our common stock on the Nasdaq Global Market under the symbol "FTSV."

We are an "emerging growth company" as defined under the federal securities laws. Investing in our common stock involves risks. See "Risk Factors" beginning on page 11.

PRICE $ A SHARE

	Price to Public	***Underwriting Discounts and Commissions(1)***	***Proceeds to Forty Seven, Inc.***
Per share	*$*	*$*	*$*
Total	*$*	*$*	*$*

(1) See "Underwriters" for a description of the compensation payable to the underwriters.

We have granted the underwriters an option to purchase up to an additional shares of common stock at the initial public offering price less underwriting discounts and commissions to cover over-allotments.

The Securities and Exchange Commission and state securities regulators have not approved or disapproved of these securities, or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares of common stock to purchasers on , 2018.

MORGAN STANLEY *CREDIT SUISSE*

CANACCORD GENUITY

BTIG *OPPENHEIMER & CO.*

, 2018

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Neither we nor the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. Neither we, nor any of the underwriters, take responsibility for, or can provide any assurance as to the reliability of, any information that others may give you. We and the underwriters are not offering to sell, or seeking offers to buy, shares of our common stock in any jurisdiction where such offer or sale is not permitted. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

Persons in jurisdictions outside the United States who come into possession of this prospectus and any applicable free writing prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of our common stock and the distribution of this prospectus and any applicable free writing prospectus applicable to such jurisdictions.

Until , 2018 (25 days after the date of this prospectus), all dealers that buy, sell, or trade shares of our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PROSPECTUS SUMMARY

This summary highlights information contained in greater detail elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider before investing in our common stock. You should read the entire prospectus carefully, especially the risks of investing in our common stock discussed under the heading "Risk Factors," and our financial statements and related notes included elsewhere in this prospectus. Unless the context otherwise requires, the terms "Forty Seven," "company," "our," "us," and "we" in this prospectus refer to Forty Seven, Inc.

FORTY SEVEN, INC.

Overview

We are a clinical-stage immuno-oncology company focused on developing novel checkpoint therapies to activate macrophages in the fight against cancer. We founded Forty Seven based on the insight that blocking CD47, a key signaling molecule that is overexpressed on cancer cells, renders tumors susceptible to macrophages. By harnessing macrophages, we believe that our lead product candidate, 5F9, dosed as a monotherapy or in combination with marketed cancer therapies, can transform the treatment of cancer. 5F9 has demonstrated promising activity in five Phase 1b/2 clinical trials in which we have treated over 140 relapsed or refractory cancer patients with solid or hematologic tumors. We hold worldwide rights to all of our product candidates.

We focus our efforts on targeting the CD47 pathway as a way to engage macrophages in fighting tumors. Macrophages function as first responders, swallowing foreign and abnormal cells, including cancer cells, and mobilizing other components of the immune system including T cells and antibodies. Cancer cells use CD47, a "don't eat me" signal, in order to evade detection by the immune system and subsequent destruction by macrophages. Overexpression of CD47 is common to nearly all types of tumors and is also correlated with poor prognosis in multiple cancers including acute myelogenous leukemia, or AML, colorectal cancer, or CRC, gastric cancer, lung cancer, Non-Hodgkin's lymphoma, or NHL, and ovarian cancer. Despite the central role of macrophages as cell-eating scavengers and first responders, the pharmaceutical industry is only beginning to bring this key group of cells into the fight against cancer.

Our company was founded by leading scientists at Stanford University who uncovered the fundamental role of CD47 in cancer evasion. Preclinical work performed in the laboratory of our co-founder, Irv Weissman, at Stanford University demonstrated that:

- Blocking the CD47 "don't eat me" signaling pathway leads to elimination of many types of tumors and increased survival;
- Boosting an "eat me" signal found on cancer cells using therapeutic antibodies results in a synergistic effect with blocking CD47; and
- Macrophages digest cancer cells in a process called phagocytosis and present tumor-specific antigens that can activate T cells against the cancer, thus creating the potential for synergy with T cell checkpoint inhibitors.

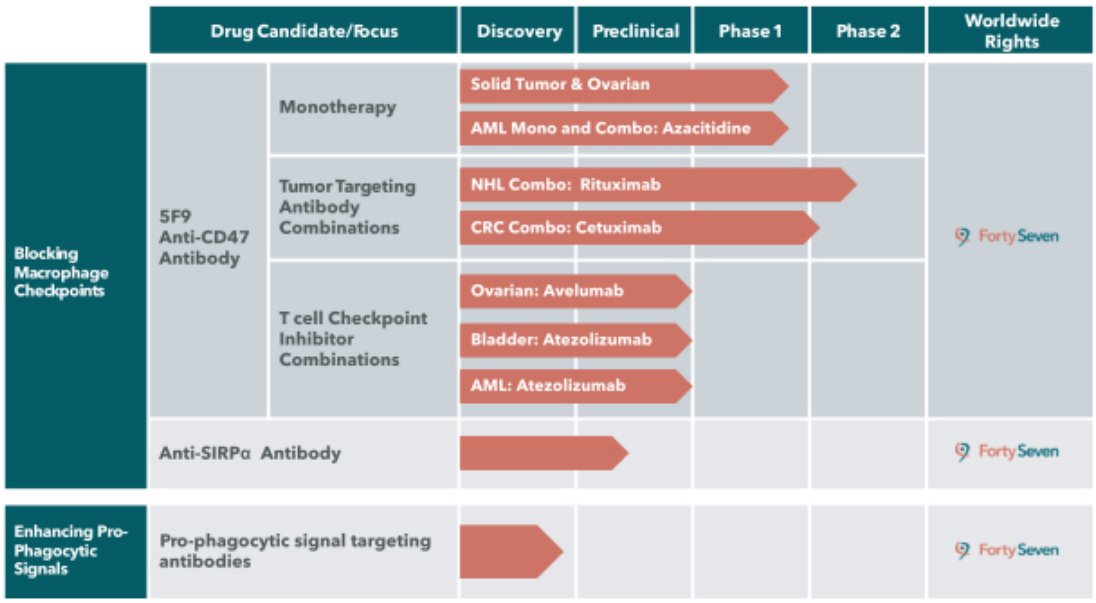
Our lead product candidate, 5F9, is a humanized IgG4 subclass monoclonal antibody against CD47 that is designed to interfere with recognition of CD47 by the SIRPa receptor on macrophages, thus blocking the "don't eat me" signal. The design of 5F9, combined with our proprietary dosing regimen, overcomes the toxicity limitations of previously tested anti-CD47 therapies developed by others. Across all study populations, 5F9 has been well tolerated with no maximum tolerated dose observed in any study despite dosing up to 45 mg/kg. The

most common treatment-associated effects observed to date were the expected CD47-mechanism-based effects on red blood cells, which led to a temporary and reversible anemia.

To date, there are no approved therapies that target the CD47 checkpoint of the innate immune system. The targeting of CD47 to make cancer cells susceptible to macrophages, a component of the innate immune system, is analogous to the approach that has been applied with checkpoint inhibitors and T cells, a component of the adaptive immune system. In less than five years on the market, T cell checkpoint inhibitors have become frontline therapies for certain cancers and we estimate that they generated over $9 billion in sales in 2017. Despite the success of T cell checkpoint inhibitors, these therapies have been shown to be effective only in a subset of tumors, highlighting the need for additional therapies. Similar to the way cancer cells overexpress programmed death-ligand 1, or PD-L1, to avoid attack by T cells, cancer cells overexpress CD47 as a way to avoid destruction by macrophages. We believe targeting CD47 represents a compelling and analogous approach.

Our Development Pipeline

As summarized in the following figure, our clinical trials are investigating three types of CD47 therapy: as a monotherapy, in combination with therapeutic antibodies and in combination with T cell checkpoint inhibitors, in a wide variety of tumors, including both solid and hematological cancers. We have treated over 140 relapsed or refractory cancer patients with 5F9 both as a monotherapy and in combination with therapeutic antibodies such as rituximab and cetuximab. While the primary goal of our trials has been to demonstrate safety, we have also observed early signs of efficacy in multiple tumor types.



5F9 Monotherapy

In our ongoing trials, 5F9 treatment has demonstrated biological responses and multiple cases of stable disease in Phase 1 as a monotherapy for patients with refractory AML. Reductions in the number of blast cells in patient bone marrow samples have been observed in 6 of the 14 patients (43%) in cohorts receiving 10 mg/kg or higher doses of 5F9, as of February 2018. One of these patients had prolonged stable disease for 11.8 months on study before progressing, which is more than double the average life expectancy for this refractory patient

population. In biologic responders, we confirmed the presence of macrophages in tumor tissues and we observed that other components of the immune system, including T cells, had been recruited. We have received orphan drug designation from U.S. and European regulatory authorities for AML.

We are also investigating 5F9 as a monotherapy in ovarian cancer and other solid tumors. In a Phase 1 trial of 5F9, we observed confirmed partial responses in 2 out of 9 evaluable patients in a cohort with ovarian cancer receiving either 20 mg/kg or 30 mg/kg of 5F9, as of February 2018. Both were heavily pre-treated patients failing seven or more previous treatment regimens. One of these patients had a durable partial response of more than six months in duration. We continue to investigate the potential of 5F9 in an expanded cohort of more than 15 patients with ovarian cancer.

5F9 in Combination with Therapeutic Cancer Antibodies

In addition to continuing our trials using 5F9 as a monotherapy, we are also conducting multiple trials of 5F9 in combination with therapeutic cancer antibodies in order to test the synergistic potency of these combinations. We believe that we can enhance the effect of 5F9 on cancer by using therapeutic antibodies that bind cancer cells to present an “eat me” signal to macrophages. Hence, we are combining 5F9 with cancer-cell-binding antibodies such as rituximab and cetuximab. Based on our preclinical research and on publications by academic groups, we believe that this combination of an “eat me” signal by these antibodies and the blocking of a “don’t eat me” signal by 5F9 could be highly effective.

Our most advanced ongoing clinical trial is an open-label, multi-site Phase 1b/2 combination trial using 5F9 and rituximab in patients with relapsed and refractory NHL. As of February 2018, we have obtained clinical response data from 22 patients receiving 10 mg/kg, 20 mg/kg or 30 mg/kg of 5F9. Progression of the disease was controlled in 14 patients (64%), and 11 patients (50%) displayed an objective response. Six patients (27%) were reported to have a complete response and 5 patients (23%) were reported to have partial responses. Importantly, the rate of clinical response increased with the 5F9 dosage. Efficacy was observed in both diffuse large B cell lymphoma, or DLBCL, and follicular lymphoma, or FL, patients. Efficacy in these patients is notable because they all entered the trial after failing multiple lines of previously approved therapies, including rituximab.

Our Phase 1b/2 combination clinical trial with cetuximab in patients with advanced relapsed or refractory solid tumors, including CRC, as of February 2018 had enrolled 28 patients at multiple sites in the United States. Data from the 10 mg/kg, 20 mg/kg and 30 mg/kg cohorts of the Phase 1b portion of the trial showed that of the 17 CRC patients, 2 (12%) had a partial response and 9 (53%) had stable disease at eight weeks. Importantly, at the time of data cutoff in February 2018, the initial responding patient had maintained a durable response over five months that was ongoing.

Planned Trials: 5F9 Combinations with Checkpoint Inhibitors

We believe there is a strong rationale to combine 5F9 and T cell checkpoint inhibitors and we plan to initiate combination clinical trials in both solid and hematological tumors. 5F9 induces a potent anti-tumor T cell response by enabling macrophages to ingest cancer cells and present antigens derived from these cancer cells to T cells. Thus, we believe the combination of a T cell checkpoint inhibitor with 5F9 is likely to further enhance an anti-tumor T cell response and to further mobilize both the innate and adaptive immune systems to eliminate cancer.

In early 2018, we announced collaborations with two pharmaceutical industry partners combining 5F9 with PD-L1 checkpoint inhibitors, while retaining full economic rights to our products. We are collaborating with Merck KGaA on the combination of 5F9 with BAVENCIO (avelumab) in ovarian cancer patients; and Genentech, Inc., a member of the Roche Group, on the combination of 5F9 and TECENTRIQ (atezolizumab) in patients with bladder cancer and in patients with AML.

Our Team

Our company was founded by leading scientists at Stanford University, including our co-founder, Irv Weissman, who uncovered the fundamental role of CD47 in immune regulation and applied these findings to the field of immuno-oncology. We have assembled a team of executives with broad industry experience in biologics and other therapeutics, as well as strong academic and clinical backgrounds. Our management team has worked for pharmaceutical companies such as Abbott Laboratories, Amgen, Inc., Genentech, Gilead Sciences, Inc., Janssen Global Services, LLC, PDL Biopharma, Inc. and Sandoz Inc. We have funded our operations to date primarily from the issuance and sale of our preferred stock to investors, including Lightspeed Venture Partners, Sutter Hill Ventures, Clarus, GV and Wellington Management Company, and from the receipt of government and private grants.

Our Strategy

Our strategy includes the following components:

- ***Maintain a focus on our core mission of helping patients defeat their cancer.*** By focusing on patients first, we believe we can realize the full potential of our therapies. Our initial efforts are directed at patients with high unmet medical needs, such as those diagnosed with AML, CRC, NHL or ovarian cancer. We believe there are patients with many other types of cancers that our product candidates can help.
- ***Maximize the therapeutic and commercial potential of 5F9 by exploring its treatment of both solid and hematological tumors.*** Based on our understanding of the CD47 SIRPa pathway and data from preclinical animal models, we believe 5F9 has the potential to benefit patients in a broad range of tumor types and in combination with other approved oncology therapeutics. We are currently evaluating 5F9 in five clinical trials and by the end of 2018, we expect to have seven clinical trials underway. These trials will read out in 2018 and 2019 and based on these data we expect to initiate additional trials with 5F9 to support regulatory approval and to explore the use of 5F9 in multiple cancer indications.
- ***Invest early to secure a clinical and commercial supply of 5F9 to mitigate risk and ensure a timely regulatory approval.*** Although 5F9 utilizes standard antibody manufacturing processes, we recognize that any regulatory approval requires experience and expertise in the commercial manufacturing of 5F9. We have completed strategic manufacturing agreements with Lonza Sales AG and Lonza Biologics Tuas Pte Ltd, or collectively, Lonza, a global leader in biologics manufacturing. The multi-year arrangements help ensure sufficient clinical material for our existing trials and provides a path to generate the required manufacturing information that is part of a biologics license application, or BLA, submission and initial commercial supplies.
- ***Pursue collaborative relationships and in-licensing opportunities to help advance and expand our product candidate portfolio.*** In addition to our internal drug discovery and development efforts, we plan to identify and pursue strategic collaborative relationships, partnerships and in-licensing opportunities to enhance the development of our current programs and access additional novel product candidates. For example, in January 2018 we announced clinical collaborations with both Merck KGaA and Genentech to explore the utility of 5F9 in combination with approved checkpoint inhibitors.
- ***Prepare for an active role in commercialization in the United States while considering opportunities to engage with partners to access commercialization capabilities outside the United States.*** We have worldwide rights to 5F9. If 5F9 receives marketing approval in the United States, we intend to commercialize it with our own focused, specialty sales and marketing organization. We may explore partnering with a third party to commercialize and market 5F9 in certain geographies.

- ***Leverage our knowledge and expertise in immune system and cancer biology to develop a pipeline of novel cancer therapeutics.*** We intend to utilize CD47 and its associated immune activation pathways to their fullest potential to help patients defeat their cancer. This includes the development of our existing programs and the pursuit of new programs in the future.

Risks Associated with Our Business

Our business is subject to numerous risks and uncertainties, including those highlighted in the section titled "Risk Factors" immediately following this prospectus summary. These risks include, among others, the following:

- We have incurred significant operating losses since our inception and anticipate that we will continue to incur substantial operating losses for the foreseeable future. We have not yet generated any revenue and had an accumulated deficit of $69.4 million as of December 31, 2017.
- Even if this offering is successful, we will need substantial additional funding and may be unable to raise capital when needed, which would force us to delay, reduce or terminate our product development programs or commercialization efforts.
- We depend primarily on the success of our lead product candidate, 5F9, which is in clinical development and which has not completed a pivotal trial, and we may not be successful in any future efforts to identify and develop additional product candidates.
- Clinical trials of our product candidates will be costly and time consuming, and if they fail to demonstrate safety and efficacy to the satisfaction of the FDA or other regulatory authorities, we will be unable to commercialize our product candidates.
- Failures or delays in the commencement or completion of our planned clinical trials could result in increased costs to us and could delay, prevent or limit our ability to generate revenue and continue our business.
- If serious adverse events or unexpected characteristics of our product candidates are identified during development, we may need to abandon or limit our development of some or all of our product candidates.
- If we experience delays or difficulties in the enrollment of patients in our clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.
- If we are unable to conduct our business without infringing, misappropriating or otherwise violating the intellectual property rights of third parties, we may not be able to commercialize our product candidates.
- If we are unable to obtain sufficient intellectual property protection for our product candidates and related intellectual property, or if the scope of such intellectual property protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our product candidates or our business may be harmed.
- Healthcare policy and regulatory oversight in the United States and internationally are subject to rapid change, and if we are unable to respond, our business may be harmed.
- We face substantial competition from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide.

If we are unable to adequately address these and other risks we face, our business, financial condition, operating results and prospects may be adversely affected.

In addition, we are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act, or the JOBS Act, and therefore we intend to take advantage of certain exemptions from various public company reporting requirements, including not being required to have our internal control over financial reporting audited by our independent registered public accounting firm pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments not previously approved. We may take advantage of these exemptions for up to five years or until we are no longer an "emerging growth company," whichever is earlier. In addition, the JOBS Act provides that an "emerging growth company" can delay adopting new or revised accounting standards until those standards apply to private companies. We have not elected to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not "emerging growth companies."

Corporate Information

We were incorporated in Delaware in 2014 as CD47 Sciences, Inc. Our principal executive offices are located at 1490 O'Brien Drive, Suite A, Menlo Park, California 94025, and our telephone number is (650) 352-4150.

Our website address is www.fortyseveninc.com. Information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus.

"Forty Seven," the Forty Seven logo and other trademarks or service marks of Forty Seven appearing in this prospectus are our property. This prospectus contains additional trade names, trademarks, and service marks of other companies, which are the property of their respective owners. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, these other companies.

THE OFFERING

Common stock offered by us	shares
Over-allotment option	shares
Common stock to be outstanding after this offering	shares
Use of proceeds	We estimate that the net proceeds from the sale of shares of our common stock that we are selling in this offering will be approximately $ million (or approximately $ million if the underwriters' over-allotment option is exercised in full), based upon an assumed initial public offering price of $ per share, the midpoint of the estimated offering price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering to conduct our clinical trials, to fund continued research and development of 5F9 in several applications, to fund other research and development activities, and for working capital and other general corporate purposes. We may also use a portion of the net proceeds to make acquisitions or investments, although we have no commitments or agreements to enter into such acquisitions or investments. See the section titled "Use of Proceeds" for additional information.
Risk factors	See "Risk Factors" and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Proposed Nasdaq trading symbol	"FTSV"

The number of shares of common stock that will be outstanding after this offering is based on 177,995,168 shares of common stock (including preferred stock on an as-converted basis) outstanding as of December 31, 2017, and excludes:

- 16,294,994 shares of common stock issuable upon the exercise of outstanding stock options as of December 31, 2017 with a weighted-average exercise price of $0.58 per share;
- 1,774,598 additional shares of common stock reserved for future issuance under our 2015 Equity Incentive Plan as of December 31, 2017, which shares will cease to be available for issuance at the time our 2018 Equity Incentive Plan becomes effective in connection with this offering;
- shares of common stock reserved for future issuance under our 2018 Equity Incentive Plan, which will become effective upon the execution of the underwriting agreement for this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and

- shares of common stock reserved for issuance under our 2018 Employee Stock Purchase Plan, which will become effective upon the execution of the underwriting agreement for this offering as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

In addition, unless we specifically state otherwise, all information in this prospectus assumes:

- that our amended and restated certificate of incorporation, which we will file in connection with the closing of this offering, and our amended and restated bylaws adopted in connection with this offering are effective;
- the conversion of all 125,673,575 outstanding shares of our preferred stock into an equal number of shares of common stock immediately upon the closing of this offering;
- no exercise of the outstanding options described above; and
- no exercise of the underwriters' over-allotment option.

SUMMARY FINANCIAL DATA

We have derived the summary statement of operations data for 2016 and 2017 and the summary balance sheet data as of December 31, 2017 from our audited financial statements included elsewhere in this prospectus. You should read the following summary financial data in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected for any other period in the future.

	Year Ended December 31,	
	2016	2017
	(In thousands, except share and per share data)	
Statement of Operations Data:		
Operating expenses:		
Research and development	$ 14,464	$ 37,174
General and administrative	5,153	8,130
Total operating expenses	19,617	45,304
Loss from operations	(19,617)	(45,304)
Interest and other income, net	78	406
Net loss	$ (19,539)	$ (44,898)
Net loss per share, basic and diluted(1)	$ (0.41)	$ (0.90)
Shares used in computing net loss per share, basic and diluted(1)	48,028,336	50,131,995
Pro forma net loss per share, basic and diluted (unaudited)(1)		$
Shares used in computing pro forma net loss per share, basic and diluted (unaudited)(1)		

(1) See the statements of operations and Note 10 to our financial statements for further details on the calculation of net loss per share and the unaudited pro forma net loss per share.

	As of December 31, 2017		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)(3)
		(In thousands)	
Balance Sheet Data:			
Cash, cash equivalents and short-term investments	$ 88,111	$	$
Total assets	95,465		
Working capital	81,289		
Total liabilities	12,003		
Accumulated deficit	(69,399)		
Total stockholders' equity	83,462		

(1) The pro forma balance sheet data gives effect to (i) the conversion of all outstanding shares of preferred stock into 125,673,575 shares of common stock immediately upon the closing of this offering and (ii) the filing and effectiveness of our amended and restated certificate of incorporation that will be in effect upon the closing of this offering.

(2) The pro forma as adjusted balance sheet data further reflects our receipt of net proceeds from the sale of shares of common stock at the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, respectively, the amount of cash, cash equivalents and short-term investments, working capital, total assets and total stockholders' equity by approximately $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase or decrease of 1,000,000 in the number of shares we are offering would increase or decrease the amount of cash, cash equivalents and short-term investments, working capital, total assets and stockholders' equity by approximately $ million, assuming the assumed initial public offering price per share, the midpoint of the price range set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions. The pro forma as adjusted information is illustrative only, and will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information contained in this prospectus, including our financial statements and the related notes appearing at the end of this prospectus, before deciding to invest in our common stock. If any of the following risks actually occur, it could harm our business, prospects, operating results and financial condition. Unless otherwise indicated, references to our business being harmed in these risk factors will include harm to our business, reputation, financial condition, results of operations, revenue and future prospects. In such event, the trading price of our common stock could decline and you might lose all or part of your investment.

Risks Related to Our Financial Position and Need for Additional Capital

We have a limited operating history and have incurred significant losses since inception and we anticipate that we may continue to incur losses for the foreseeable future and may never achieve or maintain profitability.

We are an immuno-oncology company with a limited operating history. Since inception in 2014, we have not generated any revenue and have incurred significant operating losses. Our net loss was $19.5 million and $44.9 million for 2016 and 2017, respectively. As of December 31, 2017, we had an accumulated deficit of $69.4 million. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. Since inception, we have devoted substantially all of our efforts to research and preclinical and clinical development of our product candidates, as well as to building out our management team and infrastructure. It could be several years, if ever, before we have a commercialized drug. The net losses we incur may fluctuate significantly from quarter to quarter and year to year. We anticipate that our expenses will increase substantially if, and as, we:

- continue to advance our research and clinical and preclinical development of our product candidates;
- scale up manufacturing to provide adequate drug substance for clinical trials and commercialization;
- initiate further clinical trials for our product candidates;
- seek to identify additional product candidates;
- seek marketing approvals for our product candidates that successfully complete clinical trials, if any;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval;
- maintain, expand, protect and enforce our intellectual property portfolio and obtain licenses to third-party intellectual property;
- attract, hire and retain additional administrative, clinical, regulatory and scientific personnel; and
- incur additional legal, accounting and other expenses in operating our business, including the additional costs associated with operating as a public company.

In addition, because of the numerous risks and uncertainties associated with pharmaceutical products and development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. Our expenses could increase and profitability could be further delayed if we decide to or are required by the U.S. Food and Drug Administration, or FDA, or other regulatory authorities such as the European Medicines Agency, or EMA, or the U.K. Medicines & Healthcare Products Regulatory Agency, or MHRA, to perform studies or trials in addition to those currently expected, or if there are any delays in the development, or in the completion of any planned or future preclinical studies or clinical trials of our current and future product candidates. Even if we complete the development and regulatory processes described above, we anticipate incurring significant costs associated with launching and commercializing our current and future product candidates.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our company also could cause you to lose all or part of your investment.

Even if this offering is successful, we will need substantial additional funding to pursue our business objectives. If we are unable to raise capital when needed or on terms favorable to us, we could be forced to delay, reduce or terminate our product development, other operations or commercialization efforts.

Identifying potential product candidates and conducting preclinical studies and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and begin selling any approved products. We expect our expenses to increase in connection with our ongoing activities, particularly as we continue to develop our product candidates. Our expenses could increase beyond our current expectations if the FDA requires us to perform clinical trials and other studies in addition to those that we currently anticipate. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or terminate our research and development programs or future commercialization efforts.

As of December 31, 2017, we had cash, cash equivalents and short-term investments of $88.1 million. Based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash, cash equivalents and short-term investments, will enable us to fund our cash and capital expenditure requirements through at least the next 12 months from the date of this offering. This estimate is based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we expect. Changes may occur beyond our control that would cause us to consume our available capital before that time, including changes in and progress of our development activities and changes in regulation. Our future capital requirements will depend on many factors, including:

- the scope, rate of progress, results and costs of drug discovery, preclinical development, laboratory testing and clinical trials for our product candidates;
- the number and development requirements of other product candidates that we may pursue, and other indications for our current product candidates that we may pursue;
- the costs, timing and outcome of regulatory review of our product candidates;
- the scope and costs of manufacturing development and commercial manufacturing activities;
- the cost associated with commercializing any approved product candidates;
- the cost and timing of developing our ability to establish sales and marketing capabilities, if any;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights, defending intellectual property-related claims and obtaining licenses to third-party intellectual property;
- the timing and amount of milestone and royalty payments we are required to make under our license agreements;
- our ability to establish and maintain collaborations on favorable terms, if at all; and
- the extent to which we acquire or in-license other product candidates and technologies and associated intellectual property.

Even if this offering is successful, we will require additional capital to complete our planned clinical development programs for our current product candidates to obtain regulatory approval. Any additional capital raising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our current and future product candidates, if approved.

In addition, we cannot guarantee that future financing will be available on a timely basis, in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities by us, whether equity or debt, or the market perception that such issuances are likely to occur, could cause the market price of our common stock to decline. If we are unable to obtain funding on a timely basis on acceptable terms, we may be required to delay, reduce or terminate one or more of our research and development programs or the commercialization of any product candidates that may be approved.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish proprietary rights.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, reduce or terminate our product development or future commercialization efforts or grant rights to third parties to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Risks Related to the Development of Our Product Candidates

We depend primarily on the success of our lead product candidate, 5F9, which is in clinical development and which has not completed a pivotal trial. If we do not obtain regulatory approval for and successfully commercialize our lead product candidate in one or more indications or we experience significant delays in doing so, we may never generate any revenue or become profitable.

We do not have any products that have received regulatory approval and may never be able to develop marketable product candidates. We expect that a substantial portion of our efforts and expenses over the next several years will be devoted to the development of our lead product candidate, 5F9, in our five ongoing clinical trials, including trials in monotherapy and in combination with anti-cancer antibodies such as rituximab and cetuximab. As a result, our business currently depends heavily on the successful development, regulatory approval and, if approved, commercialization of 5F9 in one or more of these indications. We cannot be certain that 5F9 will receive regulatory approval or will be successfully commercialized even if it receives regulatory approval. The research, testing, manufacturing, safety, efficacy, labeling, approval, sale, marketing and distribution of 5F9 is, and will remain, subject to comprehensive regulation by the FDA and similar foreign regulatory authorities. Before obtaining regulatory approvals for the commercial sale of any product candidate, we must demonstrate through preclinical studies and clinical trials that the product candidate is safe and effective for use in each target indication. Drug development is a long, expensive and uncertain process, and delay or failure can occur at any stage of any of our clinical trials. Failure to obtain regulatory approval for our product

candidates in the United States will prevent us from commercializing and marketing our product candidates. The success of 5F9 and any other product candidates will depend on several additional factors, including:

- completing clinical trials that demonstrate their efficacy and safety;
- receiving marketing approvals from applicable regulatory authorities;
- completing any post-marketing studies required by applicable regulatory authorities;
- establishing commercial manufacturing capabilities;
- launching commercial sales, marketing and distribution operations;
- the prevalence and severity of adverse events experienced with our product candidates;
- acceptance of our product candidates by patients, the medical community and third-party payors;
- a continued acceptable safety profile following approval;
- obtaining and maintaining healthcare coverage and adequate reimbursement for our product candidates;
- competing effectively with other therapies, including with respect to the sales and marketing of our product candidates, if approved; and
- qualifying for, maintaining, enforcing and defending our intellectual property rights and claims and obtaining licenses to any third party intellectual property we deem necessary or desirable.

Many of these factors are beyond our control, including the time needed to adequately complete clinical testing, the regulatory submission process, potential threats to our intellectual property rights and changes in the competitive landscape. It is possible that none of our product candidates will ever obtain regulatory approval, even if we expend substantial time and resources seeking such approval. If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully complete clinical trials, obtain regulatory approval or, if approved, commercialize our product candidates, which would materially harm our business, financial condition and results of operations.

In addition, the clinical trial requirements of the FDA, the EMA, the MHRA and other regulatory agencies and the criteria these regulators may use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use and market of the potential products. The regulatory approval process for novel product candidates such as ours can be more expensive and take longer than for other, better known or extensively studied pharmaceutical or other product candidates.

Our product candidates are based on a novel technology, which makes it difficult to predict the time and cost of product candidate development.

We have concentrated our product research and development efforts on our novel therapeutic approach, and our future success depends on the successful development of our lead product candidate, 5F9, and other product candidates. There can be no assurance that any development problems we experience in the future related to our novel therapy will not cause significant delays or unanticipated costs, or that such development problems can be solved. We may also experience delays in developing a sustainable, reproducible and scalable manufacturing process or transferring that process to commercial partners, which may prevent us from completing our clinical trials or commercializing our product candidates on a timely or profitable basis, if at all.

Clinical trials are very expensive, time-consuming and difficult to design and implement, and involve uncertain outcomes. Furthermore, results of earlier preclinical studies and clinical trials may not be predictive of results of future preclinical studies or clinical trials.

The risk of failure for our product candidates is high. It is impossible to predict when or if any of our product candidates will prove effective or safe in humans or will receive regulatory approval. To obtain the requisite regulatory approvals to market and sell any of our product candidates, we must demonstrate through extensive preclinical studies and clinical trials that our product candidates are safe and effective in humans for use in each target indication. Clinical testing is expensive and can take many years to complete, and the outcome is inherently uncertain. Failure can occur at any time during the clinical trial process.

In addition, the results of preclinical studies and earlier clinical trials may not be predictive of the results of later-stage preclinical studies or clinical trials. The results generated to date in preclinical studies or clinical trials for our product candidates do not ensure that later preclinical studies or clinical trials will demonstrate similar results. We have limited clinical data for each of our product candidates. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical and earlier stage clinical trials. For example, the favorable results of our ongoing trial of 5F9 in tumor targeting antibody combinations with rituximab may not be predictive of similar results in subsequent trials. In later-stage clinical trials, we will likely be subject to more rigorous statistical analyses than in completed earlier stage clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in later-stage clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials, and we cannot be certain that we will not face similar setbacks. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products.

In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in clinical trial procedures set forth in protocols, differences in the size and type of the patient populations, adherence to the dosing regimen and other clinical trial protocols, and the rate of dropout among clinical trial participants. If we fail to produce positive results in our planned preclinical studies or clinical trials of any of our product candidates, the development timeline and regulatory approval and commercialization prospects for our product candidates, and, correspondingly, our business and financial prospects, would be materially and adversely affected.

We may encounter substantial delays in our clinical trials or we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of the product candidate for its intended indications. Clinical trials are expensive, time-consuming and uncertain as to outcome. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical trials can occur at any stage of testing. Events that may prevent successful or timely completion of clinical development include:

- delays in reaching a consensus with regulatory authorities on trial design;
- delays in reaching agreement or failing to agree on acceptable terms with prospective clinical research organizations, or CROs, and clinical trial sites;
- delays in opening sites and recruiting suitable patients to participate in our clinical trials;
- imposition of a clinical hold by regulatory authorities as a result of a serious adverse event, concerns with a class of product candidates or after an inspection of our clinical trial operations or trial sites;
- delays in having patients complete participation in a trial or return for post-treatment follow-up;

- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenue from future drug sales and regulatory and commercialization milestones. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional testing to bridge our modified product candidate to earlier versions. Clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates, if approved, or allow our competitors to bring comparable drugs to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business, financial condition, results of operations and prospects.

Additionally, if the results of our clinical trials are inconclusive or if there are safety concerns or serious adverse events associated with our product candidates, we may:

- be delayed in obtaining marketing approval, if at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw, or suspend, their approval of the drug or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy, or REMS;
- be subject to the addition of labeling statements, such as warnings or contraindications;
- be sued; or
- experience damage to our reputation.

Our drug development costs will also increase if we experience delays in testing or obtaining marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, need to be restructured or be completed on schedule, if at all.

Further, we, the FDA or an institutional review board may suspend our clinical trials at any time if it appears that we or our collaborators are failing to conduct a trial in accordance with regulatory requirements, including the FDA's current Good Clinical Practice, or GCP, regulations, that we are exposing participants to unacceptable health risks, or if the FDA finds deficiencies in our investigational new drug applications or the conduct of these trials. Therefore, we cannot predict with any certainty the schedule for commencement and completion of future clinical trials. If we experience delays in the commencement or completion of our clinical trials, or if we terminate a clinical trial prior to completion, the commercial prospects of our product candidates could be negatively impacted, and our ability to generate revenues from our product candidates may be delayed or eliminated entirely.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs that we identify for specific indications. As a result, we may forego or delay pursuit of opportunities with other product

candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial therapies or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

If any of our product candidates receives marketing approval and we, or others, later discover that the drug is less effective than previously believed or causes undesirable side effects that were not previously identified, our ability to market the drug could be compromised.

Clinical trials of our product candidates are conducted in carefully defined subsets of patients who have agreed to enter into clinical trials. Consequently, it is possible that our clinical trials may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any, or alternatively fail to identify undesirable side effects. Other products focused on CD47 have had problems with toxicity. If one or more of our product candidates receives regulatory approval, and we, or others, later discover that they are less effective than previously believed, or cause undesirable side effects, a number of potentially significant negative consequences could result, including:

- withdrawal or limitation by regulatory authorities of approvals of such product;
- seizure of the product by regulatory authorities;
- recall of the product;
- restrictions on the marketing of the product or the manufacturing process for any component thereof;
- requirement by regulatory authorities of additional warnings on the label, such as a “black box” warning or contraindication;
- requirement that we implement a REMS or create a medication guide outlining the risks of such side effects for distribution to patients;
- commitment to expensive additional safety studies prior to approval or post-marketing studies required by regulatory authorities of such product;
- the product may become less competitive;
- initiation of regulatory investigations and government enforcement actions;
- initiation of legal action against us to hold us liable for harm caused to patients; and
- harm to our reputation and resulting harm to physician or patient acceptance of our products.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, financial condition and results of operations.

If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the study until its conclusion. We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The enrollment of patients depends on many factors, including:

- the patient eligibility criteria defined in the protocol;

- the size and health of the patient population required for analysis of the trial's primary endpoints;
- the proximity of patients to study sites;
- the design of the trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will drop out of the trials before completion.

In addition, our clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials at such clinical trial site. Moreover, because our product candidates represent a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies rather than enroll patients in any future clinical trial.

Delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our product candidates.

We may become exposed to costly and damaging liability claims, either when testing our product candidates in the clinic or at the commercial stage, and our product liability insurance may not cover all damages from such claims.

We are exposed to potential product liability and professional indemnity risks that are inherent in the research, development, manufacturing, marketing and use of pharmaceutical products. We currently have no products that have been approved for commercial sale. However, the current and future use of product candidates by us in clinical trials, and the sale of any approved products in the future, may expose us to liability claims. These claims might be made by patients that use the product, healthcare providers, pharmaceutical companies or others selling such products. In addition, we have agreed to indemnify the licensors of the intellectual property related to our product candidates against certain intellectual property infringement claims. Any claims against us, or with respect to which we are obligated to provide indemnification, regardless of their merit, could be difficult and costly to defend or settle, and could compromise the market acceptance of our product candidates or any prospects for commercialization of our product candidates, if approved.

Although the clinical trial process is designed to identify and assess potential side effects, it is always possible that a drug, even after regulatory approval, may exhibit unforeseen side effects. If any of our product candidates were to cause adverse side effects during clinical trials or after approval of the product candidate, we may be exposed to substantial liabilities. Physicians and patients may not comply with any warnings that identify known potential adverse effects and patients who should not use our product candidates.

Although we maintain product liability insurance coverage, such insurance may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage each time we commence a clinical trial and if we successfully commercialize any product candidate. As the expense of insurance coverage is increasing, we may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to

satisfy any liability that may arise. If a successful product liability claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover such claims and our business operations could be impaired.

Risks Related to Commercialization of Our Product Candidates

We have never commercialized a product candidate and we may lack the necessary expertise, personnel and resources to successfully commercialize any of our products that receive regulatory approval on our own or together with collaborators.

We have never commercialized a product candidate. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, acquiring the rights to our product candidates and undertaking preclinical studies and clinical trials of our product candidates. We currently have no sales force, marketing or distribution capabilities. To achieve commercial success of our product candidates, if any are approved, we will have to develop our own sales, marketing and supply capabilities or outsource these activities to a third party.

Factors that may affect our ability to commercialize our product candidates on our own include recruiting and retaining adequate numbers of effective sales and marketing personnel, obtaining access to or persuading adequate numbers of physicians to prescribe our product candidates and other unforeseen costs associated with creating an independent sales and marketing organization. Developing a sales and marketing organization requires significant investment, is time-consuming and could delay the launch of our product candidates. We may not be able to build an effective sales and marketing organization in the United States, the European Union or other key global markets. If we are unable to build our own distribution and marketing capabilities or to find suitable partners for the commercialization of our product candidates, we may have difficulties generating revenue from them.

We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do.

The development and commercialization of new drug products is highly competitive. We face competition with respect to our current product candidates, and will face competition with respect to any product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical, specialty pharmaceutical and biotechnology companies among others. We compete in the segments of the pharmaceutical, biotechnology and other related markets that develop immunotherapies for the treatment of cancer. There are other companies working to develop immunotherapies for the treatment of cancer including divisions of large pharmaceutical and biotechnology companies of various sizes. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach, and others are based on entirely different approaches. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

We are developing our initial product candidates for the treatment of cancer and currently none of these therapies are approved. There are already a variety of available drug therapies marketed for cancer and some of the currently approved drug therapies are branded and subject to patent protection, and others are available on a generic basis. Many of these approved drugs are well established therapies and are widely accepted by physicians, patients and third-party payors. Insurers and other third-party payors may also encourage the use of generic products. We expect that if our product candidates are approved, they will be priced at a significant premium over competitive generic products. This may make it difficult for us to achieve our business strategy of using our product candidates in combination with existing therapies or replacing existing therapies with our product candidates.

Competition may further increase as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. We are aware that Celgene Corporation, Trillium Therapeutics Inc., Alexo Therapeutics Ltd, Arch Therapeutics, Inc., Surface Oncology, Inc., Novimmune SA, OSE Immunotherapeutics SA, Aurigene Discovery Technologies Ltd and others are developing drugs targeting the CD47 pathway that may have utility for the treatment of indications that we are targeting. Our competitors may succeed in developing, acquiring or licensing, on an exclusive basis, products that are more effective or less costly than any product candidate that we may develop.

Established pharmaceutical companies may invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make our product candidates less competitive. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety in order to overcome price competition and to be commercially successful. Accordingly, our competitors may succeed in obtaining patent protection, discovering, developing, receiving FDA approval for or commercializing drugs before we do, which would have an adverse impact on our business and results of operations.

The availability of our competitors' products could limit the demand and the price we are able to charge for any product candidate we commercialize, if any. The inability to compete with existing or subsequently introduced drugs would harm our business, financial condition and results of operations.

Even if any of our product candidates receive marketing approval, they may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success.

If 5F9 and any other future product candidates receive marketing approval, whether as a single agent or in combination with other therapies, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. For example, current approved immunotherapies, and other cancer treatments like chemotherapy and radiation therapy, are well established in the medical community, and doctors may continue to rely on these therapies. If 5F9 and any other future product candidates do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of 5F9 and any future products, if approved for commercial sale, will depend on a number of factors, including:

- efficacy and potential advantages compared to alternative treatments;
- the ability to offer our products, if approved, for sale at competitive prices;
- convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- sufficient third-party coverage or reimbursement, including of combination therapies;
- adoption of a companion diagnostic and/or complementary diagnostic; and
- the prevalence and severity of any side effects.

The successful commercialization of certain of our product candidates will depend in part on the extent to which governmental authorities and health insurers establish adequate coverage, reimbursement levels and pricing policies. Failure to obtain or maintain adequate coverage and reimbursement for our product candidates, if approved, could limit our ability to market those products and decrease our ability to generate revenue.

The availability and adequacy of coverage and reimbursement by governmental healthcare programs such as Medicare and Medicaid, private health insurers and other third-party payors are essential for most patients to be

able to afford products such as our product candidates, if approved. Our ability to achieve acceptable levels of coverage and reimbursement for products by governmental authorities, private health insurers and other organizations will have an effect on our ability to successfully commercialize our product candidates and attract additional collaboration partners to invest in the development of our product candidates. Coverage under certain government programs, such as Medicare, Medicaid and TRICARE, may not be available for certain of our product candidates. Assuming we obtain coverage for a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. We cannot be sure that coverage and reimbursement in the United States, the European Union or elsewhere will be available for any product that we may develop, and any reimbursement that may become available may be decreased or eliminated in the future.

Third-party payors increasingly are challenging prices charged for pharmaceutical products and services, and many third-party payors may refuse to provide coverage and reimbursement for particular drugs when an equivalent generic drug, biosimilar or a less expensive therapy is available. It is possible that a third-party payor may consider our product candidates and other therapies as substitutable and only offer to reimburse patients for the less expensive product. Even if we show improved efficacy or improved convenience of administration with our product candidates, pricing of existing drugs may limit the amount we will be able to charge for our product candidates. These payors may deny or revoke the reimbursement status of a given product or establish prices for new or existing marketed products at levels that are too low to enable us to realize an appropriate return on our investment in product development. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize our product candidates, and may not be able to obtain a satisfactory financial return on products that we may develop.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. In the United States, third-party payors, including private and governmental payors, such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs and biologics will be covered. The Medicare and Medicaid programs increasingly are used as models for how private payors and other governmental payors develop their coverage and reimbursement policies for drugs and biologics. Some third-party payors may require pre-approval of coverage for new or innovative devices or drug therapies before they will reimburse health care providers who use such therapies. It is difficult to predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our product candidates.

Obtaining and maintaining reimbursement status is time-consuming and costly. No uniform policy for coverage and reimbursement for products exists among third-party payors in the United States. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Furthermore, rules and regulations regarding reimbursement change frequently, in some cases at short notice, and we believe that changes in these rules and regulations are likely.

Moreover, increasing efforts by governmental and third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our product candidates. We expect to experience pricing pressures in connection with the sale of any of our product candidates due to the trend toward managed healthcare, the increasing influence of health maintenance organizations, and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. The continuing efforts of the government, insurance companies, managed care organizations and other payors of health care services to contain or reduce costs of health care may adversely affect:

- the demand for any products for which we may obtain regulatory approval;

- our ability to set a price that we believe is fair for our products;
- our ability to obtain coverage and reimbursement approval for a product;
- our ability to generate revenues and achieve or maintain profitability; and
- the level of taxes that we are required to pay.

Even if we receive marketing approval for any of our product candidates, we may not achieve market acceptance, which would limit the revenue that we can generate from sales of any of our approved product candidates.

Even if the FDA approves the marketing of any product candidates that we develop, physicians, patients, third-party payors or the medical community may not accept or use them. Efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may not be successful. Market acceptance of 5F9 and our other product candidates, if any are approved, will depend on a number of factors, including, among others:

- the ability of 5F9 and our other product candidates to treat cancer, as compared with other available drugs, treatments or therapies;
- the prevalence and severity of any adverse side effects associated with 5F9 and our other product candidates;
- limitations or warnings contained in the labeling approved for 5F9 or our other product candidates by the FDA;
- availability of alternative treatments;
- the size of the target patient population, and the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support and timing of market introduction of competitive products;
- publicity for our product candidates and competing products and treatments;
- pricing and cost effectiveness;
- the effectiveness of our sales and marketing strategies;
- our ability to increase awareness of our product candidates through marketing efforts;
- our ability to obtain sufficient third-party coverage or reimbursement;
- the willingness of patients to pay out-of-pocket in the absence of third-party coverage; and
- the likelihood that the FDA may impose additional requirements that limit the promotion, advertising, distribution or sales of our product candidates.

If any of our product candidates is approved but does not achieve an adequate level of acceptance by patients, physicians and third-party payors, we may not generate sufficient revenue to become or remain profitable and our business may be harmed.

Even if we obtain regulatory approval for our product candidates, they will remain subject to ongoing regulatory oversight.

Even if we obtain regulatory approval for any of our product candidates, they will be subject to extensive and ongoing regulatory requirements for manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, sampling and record-keeping. These requirements include

submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current good manufacturing practices, or cGMP, regulations and GCPs, for any clinical trials that we conduct post-approval, all of which may result in significant expense and limit our ability to commercialize such products. In addition, any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. The FDA may also require a REMS as a condition of approval of our product candidates, which could include requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability. Moreover, if there are changes in the application of legislation or regulatory policies, or if problems are discovered with a product or our manufacture of a product, or if we or one of our distributors, licensees or co-marketers fails to comply with regulatory requirements, the regulators could take various actions. These include:

- issuing warning or untitled letters;
- seeking an injunction or imposing civil or criminal penalties or monetary fines;
- suspension or imposition of restrictions on operations, including product manufacturing;
- seizure or detention of products, refusal to permit the import or export of products, or request that we initiate a product recall;
- suspension or withdrawal of our marketing authorizations;
- suspension of any ongoing clinical trials;
- refusal to approve pending applications or supplements to applications submitted by us; or
- requiring us to conduct additional clinical trials, change our product labeling or submit additional applications for marketing authorization.

If any of these events occurs, our ability to sell such product may be impaired, and we may incur substantial additional expense to comply with regulatory requirements, which could adversely affect our business, financial condition and results of operations.

If any of our product candidates are approved for marketing and commercialization and we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market our product candidates, we will be unable to successfully commercialize our product candidates if and when they are approved.

We have no sales, marketing or distribution capabilities or experience. To achieve commercial success for any approved product for which we retain sales and marketing responsibilities, we must either develop a sales and marketing organization, which would be expensive and time consuming, or outsource these functions to other third parties. In the future, we may choose to build a focused sales and marketing infrastructure to sell, or participate in sales activities with our collaborators for, some of our product candidates if and when they are approved.

There are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our product candidates on our own include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future product candidates;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we enter into arrangements with third parties to perform sales, marketing and distribution services, our product revenues or the profitability of these product revenues to us are likely to be lower than if we were to market and sell any products that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell and market our product candidates or may be unable to do so on terms that are favorable to us. In entering into third-party marketing or distribution arrangements, any revenue we receive will depend upon the efforts of the third parties and we cannot assure you that such third parties will establish adequate sales and distribution capabilities or devote the necessary resources and attention to sell and market our product candidates effectively. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

Risks Related to Our Dependence on Third Parties

We do not have our own manufacturing capabilities and will rely on third parties to produce clinical and commercial supplies of 5F9 and any future product candidate.

We have limited experience in drug formulation and manufacturing and do not own or operate, and we do not expect to own or operate, facilities for drug manufacturing, storage, distribution, or testing. We have entered into a development and manufacturing agreement with Lonza, pursuant to which we agreed to purchase 5F9. Lonza is currently our sole supplier of 5F9. If Lonza is unable to supply us with sufficient clinical and commercial grade quantities of 5F9, and we are unable to timely establish an alternate supply from one or more third-party contract manufacturers, we could experience delays in our development efforts as we locate and qualify new manufacturers. Under such circumstances, we may be required to receive drug substance for use on a purchase order basis, and as such, there can be no assurance that we actually receive sufficient quantities.

Further, our reliance on third-party manufacturers exposes us to risks beyond our control, including the risk of:

- inability to meet our drug specifications and quality requirements consistently;
- delay or inability to procure or expand sufficient manufacturing capacity;
- manufacturing and drug quality issues, including related to scale-up of manufacturing;
- costs and validation of new equipment and facilities required for additional scale-up;
- failure to comply with cGMP and similar foreign standards;

- inability to negotiate manufacturing agreements with third parties under commercially reasonable terms;
- termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us;
- reliance on a limited number of sources, and in some cases, single sources for drug components, such that if we are unable to secure a sufficient supply of these drug components, we will be unable to manufacture and sell 5F9 or any future product candidate in a timely fashion, in sufficient quantities or under acceptable terms;
- lack of qualified backup suppliers for those components that are currently purchased from a sole or single source supplier;
- operations of our third-party manufacturers or suppliers could be disrupted by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier or the issuance of a FDA Form 483 notice or warning letter;
- carrier disruptions or increased costs that are beyond our control; and
- failure to deliver our drugs under specified storage conditions and in a timely manner.

Some of these events could be the basis for FDA action, including injunction, recall, seizure, or total or partial suspension of production. In addition, our third-party manufacturers and suppliers are subject to FDA inspection from time to time. Failure by our third-party manufacturers and suppliers to pass such inspections and otherwise satisfactorily complete the FDA approval regimen with respect to our product candidate may result in regulatory actions such as the issuance of FDA Form 483 notices of observations, warning letters or injunctions or the loss of operating licenses. In addition, our third-party manufacturers and suppliers are subject to numerous environmental, health and safety laws and regulations, including those governing the handling, use, storage, treatment and disposal of waste products, and failure to comply with such laws and regulations could result in significant costs associated with civil or criminal fines and penalties for such third parties. Based on the severity of the regulatory action, our clinical or commercial supply of drug and packaging and other services could be interrupted or limited, which could harm our business.

In addition, our contract manufacturers are or may be engaged with other companies to supply and manufacture materials or products for such companies, which also exposes our suppliers and manufacturers to regulatory risks for the production of such materials and products. As a result, failure to meet the regulatory requirements for the production of those materials and products may also affect the regulatory clearance of a contract supplier's or manufacturer's facility. If the FDA or a comparable foreign regulatory agency does not approve these facilities for the supply or manufacture of our product candidates, or if it withdraws its approval in the future, we may need to find alternative supply or manufacturing facilities, which would negatively impact our ability to develop, obtain regulatory approval of or market our product candidates, if approved.

As we prepare for later-stage clinical trials and potential commercialization, we will need to take steps to increase the scale of production of our product candidates, which may include transferring production to new third-party suppliers or manufacturers. In order to conduct larger or late-stage scale clinical trials for our product candidates and supply sufficient commercial quantities of the resulting drug product and its components, if that product candidate is approved for sale, our contract manufacturers and suppliers will need to produce our product candidates in larger quantities, more cost effectively and, in certain cases, at higher yields than they currently achieve. These third-party contractors may not be able to successfully increase the manufacturing capacity for any such product candidates in a timely or cost-effective manner or at all. Significant scale up of manufacturing may require additional processes, technologies and validation studies, which are costly, may not be successful and which the FDA and foreign regulatory authorities must review and approve. In addition, quality issues may arise during those scale-up activities because of the inherent properties of a product candidate itself or of a product candidate in combination with other components added during the manufacturing and packaging process,

or during shipping and storage of the active pharmaceutical ingredients or the finished product. If our third-party contractors are unable to successfully scale up the manufacture of any of our product candidates in sufficient quality and quantity and at commercially reasonable prices, and we are unable to find one or more replacement suppliers or manufacturers capable of production at a substantially equivalent cost in substantially equivalent volumes and quality, and we are unable to successfully transfer the processes on a timely basis, the development of that product candidate and regulatory approval or commercial launch for any resulting products may be delayed, or there may be a shortage in supply, either of which could significantly harm our business, financial condition, operating results and prospects.

Any of these events could lead to clinical trial delays, failure to obtain regulatory approval or impact our ability to successfully commercialize any potential future product candidates.

We rely on third parties to conduct our preclinical studies and clinical trials and if these third parties perform in an unsatisfactory manner, our business could be substantially harmed.

We intend to conduct our future clinical trials using our own clinical resources while also leveraging expertise and assistance from CROs as appropriate. We do not currently have the ability to independently conduct large-scale clinical trials, such as a Phase 3 clinical trial, without outside assistance.

We have relied upon and plan to continue to rely upon medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct or assist us in conducting GCP-compliant clinical trials on our product candidates properly and on time, and may not currently have all of the necessary contractual relationships in place to do so. Once we have established contractual relationships with such third-party CROs, we will have only limited control over their actual performance of these activities.

We and our CROs and other vendors are required to comply with cGMP, GCP and good laboratory practices, or GLP, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Union and any comparable foreign regulatory authorities for all of our product candidates in preclinical and clinical development. Regulatory authorities enforce these regulations through periodic inspections of trial sponsors, principal investigators, clinical trial sites and other contractors. Although we rely on CROs to conduct any current or planned GLP-compliant preclinical studies and GCP-compliant clinical trials and have limited influence over their actual performance, we remain responsible for ensuring that each of our preclinical studies and clinical trials is conducted in accordance with its investigational plan and protocol and applicable laws and regulations, and our reliance on the CROs does not relieve us of our regulatory responsibilities. If we or any of our CROs or vendors fail to comply with applicable regulations, the data generated in our preclinical studies and clinical trials may be deemed unreliable and the FDA, EMA, MHRA or any comparable foreign regulatory agency may require us to perform additional preclinical studies and clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory agency, such regulatory agency will determine that all of our clinical trials comply with GCP regulations. In addition, our clinical trials must be conducted with products produced under cGMP requirements. Our failure to comply with these requirements may require us to repeat clinical trials, which would delay the regulatory approval process.

While we will have agreements governing their activities, our CROs will not be our employees, and we will not be able to control whether or not they devote sufficient time and resources to our future preclinical and clinical programs. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials, or other drug development activities which could harm our business. We face the risk of potential unauthorized disclosure or misappropriation of our intellectual property by CROs, which may reduce our trade secret protection and allow our potential competitors to access and exploit our proprietary technology. CROs also may use our proprietary information and intellectual property in such a way as to invite litigation or other intellectual property-related proceedings that could jeopardize or invalidate our proprietary information and intellectual property. If our CROs do not successfully

carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for any other reason, our clinical trials may be extended, delayed or terminated, the clinical data generated in our clinical trials may be deemed unreliable, and we may not be able to obtain regulatory approval for, or successfully commercialize any product candidate that we develop. As a result, our financial results and the commercial prospects for any product candidate that we develop would be harmed, our costs could increase, and our ability to generate revenue could be delayed.

If our relationships with these CROs terminate, we may not be able to enter into arrangements with alternative CROs or do so on commercially reasonable terms. Switching or adding additional CROs involves substantial cost and requires management time and focus, and could delay development and commercialization of our product candidates. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can negatively impact our ability to meet our desired clinical development timelines. Though we intend to carefully manage our relationships with our CROs, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a negative impact on our business and financial condition.

If we are not able to maintain our current collaborations and establish further collaborations, we may have to alter some of our future development and commercialization plans.

Our product development programs and the potential commercialization of our product candidates will require substantial additional capital to fund expenses. We have entered into collaboration agreements with pharmaceutical and biotechnology companies for certain combination therapies with 5F9 and may decide to collaborate for the future development and potential commercialization of other product candidates. For example, we have a combination clinical trial planned in ovarian cancer with Merck KGaA and combination clinical trials planned in in AML and bladder cancer with Genentech. Furthermore, we may find that our programs require the use of proprietary rights held by third parties, and the growth of our business may depend in part on our ability to acquire, in-license or use these proprietary rights. We will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of any product candidates we may seek to develop with them. We cannot predict the success of any collaboration that we have entered into or will enter into.

We face significant competition in seeking appropriate collaborators, and a number of more established companies may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, financial resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator’s resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator’s evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA, EMA, MHRA or similar foreign regulatory authorities, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. We may also be restricted under existing license agreements from entering into agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate further collaborations on a timely basis, on acceptable terms, or at all. Even if we are able to obtain a license to intellectual property of interest, we may not be able to secure exclusive rights, in which case others could use the same rights and compete with us. Our existing collaboration partners may not prioritize our product candidates or otherwise not effectively pursue the development of our product candidates which may delay, reduce or terminate the development of such product candidate, reduce or delay its development program or delay its potential commercialization. Further if we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to delay, reduce or terminate the development of such product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. Doing so will likely harm our ability to execute our business plans. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we rely on third parties to develop and manufacture our product candidates, we must, at times, share trade secrets with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, collaborative research agreements, consulting agreements or other similar agreements with our collaborators, advisors, employees and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, such as trade secrets. Despite these contractual agreements with third parties, sharing trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor's discovery of our trade secrets or other unauthorized use or disclosure would impair our competitive position and may harm our business.

In addition, these agreements typically restrict the ability of our advisors, employees, third-party contractors and consultants to publish data potentially relating to our trade secrets, although our agreements may contain certain limited publication rights. Despite our efforts to protect our trade secrets, our competitors may discover our trade secrets, either through breach of our agreements with third parties, independent development or publication of information by any of our third-party collaborators. A competitor's discovery of our trade secrets would impair our competitive position and have an adverse impact on our business.

Risks Related to Regulatory Compliance

Enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may charge for such product candidates.

The United States and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product for which we obtain marketing approval.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the Affordable Care Act, was enacted, which includes measures that have significantly changed the way health care is financed by both governmental and private insurers. Some of the provisions of the Affordable Care Act have yet to be implemented, and there have been judicial and congressional challenges to certain aspects of the Affordable Care Act. In January 2017, President

Trump signed an Executive Order directing federal agencies with authorities and responsibilities under the Affordable Care Act to waive, defer, grant exemptions from, or delay the implementation of any provision of the Affordable Care Act that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The U.S. House of Representatives passed legislation known as the American Health Care Act of 2017 in May 2017. More recently, the Senate Republicans introduced and then updated a bill to replace the Affordable Care Act known as the Better Care Reconciliation Act of 2017. The Senate Republicans also introduced legislation to repeal the Affordable Care Act without companion legislation to replace it, and a "skinny" version of the Better Care Reconciliation Act of 2017. Each of these measures was rejected by the full Senate. Congress will likely consider other legislation to replace elements of the Affordable Care Act. We continue to evaluate the effect that the ACA and its possible repeal and replacement has on our business.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. For example, in August 2011, then-President Obama signed into law the Budget Control Act of 2011, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction, which triggered the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of, on average, 2% per fiscal year through 2025 unless Congress takes additional action. Recently, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs and reform government program reimbursement methodologies for drugs.

We expect that the healthcare reform measures that have been adopted and may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product and could seriously harm our future revenues. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products.

Our business operations and current and future relationships with investigators, health care professionals, consultants, third-party payors and customers will be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, health information privacy and security laws, and other healthcare laws and regulations. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

Although we do not currently have any products on the market, if we obtain FDA approval for our product candidates, and begin commercializing those products in the United States, our operations may be directly, or indirectly through our prescribers, customers and third-party payors, subject to various U.S. federal and state healthcare laws and regulations, including, without limitation, the U.S. federal Anti-Kickback Statute, the U.S. federal civil and criminal false claims laws and the Physician Payments Sunshine Act and regulations. Healthcare providers, physicians and others play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. These laws may impact, among other things, our current business operations, including our clinical research activities, and proposed sales, marketing and education programs and constrain the business of financial arrangements and relationships with healthcare providers, physicians and other parties through which we market, sell and distribute our products for which we obtain marketing approval. In addition, we may be subject to patient data privacy and security regulation by both the U.S. federal government and the states in which we conduct our business. Finally, we may be subject to additional healthcare, statutory and regulatory requirements and enforcement by foreign regulatory authorities in jurisdictions in which we conduct our business. The laws that may affect our ability to operate include:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or paying any remuneration (including any

kickback, bribe, or certain rebates), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under U.S. federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the U.S. federal false claims and civil monetary penalties laws, including the civil False Claims Act, which, among other things, impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the U.S. federal government, claims for payment or approval that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. federal government. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- the U.S. federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items or services; similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and its implementing regulations, and as amended again by the Modifications to the HIPAA Privacy, Security, Enforcement and Breach Notification Rules Under HITECH and the Genetic Information Nondiscrimination Act; Other Modifications to the HIPAA Rules, commonly referred to as the Final HIPAA Omnibus Rule, published in January 2013, which imposes certain obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information without appropriate authorization by covered entities subject to the Final HIPAA Omnibus Rule, i.e. health plans, healthcare clearinghouses and healthcare providers, as well as their business associates that perform certain services for or on their behalf involving the use or disclosure of individually identifiable health information;
- the U.S. Federal Food, Drug and Cosmetic Act, which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;
- the U.S. federal legislation commonly referred to as Physician Payments Sunshine Act, enacted as part of the ACA, and its implementing regulations, which requires certain manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to the CMS information related to certain payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members;
- analogous state laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including, but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking

gifts and other remuneration and items of value provided to healthcare professionals and entities; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and

- European and other foreign law equivalents of each of the laws, including reporting requirements detailing interactions with and payments to healthcare providers.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from U.S. government funded healthcare programs, such as Medicare and Medicaid, or similar programs in other countries or jurisdictions, disgorgement, individual imprisonment, contractual damages, reputational harm, diminished profits, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws and the delay, reduction, termination or restructuring of our operations. Further, defending against any such actions can be costly and time-consuming, and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired. If any of the physicians or other providers or entities with whom we expect to do business is found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs and imprisonment. If any of the above occur, it could adversely affect our ability to operate our business and our results of operations.

We may not be able to obtain or maintain orphan drug designation or exclusivity for our product candidates.

We have obtained orphan drug designation in the United States and Europe for use of 5F9 in treating AML. We may seek orphan drug designation for other product candidates in the future. Regulatory authorities in some jurisdictions, including the United States and the European Union, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals in the United States.

Our orphan drug exclusivity for the use of 5F9 in treating AML is contingent upon a showing that 5F9 is clinically superior to existing treatments of AML. Clinical superiority may be demonstrated by showing that a drug has greater effectiveness than the approved drug, greater safety in a substantial portion of the target population, or otherwise makes a major contribution to patient care. If we are unable to demonstrate that the use of 5F9 in treating AML is clinically superior to existing treatments, we will not be entitled to the benefits of orphan drug exclusivity, which could adversely affect our business and our ability to market and sell 5F9 if it is approved for sale.

Generally, if a product with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the EMA from approving another marketing application for the same drug for the same indication during that time period. The applicable period is seven years in the United States and ten years in the European Union. The European exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or the EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition.

We cannot assure you that any future application for orphan drug designation with respect to any other product candidate will be granted. If we are unable to obtain orphan drug designation with respect to other product candidates in the United States, we will not be eligible to obtain the period of market exclusivity that could result from orphan drug designation or be afforded the financial incentives associated with orphan drug designation. Even when we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve a later drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient patent and other intellectual property protection for our product candidates and technology, we may not be able to compete effectively in our market.

Our success depends in significant part on our ability and the ability of our licensors and collaborators to obtain, maintain, enforce and defend patents and other intellectual property rights with respect to our product candidates and technology and to operate our business without infringing, misappropriating, or otherwise violating the intellectual property rights of others. We have licensed a patent estate from The Board of Trustees of the Leland Stanford Junior University, or Stanford, - for more information, see “Business—License and Collaboration Agreements.” In addition, we have filed our own patent applications, and as of December 31, 2017, the only patent applications solely owned by us are provisional patent applications, and we do not own any issued patents. Provisional patent applications are not eligible to become issued patents until, among other things, we file a non-provisional patent application within 12 months of filing of one or more of our related provisional patent applications. If we do not timely file any non-provisional patent applications, we may lose our priority date with respect to our provisional patent applications and any patent protection on the inventions disclosed in our provisional patent applications. While we intend to timely file non-provisional patent applications relating to our provisional patent applications, we cannot predict whether any such patent applications will result in the issuance of patents that provide us with any competitive advantage.

We have also licensed patent and other intellectual property rights to and from our partners. Some of these licenses give us the right to prepare, file and prosecute patent applications and maintain and enforce patents we have licensed, whereas other licenses may not give us such rights. In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications or to maintain the patents covering technology that we license to or from our partners, and we may have to rely on our partners to fulfill these responsibilities. Consequently, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. If our current or future licensors, licensees or collaborators fail to establish, maintain or protect such patents and other intellectual property rights, such rights may be reduced or eliminated. If our licensors, licensees or collaborators are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised.

The patent prosecution process is expensive and time-consuming. We and our current or future licensors, licensees or collaborators may not be able to prepare, file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we or our licensors will fail to file patent applications covering inventions made in the course of development and commercialization activities before a competitor or another third party files a patent application covering, or publishes information disclosing, a similar, independently-developed invention. Such competitor’s patent application may pose obstacles to our ability to obtain or limit the scope of patent protection we may obtain. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, collaborators, CROs, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. In addition, publications of

discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we or our licensors were the first to make the inventions claimed in our owned or licensed patents or pending patent applications, or were the first to file for patent protection of such inventions.

The patent position of biotechnology and pharmaceutical companies generally is uncertain, involves complex legal and factual questions and is the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our and our current or future licensors' patent rights are uncertain. Our and our licensors pending and future patent applications may not result in patents being issued that protect our technology or products, in whole or in part, or which effectively exclude others from commercializing competitive technologies and products. The patent examination process may require us or our licensors to narrow the scope of the claims of our pending and future patent applications, and therefore, even if such patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Our and our licensors' patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications, and then only to the extent the issued claims cover such technology. Any of the foregoing could harm our competitive position, business, financial condition, results of operations and prospects.

The patent protection we obtain for our product candidates and technology may be challenged or not sufficient enough to provide us with any competitive advantage.

Even if our owned or licensed patent applications issue as patents, the issuance of any such patents is not conclusive as to their inventorship, scope, validity, or enforceability, and such patents may be challenged, invalidated or held to be unenforceable, including in the courts or patent offices in the United States and abroad, or circumvented. We may be subject to a third party preissuance submission of prior art to the United States Patent and Trademark Office, or USPTO, or equivalent foreign bodies, or become involved in opposition, derivation, revocation, re-examination, post-grant and *inter partes* review, or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Moreover, we, or one of our licensors, may have to participate in interference proceedings declared by the USPTO to determine priority of invention or in post-grant challenge proceedings, such as oppositions in a foreign patent office, that challenge priority of invention or other features of patentability. Such challenges may result in loss of patent rights, loss of exclusivity, or in patent claims being narrowed, invalidated, or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us.

Furthermore, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolios may not provide us with adequate protection against third parties seeking to commercialize products similar or identical to ours. We expect to request extensions of patent terms to the extent available in countries where we obtain issued patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the expiration of the patent. However, there are no assurances that the FDA or any comparable foreign regulatory authority will grant such extensions, in whole or in part. In such case, our competitors may launch their products earlier than might otherwise be anticipated. Moreover, some of our owned or in-licensed patents and patent applications are, and may in the future be, co-owned with third parties. If we are

unable to obtain an exclusive license to any such co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we may need the cooperation of any such co-owners in order to enforce such patents against third parties, and such cooperation may not be provided to us.

In addition, our owned and in-licensed patents may be subject to a reservation of rights by one or more third parties. For example, our license to certain intellectual property owned by Stanford is subject to certain rights Stanford granted to third parties prior to our license agreement. In addition, the research resulting in certain of our owned and in-licensed patent rights and technology was funded in part by the U.S. federal or state governments, including our grants from the California Institute for Regenerative Medicine, or CIRM. As a result, the government may have certain rights, including march-in rights, to such patent rights and technology. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention for noncommercial purposes. These rights may permit the government to disclose our confidential information to third parties or allow third parties to use our licensed technology. The government can also exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any of the foregoing could harm our competitive position, business, financial condition, results of operations and prospects.

We are heavily dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing our product candidates, if approved. If we breach any of the agreements under which we license the use, development and commercialization rights to our product candidates or technology from third parties or, in certain cases, we fail to meet certain development deadlines, we could lose license rights that are important to our business.

We are heavily reliant upon licenses to certain patent rights and other intellectual property from third parties that are important or necessary to the development of our product candidates, including 5F9. For example, in November 2015 we entered into a license agreement with Stanford under which we are granted rights to intellectual property that are necessary to the development and commercialization of 5F9 and are otherwise important to our business. We may also need to obtain additional licenses to advance the development and commercialization of other product candidates we may develop. Our existing license agreement with Stanford imposes, and we expect that future license agreements will impose, upon us various development, regulatory and/or commercial diligence obligations, payment of milestones and/or royalties and other obligations. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy-related event, the licensor may have the right to terminate the license, in which event we would not be able to develop, market or otherwise commercialize products covered by the license, including 5F9 if any of the foregoing were to occur with respect to our license with Stanford. Our business could suffer, for example, if any current or future licenses terminate, if the licensors fail to abide by the terms of the license, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms. For more information regarding our license agreements, see "Business—License and Collaboration Agreements."

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and certain provisions in intellectual property license agreements may be susceptible to multiple interpretations. Disputes may arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;

- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners;
- our right to transfer or assign the license; and
- the effects of termination.

The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could harm our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

We may enter into additional licenses to third-party intellectual property that are necessary or useful to our business. Our current licenses and any future licenses that we may enter into impose various royalty payment, milestone and other obligations on us. Under some license agreements, we may not control prosecution of the licensed intellectual property, or may not have the first right to enforce the intellectual property. In those cases, we may not be able to adequately influence patent prosecution or enforcement, or prevent inadvertent lapses of coverage due to failure to pay maintenance fees. If we fail to comply with any of our obligations under a current or future license agreement, the licensor may allege that we have breached our license agreement, and may accordingly seek to terminate our license. Termination of any of our current or future licenses could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop and commercialize a product candidate or product, if approved, as well as harm our competitive business position and our business prospects. Under some license agreements, termination may also result in the transfer or granting of rights under certain of our intellectual property and information related to the product candidate being developed under the license, such as regulatory information.

In addition, if our licensors fail to abide by the terms of the license, if the licensors fail to prevent infringement by third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms, our business, competitive position, financial condition, results of operations and prospects could be materially harmed.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time-consuming and unsuccessful, and issued patents covering our technology and product candidates could be found invalid or unenforceable if challenged.

Competitors and other third parties may infringe or otherwise violate our issued patents or other intellectual property or the patents or other intellectual property of our licensors. In addition, our patents or the patents of our licensors may become involved in inventorship or priority disputes. Our pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. To counter infringement or other unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents or that our patents are invalid or unenforceable. In a patent infringement proceeding, a court may decide that a

patent of ours is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology. An adverse result in any litigation proceeding could put one or more of our owned or licensed patents at risk of being invalidated, held unenforceable or interpreted narrowly. We may find it impractical or undesirable to enforce our intellectual property against some third parties.

If we were to initiate legal proceedings against a third party to enforce a patent directed to our product candidates, or one of our future product candidates, the defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, non-enablement or insufficient written description. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Third parties may also raise similar claims before the USPTO or an equivalent foreign body, even outside the context of litigation. Potential proceedings include re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings and equivalent proceedings in foreign jurisdictions (*e.g.*, opposition proceedings). Such proceedings could result in the revocation of, cancellation of, or amendment to our patents in such a way that they no longer cover our technology or any product candidates that we may develop. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on the applicable product candidates or technology covered by the patent rendered invalid or unenforceable. Such a loss of patent protection would materially harm our business, financial condition, results of operations and prospects.

Interference proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be materially harmed if the prevailing party does not offer us a license on commercially reasonable terms.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

Most of our competitors are larger than we are and have substantially greater resources. They are, therefore, likely to be able to sustain the costs of complex patent litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon, misappropriating or otherwise violating our intellectual property. Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims could result in substantial costs and diversion of management resources, which could harm our business. In addition, the uncertainties associated with litigation could compromise our ability to raise the funds necessary to continue our clinical trials, continue our internal research programs, or in-license needed technology or other product candidates. There could also be public announcements of the results of the hearing, motions, or other interim proceedings or developments. If securities analysts or investors perceive those results to be negative, it could cause the price of shares of our common stock to decline. Any of the foregoing events could harm our business, financial condition, results of operation and prospects.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, maintaining, defending and enforcing patents on our product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own drugs and may export otherwise infringing drugs to territories where we have patent protection, but enforcement rights are not as strong as those in the United States. These drugs may compete with our product candidates and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of some countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful.

Many countries, including European Union countries, India, Japan and China, have compulsory licensing laws under which a patent owner may be compelled under specified circumstances to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In those countries, we may have limited remedies if patents are infringed or if we are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license, which could adversely affect our business, financial condition, results of operations and prospects.

We may not identify relevant third-party patents or may incorrectly interpret the relevance, scope or expiration of a third-party patent which might adversely affect our ability to develop and market our product candidates.

We cannot guarantee that any of our or our licensors' patent searches or analyses, including the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third-party patent and pending patent application in the United States and abroad that is relevant to or necessary for the commercialization of our product candidates in any jurisdiction. For example, U.S. patent applications filed before November 29, 2000 and certain U.S. patent applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Patent applications in the United States and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our product candidates could have been filed by third parties without our knowledge. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our product candidates or the use of our product candidates. The scope of a patent claim is determined by an interpretation of the law, the written disclosure in a patent and the patent's prosecution history. Our interpretation of the relevance or the scope of a patent or a pending application may be incorrect, which may negatively impact our ability to market our product candidates. We may incorrectly determine that our product candidates are not covered by a third-party patent or may incorrectly predict whether a third party's pending application will issue with claims of

relevant scope. Our determination of the expiration date of any patent in the United States or abroad that we consider relevant may be incorrect, which may negatively impact our ability to develop and market our product candidates. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our product candidates.

If we fail to identify and correctly interpret relevant patents, we may be subject to infringement claims. We cannot guarantee that we will be able to successfully settle or otherwise resolve such infringement claims. If we fail in any such dispute, in addition to being forced to pay damages, which may be significant, we may be temporarily or permanently prohibited from commercializing any of our product candidates that are held to be infringing. We might, if possible, also be forced to redesign product candidates so that we no longer infringe the third-party intellectual property rights. Any of these events, even if we were ultimately to prevail, could require us to divert substantial financial and management resources that we would otherwise be able to devote to our business and could adversely affect our business, financial condition, results of operations and prospects.

If we are unable to obtain licenses from third parties on commercially reasonable terms or fail to comply with our obligations under such agreements, our business could be harmed.

It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our products, in which case we would be required to obtain a license from these third parties. If we are unable to license such technology, or if we are forced to license such technology, on unfavorable terms, our business could be materially harmed. If we are unable to obtain a necessary license, we may be unable to develop or commercialize the affected product candidates, which could materially harm our business, and the third parties owning such intellectual property rights could seek either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us.

If we fail to comply with our obligations under our license agreements, our counterparties may have the right to terminate these agreements, in which event we might not be able to develop, manufacture or market, or may be forced to cease developing, manufacturing or marketing, any product that is covered by these agreements or may face other penalties under such agreements. Such an occurrence could materially adversely affect the value of the product candidate being developed under any such agreement. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to negotiate new or reinstated agreements with less favorable terms, cause us to lose our rights under these agreements, including our rights to important intellectual property or technology, or impede, delay or prohibit the further development or commercialization of one or more product candidates that rely on such agreements.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for a product candidate, we may be open to competition from competitive medications, including generic medications. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such product candidates might expire before or shortly after such product candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing product candidates similar or identical to ours.

Depending upon the timing, duration and conditions of any FDA marketing approval of our product candidates, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug

Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments, and similar legislation in the European Union. The Hatch-Waxman Amendments permit a patent term extension of up to five years for a patent covering an approved product as compensation for effective patent term lost during product development and the FDA regulatory review process. However, we may not receive an extension if we fail to exercise due diligence during the testing phase or regulatory review process, fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. Moreover, the length of the extension could be less than we request. Only one patent per approved product can be extended, the extension cannot extend the total patent term beyond 14 years from approval and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. If we are unable to obtain patent term extension or the term of any such extension is less than we request, the period during which we can enforce our patent rights for the applicable product candidate will be shortened and our competitors may obtain approval to market competing products sooner. As a result, our revenue from applicable products could be reduced. Further, if this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case, and our competitive position, business, financial condition, results of operations and prospects could be materially harmed.

Changes in patent law could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.

Obtaining and enforcing patents in the pharmaceutical industry is inherently uncertain, due in part to ongoing changes in the patent laws. Depending on decisions by Congress, the federal courts, and the USPTO, the laws and regulations governing patents, and interpretation thereof, could change in unpredictable ways that could weaken our and our licensors' or collaborators' ability to obtain new patents or to enforce existing or future patents. For example, the Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. Therefore, there is increased uncertainty with regard to our and our licensors' or collaborators' ability to obtain patents in the future, as well as uncertainty with respect to the value of patents once obtained.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our and our licensors' or collaborators' patent applications and the enforcement or defense of our or our licensors' or collaborators' issued patents. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. After March 2013, under the Leahy-Smith America Invents Act, or the Leahy-Smith Act, enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. The Leahy-Smith Act also includes a number of significant changes that affect the way patent applications are prosecuted and may also affect patent litigation. These include allowing third party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO-administered post-grant proceedings, including post-grant review, *inter partes* review and derivation proceedings. The USPTO recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, particularly the first inventor-to-file provisions. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our or our licensors' patent applications and the enforcement or defense of our or our licensors' issued patents, all of which could harm our business, financial condition, results of operations and prospects.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated if we fail to comply with these requirements.

Periodic maintenance and annuity fees on any issued patent are required to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of a patent. In certain circumstances, we rely on our licensors to pay these fees. The USPTO and various foreign patent agencies also require compliance with a number of procedural, documentary, fee payment and other similar requirements during the patent application and prosecution process. Noncompliance events that could result in abandonment or lapse of a patent or patent application include failure to respond to official communications within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which non-compliance can result in irrevocable abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If we or our licensors or collaborators fail to maintain the patents and patent applications covering our product candidates, our competitors might be able to enter the market with similar or identical products or technology, which would harm our business, financial condition, results of operations and prospects.

Third parties may initiate legal proceedings alleging that we are infringing, misappropriating or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could negatively impact the success of our business.

Our commercial success depends upon our ability to develop, manufacture, market and sell our product candidates and use our proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property and other proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries. We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our drugs and technology, including re-examination, interference, post-grant review, inter partes review or derivation proceedings before the USPTO or an equivalent foreign body. Numerous U.S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing our product candidates. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit.

Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability or priority. A court of competent jurisdiction could hold that third-party patents asserted against us are valid, enforceable and infringed, which could materially and adversely affect our ability to commercialize any product candidates we may develop and any other product candidates or technologies covered by the asserted third-party patents. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. If we are found to infringe, misappropriate or otherwise violate a third party's intellectual property rights, and we are unsuccessful in demonstrating that such rights are invalid or unenforceable, we could be required to obtain a license from such a third party in order to continue developing and marketing our products and technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or product. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties and other fees, redesign our infringing drug or obtain one or more licenses from third parties, which may be impossible or require substantial time and

monetary expenditure. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business. Any of the foregoing events would harm our business, financial condition, results of operations and prospects.

We may be subject to claims by third parties asserting that we or our employees have infringed upon, misappropriated or otherwise violated their intellectual property rights, or claiming ownership of what we regard as our own intellectual property.

Many of our employees were previously employed at other biotechnology or pharmaceutical companies. Although we try to ensure that our employees, consultants and advisors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's former employer. Litigation may be necessary to defend against these claims.

In addition, we or our licensors may be subject to claims that former employees, collaborators, or other third parties have an interest in our owned or in-licensed patents or other intellectual property as an inventor or co-inventor. While it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Our and their assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs, delay development of our product candidates and be a distraction to management. Any of the foregoing events would harm our business, financial condition, results of operations and prospects.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace, including compromising our ability to raise the funds necessary to continue our clinical trials, continue our research programs, license necessary technology from third parties, or enter into development collaborations that would help us commercialize our product candidates, if approved. Any of the foregoing events would harm our business, financial condition, results of operations and prospects.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

We rely on trade secrets and confidentiality agreements to protect our unpatented know-how, technology and other proprietary information and to maintain our competitive position. Trade secrets and know-how can be

difficult to protect. We seek to protect these trade secrets and other proprietary technology, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, collaborators, CROs, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. We cannot guarantee that we have entered into such agreements with each party that may have or has had access to our trade secrets or proprietary technology and processes. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position would be materially and adversely harmed.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make products that are similar to any product candidates we may develop or utilize similar technology but that are not covered by the claims of the patents that we license or may own in the future;
- we, or our current or future licensors might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future;
- we, or our current or future licensors might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights;
- it is possible that our pending owned or licensed patent applications or those that we may own or license in the future will not lead to issued patents;
- issued patents that we hold rights to may be held invalid or unenforceable, including as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others may harm our business; and
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could harm our business, financial condition, results of operations and prospects.

Risks Related to Our Business Operations, Employee Matters and Managing Growth

Our future success depends on our ability to retain key employees, consultants and advisors and to attract, retain and motivate qualified personnel.

We are highly dependent on the management, research and development, clinical, financial and business development expertise of our executive officers, as well as the other members of our scientific and clinical teams. Although we have employment offer letters with each of our executive officers, each of them may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or employees.

Recruiting and retaining qualified scientific and clinical personnel and, if we are successful in obtaining marketing approval for our product candidates, sales and marketing personnel, is critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval for and commercialize our product candidates. Competition to hire qualified personnel in our industry is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. Furthermore, to the extent we hire personnel from competitors, we may be subject to allegations that they have been improperly solicited or that they have divulged proprietary or other confidential information, or that their former employers own their research output. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited, and our business, prospects, financial condition and results of operations may be adversely affected.

We expect to expand our development and regulatory capabilities and potentially implement sales, marketing and distribution capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

As of December 31, 2017, we had 43 employees. As our clinical development progresses, we expect to experience growth in the number of our employees and the scope of our operations, particularly in the areas of clinical operations, regulatory affairs and, if any of our product candidates receives marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Our employees, independent contractors, consultants, commercial collaborators, principal investigators, CROs and vendors may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements.

We are exposed to the risk that our employees, independent contractors, consultants, commercial collaborators, principal investigators, CROs and vendors may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless or negligent conduct or unauthorized

activities that violates (1) the laws and regulations of the FDA, the EMA, the MHRA and other similar regulatory authorities, including those laws requiring the reporting of true, complete and accurate information to such authorities, (2) manufacturing standards, (3) federal and state data privacy, security, fraud and abuse and other healthcare laws and regulations in the United States and abroad and (4) laws that require the true, complete and accurate reporting of financial information or data. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Misconduct by these parties could also involve the improper use of individually identifiable information, including information obtained in the course of clinical trials, creating fraudulent data in our preclinical studies or clinical trials or illegal misappropriation of product candidates, which could result in regulatory sanctions and serious harm to our reputation.

Prior to the closing of this offering, we intend to adopt a code of business conduct and ethics, but it is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. Additionally, we are subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal and administrative penalties, including damages, fines, disgorgement, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, contractual damages, reputational harm and the delay, reduction, termination or restructuring of our operations.

Our international operations may expose us to business, regulatory, political, operational, financial, pricing and reimbursement risks associated with doing business outside of the United States.

Our business is subject to risks associated with conducting business internationally. Some of our suppliers, industry partners and clinical study centers are located outside of the United States. Furthermore, our business strategy incorporates potential international expansion as we seek to obtain regulatory approval for, and commercialize, our product candidates in patient populations outside the United States. If approved, we may hire sales representatives and conduct physician and patient association outreach activities outside of the United States. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting and changing laws and regulations such as privacy regulations, tax laws, export and import restrictions, employment laws, regulatory requirements, and other governmental approvals, permits and licenses;
- failure by us to obtain and maintain regulatory approvals for the use of our products in various countries;
- rejection or qualification of foreign clinical trial data by the competent authorities of other countries;
- additional potentially relevant third-party patent rights;
- complexities and difficulties in obtaining, maintaining, protecting and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payor reimbursement regimes, government payors or patient self-pay systems;
- limits in our ability to penetrate international markets;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;

- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions;
- certain expenses including, among others, expenses for travel, translation and insurance; and
- regulatory and compliance risks that relate to anti-corruption compliance and record-keeping that may fall within the purview of the U.S. Foreign Corrupt Practices Act, its accounting provisions or its anti-bribery provisions or provisions of anti-corruption or anti-bribery laws in other countries.

Any of these factors could harm our future international expansion and operations and, consequently, our results of operations.

Risks Related to This Offering and Our Common Stock

We have identified material weaknesses in our internal control over financial reporting. If our remediation of the material weaknesses is not effective, or if we experience additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls in the future, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect investor confidence in us and, as a result, the value of our common stock.

Prior to the completion of this offering, we have been a private company with limited accounting personnel to adequately execute our accounting processes and other supervisory resources with which to address our internal control over financial reporting. In connection with the audit of our financial statements, we identified material weaknesses in our internal control over financial reporting. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected on a timely basis. The material weaknesses related to our accounting for complex transactions and the timing of our recognition of research and development expenses. We are implementing measures designed to improve our internal control over financial reporting to remediate these material weaknesses including, the engagement of technical accounting consulting resources, plans to hire additional finance department employees and the implementation of more formal policies and procedures related to the accounting for our procurement and vendor payment process.

We cannot assure you that the measures we have taken to date, and are continuing to implement, will be sufficient to remediate the material weaknesses we have identified or avoid potential future material weaknesses. If the steps we take do not correct the material weaknesses in a timely manner, we will be unable to conclude that we maintain effective internal control over financial reporting. Accordingly, there could continue to be a reasonable possibility that a material misstatement of our financial statements would not be prevented or detected on a timely basis.

If we fail to remediate our existing material weaknesses or identify new material weaknesses in our internal controls over financial reporting, if we are unable to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, if we are unable to conclude that our internal controls over financial reporting are effective, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal controls over financial reporting when we are no longer an emerging growth company, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock could be negatively affected. As a result of such failures, we could also become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, and become subject to litigation from investors and stockholders, which could harm our reputation and financial condition or divert financial and management resources from our regular business activities.

An active trading market for our common stock may not develop and you may not be able to resell your shares of our common stock at or above the initial offering price, if at all.

Prior to this offering, there has been no public market for our common stock. We cannot predict the extent to which an active market for our common stock will develop or be sustained after this offering, or how the development of such a market might affect the market price for our common stock. The initial public offering price for our common stock will be determined through negotiations with the underwriters and may not be indicative of the price at which our common stock will trade after the closing of this offering. Although we have applied to list our common stock on the Nasdaq Global Market, an active trading market for our shares may never develop or be sustained following this offering. If an active market for our common stock does not develop or is not sustained, it may be difficult for you to sell shares you purchased in this offering at an attractive price or at all.

The trading price of the shares of our common stock may be volatile, and purchasers of our common stock could incur substantial losses.

Our stock price may be volatile. The stock market in general and the market for pharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may not be able to sell their common stock at or above the price paid for the shares. The market price for our common stock may be influenced by many factors, including:

- adverse regulatory decisions;
- any delay in our regulatory filings for our product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- the commencement, enrollment or results of any future clinical trials we may conduct, or changes in the development status of our product candidates;
- adverse results from, delays in or termination of clinical trials;
- unanticipated serious safety concerns related to the use of our product candidates;
- lower than expected market acceptance of our product candidates following approval for commercialization;
- changes in financial estimates by us or by any securities analysts who might cover our stock;
- conditions or trends in our industry;
- changes in the market valuations of similar companies;
- stock market price and volume fluctuations of comparable companies and, in particular, those that operate in the pharmaceutical industry;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- announcements by us or our competitors of significant acquisitions, strategic partnerships or divestitures;
- announcements of investigations or regulatory scrutiny of our operations or lawsuits filed against us;
- investors' general perception of our company and our business;
- recruitment or departure of key personnel;
- overall performance of the equity markets;

- trading volume of our common stock;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or stockholder litigation;
- proposed changes to healthcare laws in the United States or foreign jurisdictions, or speculation regarding such changes;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, in the past, stockholders have initiated class action lawsuits against pharmaceutical and biotechnology companies following periods of volatility in the market prices of these companies' stock. Such litigation, if instituted against us, could cause us to incur substantial costs and divert management's attention and resources from our business.

If equity research analysts do not publish research or reports, or publish unfavorable research or reports, about us, our business or our market, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that equity research analysts publish about us and our business. We do not currently have and may never obtain research coverage by equity research analysts. Equity research analysts may elect not to provide research coverage of our common stock after this offering, and such lack of research coverage may adversely affect the market price of our common stock. In the event we do have equity research analyst coverage, we will not have any control over the analysts or the content and opinions included in their reports. The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

If you purchase shares of our common stock in this offering, you will suffer immediate dilution of your investment.

The assumed initial public offering price of our common stock is substantially higher than the pro forma as adjusted net tangible book value per share of our common stock. Therefore, if you purchase shares of our common stock in this offering, you will pay a price per share that substantially exceeds our pro forma as adjusted net tangible book value per share after this offering. Based on an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, you will experience immediate dilution of $ per share, representing the difference between our pro forma as adjusted net tangible book value per share after this offering and the assumed initial public offering price. In addition, to the extent outstanding stock options are exercised, there will be further dilution to investors in this offering. In addition, if the underwriters exercise their over-allotment option or if we issued additional equity securities, you will experience additional dilution. See "Dilution" for a more detailed description of the dilution to investors in the offering.

A significant portion of our total outstanding shares are restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time, subject to the restrictions and limitations described below. If our stockholders sell, or the market perceives that our stockholders intend to sell, substantial amounts of our common stock in the public market following this offering, the market price of our common stock could decline significantly.

Upon the closing of this offering, we will have outstanding shares of common stock, after giving effect to the conversion of our preferred stock outstanding as of December 31, 2017 into 125,673,575 shares of our common stock, assuming no exercise of the underwriters' over-allotment option and no exercise of outstanding options. Of these shares, the shares sold in this offering will be freely tradable and the remaining shares of common stock will be available for sale in the public market beginning after the end of the 180th day after the date of this prospectus following the expiration of lock-up agreements between our stockholders and certain of the underwriters for this offering, subject, in the case of our affiliates, to the conditions of Rule 144 under the Securities Act of 1933, as amended, or the Securities Act. Morgan Stanley & Co. LLC and Credit Suisse Securities (USA) LLC on behalf of the underwriters may release these stockholders from their lock-up agreements at any time and without notice, which would allow for earlier sales of shares in the public market subject to the conditions of Rule 144 under the Securities Act.

In addition, promptly following the closing of this offering, we intend to file one or more registration statements on Form S-8 registering the issuance of approximately million shares of common stock subject to options or other equity awards issued or reserved for future issuance under our equity incentive plans. Shares registered under these registration statements on Form S-8 will be available for sale in the public market subject to vesting arrangements and exercise of options, the lock-up agreements described above and, in the case of our affiliates, the restrictions of Rule 144.

Additionally, after this offering, the holders of an aggregate of shares of our common stock, or their transferees, will have rights, subject to some conditions, to require us to file one or more registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. If we were to register the resale of these shares, they could be freely sold in the public market without limitation. If these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

Provisions in our corporate charter documents and under Delaware law may prevent or frustrate attempts by our stockholders to change our management and hinder efforts to acquire a controlling interest in us, and the market price of our common stock may be lower as a result.

There are provisions in our certificate of incorporation and bylaws, as they will be in effect following this offering, that may make it difficult for a third-party to acquire, or attempt to acquire, control of our company, even if a change in control was considered favorable by our stockholders.

Our charter documents will also contain other provisions that could have an anti-takeover effect, such as:

- establishing a classified board of directors so that not all members of our board of directors are elected at one time;
- permitting the board of directors to establish the number of directors and fill any vacancies and newly created directorships;
- providing that directors may only be removed for cause;
- prohibiting cumulative voting for directors;
- requiring super-majority voting to amend some provisions in our certificate of incorporation and bylaws;
- authorizing the issuance of "blank check" preferred stock that our board of directors could use to implement a stockholder rights plan;
- eliminating the ability of stockholders to call special meetings of stockholders;
- prohibiting stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders; and

- reflecting our two classes of common stock as described above.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibit a person who owns 15% or more of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. Any provision in our certificate of incorporation or our bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our Class A common stock, and could also affect the price that some investors are willing to pay for our Class A common stock.

Concentration of ownership of our common stock among our existing executive officers, directors and principal stockholders may prevent new investors from influencing significant corporate decisions.

Based upon our common stock outstanding as of , upon the closing of this offering, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock before this offering will, in the aggregate, beneficially own approximately % of our outstanding common stock. Based on an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, the number of common stock beneficially owned by our executive officers, directors and current 5% stockholders and their respective affiliates will, in the aggregate, increase to % of our common stock. These stockholders, acting together, will be able to significantly influence all matters requiring stockholder approval, including the election and removal of directors and approval of any merger, consolidation or sale of all or substantially all of our assets.

Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the price at which shares are being sold in this offering and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other stockholders.

We will incur costs and demands upon our management as a result of complying with the laws and regulations affecting public companies in the United States, which may harm our business.

As a public company listed in the United States, we will incur significant additional legal, accounting and other expenses. In addition, changing laws, regulations and standards relating to corporate governance and public disclosure, including regulations implemented by the Securities and Exchange Commission, or SEC, and the Nasdaq Global Market may increase legal and financial compliance costs and make some activities more time consuming. These laws, regulations and standards are subject to varying interpretations and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management’s time and attention from regular business activities to compliance activities. If, notwithstanding our efforts, we fail to comply with new laws, regulations and standards, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

Failure to comply with these rules might also make it more difficult for us to obtain certain types of insurance, including director and officer liability insurance, and we might be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, on committees of our board of directors or as members of senior management.

We are an "emerging growth company," and as a result of the reduced reporting requirements applicable to "emerging growth companies" our common stock may be less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act. For as long as we continue to be an "emerging growth company," we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies," including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. As an "emerging growth company," we are required to report only two years of financial results and selected financial data compared to three and five years, respectively, for comparable data reported by other public companies. We may take advantage of these exemptions until we are no longer an "emerging growth company." We could be an "emerging growth company" for up to five years, although circumstances could cause us to lose that status earlier, including if the aggregate market value of our common stock held by non-affiliates exceeds $700 million as of any June 30 (the end of our second quarter) before that time, in which case we would no longer be an "emerging growth company" as of the following December 31 (our year-end). We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and the price of our common stock may be more volatile.

If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements on a timely basis could be impaired.

After the closing of this offering, we will be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, the Sarbanes-Oxley Act and the rules and regulations of the Nasdaq Global Market. Section 302 of the Sarbanes-Oxley Act requires, among other things, that we report on the effectiveness of our disclosure controls and procedures in our quarterly and annual reports and, beginning with our annual report for the year ending 2019, Section 404 of the Sarbanes-Oxley Act requires that we perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting in our Form 10-K filing for that year. This will require that we incur substantial additional professional fees and internal costs to expand our accounting and finance functions and that we expend significant management efforts. Prior to this offering, we have never been required to test our internal control within a specified period, and, as a result, we may experience difficulty in meeting these reporting requirements in a timely manner.

As a public company, we will be required to maintain internal control over financial reporting and to report any material weaknesses in those internal controls. We and our independent registered public accounting firm identified material weaknesses in our internal control over financial reporting, for the year ended December 31, 2016, related to the accounting for complex transactions and the timing of expense recognition for research and development expenses. During 2017, management has hired key accounting personnel, created a formal month-end close process, and established more robust processes supporting internal controls over financial reporting, including accounting policies and procedures. Our remediation efforts are ongoing. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, or if we are unable to maintain proper and effective internal controls, we may not be able to produce timely and accurate financial statements. If that were to happen, the market price of our stock could decline and we could be subject to sanctions or investigations by the Nasdaq Global Market, the SEC or other regulatory authorities. In addition, our common stock may not be able to remain listed on the Nasdaq Global Market or any other securities exchange.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. We intend to use the net proceeds from this offering to conduct our clinical trials, to fund continued research and development of 5F9 in several applications, to fund other research and development activities, and for working capital and other general corporate purposes. The failure by our management to apply these funds effectively could result in financial losses that could have an adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, will be your sole source of gains and you may never receive a return on your investment.

You should not rely on an investment in our common stock to provide dividend income. We have not declared or paid cash dividends on our common stock to date. We currently intend to retain our future earnings, if any, to fund the development and growth of our business. In addition, the terms of any existing or future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future. Investors seeking cash dividends should not purchase our common stock.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of a fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees. If a court were to find either choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future financial condition, results of operations, business strategy and plans, and objectives of management for future operations, as well as statements regarding industry trends, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potentially,” “predict,” “should,” “will” or the negative of these terms or other similar expressions.

We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of risks, uncertainties, factors and assumptions described under the section titled “Risk Factors” and elsewhere in this prospectus, regarding, among other things:

- the success, cost and timing of our product development activities and clinical trials;
- our expectations about the timing of achieving regulatory approval and the cost of our development programs;
- our ability to obtain funding for our operations, including funding necessary to complete further development and commercialization of our product candidates;
- the commercialization of our product candidates, if approved;
- our plans to research, develop and commercialize our product candidates;
- our ability to maintain, expand, protect and enforce our intellectual property portfolio;
- our ability to operate our business without infringing, misappropriating or otherwise violating the intellectual property rights of third parties;
- our ability to attract collaborators with development, regulatory and commercialization expertise;
- our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidate;
- future agreements with third parties in connection with the commercialization of our product candidates;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets;
- the rate and degree of market acceptance of our product candidates;
- regulatory developments in the United States and foreign countries;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- the success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our expectations regarding the period during which we qualify as an emerging growth company under the JOBS Act;

- our use of the proceeds from this offering; and
- our ability to maintain proper and effective internal controls.

These risks are not exhaustive. Other sections of this prospectus may include additional factors that could adversely impact our business and financial performance. New risk factors may emerge from time to time and it is not possible for our management to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. Except as required by law, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus or to conform these statements to actual results or to changes in our expectations.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and achievements may be different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

INDUSTRY AND MARKET DATA

This prospectus contains estimates, projections and other information concerning our industry and our business, including estimated market size, projected growth rates and the incidence of certain medical conditions. Unless otherwise expressly stated, we obtained this industry, business, market, medical and other information from reports, research surveys, studies and similar data prepared by third parties, industry, medical and general publications, government data and similar sources. In some cases, we do not expressly refer to the sources from which this information is derived. In that regard, when we refer to one or more sources of this type of information in any paragraph, you should assume that other information of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires.

This industry, business, market, medical and other information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. We have not independently verified any third-party information and cannot assure you of its accuracy or completeness. While we believe the market position, market opportunity, market size and medical information included in this prospectus is generally reliable, such information is inherently imprecise. In addition, projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate is necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section titled “Risk Factors” and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of shares of common stock in this offering will be approximately $ million at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters exercise their over-allotment option in full, we estimate that the net proceeds to us will be approximately $ million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share would increase or decrease, respectively, our net proceeds by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase or decrease of 1,000,000 in the number of shares we are offering would increase or decrease, respectively, the net proceeds from this offering, after deducting underwriting discounts and commissions by $ million, assuming the assumed initial public offering price stays the same.

We currently expect to use our net proceeds from this offering as follows:

- approximately $ to $ million to further the clinical development of 5F9;
- approximately $ to $ million to further the development of our anti-SIRPa antibody product candidate; and
- the remaining proceeds for research and drug discovery activities related to additional product candidates, working capital and general corporate purposes.

However, due to the uncertainties inherent in the product development process, it is difficult to estimate with certainty the exact amounts of the net proceeds from this offering that may be used for the above purposes. Our management will have broad discretion over the use of the net proceeds from this offering. The amounts and timing of our expenditures will depend upon numerous factors including the results of our research and development efforts, the timing and success of preclinical studies and any ongoing clinical trials or clinical trials we may commence in the future, the timing of regulatory submissions and the amount of cash obtained through future collaborations, if any. Following this offering, we will require additional funding in order to complete clinical development and commercialize our lead product candidate, 5F9, and complete the clinical development of any additional product candidates.

We believe opportunities may exist from time to time to expand our current business through acquisitions or in-licenses of complementary companies, medicines or technologies. While we have no current agreements, commitments or understandings for any specific acquisitions or in-licenses at this time, we may use a portion of the net proceeds for these purposes.

Pending the use of the proceeds from this offering as described above, we intend to invest the net proceeds in interest-bearing investment-grade securities or government securities.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings, if any, to support operations and to finance the growth and development of our business. We do not intend to declare or pay cash dividends on common stock in the foreseeable future.

CAPITALIZATION

The following table sets forth our cash, cash equivalents and short-term investments and our capitalization as of December 31, 2017, on:

- an actual basis;
- a pro forma basis to reflect (i) the conversion of all the outstanding shares of preferred stock into 125,673,575 shares of common stock immediately upon the closing of this offering; and (ii) the filing and effectiveness of our amended and restated certificate of incorporation;
- a pro forma as adjusted basis to further reflect the sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this information together with the sections of this prospectus titled "Summary Financial Data," "Selected Financial Data," "Description of Capital Stock" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our audited financial statements and related notes included elsewhere in this prospectus.

	As of December 31, 2017		
	Actual	Pro Forma	Pro Forma, As Adjusted(1)
	(In thousands, except share and per share data)		
Cash, cash equivalents and short-term investments	$ 88,111	$	$
Stockholders' equity:			
Convertible preferred stock, $0.0001 par value per share. 125,673,575 shares authorized, issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	$ 149,397	$	$
Preferred stock, $0.0001 par value per share. No shares authorized, issued and outstanding, actual; shares authorized, and no shares issued and outstanding, pro forma and pro forma as adjusted			
Common stock, $0.0001 par value per share. 200,000,000 shares authorized, 52,321,593 shares issued and outstanding, actual; shares authorized, shares issued and outstanding, pro forma and pro forma as adjusted	5		
Additional paid-in capital	3,503		
Accumulated other comprehensive loss	(44)		
Accumulated deficit	(69,399)		
Total stockholders' equity	83,462		
Total capitalization	$ 83,462	$	$

(1) Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, respectively, the amount of cash, cash equivalents and short-term investments, additional paid-in-capital, total stockholders' equity and total capitalization by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase or decrease of 1,000,000 in the

number of shares we are offering would increase or decrease, respectively, the amount of cash, cash equivalents and short-term investments, additional paid-in-capital, total stockholders' equity and total capitalization by approximately $ million, assuming the assumed initial public offering price per share, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions. The pro forma as adjusted information is illustrative only, and will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing.

The outstanding share information in the table above excludes, as of December 31, 2017, the following shares:

- 16,294,994 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2017, with a weighted average exercise price of $0.58 per share;
- 1,774,598 additional shares of common stock reserved for future issuance under our 2015 Equity Incentive Plan as of December 31, 2017 (excluding options granted subsequent to December 31, 2017), which shares will cease to be available for issuance at the time our 2018 Equity Incentive Plan becomes effective in connection with this offering;
- shares of common stock reserved for future issuance under our 2018 Equity Incentive Plan, which will become effective upon the execution of the underwriting agreement for this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
- shares of common stock reserved for issuance under our 2018 Employee Stock Purchase Plan, which will become effective upon the execution of the underwriting agreement for this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after the closing of this offering.

Our pro forma net tangible book value of our common stock as of was $ million, or $ per share, based on the total number of shares of our common stock outstanding as of . Pro forma net tangible book value per share represents our total tangible assets less our total liabilities, divided by the number of outstanding shares of common stock, after giving effect to the conversion of all outstanding shares of preferred stock into shares of common stock immediately upon the closing of this offering.

After giving effect to the conversion of our outstanding preferred stock into common stock immediately upon the closing of this offering and the receipt of the net proceeds from our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of , would have been $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to our existing stockholders and immediate dilution of $ per share to investors purchasing common stock in this offering.

The following table illustrates this dilution on a per share basis to new investors:

Assumed initial public offering price per share		$
Pro forma net tangible book value per share as of December 31, 2017	$	
Increase in pro forma net tangible book value per share attributable to new investors purchasing shares in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution in net tangible book value per share to new investors in this offering		$

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share would increase or decrease, respectively, our pro forma as adjusted net tangible book value per share after this offering by $ per share and the dilution to new investors by $ per share, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1,000,000 shares in the number of shares of common stock offered by us would increase or decrease, respectively, the pro forma as adjusted net tangible book value by $ per share and the dilution to new investors by $ per share, assuming the assumed initial public offering price remains the same and after deducting underwriting discounts and commissions.

If the underwriters exercise their over-allotment option in full, the pro forma as adjusted net tangible book value per share after giving effect to this offering would be $ per share, and the dilution in pro forma as adjusted net tangible book value per share to new investors in this offering would be $ per share.

The following table summarizes, as of December 31, 2017:

- the total number of shares of common stock purchased from us by our existing stockholders and by new investors purchasing shares in this offering;
- the total consideration paid to us by our existing stockholders and by new investors purchasing shares in this offering, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, before deducting the underwriting discounts and commissions and estimated offering expenses payable by us in connection with this offering; and
- the average price per share paid by existing stockholders and by new investors purchasing shares in this offering.

	Shares Purchased		Total Consideration		Average
	Number	Percent	Amount	Percent	Price Per Share
Existing stockholders		%	$	%	$
New investors					$
Total		100%	$	100%	

Except as otherwise indicated, the above discussion and tables assume no exercise of the underwriters' over-allotment option. If the underwriters exercise their over-allotment option in full, our existing stockholders would own % and our new investors would own % of the total number of shares of common stock outstanding upon the closing of this offering.

The number of shares of our common stock that will be outstanding after this offering is based on 177,995,168 shares of common stock outstanding as of December 31, 2017, and excludes:

- 16,294,994 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2017, with a weighted average exercise price of $0.58 per share;
- 1,774,598 additional shares of common stock reserved for future issuance under our 2015 Equity Incentive Plan as of December 31, 2017 (excluding options granted subsequent to December 31, 2017), which shares will cease to be available for issuance at the time our 2018 Equity Incentive Plan becomes effective in connection with this offering;
- shares of common stock reserved for future issuance under our 2018 Equity Incentive Plan, which will become effective upon the execution of the underwriting agreement for this offering as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
- shares of common stock reserved for issuance under our 2018 Employee Stock Purchase Plan, which will become effective upon the execution of the underwriting agreement for this offering, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, the midpoint of the estimated offering price range set forth on the cover page of this prospectus, would increase or decrease, respectively, the total consideration paid by new investors by $ million and increase or decrease, respectively, the total consideration paid by new investors by %, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and before deducting underwriting discounts and commissions.

In addition, to the extent any outstanding options are exercised, new investors would experience further dilution.

SELECTED FINANCIAL DATA

You should read the selected financial data together with the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus. The selected financial data included in this section are not intended to replace the financial statements and related notes included elsewhere in this prospectus. We derived the statement of operations data for the years ended December 31, 2016 and December 31, 2017 and balance sheet data as of December 31, 2016 and December 31, 2017 from our audited financial statements included elsewhere in this prospectus.

	Year Ended December 31,	
	2016	2017
	(In thousands, except share and per share data)	
Statement of Operations Data:		
Operating expenses:		
Research and development	$ 14,464	$ 37,174
General and administrative	5,153	8,130
Total operating expenses	19,617	45,304
Loss from operations	(19,617)	(45,304)
Interest and other income, net	78	406
Net loss	$ (19,539)	$ (44,898)
Net loss per share, basic and diluted(1)	$ (0.41)	$ (0.90)
Shares used in computing net loss per share, basic and diluted	48,028,336	50,131,995
Pro forma net loss per share, basic and diluted (unaudited)(1)		$
Shares used in computing pro forma net loss per share, basic and diluted (unaudited)		$

(1) See Note 10 of the notes to our financial statements included elsewhere in this prospectus for a description of how we compute basic and diluted net loss per share and unaudited pro forma net loss per share.

	As of December 31,	
	2016	2017
	(In thousands)	
Balance Sheet Data:		
Cash, cash equivalents and short-term investments	$ 9,742	$ 88,111
Total assets	16,988	95,465
Working capital	9,692	81,289
Total liabilities	4,754	12,003
Accumulated deficit	(24,501)	(69,399)
Total stockholders' equity	12,234	83,462

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion of our financial condition and results of operations in conjunction with the financial statements and the related notes included elsewhere in this prospectus. In addition to historical financial information, this discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under "Risk Factors" and elsewhere in this prospectus.

Overview

We are a clinical-stage immuno-oncology company focused on developing novel checkpoint therapies to activate macrophages in the fight against cancer. We founded Forty Seven based on the insight that blocking CD47, a key signaling molecule that is overexpressed on cancer cells, renders tumors susceptible to macrophages. By harnessing macrophages, we believe that our lead product candidate, 5F9, dosed as a monotherapy or in combination with marketed cancer therapies, can transform the treatment of cancer. 5F9 has demonstrated promising activity in five Phase 1b/2 clinical trials in which we have treated over 140 relapsed or refractory cancer patients with solid or hematologic tumors. We hold worldwide rights to all of our product candidates.

We focus our efforts on targeting the CD47 pathway as a way to engage macrophages in fighting tumors. Macrophages function as first responders, swallowing foreign and abnormal cells, including cancer cells, and mobilizing other components of the immune system including T cells and antibodies. Cancer cells use CD47, a "don't eat me" signal, in order to evade detection by the immune system and subsequent destruction by macrophages. Overexpression of CD47 is common to nearly all types of tumors and is also correlated with poor prognosis in multiple cancers including AML, CRC, gastric cancer, lung cancer, NHL and ovarian cancer. Despite the central role of macrophages as cell-eating scavengers and first responders, the pharmaceutical industry is only beginning to bring this key group of cells into the fight against cancer.

Since our inception in 2014, we have devoted substantially all of our resources to identifying and developing 5F9, advancing our preclinical programs, conducting clinical trials and providing general and administrative support for these operations. We have not recorded revenue from product sales or collaboration activities, or any other source. We have funded our operations to date primarily from the issuance and sale of our preferred stock and the receipt of government and private grants. We are eligible to receive up to $19.2 million in grants from CIRM and the Leukemia and Lymphoma Society, or LLS, of which $5.9 million has been received through December 31, 2017.

We have incurred net losses in each year since inception. Our net losses were $19.5 million and $44.9 million for 2016 and 2017, respectively. As of December 31, 2017, we had an accumulated deficit of $69.4 million. Substantially all of our net losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect to continue to incur significant expenses and increasing operating losses over at least the next several years. We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- advance product candidates through clinical trials;
- pursue regulatory approval of product candidates;
- operate as a public company;
- continue our preclinical programs and clinical development efforts;
- continue research activities for the discovery of new product candidates; and
- manufacture supplies for our preclinical studies and clinical trials.

Components of Results of Operations

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for the development of our lead product candidate, 5F9, which include:

- expenses incurred under agreements with third-party contract organizations, investigative clinical trial sites that conduct research and development activities on our behalf, and consultants;
- costs related to production of clinical materials, including fees paid to contract manufacturers;
- laboratory and vendor expenses related to the execution of preclinical and clinical trials;
- employee-related expenses, which include salaries, benefits and stock-based compensation; and
- facilities and other expenses, which include expenses for rent and maintenance of facilities, depreciation and amortization expense and other supplies.

We expense all research and development costs in the periods in which they are incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors, collaborators and third-party service providers. Nonrefundable advance payments for goods or services to be received in future periods for use in research and development activities are deferred and capitalized. The capitalized amounts are then expensed as the related goods are delivered and as services are performed.

The largest component of our operating expenses has historically been our investment in research and development activities related to the clinical development of our lead product candidate, 5F9. We recognize the funds from research and development grants as a reduction of research and development expense when the related eligible research costs are incurred. Research and development grants received during 2017 totaled $5.9 million. No grants were received during 2016.

We expect our research and development expenses to increase substantially for the foreseeable future as we continue to invest in research and development activities related to developing our product candidates, as our product candidates advance into later stages of development, and as we begin to conduct larger clinical trials. The process of conducting the necessary clinical research to obtain regulatory approval is costly and time-consuming, and the successful development of our product candidates is highly uncertain. As a result, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of any of our product candidates.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel-related costs, facilities costs, depreciation and amortization expenses and professional services expenses, including legal, human resources, audit and accounting services. Personnel-related costs consist of salaries, benefits and stock-based compensation. Facilities costs consist of rent and maintenance of facilities. We expect our general and administrative expenses to increase for the foreseeable future due to anticipated increases in headcount to advance our product candidates and as a result of operating as a public company, including expenses related to compliance with the rules and regulations of the SEC, the Nasdaq Global Market, additional insurance expenses, investor relations activities and other administrative and professional services.

Interest and Other Income, Net

Interest and other income, net consists of interest earned on our cash equivalents and short-term investments and foreign currency transaction gains and losses incurred during the period.

Results of Operations

Years Ended December 31, 2016 and 2017

	Year Ended December 31, 2016	2017	Increase/ (Decrease)
		(In thousands)	
Operating expenses:			
Research and development	$ 14,464	$ 37,174	$ 22,710
General and administrative	5,153	8,130	2,977
Total operating expenses	19,617	45,304	25,687
Loss from operations	(19,617)	(45,304)	(25,687)
Interest and other income, net	78	406	328
Net loss	$ (19,539)	$ (44,898)	$ (25,359)

Research and Development Expenses

Research and development expenses increased by $22.7 million, or 157%, from $14.5 million in 2016 to $37.2 million in 2017. The increase was primarily due to a $19.0 million increase in third party costs related to advancing our current clinical programs focused on CRC and NHL with our lead product candidate, 5F9, and associated contract manufacturing costs, partially offset by a $3.9 million reduction related to grant funding recognized under the CIRM and LLS grants during 2017. There was also a $4.5 million increase in our other preclinical and discovery programs costs as we expanded our immuno-oncology efforts. In addition, personnel-related costs, including stock-based compensation, increased by $3.0 million as a result of increased headcount.

The following tables summarize the period-over-period changes in research and development expenses for the periods indicated:

	Year Ended December 31, 2016	2017	Increase/ (Decrease)
		(In thousands)	
Product-specific costs:			
5F9	$ 8,838	$ 27,873	$ 19,035
Grant funding reimbursement	—	(3,861)	(3,861)
Non product-specific costs:			
Stock-based compensation	93	206	113
Personnel-related	3,368	6,258	2,890
Other preclinical programs	2,165	6,698	4,533
Total research and development expenses	$ 14,464	$ 37,174	$ 22,710

General and Administrative Expenses

General and administrative expenses increased by $3.0 million, or 58%, from $5.2 million in 2016 to $8.1 million in 2017. The increase was primarily due to a $1.4 million increase in accounting and consulting expenses, and a $1.3 million increase in personnel-related costs driven by an increase in headcount.

Interest and Other Income, Net

Interest and other income, net increased by $0.3 million from $0.1 million in 2016 to $0.4 million in 2017. The increase was primarily due to $0.3 million in interest income from the investment of the net proceeds from the issuance of our Series A-2 and Series B preferred stock financings completed during 2017.

Liquidity, Capital Resources and Plan of Operations

Since our inception through December 31, 2017, our operations have been financed primarily by net proceeds of $149.4 million from the sale of our preferred stock. As of December 31, 2017, we had $88.1 million in cash, cash equivalents and short-term investments, and an accumulated deficit of $69.4 million.

Our primary use of cash is to fund operating expenses, which consist primarily of research and development expenditures related to our lead product candidate, 5F9, and to a lesser extent, general and administrative expenditures. Cash used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the change in our outstanding accounts payable and accrued expenses.

Based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash, cash equivalents and short-term investments, will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months from the date of this offering. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. We will continue to require additional financing to advance our current product candidates through clinical development, to develop, acquire or in-license other potential product candidates and to fund operations for the foreseeable future. We will continue to seek funds through equity or debt financings, collaborative or other arrangements with corporate sources, or through other sources of financing. Adequate additional funding may not be available to us on acceptable terms, or at all. Any failure to raise capital as and when needed could have a negative impact on our financial condition and on our ability to pursue our business plans and strategies.

Further, our operating plans may change, and we may need additional funds to meet operational needs and capital requirements for clinical trials and other research and development activities. We currently have no credit facility or committed sources of capital. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated product development programs.

If we need to raise additional capital to fund our operations, funding may not be available to us on acceptable terms, or at all. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our clinical trials, research and development programs or commercialization efforts. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings and collaborations or licensing arrangements. If we do raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to raise capital, we will need to delay, reduce or terminate planned activities to reduce costs. Doing so will likely harm our ability to execute our business plans.

Cash Flows

The following table summarizes our cash flows for the periods indicated:

	Year Ended December 31,	
	2016	2017
	(In thousands)	
Cash used in operating activities	$(21,815)	$(36,937)
Cash used in investing activities	(1,103)	(63,852)
Cash provided by financing activities	5,026	115,464
Net (decrease) increase in cash and cash equivalents	$(17,892)	$ 14,675

Operating Activities

In 2017, cash used in operating activities of $36.9 million was attributable to a net loss of $44.9 million partially offset by $1.1 million in non-cash charges and a net change of $6.9 million in our net operating assets and liabilities. The non-cash charges consisted of stock-based compensation of $0.7 million and depreciation and amortization of $0.4 million. The change in operating assets and liabilities was primarily due to $4.6 million increase in accounts payable and accrued liabilities resulting from increases in our operating activities, primarily in research and development, and a $2.8 million increase in deferred grant funding due to research grant award payments received. This was partially offset by a $0.6 million decrease in prepaid expenses and other current assets resulting from the timing of prepayments made for research and development activities.

In 2016, cash used in operating activities of $21.8 million was attributable to a net loss of $19.5 million and a net change of $2.7 million in our net operating assets and liabilities, partially offset by $0.4 million in non-cash charges. The non-cash charges consisted of stock-based compensation of $0.3 million and depreciation and amortization of $0.1 million. The change in operating assets and liabilities was primarily due to a $3.9 million decrease in prepaid expenses and a $1.7 million decrease in other assets resulting from the timing of prepayments made for research and development activities, partially offset by a $2.8 million increase in accounts payable and accrued liabilities primarily driven by increases in accrued compensation and our research and development activities.

Investing Activities

In 2017, cash used for investing activities was $63.9 million related primarily to the purchase of short-term investments of $79.7 million from the cash proceeds received from our preferred stock issuance, partially offset by the maturity of investments of $16.0 million.

In 2016, cash used for investing activities was $1.1 million related to capital expenditures on the purchase of property and equipment.

Financing Activities

In 2017, cash provided by financing activities was $115.5 million related to net proceeds of $115.2 million from the issuance of preferred stock and $0.3 million from the issuance of common stock in connection with stock option exercises.

In 2016, cash provided by financing activities was $5.0 million related to net proceeds of $4.6 million from the issuance of preferred stock and $0.4 million from the issuance of common stock in connection with stock option exercises.

Contractual Obligations and Commitments

The following table summarizes our commitments and contractual obligations as of December 31, 2017:

	Payments Due By Period				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
	(In thousands)				
Operating lease obligations	$ 4,197	$ 1,101	$ 2,302	$ 794	$ —
Contract manufacturing obligations	37,187	9,688	27,499	—	—
Total	$ 41,384	$ 10,789	$ 29,801	$ 794	$ —

We enter into agreements in the normal course of business with contract research organizations for clinical trials and with vendors for preclinical studies and other services and products for operating purposes which are cancelable at any time by us, generally upon 30 days prior written notice. These payments are not included in this table of contractual obligations.

Contract Manufacturing Agreement

In August 2016 and December 2017, we entered into development and manufacturing agreements with Lonza relating to the manufacturing of 5F9-related products. The August 2016 agreement was amended in November 2017 to provide for the manufacturing of our other preclinical program related products.

Under the 2016 agreement, we are required to pay an annual suite reservation fee in each contract year along with the costs of ingredients, solvents and other components of 5F9 and our preclinical program-related products. The fees under the 2016 agreement are specified in British Pounds and are converted into U.S. Dollars based on the exchange rate as of December 31, 2017.

Our payment obligations under the 2017 agreement will begin in January 2019 and run through the expiration of the agreement, which is expected in December 2021, unless the agreement is extended for at least an additional year. Under the 2017 agreement, we must also pay the costs of ingredients, solvents and other components of 5F9-related products required for the performance of the manufacturing process or services. The potential payments due to Lonza under both the 2016 and 2017 agreements in 2021 are subject to our right to discontinue such manufacturing services and are excluded from the commitments and contractual obligations table above.

License and Collaboration Agreements

In November 2015, we entered into a technology license agreement with Stanford under which Stanford granted us exclusive licenses under certain patents and other intellectual property rights relating to our current product candidates, including 5F9 and non-exclusive licenses under certain other patents and other intellectual property rights to develop, manufacture and commercialize products for use in certain licensed fields, including oncology. We are required to make milestone payments up to $5.6 million in respect of the first three licensed products that successfully satisfy certain clinical and regulatory milestones in the United States, major European countries and Japan. The first such milestone payment of $75,000 was paid to Stanford in February 2018. In addition, we are required to pay Stanford a minimum annual fee and a royalty of a tiered-single digit percentage on net sales of licensed products, reimburse patent-related expenses and share any non-royalty sublicensing income received related to the licensed technology. For more information, see “Business—License and Collaboration Agreements.”

In January 2017, we were awarded a research grant from CIRM. The CIRM grant stipulates various milestone-based payments to us with the total award of $10.2 million over a period of four years. As of December 31, 2017, we had received $3.8 million under the award. In November 2017, we were awarded a second research grant from CIRM for a separate clinical trial study. The total amount of the research grant awarded was $5.0 million in various milestone-based payments over a period of five years. As of December 31, 2017, we had received $1.1 million under the award. Under the terms of the CIRM grants, we are obligated to pay royalties and licensing fees based on a low single digit royalty percentage on net sales of CIRM-funded product candidates or CIRM-funded technology. We have the option to decline any and all amounts awarded by CIRM. As an alternative to revenue sharing, we have the option to convert each award to a loan, which option must be exercised on or before ten business days after the FDA notifies us that it has accepted our application for marketing authorization. In the event we exercise our right to convert an award to a loan, we will be obligated to repay the loan within ten business days of making such election, including interest at the rate equal to the three-month LIBOR rate (1.69% as of December 31, 2017) plus zero to 30% per annum that varies depending on the

stage of the research and the stage of development at the time the election is made. In the event that we terminate a CIRM-funded clinical trial, we will be obligated to repay the remaining CIRM funds on hand.

In March 2017, we entered into an agreement with LLS. The LLS research grant stipulates various milestone-based payments with a total award of $4.0 million through December 2019. As of December 31, 2017, we had received $1.0 million under the award. We are required to pay LLS certain development and regulatory approval milestone payments, as well as a low single digit percentage royalty on net sales, up to a maximum of $15 million in total.

We have not included these potential contingent payment obligations in the table above as the timing and likelihood of such payments is not known. These payments generally become due and payable only upon achievement of certain development, regulatory or commercial milestones.

Off-Balance Sheet Arrangements

During 2016 and 2017, we did not have any off-balance sheet arrangements as defined in Item 303 of Regulation S-K.

Qualitative and Quantitative Disclosures about Market Risk

Interest Rate Risk

We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities. We held cash, cash equivalents and short-term investments of $88.1 million as of December 31, 2017, which consist of bank deposits, money market funds and available-for-sale securities. Such interest-earning instruments carry a degree of interest rate risk; however, historical fluctuations in interest income have not been significant for us. Due to the short-term maturities of our cash equivalents and marketable securities, and the low risk profile of our marketable securities, an immediate 100 basis point change in interest rates would not have a material effect on the fair market value of our cash equivalents and marketable securities.

Foreign Currency Risk

Our expenses are generally denominated in U.S. dollars. However, we have entered into a limited number of contracts with vendors for research and development services with payments denominated in foreign currencies, including the British Pound. We are subject to foreign currency transaction gains or losses on our contracts denominated in foreign currencies. During 2016 and 2017, we incurred foreign currency remeasurement gains (losses) of less than $0.1 million. To date, we have not had a formal hedging program with respect to foreign currency. A 10% increase or decrease in current exchange rates would not have a material effect on our financial results.

Critical Accounting Policies

Our management’s discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with United States generally accepted accounting principles, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management’s judgments and estimates.

Accrued Research and Development Expenditures

We record accrued expenses for estimated preclinical study and clinical trial expenses. Estimates are based on the services performed pursuant to contracts with research institutions and contract research organizations and clinical manufacturing organizations that conduct and manage preclinical studies and clinical trials on our behalf based on actual time and expenses incurred by them. Further, we accrue expenses related to clinical trials based on the level of patient enrollment and activity according to the related agreement. We monitor patient enrollment levels and related activity to the extent reasonably possible and make judgments and estimates in determining the accrued balance in each reporting period. If we underestimate or overestimate the level of services performed or the costs of these services, our actual expenses could differ from our estimates. To date, we have not experienced significant changes in our estimates of preclinical studies and clinical trial accruals.

Stock-Based Compensation

We recognize compensation costs related to stock-based awards granted to employees and directors, including stock options, based on the estimated fair value of the awards on the date of grant. We estimate the grant date fair value, and the resulting stock-based compensation, using the Black-Scholes option-pricing model. The grant date fair value of the stock-based awards is generally recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards.

The Black-Scholes option-pricing model requires the use of highly subjective assumptions to determine the fair value of stock-based awards. These assumptions include:

- *Expected Term*—The expected term represents the period that stock-based awards are expected to be outstanding. The expected term for option grants is determined using the simplified method. The simplified method deems the expected term to be the midpoint between the vesting date and the contractual life of the stock-based awards.
- *Expected Volatility*—Since we have been privately held and do not have any trading history for our common stock, the expected volatility was estimated based on the average volatility for comparable publicly traded biotechnology companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, stage in the life cycle or area of specialty.
- *Risk-Free Interest Rate*—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.
- *Expected Dividend*—We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

In 2016 and 2017, stock-based compensation was $0.2 million and $0.7 million, respectively. As of December 31, 2017, we had $5.8 million of total unrecognized stock-based compensation which we expect to recognize over a weighted-average period of 3.5 years.

Historically, for all periods prior to this initial public offering, the fair values of the shares of common stock underlying our share-based awards were estimated on each grant date by our board of directors. In order to determine the fair value of our common stock underlying option grants, our board of directors considered, among other things, valuations of our common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provided by the American Institute of Certified Public Accountants Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation.*

The valuations were performed using the OPM Backsolve method. In an option pricing method, or OPM, framework, the backsolve method for inferring the equity value implied by a recent financing transaction involves making assumptions for the expected time to liquidity, volatility and risk-free rate and then solving for

the value of equity such that value for the most recent financing equals the amount paid. This method was selected as management concluded that the contemporaneous financing transaction was an arm's-length transaction. Furthermore, as of each of the valuation dates, we were an early stage of development and future liquidity events were difficult to forecast.

Given the absence of a public trading market for our common stock, our board of directors exercised their judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of our common stock, including important developments in our operations, valuations performed by an independent third party, sales of preferred stock, actual operating results and financial performance, the conditions in the biotechnology industry and the economy in general, the stock price performance and volatility of comparable public companies, and the lack of liquidity of our common stock, among other factors. After the closing of this offering, our board of directors will determine the fair value of each share of underlying common stock based on the closing price of our common stock as reported on the date of the grant. Our board of directors intended all options granted to be exercisable at a price per share not less than the per share fair value of our common stock underlying those options on the grant date.

Based upon the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover of this prospectus, the aggregate intrinsic value of options outstanding as of December 31, 2017 was $ million, of which $ million related to vested options and $ million related to unvested options.

Emerging Growth Company Status

In April 2012, the JOBS Act was enacted. Section 107 of the JOBS Act provides that an "emerging growth company" may take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. Therefore, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards, and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Recent Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board issued Accounting Standards Update No. 2016-02, *Leases* (ASU 2016-02) which provides accounting guidance for both lessee and lessor accounting models. The principle of ASU 2016-02 is that a lessee should recognize the assets and liabilities that arise from leases. Lessees will need to recognize a right-of-use asset and a lease liability for virtually all of their leases (other than leases that meet the definition of a short-term lease). The liability will be equal to the present value of lease payments. The asset will be based on the liability. For income statement purposes, ASU 2016-02 requires leases to be classified as either operating or finance. Operating leases will result in straight-line expense while finance leases will result in a front-loaded expense pattern. ASU 2016-02 is effective for years beginning after December 15, 2019. Early adoption is permitted. The new standard must be adopted using a modified-retrospective transition and provides for certain practical expedients. We are currently evaluating the effects of the adoption of this ASU on our financial statements.

BUSINESS

Overview

We are a clinical-stage immuno-oncology company focused on developing novel checkpoint therapies to activate macrophages in the fight against cancer. We founded Forty Seven based on the insight that blocking CD47, a key signaling molecule that is overexpressed on cancer cells, renders tumors susceptible to macrophages. By harnessing macrophages, we believe that our lead product candidate, 5F9, dosed as a monotherapy or in combination with marketed cancer therapies, can transform the treatment of cancer. 5F9 has demonstrated promising activity in five Phase 1b/2 clinical trials in which we have treated over 140 relapsed or refractory cancer patients with solid or hematologic tumors. We hold worldwide rights to all of our product candidates.

We focus our efforts on targeting the CD47 pathway as a way to engage macrophages in fighting tumors. Macrophages function as first responders, swallowing foreign and abnormal cells, including cancer cells, and mobilizing other components of the immune system including T cells and antibodies. Cancer cells use CD47, a “don’t eat me,” signal, in order to evade detection by the immune system and subsequent destruction by macrophages. Overexpression of CD47 is common to nearly all types of tumors and is also correlated with poor prognosis in multiple cancers including AML, CRC, gastric cancer, lung cancer, NHL and ovarian cancer. Despite the central role of macrophages as cell-eating scavengers and first responders, the pharmaceutical industry is only beginning to bring this key group of cells into the fight against cancer.

Our company was founded by leading scientists at Stanford University who uncovered the fundamental role of CD47 in cancer evasion. They discovered that CD47 sends out a “don’t eat me” signal to macrophages. This has been supported by multiple lines of evidence, including elevated levels of CD47 in a wide range of cancer cells and an observed correlation of a decrease in survival in patients with high levels of CD47.

Preclinical work performed in the laboratory of our co-founder, Irv Weissman, at Stanford University demonstrated that:

- Blocking the CD47 “don’t eat me” signaling pathway leads to elimination of many types of tumors and increased survival;
- Boosting an “eat me” signal found on cancer cells using therapeutic antibodies results in a synergistic effect with blocking CD47; and
- Macrophages digest cancer cells in a process called phagocytosis and present tumor-specific antigens that can activate T cells against the cancer, thus creating the potential for synergy with T cell checkpoint inhibitors.

Our clinical trials are investigating three types of CD47 therapy: as a monotherapy, in combination with therapeutic antibodies, and in combination with checkpoint inhibitors, in a wide variety of tumors, including both solid and hematological cancers.

The targeting of CD47 to make cancer cells susceptible to macrophages, a component of the innate immune system, is analogous to the approach that has been applied with checkpoint inhibitors and T cells, a component of the adaptive immune system. In less than five years on the market, T cell checkpoint inhibitors have become frontline therapies for certain cancers and we estimate that they generated over $9 billion in sales in 2017. Despite the success of T cell checkpoint inhibitors, these therapies have been shown to be effective only in a subset of tumors, highlighting the need for additional therapies. Similar to the way cancer cells overexpress PD-L1 to avoid attack by T cells, cancer cells overexpress CD47 as a way to avoid destruction by macrophages. We believe targeting CD47 represents a compelling and analogous approach.

Our lead product candidate, 5F9, is a humanized IgG4 subclass monoclonal antibody against CD47 that is designed to interfere with recognition of CD47 by the SIRPa receptor on macrophages, thus blocking the “don’t

eat me" signal. The design of 5F9 combined with our proprietary dosing regimen overcomes the toxicity limitations of previously tested anti-CD47 therapies developed by others. Across all study populations, 5F9 has been well tolerated with no maximum tolerated dose observed in any study despite dosing up to 45 mg/kg. The most common treatment-associated effects observed to date were the expected CD47-mechanism-based effects on red blood cells which led to a temporary and reversible anemia.

We have treated over 140 relapsed or refractory cancer patients with 5F9 both as a monotherapy and in combination with therapeutic antibodies such as rituximab and cetuximab. While the primary goal of our trials has been to demonstrate safety, we also observed early signs of efficacy in multiple tumor types. These data support our view that targeting CD47 can become an important immuno-oncology therapy and that 5F9 has the potential to transform the treatment of cancer.

In our ongoing trials, 5F9 treatment has demonstrated biological responses and multiple cases of stable disease in Phase 1 as a monotherapy for patients with refractory AML. In biologic responders, we confirmed the presence of macrophages in tumor tissues and we observed that other components of the immune system, including T cells, had been recruited. In our studies of 5F9 as a monotherapy in solid tumors, such as CRC and ovarian cancer, we observed stable disease and, in some cases, tumor shrinkage leading to objective responses.

We are also investigating 5F9 as a monotherapy in ovarian cancer and other solid tumors. In a Phase 1 trial of 5F9, we observed confirmed partial responses in 2 out of 9 evaluable patients in a cohort with ovarian cancer receiving either 20 mg/kg or 30 mg/kg of 5F9, as of February 2018. Both were heavily pre-treated patients failing seven or more previous treatment regimens. One of these patients had a durable partial response of more than six months in duration. We continue to investigate the potential of 5F9 in an expanded cohort of more than 15 patients with ovarian cancer.

In addition to continuing our trials using 5F9 as a monotherapy, we are also pursuing multiple trials of 5F9 in combination with therapeutic cancer antibodies in order to test the synergistic potency of these combinations. We believe that we can enhance the effect of 5F9 on cancer by using therapeutic antibodies that bind cancer cells to present an "eat me" signal to macrophages. Hence, we are combining 5F9 with cancer-cell-binding antibodies such as rituximab and cetuximab. Based on our preclinical research and on publications by academic groups, we believe that this combination of an "eat me" signal by these antibodies and the blocking of a "don't eat me" signal by 5F9 could be highly effective. We are conducting a Phase 1b/2 combination trial using 5F9 and rituximab in patients with relapsed and refractory NHL. As of February 2018, 22 patients with refractory NHL have been evaluated and 11 (50%) have had an objective response during the dose finding study of 5F9 in combination with rituximab. In 6 (27%) of these patients, we observed a complete response, an uncommon therapeutic finding for such a heavily pre-treated population. Final results from this trial are expected in early 2019. We are also conducting a Phase 1b/2 combination clinical trial using 5F9 and cetuximab in patients with CRC. Results from this trial are expected in the first half of 2019.

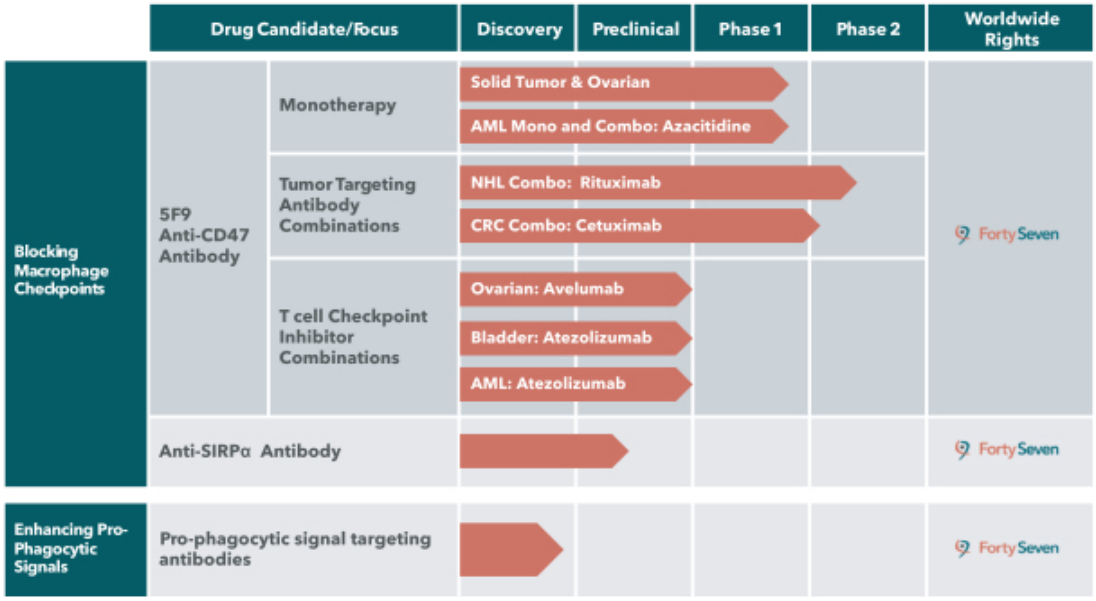
We believe there is a strong rationale to combine 5F9 and T cell checkpoint inhibitors and we plan to initiate combination clinical trials in both solid and hematological tumors. 5F9 induces a potent anti-tumor T cell response by enabling macrophages to ingest cancer cells and present antigens derived from these cancer cells to T cells. Thus, we believe the combination of a T cell checkpoint inhibitor with 5F9 is likely to further enhance an anti-tumor T cell response and to further mobilize both the innate and adaptive immune systems to eliminate cancer.

In early 2018, we announced collaborations with two pharmaceutical industry partners combining 5F9 with PD-L1 checkpoint inhibitors, while retaining full economic rights to our products. We are collaborating with Merck KGaA on the combination of 5F9 with BAVENCIO (avelumab) in ovarian cancer patients; and Genentech, a member of the Roche Group, on the combination of 5F9 and TECENTRIQ (atezolizumab) in patients with bladder cancer and in patients with AML. We expect that these trials will be initiated in early 2019.

Our company was founded by leading scientists at Stanford University who uncovered the fundamental role of CD47 in immune regulation and applied these findings to the field of immuno-oncology. We have an exclusive license to this technology and to our lead product candidate, 5F9, from Stanford. Our goal is to accelerate regulatory approval of 5F9 through execution of multiple clinical trials in parallel to identify areas of highest efficacy. We have assembled a team of executives with broad industry experience in biologics and other therapeutics, as well as strong academic and clinical backgrounds. Our management team has worked for pharmaceutical companies such as Abbott Laboratories, Amgen, Genentech, Gilead, Janssen Global Services, LLC, PDL Biopharma, Inc. and Sandoz Inc. We have funded our operations to date primarily from the issuance and sale of our preferred stock to investors, including Lightspeed Venture Partners, Sutter Hill Ventures, Clarus, GV and Wellington Management Company, and from the receipt of government and private grants. We are eligible to receive up to $19.2 million in grants from CIRM and LLS, of which $5.9 million has been received through December 31, 2017.

Our Development Pipeline

The following table summarizes our development programs, target indications and current stages of development.



Strategy

Our goal is to transform the treatment of cancer by leveraging our scientific expertise and lead product candidate to engage macrophages to help patients defeat their cancer.

Our strategy includes the following components:

- ***Maintain a focus on our core mission of helping patients defeat their cancer.*** By focusing on patients first, we believe we can realize the full potential of our therapies. Our initial efforts are directed at patients with high unmet medical needs, such as those diagnosed with AML, CRC, NHL or ovarian cancer. We believe there are patients with many other types of cancers that our product candidates can help.

- ***Maximize the therapeutic and commercial potential of 5F9 by exploring its treatment of both solid and hematological tumors.*** Based on our understanding of the CD47 SIRPa pathway and data from preclinical animal models, we believe 5F9 has the potential to benefit patients in a broad range of tumor types and in combination with other approved oncology therapeutics. We are currently evaluating 5F9 in five clinical trials and by the end of 2018, we expect to have seven clinical trials underway. These trials will read out in 2018 and 2019 and based on these data we expect to initiate additional trials with 5F9 to support regulatory approval and to explore the use of 5F9 in multiple cancer indications.
- ***Invest early to secure a clinical and commercial supply of 5F9 to mitigate risk and ensure a timely regulatory approval.*** Although 5F9 utilizes standard antibody manufacturing processes, we recognize that any regulatory approval requires experience and expertise in the commercial manufacturing of 5F9. In 2016, we completed a strategic manufacturing agreement with Lonza, a global leader in biologics manufacturing. The multi-year arrangement helps ensure sufficient clinical material for our existing trials and provides a path to generate the required manufacturing information that is part of a BLA and initial commercial supplies.
- ***Pursue collaborative relationships and in-licensing opportunities to help advance and expand our product candidate portfolio.*** In addition to our internal drug discovery and development efforts, we plan to identify and pursue strategic collaborative relationships, partnerships and in-licensing opportunities to enhance the development of our current programs and access additional novel product candidates. As examples, in January 2018 we announced clinical collaborations with both Merck KGaA and Genentech to explore the utility of 5F9 in combination with approved checkpoint inhibitors.
- ***Prepare for an active role in commercialization in the United States while considering opportunities to engage with partners to access commercialization capabilities outside the United States.*** We have worldwide rights to 5F9. If 5F9 receives marketing approval in the United States, we intend to commercialize it with our own focused, specialty sales and marketing organization. We may explore partnering with a third party to commercialize and market 5F9 in certain geographies.
- ***Leverage our knowledge and expertise in immune system and cancer biology to develop a pipeline of novel cancer therapeutics.*** We intend to utilize CD47 and its associated immune activation pathways to their fullest potential to help patients defeat their cancer. This includes the development of our existing programs and the pursuit of new programs in the future.

Scientific Background

The Role of Macrophages in the Treatment of Cancer

The innate and adaptive components of the human immune system form a complex organization of tissues, cells and proteins that serve to protect the body from invading pathogens. For the body to mount an effective response to a foreign cell or a cancer cell, the innate and adaptive immune systems must generally work in concert.

Macrophages, a key component of the innate immune system, serve as a first line of immune defense and initiate an immune response based on non-specific signals of foreign or abnormal cells. Macrophages also play a key role in alerting cells of the adaptive immune system to the presence of potential targets such as cancer cells. By making cancer cells susceptible to macrophages, we believe that our therapeutic candidates can be effective both as a monotherapy and in combination with other immunotherapies, such as the PD-1/PD-L1-directed and CTLA-4-directed checkpoint inhibitors.

The Role of Macrophages in the Innate and Adaptive Immune Response

The innate immune system, of which macrophages are a key component, serves as the first line of immune defense. Macrophages specialize in engulfing and digesting cellular debris, foreign substances, invading microorganisms and other cells. Macrophages determine what to attack by recognizing certain “eat me” signals common to pathogens or cancer cells.

Macrophages also play a key role in alerting highly-specialized cells of the adaptive immune system of the presence of potential targets, including cancer cells. Although these highly specialized adaptive immune cells take longer to mobilize, they are capable of providing long-term, effective protection against specific antigens and, importantly, can recall antigens to which they have previously been exposed. As first responders, macrophages swallow the abnormal cells in a process called phagocytosis, digest them and recruit and activate the second line of defense, the adaptive immune system.

Interfering with Suppression of Immune Signaling Pathways

A critical capability of both the innate and adaptive immune systems is the ability to distinguish cells that are normally found in the body from foreign invaders. Components of both immune systems rely on the presence of certain surface proteins on cells that serve as markers for normal cells to prevent immune attacks. For the innate immune system, CD47 is expressed on cells throughout the body and functions as a “don’t eat me” signal to prevent attack by macrophages. Similarly, for the adaptive immune system, PD-L1 expression prevents attack by T cells.

Recent developments in the field of immuno-oncology have demonstrated that interfering in the PD-L1-based immune suppression system allows the adaptive immune system to attack cancer cells, resulting in significant reduction in tumor burden and increasing overall survival in some cancers. These therapies are generally referred to as checkpoint inhibitors and include both therapies that target PD-1 or PD-L1 such as nivolumab, pembrolizumab, atezolizumab, durvalumab and avelumab as well as therapies such as ipilimumab that target another checkpoint known as CTLA-4. These agents, all of which target the adaptive immune system, have resulted in remarkable efficacy in some patients and are the focus of over 1,300 active clinical trials.

To date, there have been no therapies approved that target the CD47 checkpoint of the innate immune system. Preclinical data have demonstrated that binding by a CD47 antibody increases antigen presentation by macrophages and stimulates the development of anti-tumor cytotoxic T cell responses. We believe that by targeting CD47 and activating the macrophage and other components of the innate and adaptive immune system, we can create a new class of therapies with the potential to treat multiple types of solid and hematological tumors.

The below table outlines our macrophage-focused approach targeting the innate immune system as compared to T cell checkpoint inhibitors targeting the adaptive immune system.

	T cells	Macrophages
Immune System Targeted	Adaptive immune system	Innate immune system
Percentage of Tumor Infiltrating Immune Cells	10-20%	20-40%
Cell-Surface Checkpoints and Their Receptors	PD-1/PD-L1, CTLA-4	CD47/SIRPα
Applicability to Tumor Targets	Target limited	Not target limited
Dependency	Requires antigen presentation by innate immune cells	Works independently and can recruit adaptive immune cells

The Role of CD47 in the Treatment of Cancer

There are two opposing mechanisms that macrophages rely on to determine whether to attack a cell: one set of markers found on some cells, including bound IgG and calreticulin, triggers an “eat me” signal; the other, centered around CD47, found on both healthy cells as well as many cancer cells, sends a “don’t eat me” signal. This “don’t eat me” signal is essential to prevent macrophages from attacking. Macrophages recognize CD47 through a receptor, SIRPa, that can specifically bind to CD47. Binding of SIRPa receptors on macrophages to CD47 on cancer cells prevents macrophages from attacking and digesting these cancer cells. Macrophages only remove cells whose balance of “eat me” signals outweigh the CD47 “don’t eat me” signals.

Nearly all types of tumors overexpress CD47 as a way to avoid the innate immune system. Sending this “don’t eat me” signal prevents the initial attack by macrophages and other phagocytic cells. Because these cancer cells are not digested, the macrophages cannot present components of the cancer cells to the adaptive immune system thereby preventing the activation of T cells that could specifically target them. Expression of CD47 by cancer cells can thus render these cells invisible to innate immune recognition. Interfering with CD47 binding to SIRPa has the potential to activate an immune response to cancer cells that is upstream of current checkpoint inhibitors that target PD-1/PD-L1 or CTLA-4. As shown in the following figure the overexpression of CD47 in many types of cancer has been demonstrated by a variety of scientific techniques.

CD47 Overexpression in Cancer Compared to Normal Tissue

	RNA	Protein Immuno-histochemistry	Protein Western Blot	Protein Flow Cytometry
Pancreatic Cancer	✓	✓		
Lung Cancer	✓		✓	✓
Ovarian Cancer	✓	✓	✓	
Laryngeal Cancer	✓	✓	✓	
Stomach Cancer				✓
Kidney Cancer				✓
Colon Cancer				✓
Acute Myeloid Leukemia				✓
Non-Hodgkin’s Lymphoma				✓
Acute Lymphoblastic Leukemia				✓

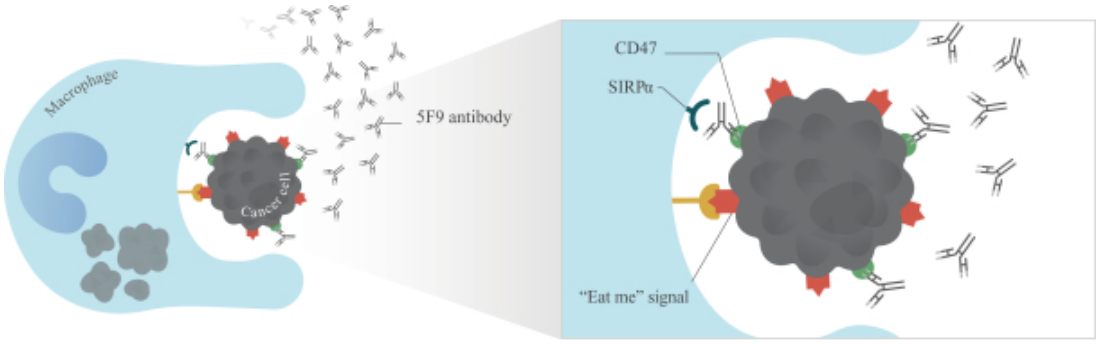
Overexpression of CD47 is associated with poor prognosis in multiple cancers including AML, gastric cancer, lung cancer, NHL and ovarian cancer. In CRC patients with tumors containing high levels of macrophages and low levels of CD47 have increased long-term survival.

The progression from normal cell to cancer cell involves changes in genes and/or gene expression that can subvert normal cellular control mechanisms, and overexpression of CD47 represents an important checkpoint allowing the cancer cells to survive. In animal models, CD47-blocking antibodies have been shown to inhibit human cancer growth and metastasis by enabling the phagocytosis of cancer cells. CD47-blocking antibodies have been shown to exhibit potent synergy with tumor-specific monoclonal antibodies, such as rituximab, cetuximab and trastuzumab. Thus, we believe CD47 has a strong potential as a therapeutic target for the treatment of a variety of cancers.

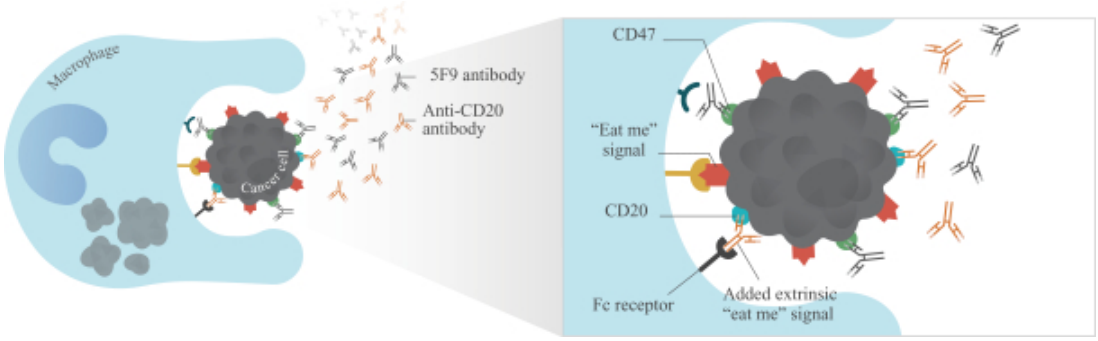
Our Lead Product Candidate, 5F9

Our lead product candidate, 5F9, is a humanized IgG4 subclass monoclonal antibody against CD47 that is designed to interfere with recognition of CD47 by the SIRPa receptor on macrophages. By blocking this recognition, 5F9 removes a key self-recognition or “don’t eat me” signal, which allows the innate immune system to attack and dispose of cancer cells. We are currently investigating 5F9 in multiple Phase 1 and Phase 2 trials in various cancers including AML, CRC, NHL and ovarian cancer, as both a monotherapy and in combination with other therapies such as rituximab and cetuximab.

The following figure shows the mechanism of action of 5F9.



5F9 activation of macrophages to attack cancer cells can be further stimulated in combination therapies by supplying a therapeutic antibody that can specifically recognize tumor-specific antigens. By binding to cancer cells, these antibodies become an "eat me" signal to macrophages. There are many tumor-specific antibodies in current clinical practice in oncology, including rituximab, approved for various lymphomas and some types of leukemia; and cetuximab, approved in CRC and certain head and neck cancers. The following figure shows the mechanism of action of 5F9 in combination with a CD20 therapeutic antibody, such as rituximab.



Importantly, most normal cells lack an "eat me" signal and are therefore unaffected by the blocking of CD47.

5F9 in B-cell Non-Hodgkin's Lymphoma

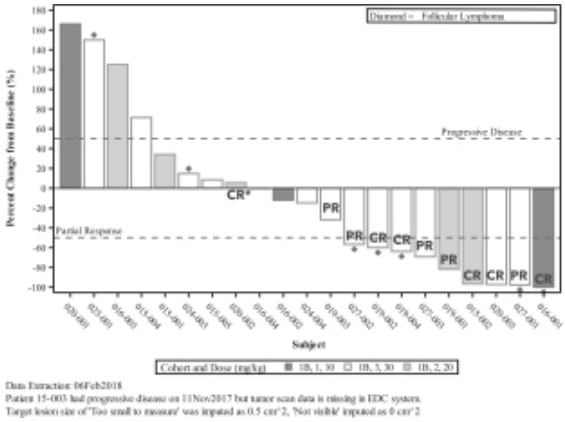
Combination Trial and Early Signs of Efficacy

Our most advanced ongoing clinical trial is an open-label, multi-site Phase 1b/2 trial of 5F9 in combination with rituximab in patients with relapsed or refractory NHL. The rationale behind this combination trial is to release the CD47 inhibition of the innate immune system, thus eliminating the "don't eat me" signal, and use rituximab to provide the "eat me" signal through its binding to CD20 on the surface of NHL cells. We began recruitment in November 2016 and as of February 2018 we have enrolled 29 patients and we anticipate enrolling up to 72 patients in this trial. In the Phase 1b portion of this trial, patients received full doses of rituximab with cohorts evaluating escalating doses of 5F9. The Phase 2 portion of this trial has separate treatment arms for relapsed or refractory patients with non-aggressive, or indolent FL, and those with aggressive DLBCL. We expect data from patients in the Phase 2 arm of this trial to become available in early 2019.

As of February 2018, we have obtained clinical response data from 22 patients receiving 10 mg/kg, 20 mg/kg or 30 mg/kg 5F9. Progression of the disease was controlled in 14 patients (64%), and 11 patients (50%) displayed an objective response. Six patients (27%) were reported to have a complete response and 5 patients (23%) were reported to have partial responses. Importantly, the rate of clinical response increased with the 5F9 dosage. Efficacy was observed in both DLBCL and FL patients. Efficacy in these patients is notable because they all entered the trial after failing multiple lines of previously approved therapies, including rituximab. Particularly, multiple complete remissions have been observed in both DLBCL and FL patients, which are uncommon given the heavily pre-treated nature of these patients. For example, one DLBCL patient had failed four lines of prior therapy and entered the trial with extensive disease that was rapidly progressing. After treatment for eight weeks, this patient achieved a complete response, with no evidence of lymphoma lesions or bone marrow disease.

The figure below shows the preliminary results from a Phase 1b trial of 5F9 in combination with rituximab in relapsed or refractory NHL. Complete and partial response were evaluated by the Lugano criteria, which measures tumor size and metabolic activity.

Response	All Patients n=22	DLBCL n=15	Follicular Lymphoma n=7
Objective Response Rate (ORR)	50% (11)	40% (6)	71% (5)
Partial Response (PR)	23% (5)	20% (3)	29% (2)
Complete Response (CR)	27% (6)	20% (3)	43% (3)
Disease control rate (CR+PR+SD)	64% (14)	60% (9)	71% (5)



A full 90% of responders had been considered rituximab refractory before dosing. Failure of prior therapies containing rituximab did not prevent patients from responding to the combination of 5F9 and rituximab in this trial. In addition, approximately 90% of the patients who had an initial response continue to respond, suggesting durability. For example, 1 patient continues in complete remission after one year on treatment. While these results represent early data from a limited number of patients, the efficacy reported is comparable to the durable response rates (responses of greater than eight months duration) seen with other approved therapies such as the CAR-T product YESCARTA (axicabtagene ciloleucel) in DLBCL and the kinase inhibitor ALIQOPA (copanlisib), in FL. Furthermore, 5F9 has been well tolerated to date with no maximum tolerated dose observed; is easy to administer; and in the majority of responding patients, begins to show efficacy at the first assessment made at eight weeks. These attributes may make 5F9 suitable for a broad range of patients. We expect results from the Phase 2 arm of this trial to be available by early 2019.

Market Opportunity

We believe there is a broad market opportunity for 5F9 in the treatment of NHL. B-cell NHL is a diverse group of cancers derived from B cells. The American Cancer Society estimates that 74,680 people will be diagnosed with NHL in the United States in 2018. The natural progression of NHL varies widely across multiple forms, including aggressive forms such as DLBCL and more slowly growing or indolent forms such as FL, which according to a publication in Frontiers in Oncology in 2013, account for 31% and 22% of all NHL cases, respectively. Without treatment, survival of aggressive NHL, such as DLBCL, is only a few months in duration.

As with other B cell lymphomas, FL and DLBCL cells express CD20 on the cell surface. Monoclonal antibodies targeting CD20 are a key component of current therapy for B cell lymphomas. Rituximab was the first anti-CD20 monoclonal antibody developed and approved for the treatment of B cell NHL. The addition of rituximab to combination chemotherapy could result in an approximately 10-15% overall increase in survival at one year in patients of all ages. Unfortunately not all patients respond to rituximab and of those that initially responded after treatment with rituximab as a monotherapy, but subsequently relapsed, a study has shown that approximately 60% are resistant to rituximab.

In 2017, a new approach to treating DLBCL known as CAR-T cell therapy was approved. This therapy requires removing blood stem cells from patients, genetically modifying them in the lab to attack DLBCL cells and transplanting them back into the patient, a process which can take several weeks. Although this approach has had some success, there remain significant safety limitations. This therapy is not available to patients who have highly proliferative disease, who cannot wait for treatment, or who cannot tolerate the transplantation procedure. We believe that 5F9 will not have these limitations.

5F9 in Ovarian Cancer

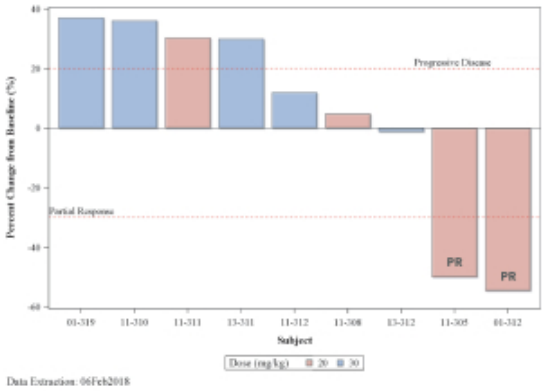
Monotherapy Trial and Early Signs of Efficacy

The first in human trial of 5F9 as a monotherapy was a multi-arm trial designed to test the safety and tolerability and to determine dosing in patients with advanced solid tumors. We have observed confirmed partial responses in 2 out of 9 evaluable patients in a cohort with ovarian cancer receiving either 20 mg/kg or 30 mg/kg of 5F9, as of February 2018. Both were heavily pre-treated patients failing seven or more previous treatment regimens. One of these patients had a durable partial response of more than six months in duration. We continue to investigate the potential of 5F9 in an expanded cohort of more than 15 patients with ovarian cancer from which we anticipate having data by the end of 2018.

The following figure shows responses in a Phase 1 trial of 5F9 as a monotherapy in ovarian cancer.

Best Response	Ovarian Cancer Patients (n=9)
Objective Response Rate (ORR)	22% (2)
Partial Response (PR)	22% (2)
Complete Response (CR)	0% (0)
Stable Disease (SD)	33% (3)
Disease control rate (CR+PR+SD)	56% (5)
	44% (4)

Data cutoff 06 Feb 2018



In January 2018, we announced a clinical collaboration with Merck KGaA to test 5F9 in combination with the T cell checkpoint inhibitor avelumab in ovarian cancer patients. The rationale for the collaboration is based on these data and additional preclinical work showing that avelumab enhances cancer cell phagocytosis *in vitro*. We believe this enhancement is due to avelumab binding PD-L1 on the cancer cells and stimulating phagocytosis via binding of the IgG1 isotype antibody to macrophage receptors.

Market Opportunity

The Centers for Disease Control and Prevention, or CDC, estimates that ovarian cancer is the fifth leading cause of cancer death in women in the United States with over 20,000 women in the United States diagnosed

with ovarian cancer and approximately 14,000 die from this disease each year. The International Agency for Research on Cancer estimates that, worldwide, there were approximately 225,000 cases of ovarian cancer leading to 140,000 deaths yearly.

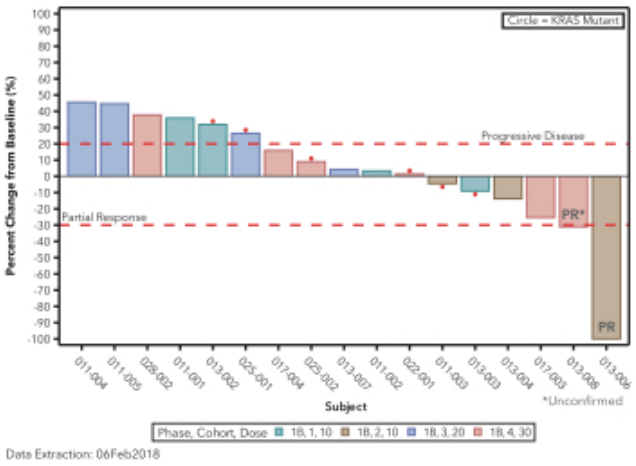
Surgery and cytotoxic chemotherapies are widely used to treat ovarian cancer; however, the outcomes have changed little over the last several decades. According to the National Cancer Institute, the relative five-year survival rate has improved only marginally from 43.8%, observed from 2001 to 2007, to 46.5%, observed from 2007 to 2013. Treatment of patients with advanced, relapsed ovarian cancer with a combination of gemcitabine and carboplatin increased the progression free survival to 8.6 months from 5.8 months with carboplatin alone but has had no significant effect on overall survival. Recently a number of products that target poly ADP ribose polymerase, or PARP, a specific component of a DNA repair pathway, have been approved for use in ovarian cancers. These products include olaparib, rucaparib and niraparib. Research published in Molecular Oncology has demonstrated that the efficacy of these products is greatly enhanced in the subset of 5-15% of ovarian cancers with mutations in the BRCA1 and BRCA2 genes. Given the historical lack of improvement in survival rates and limitations of PARP therapies for the majority of cancer patients, we believe 5F9 has the potential to deliver an effective new class of therapy to address this unmet medical need.

5F9 in Colorectal Cancer

Combination Trial and Early Signs of Efficacy

We are investigating the combination of 5F9 and cetuximab in an open-label Phase 1b/2 trial in patients with advanced relapsed or refractory solid tumors, including CRC. As of February 2018, we have enrolled 28 patients at multiple sites in the United States. The first arm of this trial is a dose escalation stage with doses of cetuximab increasing up to the standard approved dose level combined with increasing doses of 5F9. Data from the 10 mg/kg, 20 mg/kg and 30 mg/kg cohorts of the Phase 1b portion of the trial is available for 17 patients with CRC. Of these 17 patients, 2 (12%) had a partial response and 9 (53%) had stable disease at eight weeks. Importantly, at time of data cutoff in February 2018 the initial responding patient had maintained a durable response over five months that was ongoing. This trial is ongoing and we expect data from patients in the Phase 2 arm of this trial to become available in the first half of 2019. The following figure shows the responses in patients from this trial.

Best Response	CRC Patients n=17
Objective Response Rate (ORR)	12% (2)
Partial Response (PR)	12% (2)
Complete Response (CR)	0%
Stable Disease (SD)	53% (9)
Disease control rate (CR+PR+SD)	64% (11)



Market Opportunity

According to CDC estimates, CRC is the second leading cause of cancer deaths in the United States. The National Cancer Institute estimates that there were 135,430 new cases of CRC and 50,260 CRC related deaths in

the United States in 2017. Almost 35% of the patients with a new diagnosis of CRC will die within five years. The risk of CRC increases with age, with 90% of cases diagnosed in individuals 50 years of age or older. Despite effective screening, leading to a reduction in the mortality from CRC, the number of cases remains high and is expected to increase worldwide to 2.2 million by the year 2030.

Treatment of CRC typically involves the use of cytotoxic chemotherapy and radiation. Treatment with anti-epidermal growth factor receptor or EGFR antibodies as a monotherapy or in combination with chemotherapy has been shown to be effective in a subset of CRC patients, however according to a publication in Current Oncology in 2010, over 40% of patients do not respond to anti-EGFR antibody therapies and of those that do, resistance often develops. Specifically, cetuximab is ineffective in patients who have a mutation in the RAS gene, which represents approximately 40% of all patients. In addition, after initial treatments, the currently approved therapies for advanced CRC patients, such as regorafenib and trifluridine/tipiracil (TAS-102), have significant toxicities, negligible response rates (less than 2%) and only a minimal survival benefit, increasing median survival by 1.4 to 1.8 months. We believe that there is an unmet medical need for a treatment option that improves outcomes for patients with CRC.

5F9 in Acute Myeloid Leukemia

Monotherapy Trial with Signs of Biologic Activity

We are conducting a Phase 1 monotherapy trial in patients with relapsed or refractory AML in collaboration with the University of Oxford at multiple sites in the United Kingdom. Leukemic cells, called blasts or blast precursors, are the main driver and indicator of disease burden in AML. Reductions in the number of blast cells in patient bone marrow samples have been observed in 6 of the 14 patients (43%) in cohorts receiving 10 mg/kg or higher doses of 5F9, as of February 2018. One of these patients had prolonged stable disease for 11.8 months on study before progressing, which is more than double the average life expectancy for this refractory patient population. This patient had a significant increase in T cells in the bone marrow during treatment, suggesting that 5F9 may have activated the adaptive immune system. Based in part on these data and similar observations in preclinical models, in January 2018, we announced a clinical collaboration with Genentech to initiate a clinical trial exploring a combination of 5F9 with atezolizumab in patients with AML. We have received orphan drug designation from both the FDA and the EMA for AML.

Market Opportunity

AML is a hematologic cancer characterized by excessive proliferation of myeloid stem cells and their failure to properly differentiate into mature blood cells. AML is the second most common subtype of leukemia in adults. The American Cancer Society estimates an incidence of approximately 19,500 new cases in the United States in 2018. AML is generally a disease of elderly people, with more than 60% of diagnosed patients being older than 60 years. According to Cancer Research UK, the average five-year survival rate for patients with AML is 20%, but there are significant differences in prognosis depending on several factors, including the age of the patient and the presence of co-morbidities at the time of diagnosis. For patients under the age of 45, the five-year survival rate is approximately 57%, while for those over the age of 65 it is only 6%. There are likely multiple reasons for this difference, including the ability of younger patients to tolerate more aggressive therapy.

Current first-line treatments in AML typically involve aggressive chemotherapy, including alkylating agents and cytarabine potentially followed by stem cell transplantation, for younger patients with the aim to induce and then maintain long-term remission. This therapy is not recommended for older patients or patients with comorbidities, who are often not treated at all or are treated with low dose cytarabine or azacitidine. There is a single biologic, MYLOTARG (gemtuzumab ozogamicin), approved by the FDA for AML. Mean survival in AML patients over 75 years of age treated with gemtuzumab ozogamacin as a monotherapy was 4.9 months versus 3.6 months for those treated with the best supportive care. Significant myeloid and liver toxicities have also complicated the use of gemtuzumab ozogamacin in patients. Other more recently approved therapeutics for

AML target subsets of patients with tumors containing specific mutations such as RYDAPT (midostaurin) by Novartis for those with FLT3 mutations and IDHIFA (enasidenib) by Celgene for those with mutations in IDH2. Despite these advancements, we believe there is a significant need for a safe, broadly effective AML treatment. CD47 is expressed to a higher degree in AML cells, including leukemia stem cells, than in normal blood cells, making AML an attractive potential indication for 5F9.

Planned Trials: Combinations with Checkpoint Inhibitors

We believe there is a strong rationale to combine 5F9 with T cell checkpoint inhibitors. 5F9 induces a potent anti-cancer T cell response by enabling macrophages to ingest cancer cells and present antigens derived from these cancer cells to T cells. Thus, the combination of a T cell checkpoint inhibitor with 5F9 is likely to further enhance an anti-cancer T cell response and to further mobilize both the innate and adaptive immune systems to eliminate cancer. In this context, we and our partner Genentech are planning to test the safety and efficacy of 5F9 in combination with atezolizumab, a monoclonal antibody targeting PD-L1, an adaptive immunity checkpoint, in bladder cancer. We believe that this trial will help us test a key hypothesis by determining whether 5F9 can further enhance the anti-tumor activity of checkpoint inhibitors that already have activity as a monotherapy. In addition, 5F9 will be combined with atezolizumab in AML patients. Our rationale for this combination is the observed increase in T cells in the bone marrow of an AML patient during 5F9 monotherapy treatment. We believe the presence of increased T cells may indicate an activation of the adaptive immune system which is the target of T cell checkpoint inhibitors. Atezolizumab has received regulatory approval for the treatment of advanced urothelial carcinoma and non-small cell lung cancer.

We also partner with Merck KGaA to test the safety and efficacy of 5F9 in combination with avelumab, an antibody targeting PD-L1 in patients with ovarian cancer. The combination of 5F9 and avelumab was selected based on the unique dual ability for avelumab to enhance both a T cell response as a checkpoint inhibitor and serve as a tumor-targeted antibody. Since PD-L1 is expressed on cancer cells, antibodies that target PD-L1 could serve as a tumor-targeting antibody, similar to rituximab and cetuximab in CRC and NHL, respectively. However, an active Fc receptor capable of inducing antibody-dependent cellular phagocytosis is required. Avelumab is the only FDA approved T cell checkpoint inhibitor targeting PD-L1 that has an active IgG1 Fc receptor. Thus, the combination of 5F9 and avelumab may be a key competitive differentiator for combination strategies of CD47 blocking agents and checkpoint inhibitors. Indeed, our preclinical studies demonstrate that the addition of avelumab to 5F9 significantly enhances macrophage phagocytosis of cancer cells. The combination of 5F9 and avelumab will be explored in ovarian cancer patients based on preclinical data as well as initial clinical data demonstrating monotherapy activity for both 5F9 and avelumab in this indication.

Safety Profile of 5F9

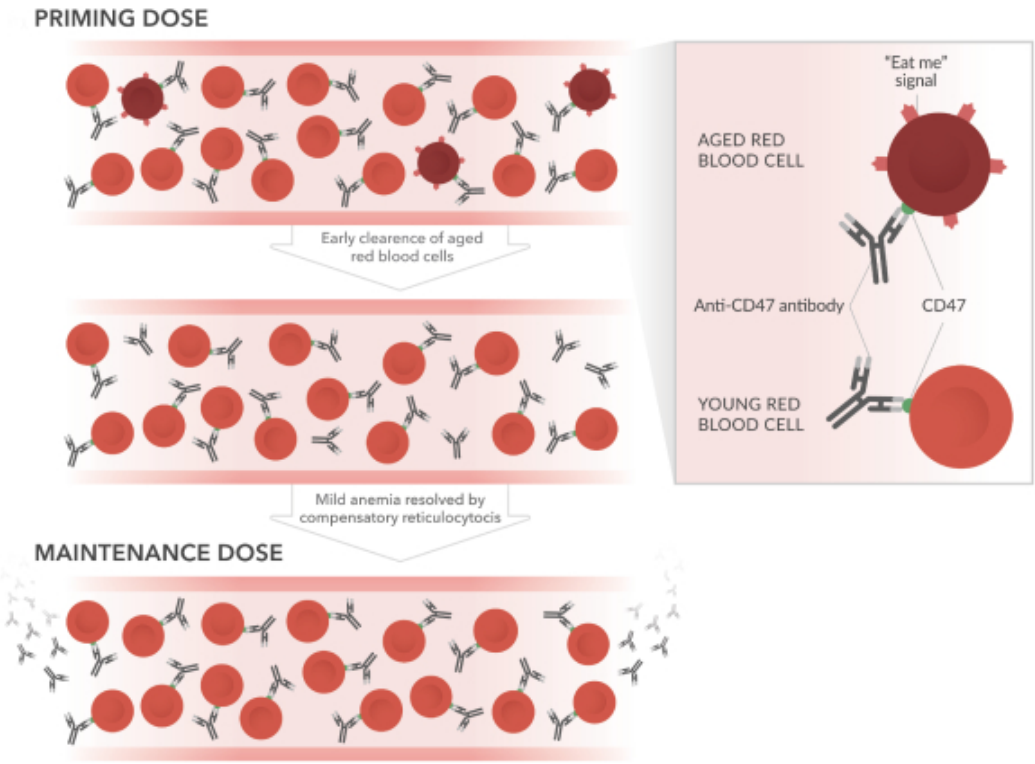
In each of our clinical studies, 5F9 has demonstrated signs of early efficacy while being generally well-tolerated. The design of 5F9, combined with our proprietary dosing regimen, overcomes the toxicity limitations of previously tested anti-CD47 therapies. Across all study populations, 5F9 has been well tolerated with no maximum tolerated dose observed in any study despite dosing up to 45 mg/kg. The most common treatment-associated effects observed to date were the expected CD47-mechanism-based effects on red blood cells which led to a temporary and reversible anemia.

Minimizing the Effects on Red Blood Cells

Red blood cells, like other cells in the body, express CD47 as a “don’t eat me” signal to prevent phagocytosis by macrophages. As red blood cells age, the levels of CD47 gradually decrease and the levels of “eat me” signals such as phosphatidylserine or IgG increase such that at some point aged red blood cells are engulfed by macrophages and removed from circulation. The levels of red blood cells in the body, however, are tightly regulated and the removal of aged or damaged red blood cells stimulates the production of new red blood cells. The administration of CD47 antibodies, such as 5F9, would be expected to block the “don’t eat me” signal

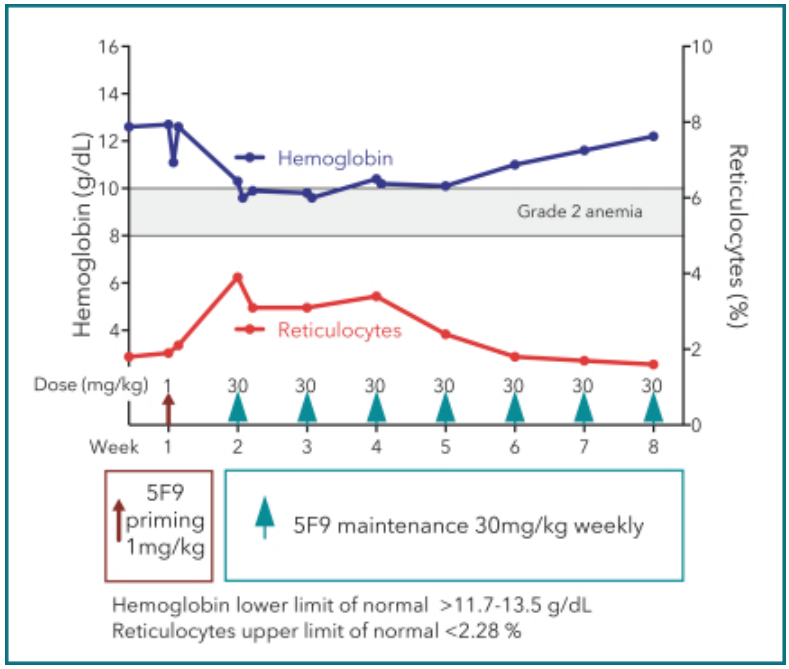
on red blood cells resulting in premature loss of those aged red blood cells that bear sufficiently high levels of “eat me” signals. Indeed, this predicted loss of red blood cells and the associated anemia has been observed in preclinical studies and clinical trials of 5F9 but it is generally temporary and reversible in nature. The loss of red blood cells is compensated for by reticulocytosis, which is the synthesis of new red blood cells that leads to the gradual resolution of the anemia. Eventually the red blood cell level stabilizes as the average age of red blood cells shifts toward younger cells.

To address this expected anemia, we designed a proprietary dosing regimen into our clinical trials in which clinicians administer a priming dose of 1 mg/kg of 5F9 that is sufficient to eliminate the aged red blood cells and trigger the process of reticulocytosis. A mild anemia with the first priming dose is therefore expected. This priming dose then enables administration of much higher and more efficacious maintenance doses of 30 mg/kg in subsequent weeks that do not induce further clearance of red blood cells. We believe our approach of administering a priming dose followed by maintenance doses is an important element in mitigating the known on-target effect of anemia that results from therapeutic blocking of CD47. The figure below illustrates this sequence.



The initial first-in-human Phase 1 clinical trial of 5F9 was initiated by researchers at Stanford University in 24 patients with relapsed or refractory solid tumors. Eleven patients were treated in Part A of the trial, which was designed as a dose escalation trial with the goal of establishing a priming dose of 5F9 that would be tolerable while also still fully saturating CD47 on red blood cells. After a single dose of 1 mg/kg of 5F9, approximately 90% of CD47 molecules on red blood cells were blocked, whereas at doses of 0.1 mg/kg and 0.3 mg/kg approximately 50% of CD47 molecules were blocked. The 1 mg/kg dose was well tolerated with no drug-limiting toxicities.

Part B of the trial investigated the safety and tolerability of weekly maintenance dosing of 5F9 in 14 patients treated at 1, 10, 20, 30 and 45 mg/kg, each following a single priming dose of 1 mg/kg. The study showed that this dosing regimen results in an early, temporary decline in hemoglobin levels corresponding to mild to moderate anemia during the first two weeks of starting therapy. In many patients, hemoglobin levels return to baseline by week four or later, even with continued treatment with 5F9 at significantly higher doses. The figure below illustrates the physiological response associated with the priming dose in a solid tumor patient.



An additional common treatment-associated effect related to red blood cells is hemagglutination, or the clumping of red blood cells, which we believe is driven by the direct interaction of 5F9 with CD47 on red blood cells. We observe hemagglutination by microscopic examination of a blood sample typically in conjunction with the initial priming or maintenance doses. In the over 140 patients treated with 5F9 across indications, hemagglutination has not been correlated with significant adverse events or other clinical symptoms.

In order to evaluate the clinical risk of hemagglutination and to monitor for any effects this might have on the microvasculature, our Phase 1 monotherapy trial of 5F9 in solid tumor patients included baseline and weekly high resolution retinal imaging studies during the trial. The 163 scans obtained in solid tumor patients did not reveal any treatment related pathology, outside of a solitary, asymptomatic transient abnormal finding on the retina known as a cotton wool spot in a single patient who did not exhibit hemagglutination. We removed the requirement for retinal imaging due to the lack of significant retinal findings in a protocol amendment, which was accepted by the FDA without any related issues being raised.

Patients with AML do not have the bone marrow capacity to stimulate reticulocytosis due to their disease and thus have to rely on blood transfusions to replace aged red blood cells that are eliminated by 5F9 treatment. Hemagglutination continues to be observed in these patients beyond the first or second dose of 5F9 as the transfused blood contains a substantial population of untreated red blood cells. These transfusions have been well tolerated. Similar to solid tumor patients, to date, no clinical consequences have been correlated with hemagglutination.

Other Safety Observations

5F9 has been dosed in over 140 patients with both solid and hematological tumors as of February 2018. Across all study populations, 5F9 has been well tolerated with no maximum tolerated dose observed in any study including in doses of up to 45 mg/kg. The most common treatment-associated effects observed were CD47-mechanism-based effects on red blood cells such as anemia. Other reported treatment-related adverse events include infusion reactions, mild headache, fatigue and nausea. Common drug-related abnormal laboratory observations have included transient hyperbilirubinemia, transient reticulocytosis and spherocytosis, all of which are consistent with the on-target effect of aged red blood cell clearance by 5F9. Lymphopenia was also observed but not associated with any clinical consequences including infections. These findings were more frequent following the first or second infusion, with substantially fewer drug-related events reported beyond the first 28-day treatment cycle. Infusion-associated reactions including fevers, chills, headache, chest/abdominal/back pain and infusion/hypersensitivity reactions are observed in patients with solid tumors and lymphoma during the initial two doses with 5F9 and generally not with subsequent doses. No consistent adverse events were observed at high or extended exposure and there were no consistent overlapping toxicities with other antitumor antibodies. In addition, no significant immune-mediated toxicities found in other T cell checkpoint inhibitors have been observed. Patients have been treated over six months without increases in safety signals.

Summaries of reported adverse events from the solid tumor and NHL combination trials are presented in the figures below.

Solid Tumor Summary* (n = 48)					
Adverse Event Term Patients Treated at 20 (37 patients), 30 (8 patients), or 45 (3 patients) mg/kg weekly	AE Grade				
	Any	1	2	3	4
Anemia	27 (56%)	8 (17%)	14 (29%)	5 (10%)	0
Hemagglutination	20 (42%)	14 (29%)	5 (10%)	1 (2%)	0
Blood Bilirubin Increased/ Hyperbilirubinemia	12 (25%)	3 (6%)	5 (10%)	4 (8%)	0
Thrombocytopenia	6 (13%)	4 (8%)	2 (4%)	0	0
Neutropenia	2 (4%)	1 (2%)	1 (2%)	0	0
Lymphocyte count decreased	10 (21%)	1 (2%)	0	7 (15%)	2 (4%)
Non-cardiac Chest Pain/Chest Pain	1 (2%)	1 (2%)	0	0	0
Headache	24 (50%)	16 (33%)	7 (15%)	1 (2%)	0
Nausea	12 (25%)	10 (21%)	2 (4%)	0	0
Fatigue	30 (63%)	26 (54%)	4 (8%)	0	0
Pyrexia	23 (48%)	20 (42%)	3 (6%)	0	0
Chills	22 (46%)	21 (44%)	1 (2%)	0	0
Photopsia	5 (10%)	5 (10%)	0	0	0
Infusion-related reaction	5 (10%)	2 (4%)	3 (6%)	0	0
AST elevation	2 (4%)	0	0	1 (2%)	1 (2%)
ALT elevation	2 (4%)	0	1 (2%)	0	1 (2%)

* Ovarian expansion cohort not included in analysis

Data cutoff 06 Feb 2018

Phase 1b: 5F9 + Rituximab Summary (n = 22)					
Adverse Event Term All Phase 1b patients (5F9 10 mg/kg to 30 mg/kg weekly + rituximab)	AE Grade related to 5F9 and/or rituximab				
	Any	1	2	3	4
Chills	9 (41%)	4 (18%)	4 (18%)	1 (5%)	0
Headache	8 (36%)	5 (23%)	3 (13%)	0	0
Anemia	7 (32%)	3 (14%)	2 (9%)	2 (9%)	0
Infusion related reaction	7 (32%)	1 (4.5%)	5 (23%)	1 (4.5%)	0
Pyrexia	6 (27%)	4 (18%)	1 (4.5%)	1 (4.5%)	0
Fatigue	5 (23%)	2 (9%)	3 (14%)	0	0
Back pain	3 (14%)	0	3 (14%)	0	0
Myalgia	3 (14%)	3 (14%)	0	0	0
Neutropenia	3 (14%)	2 (9%)	0	0	1 (4.5%)
Thrombocytopenia	3 (14%)	1 (4.5%)	1 (4.5%)	1 (4.5%)	0
Diarrhea	3 (14%)	3 (14%)	0	0	0
Nausea	3 (14%)	3 (14%)	0	0	0
Vomiting	3 (14%)	1 (4.5%)	2 (9%)	0	0
Immune thrombocytopenic purpura	1 (4.5%)	0	0	0	1 (4.5%)
Pulmonary embolism	1 (4.5%)	0	0	1 (4.5%)	0

AE>4% and DLTs regardless of frequency are shown, data cut: 16Jan2018

Pharmacokinetics of 5F9

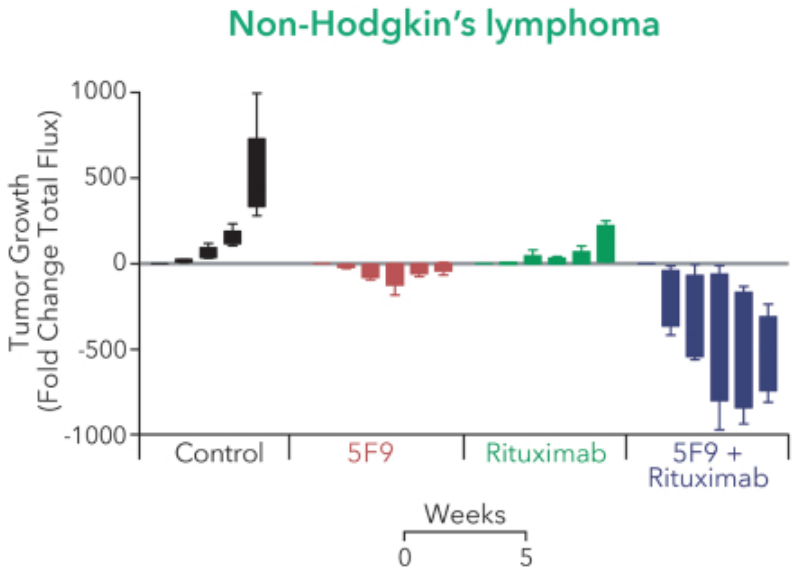
As part of the Phase 1 solid tumor trial design we measured the concentration of 5F9 in the serum of treated patients at various doses. At doses of 10 mg/kg and above the half-life of 5F9 is approximately two weeks. When dosed weekly at 10 mg/kg and higher the serum concentrations of 5F9 exceeded concentrations associated with activity in preclinical models. Our initial signs of efficacy in patients with AML, CRC, NHL or ovarian cancers were all observed at doses of 10 mg/kg weekly or higher suggesting our preclinical model results are consistent with our clinical observations. Anti-drug antibodies were detected in 2 of 58 evaluable patients in the solid tumor trial; however, the presence of such antibodies were not associated with changes in 5F9 pharmacokinetics or clinical consequences. The anti-drug antibody rate for 5F9 (3%) is similar to other humanized antibodies.

Preclinical Data

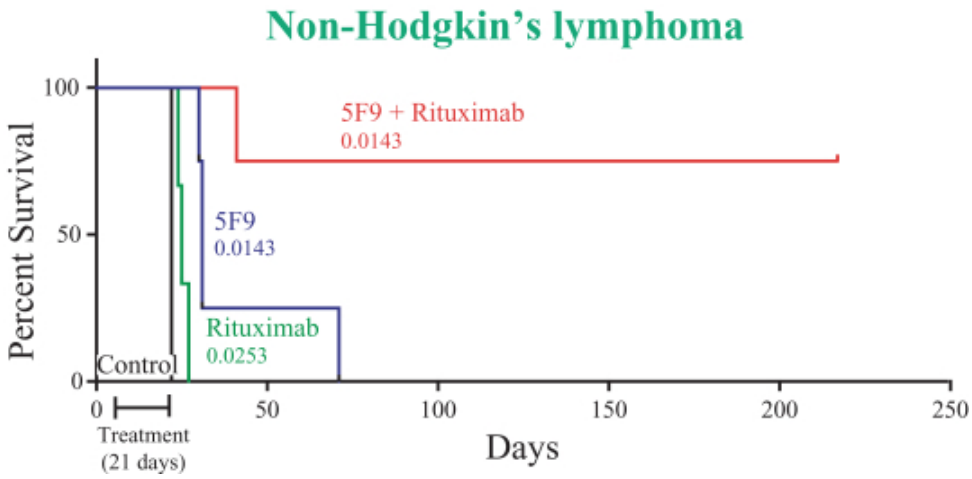
The role of CD47 as a key component of self-recognition in the innate immune system and its potential role as an immuno-oncology target has been well-published by our founders at Stanford University. These findings have been validated by independent publications from multiple academic groups. Some key findings of this preclinical research:

- CD47 is overexpressed in a majority of tumor types;
- Expression levels of CD47 are correlated with evasion of phagocytosis by macrophages;
- High expression of CD47 is associated with poor prognosis in patients with hematologic cancer and solid tumors;
- Antibodies against CD47 promote antitumor activity in over 25 types of tumors including AML, CRC, NHL, ovarian cancer and others;
- Addition of therapeutic cancer antibodies can synergize with CD47 antibodies in animal models including rituximab, cetuximab, trastuzumab and others; and
- CD47 antibody-mediated phagocytosis of cancer cells enables macrophages to present tumor antigens to recruit and activate anti-tumor T cells and therefore can synergize with T cell checkpoint therapies.

An example of the anti-tumor potential of combining inhibition of the CD47 “don’t eat me” signal by 5F9 and the “eat me” signal from rituximab was observed in a mouse models of NHL. In these models, a highly aggressive human NHL cell line is used to introduce tumors into mice. When given as a monotherapy, 5F9 or rituximab monotherapy was only able to keep the tumor from growing larger. However, when 5F9 and rituximab were dosed together, significant shrinkage of tumors was observed within two to five weeks, as shown in the figure below.



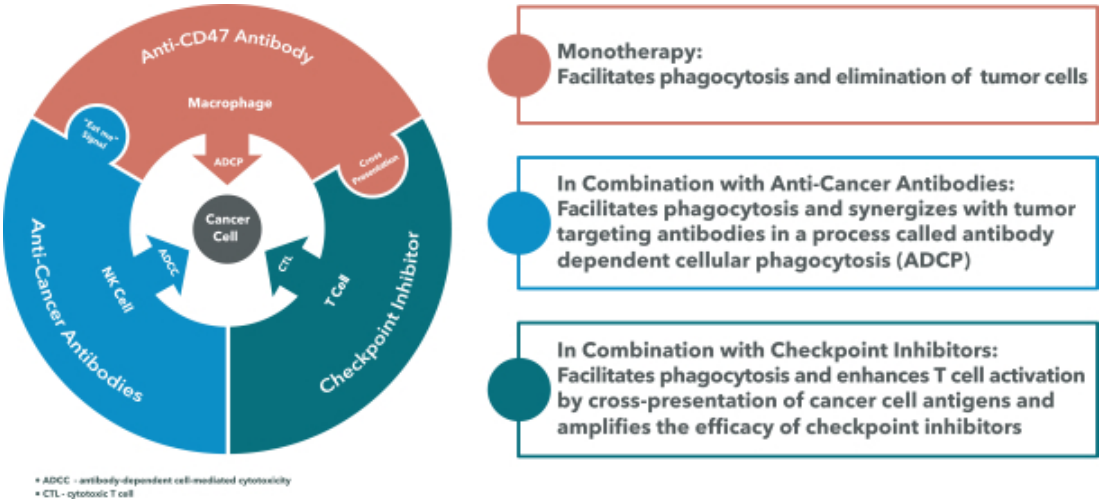
This reduction in tumor burden was associated with a significant improvement in overall survival with the majority of the mice exhibiting the disappearance or near-disappearance of their tumors, as shown in the figure below. This preclinical data and similar preclinical data in other animal models serve as the basis for our ongoing and future clinical trials.



Importance of 5F9 in a Multipronged Approach to Treating Cancer

5F9 has the potential to be an important therapeutic contributing to a multipronged approach to oncology treatment. While the field of immuno-oncology is a growing area of scientific focus, macrophage activation is missing from the current repertoire of biological oncology agents. Agents that target the CD47-SIRPa interaction can address this missing component.

- ***Anti-CD47***. Direct blockage of the CD47-SIRPa interaction enables macrophages to recognize cancer cells via endogenous "eat me" signals such as calreticulin as well as by antibodies to surface expressed antigens. Antibodies that are present endogenously or are provided therapeutically bind to surface antigens on cancer cells leading to their capturing and engulfing by macrophages in a process called antibody dependent cellular phagocytosis or ADCP. To date, no therapies have been approved that release macrophages from CD47-dependent inhibition.
- ***Anti-Cancer Antibodies***. Antibodies, such as rituximab, that recognize cancer cells trigger activation of natural killer or NK cells which result in antibody dependent cellular cytotoxicity or ADCC. Over twenty antibody products have been approved as therapeutics in oncology. These include antibodies that target antigens such as CD20 (rituximab, obinutuzumab, ofatumumab), epidermal growth factor receptor or EGFR (cetuximab, panitumumab), human epidermal growth factor receptor 2 (HER2) (trastuzumab, pertuzumab), among others. These therapeutics represent a mainstay of cancer therapy, but have limited efficacy as monotherapies. Binding of these antibodies to cancer cells can also provide strong "eat me" signal triggering attack by macrophages.
- ***Checkpoint Inhibitors***. Cytotoxic T cells are components of the adaptive immune system that are specialized for specific antigens on cancer cells. These may include naturally derived T cells that target tumor-specific antigens including neoantigens or antigens that arise from mutations within tumors. T cell agents also include a new class of cellular therapeutics such as CAR-T cells that are generated by genetic engineering, such as KYMRIAH (tisagenlecleucel) and YESCARTA (axicabtagene ciloleucel). A series of pharmacological agents known as checkpoint inhibitors have been approved as cancer therapeutics that function by relieving the active suppression of cytotoxic T cell activity. These agents include antibodies against PD-1, such as nivolumab and pembrolizumab, and PD-L1, such as atezolizumab and avelumab, as well as CTLA-4, such as ipilimumab. Similar to other biologics in oncology, these agents have limited efficacy when used as a monotherapy, and are currently the subject of over 1,300 clinical trials investigating their efficacy when used in combination. Phagocytosis of cancer cells by macrophages results in processing and presentation of tumor antigens to T cells, potentially increasing their efficacy.



Benefit of Macrophage Activation in Viral Infections

Macrophages are the first line of defense against pathogens and the expression of CD47 on patient cells may prevent recognition of some viral infections such as Human Immunodeficiency Virus, or HIV. We are in discussions to provide 5F9 to University of California, San Francisco, or UCSF, for their work with Gilead, a leader in the development and commercialization of HIV therapies, in the investigation of the potential of 5F9 to help eradicate reservoirs of cells that contain residual HIV infections. Researchers at UCSF, together with Gilead, will test the potential of 5F9 as a monotherapy and in combination with a TLR7 agonist, a compound designed to stimulate macrophage recognition of viral RNA, in non-human primates and other animal models. We have worldwide rights to 5F9 in all indications.

Other Preclinical Programs

We are working to develop additional products aimed at enhancing anti-cancer phagocytosis. This includes, but is not limited to the addition or enhancement of pro-phagocytic signals and further inhibition of anti-phagocytic signals. This development pipeline is balanced with preclinical agents at various stages of development, including a mix of both clinically validated and novel targets.

Other Potential Ways to Interfere with CD47-SIRP*a *Interaction

There are multiple types of pharmaceutical interventions that have been used to inhibit receptor-target interactions such as CD47-SIRPa. These have included antibodies that block the interaction by binding to either of the partners; small molecules and peptides that prevent the target from binding to the receptor or block downstream signaling events; and soluble decoy molecules that bind to one of the partners thereby preventing the other partner from binding productively. In addition to the 5F9, which is an antibody that binds to CD47 blocking its binding to SIRPa, we have also explored the potential of interfering with CD47 activity through other modalities. Our next most advanced product candidate is an antibody that binds to SIRPa for which we anticipate launching clinical trials in 2019.

Each of the different modalities has advantages and disadvantages and we believe that the central role of the CD47-SIRPa in regulating self-recognition in the innate immune system provides opportunities for multiple products to have therapeutic benefit in specific indications. Some SIRPa decoy molecules have a lower affinity for CD47 and thereby reduce the risk of red blood cell attack and subsequent anemia. However, these product candidates exhibited dose limiting toxicities at less than 1 mg/kg due to their toxicities on platelets. Antibodies that target SIRPa would be expected to be effective without targeting red blood cells, but, depending on their specific properties, these antibodies may not have any monotherapy activity. Specific variants of all of these modalities, such as whether antibodies are of the IgG1 subtype versus the IgG4 subclass, are expected to have different profiles based on interactions with other components of the immune system.

License and Collaboration Agreements

Exclusive (Equity) Agreement with The Board of Trustees of the Leland Stanford Junior University

In November 2015, we entered into a license agreement with Stanford under which we obtained a worldwide, royalty-bearing, sublicenseable license under certain patents, know-how and other intellectual property, including rights associated with the composition of matter of 5F9, to develop, manufacture and commercialize products for use in certain licensed fields, the scope of which would include the application of the licensed intellectual property in oncology. The license granted to us in the agreement is exclusive, subject to certain pre-existing non-exclusive or exclusive rights that Stanford granted to third parties with respect to certain categories of the licensed patents in certain fields of use and retained rights by Stanford and all other non-profit institutions to use and practice the licensed patents and technology for internal research and other non-profit purposes.

In consideration for the rights granted to us under the agreement, we paid Stanford non-refundable license fees totaling $200,000, reimbursed Stanford for past patent expenses totaling approximately $933,000 and granted Stanford 7,751,242 shares of our common stock. In addition, we are obligated to pay Stanford ongoing patent expenses and an annual license maintenance fee ranging from $20,000 to $70,000, depending on the year, which will be creditable against any royalties payable to Stanford in any such year following the first commercial sale of licensed products under the agreement. We are required to make milestone payments up to $5.6 million in respect of the first three licensed products that successfully satisfy certain clinical and regulatory milestones in the United States, major European countries and Japan. The first clinical milestone payment of $75,000 was paid to Stanford in February 2018, recognizing the initiation of the Phase 2 trial of 5F9 in NHL. We also agreed to pay Stanford tiered royalties on a specified percentage of net sales made by us, our affiliates and our sublicensees of licensed products at rates ranging from a low-to-high single digit percentage, subject to certain reductions and offsets, with the royalty rate on 5F9 reaching a high single digit percentage when its net sales exceed $3 billion. To the extent we enter into any sublicensing agreements granting rights to any of the licensed patents to a third party, other than the right to make, have made, use or sell licensed products on behalf of us or our affiliates, we will be required to pay Stanford a low-to-mid double digit percentage of all non-royalty income received from such sublicensees, which decreases based on our level of investment in the licensed products or licensed services and their stage of development. Our license, on a product-by-product and country-by country basis, shall become royalty-free and fully paid-up upon the later of (i) the date on which the last valid claim included in the licensed patents expires and (ii) the ten year anniversary of the first commercial sale of the licensed product.

We are obligated to use commercially reasonable efforts to commercialize the inventions covered by the licensed patent rights. We are also required to achieve certain specified milestones by specified times, provided that an extension of such timelines can be obtained upon mutual agreement by the parties.

Stanford retains sole responsibility for the prosecution and maintenance of certain patents relating to SIRPa, upon consultation with us. We are responsible for the prosecution and maintenance of the other licensed patents, at our expense and using commercially reasonable efforts, but Stanford retains final approval of such matters. Except for the patents prosecuted and maintained by Stanford, we have the first right to enforce the licensed patents, at our expense.

We may terminate the license at any time for any reason with at least 30 days' written notice to Stanford. Stanford may terminate the license if we enter into an insolvency-related event or in the event of our material breach of the agreement or other specified obligations therein, in each case, that remains uncured for 30 days after the date that we are provided with written notice of such breach by Stanford. In addition, if we fail to achieve any specified diligence milestone by the specified time, Stanford has the right to terminate our license solely with respect to the applicable licensed products for which the milestone was not achieved, which could include 5F9. Our obligations to pay royalties that are accrued or accruable will survive any termination.

Clinical Trial Collaboration and Supply Agreement with Merck KGaA

In January 2018, we entered into a clinical trial collaboration agreement with Ares Trading S.A., a subsidiary of Merck KGaA, to evaluate the safety, tolerability and preliminary efficacy of 5F9 combined with Merck KGaA's cancer immunotherapy, avelumab, a fully humanized monoclonal antibody targeting PD-L1, in a Phase 1b clinical trial in patients with ovarian cancer. Pursuant to the agreement, we will act as the sponsor of the study and will hold the regulatory filings relating to the study. We will supply 5F9 and Merck KGaA will supply avelumab for the study, and we and Merck KGaA will jointly pay for the cost of the study. We will conduct the study under the supervision of a joint combination study committee comprised of an equal number of representatives from each of Merck KGaA and us.

Under the terms of the agreement, we own the rights to any inventions or discoveries arising from the study that relate solely to 5F9. Merck KGaA owns the rights to any inventions or discoveries arising from the study that relate solely to avelumab. Both parties will jointly own the rights to inventions or discoveries relating to 5F9

and avelumab in combination. Each party has the sole right to prosecute and maintain patents relating to its solely owned inventions or discoveries, and we will be primarily responsible for, upon consultation with Merck KGaA, the prosecution, maintenance and defense of patents relating to jointly owned inventions or discoveries. We and Merck KGaA each have the first right to initiate legal action to enforce patents relating to jointly owned discoveries where the alleged infringement or misappropriation results from the development or sale of 5F9 or avelumab, respectively.

During the course of the agreement and for a limited time after our delivery of the final clinical study report to Merck KGaA, we agreed to work exclusively with Merck KGaA for any trials testing 5F9 in combination with an anti-PD-1 or anti-PD-L1 antibody in the specific field of ovarian cancer. In addition we have an option to initiate an additional study under the agreement to evaluate 5F9 and avelumab in combination in patients with a different cancer indication or another indication that may be agreed by the parties, which Merck may elect to co-fund at its discretion.

The agreement will expire after a set period of time following our provision of the final clinical study report to Merck KGaA. We and Merck KGaA each have the right to terminate the agreement in the event of an uncured material breach of the agreement by the other party. In addition, each party may terminate the agreement upon its own reasonable good faith determination (i) that the study presents a safety risk or (ii) that it is required to be terminated for medical, scientific, legal or regulatory reasons, or if an applicable regulatory authority takes any action that prevents the supply of its respective compound for use in the study. If Merck KGaA terminates the agreement for medical, scientific, legal or regulatory reasons relating to avelumab, we will be able to continue any study that is ongoing as of the effective date of termination.

Master Combination Study Agreement with Genentech, Inc.

In November 2017, we entered into a master clinical trial collaboration agreement with Genentech to evaluate the safety, tolerability and preliminary efficacy of 5F9 combined with Genentech's cancer immunotherapy, atezolizumab, a fully humanized monoclonal antibody targeting PD-L1, in two separate Phase 1b clinical trials (in patients with bladder cancer and AML, respectively). Pursuant to the agreement, we will supply 5F9 for the studies and will partially reimburse Genentech for its costs in connection with the bladder cancer study, and Genentech will supply atezolizumab for the studies and be solely responsible for all of its costs in connection with the AML study. Genentech will conduct the studies under the supervision of a joint development committee comprised of representatives of both parties.

Under the terms of the agreement, we own the rights to any inventions or discoveries arising from the study that relate solely to 5F9. Genentech owns the rights to any inventions or discoveries arising from the study that relate solely to atezolizumab. Both parties will jointly own the rights to inventions or discoveries relating to 5F9 and atezolizumab in combination, without the right to assign or license any patents that relate to such jointly owned rights to third parties unless necessary for the research, development or commercialization of products utilizing the combination of 5F9 and atezolizumab. Additionally, each party grants the other a non-exclusive, worldwide, fully-paid, perpetual, sublicenseable license to research, develop and commercialize combinations of 5F9 and atezolizumab. Genentech does not receive any rights from us to research, develop or commercialize 5F9 except in combination with atezolizumab and we do not receive any rights from Genentech to research, develop or commercialize atezolizumab except in combination with 5F9. Each party has the sole right to prosecute, maintain and enforce patents relating to its solely owned inventions or discoveries, and we and Genentech shall jointly prosecute, maintain and enforce patents relating to jointly owned inventions or discoveries.

As part of the agreement, we agreed to notify Genentech if we intend to commence discussions with a third party regarding an agreement to commercialize 5F9 in combination with a PD-L1 or PD-1 antagonist. Following such notice, we may not execute any such agreement until the earlier of 30 days following the date of such notice and Genentech's written confirmation that it does not intend to discuss with us a similar commercial arrangement.

The agreement shall expire after the later of (i) five years after its effective date and (ii) the expiration, termination or completion of all studies being performed under the agreement. We and Genentech each have the right to terminate the agreement in the event of a material breach of the agreement by the other party that remains uncured for 30 days after the date that such party is provided with written notice of such breach. In addition, subject to certain discussion obligations and limitations, each party may suspend or terminate a study under the agreement if, based on its review of the study data and other related information, such party determines that the study presents a safety risk or if an applicable regulatory authority withdraws authorization to conduct such study or takes any action that prevents the supply of 5F9 or atezolizumab for use in the study.

Clinical Trial Collaboration and Supply Agreement with Eli Lilly and Company

In August 2016, we entered into a clinical trial collaboration agreement with Eli Lilly and Company and its subsidiary ImClone LLC, collectively Lilly, to evaluate the safety, tolerability and preliminary efficacy of 5F9 combined with Lilly's cancer immunotherapy, cetuximab, a chimeric monoclonal antibody targeting the epidermal growth factor receptor, in a Phase 1b/2 clinical trial in patients with solid tumors and CRC. Pursuant to the agreement, we will act as the sponsor of the study and will hold the applicable regulatory filings relating to the study. Lilly will supply cetuximab for the study at no cost to us, and we will supply 5F9 and bear all other costs of the study.

Under the terms of the agreement, we own the rights to any inventions or discoveries arising from the study that relate solely to 5F9. Lilly owns the rights to any inventions or discoveries arising from the study that relate solely to cetuximab. Both parties will jointly own the rights to inventions or discoveries relating to 5F9 and cetuximab in combination. Pursuant to the agreement, the prosecution, maintenance and defense of patents relating to jointly owned inventions or discoveries will be managed jointly by the parties. Each party has the first right to initiate legal action to enforce patents relating to jointly owned discoveries depending on whether the alleged infringement or misappropriation results from the development or sale of a biosimilar or interchangeable version of 5F9, in which case we will have the first right, or cetuximab, in which case Lilly will have the first right. Each party has the sole right to prosecute, maintain and enforce patents relating to its solely owned inventions or discoveries.

Unless earlier terminated, the agreement will expire after each party completes all of its obligations under the agreement. Each party may terminate the agreement for an uncured material breach by the other party, for certain violations of anti-corruption and other applicable laws by the other party, if such party determines in good faith that the continuation of the study presents an unreasonable safety risk to patients, or if an applicable regulatory authority takes any action that prevents the supply of its respective compound for use in the study. In addition, we can terminate the agreement if we discontinue the development of 5F9, and Lilly can terminate the agreement if cetuximab is no longer commercially available.

Sales and Marketing

Given our stage of development, we have not yet established a commercial organization or distribution capabilities. We plan to build focused capabilities in the United States and European Union to commercialize our development programs focused on NHL, where we believe the patient populations and medical specialists for the indications we are targeting are sufficiently concentrated to allow us to effectively promote our product, if approved for commercial sale, with a targeted sales team. In other markets for which commercialization may be less capital efficient for us, we may selectively pursue strategic collaborations with third parties in order to maximize the commercial potential of our drug candidates.

Manufacturing and Supply

We currently do not own or operate any manufacturing facilities. We rely, and expect to continue to rely for the foreseeable future, on third party contract manufacturing organizations, or CMOs, including Lonza, to

produce our product candidates for preclinical and clinical testing, as well as for commercial manufacture if our product candidates receive marketing approval. We require that our CMOs produce bulk drug substances and finished drug products in accordance with current cGMPs and all other applicable laws and regulations. We maintain agreements with our manufacturers that include confidentiality and intellectual property provisions to protect our proprietary rights related to our product candidates.

We have engaged Lonza to manufacture 5F9 for preclinical and clinical use. Additional CMOs are used to label, package and distribute 5F9 for preclinical and clinical use. We obtain our supplies from these CMOs on a purchase order basis and do not have any long-term supply arrangements in place. We do not currently have arrangements in place for redundant supply. For all of our product candidates, we intend to identify and qualify additional manufacturers to provide the active pharmaceutical ingredient and fill-and-finish services prior to seeking regulatory approval.

In August 2016 and December 2017, we entered into development and manufacturing agreements with Lonza relating to the manufacturing of 5F9-related products. The August 2016 agreement was amended in November 2017 to provide for the manufacturing of our other preclinical program related products.

Under the 2016 agreement, we are required to pay an annual suite reservation fee in each contract year along with the costs of ingredients, solvents and other components of 5F9-related and our preclinical program-related products.

Our payment obligations under the 2017 agreement will begin in January 2019 and run through the expiration of the agreement, which is expected in December 2021, unless the agreement is extended for at least an additional year. Under the 2017 agreement, we must also pay the costs of ingredients, solvents and other components of 5F9-related products required for the performance of the manufacturing process or services.

Competition

The pharmaceutical industry and the immuno-oncology subsector are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary drugs. We face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions, governmental agencies and public and private research institutions. Any drug candidates that we successfully develop and commercialize will compete with existing treatments and new treatments that may become available in the future.

The key competitive factors affecting the success of 5F9, if approved, are likely to be its efficacy, safety, convenience, pricing and durability.

We are aware that Celgene Corporation, Trillium Therapeutics, Alexo Therapeutics, Arch Therapeutics, Surface Oncology, Novimmune, OSE Immunotherapeutics and Aurigene Discovery Technologies and others are developing drugs targeting the CD47 pathway that may have utility for the treatment of indications that we are targeting.

As noted above, there are existing treatment alternatives in each of the indications we are targeting, and we will face competition from the incumbent drug therapies in each of those markets.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize drugs that are safer, more effective, more convenient, less expensive or with a more favorable label than 5F9 or any other drug that we may develop. Our competitors also may obtain FDA or other regulatory approvals for their drugs more rapidly than we may obtain approval for our drug, which could result in our competitors establishing a strong market position before we are able to enter the market. Many of the companies against which we are competing, or against which we may compete in the future, have significantly greater financial

resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved drugs than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors will also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and subject registration for clinical trials, as well as in acquiring technologies complementary to, or that may be necessary for, our programs.

Intellectual Property

Our commercial success depends in part on our ability to obtain and maintain proprietary protection for our current and future product candidates, novel discoveries, product development technologies and know-how, to operate without infringing on the proprietary rights of others and to prevent others from infringing our proprietary rights. We seek to protect our proprietary position by, among other methods, filing or in-licensing U.S. and foreign patents and patent applications related to technology, inventions and improvements that are important to the development and implementation of our business. We also rely on trademarks, trade secrets, copyright protection, know-how, continuing technological innovation and confidential information to develop and maintain our proprietary position.

Regardless of the coverage we seek under our existing patent applications, there is always a risk that an alteration to the product or process may provide sufficient basis for a competitor to avoid infringement claims. In addition, the coverage claimed in a patent application can be significantly reduced before a patent is issued and courts can reinterpret patent scope after issuance. Moreover, many jurisdictions, including the United States, permit third parties to challenge issued patents in administrative proceedings, which may result in further narrowing or even cancellation of patent claims. Moreover, we cannot provide any assurance that any patents will be issued from our pending or any future applications or that any current or future issued patents will adequately protect our intellectual property.

As of December 31, 2017, we own four U.S. provisional patent applications, and our portfolio of licensed patents, which we license from Stanford, includes approximately 91 issued patents (18 of which are in the United States) and approximately 98 pending patent applications (23 of which are in the United States). These licensed patents are expected to expire between 2029 and 2034 excluding any extension of patent term that may be available. For more information regarding our license agreement with Stanford, please see “Business—License and Collaboration Agreements.”

Our patent portfolio licensed from Stanford contains patent families directed to the 5F9 composition of matter and methods of using 5F9 as a monotherapy and in combination with certain other therapeutic compounds, which are comprised of 11 U.S. issued patents, four U.S. patent applications and two granted European patents which have each been validated as national patents in 12 different European countries. These patents are expected to expire between 2029 and 2034 excluding any extension of patent term that may be available.

Provisional patent applications are not eligible to become issued patents until, among other things, we file a non-provisional patent application within 12 months of filing of one or more of our related provisional patent applications. If we do not timely file any non-provisional patent applications, we may lose our priority date with respect to our provisional patent applications and any patent protection on the inventions disclosed in our provisional patent applications. While we intend to timely file non-provisional patent applications relating to our provisional patent applications, we cannot predict whether any such patent applications will result in the issuance of patents that provide us with any competitive advantage.

Individual patents extend for varying periods depending on the date of filing of the patent application or the date of patent issuance and the legal term of patents in the countries in which they are obtained. Generally, utility patents issued for applications filed in the United States are granted a term of 20 years from the earliest effective filing date of a non-provisional patent application. In addition, in certain instances, a patent term can be extended to recapture a portion of the delay by the USPTO, in issuing the patent as well as a portion of the term effectively lost as a result of the FDA regulatory review period. However, as to the FDA component, the restoration period cannot be longer than five years, the total patent term including the restoration period must not exceed 14 years following FDA approval, only one patent applicable to each regulatory review period may be extended and only those claims covering the approved drug or a method for using it may be extended. The duration of foreign patents varies in accordance with provisions of applicable local law, but typically is also 20 years from the earliest effective filing date. The actual protection afforded by a patent may vary on a product-by-product basis and from country to country and can depend upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent.

Furthermore, we rely upon trade secrets and know-how and continuing technological innovation to develop and maintain our competitive position. We seek to protect our proprietary information, in part, using confidentiality agreements with our employees and consultants and any potential commercial partners and collaborators and invention assignment agreements with our employees. We also have implemented or intend to implement confidentiality agreements or invention assignment agreements with our selected consultants and any potential commercial partners. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed through a relationship with a third party. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our commercial partners, collaborators, employees and consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

Our commercial success will also depend in part on not infringing upon, misappropriating or otherwise violating the intellectual or proprietary rights of third parties. The issuance of third-party patents could require us to alter our development or commercial strategies, change our products or processes, obtain licenses to additional third-party patents or other intellectual property or cease certain activities. Our breach of any license agreements or failure to obtain a license to proprietary rights that we may require to develop or commercialize our future products may have an adverse impact on us. Given that patent applications in the United States and certain other jurisdictions are maintained in secrecy for 18 months or potentially longer, and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain of the priority of inventions covered by pending patent applications. Moreover, we may have to participate in interference, revocation, derivation, re-examination, post-grant review, *inter partes* review, or opposition proceedings brought by third parties or declared by the USPTO or an equivalent foreign body. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to Our Intellectual Property.”

Government Regulation

The FDA and comparable regulatory authorities in state and local jurisdictions and in other countries impose substantial and burdensome requirements upon companies involved in the clinical development, manufacture, marketing and distribution of products, such as those we are developing. These agencies and other federal, state and local entities regulate, among other things, the research and development, testing, manufacture, quality control, safety, effectiveness, labeling, storage, record keeping, approval, advertising and promotion, distribution, post-approval monitoring and reporting, sampling and export and import of our product candidates.

United States Government Regulation

In the United States, the FDA regulates pharmaceuticals under the Federal Food, Drug, and Cosmetic Act, or FDCA, the Public Health Service Act, or PHSA, and their implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending applications, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties.

The process required by the FDA before a pharmaceutical product may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's GLP regulations;
- submission to the FDA of an IND which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, at each clinical site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with GCP requirements to establish the safety and efficacy of the proposed drug product for each indication;
- submission to the FDA of a BLA in the case of a biologic such as 5F9;
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with cGMP requirements and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity; and
- FDA review and approval of the BLA.

Preclinical Studies

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some preclinical testing may continue even after the IND is submitted. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

Clinical Trials

Clinical trials involve the administration of the investigational new drug to human patients under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research patients provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB at each

institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their www.clinicaltrials.gov website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

- Phase 1 clinical trial: The drug is initially introduced into healthy human volunteers or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness.
- Phase 2 clinical trial: The drug is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.
- Phase 3 clinical trial: The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. Each of Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

Marketing Approval

Assuming successful completion of the required clinical testing, the results of the preclinical studies and clinical trials, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications. In most cases, the submission of a BLA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act, or PDUFA, guidelines that are currently in effect, the FDA has a goal of ten months from the date of "filing" of a standard BLA to review and act on the submission. This review typically takes 12 months from the date the BLA is submitted to FDA because the FDA has approximately two months to make a "filing" decision.

In addition, under the Pediatric Research Equity Act of 2003, or PREA, as amended and reauthorized, certain applications or supplements must contain data that are adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements.

The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, plan to ensure that the benefits of the drug outweigh its risks. The REMS plan could include medication guides, physician communication plans, assessment plans, or elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

The FDA conducts a preliminary review of all BLAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The

FDA may request additional information rather than accept a BLA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews a BLA to determine, among other things, whether the biologic is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving a BLA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving a BLA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP requirements.

After evaluating the BLA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the application and may require additional clinical or preclinical testing in order for the FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Post-Approval Requirements

Pharmaceuticals manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims are subject to prior FDA review and approval. There also are continuing, annual program user fee requirements for any marketed products, as well as new application fees for supplemental applications with clinical data.

The FDA may impose a number of post-approval requirements as a condition of approval of an application. For example, the FDA may require post-marketing testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, pharmaceutical manufacturers and other entities involved in the manufacture and distribution of approved products are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP requirements and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

Orphan Drug Designation in the United States

Under the Orphan Drug Act of 1983, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States. Orphan drug designation must be requested before submitting a BLA or supplemental BLA. After the FDA grants orphan drug designation, the name of the sponsor, identity of the drug or biologic and its potential orphan use are disclosed publicly by the FDA. The orphan drug designation does not shorten the duration of the regulatory review or approval process, but does provide certain advantages, such as a waiver of PDUFA, fees, enhanced access to FDA staff and potential waiver of pediatric research requirements.

If a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications to market the same drug or biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the application user fee. A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, exclusive marketing rights in the United

States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

In August 2015, the FDA granted orphan drug designation in the United States for 5F9 for the treatment of AML. We intend to pursue orphan drug designation for 5F9 in additional indications, as well as for potential other future product candidates, in the United States and in the European Union as we deem it appropriate. Even if we obtain orphan drug designation for a product candidate, we may not obtain orphan exclusivity and that exclusivity may not effectively protect the drug or biologic from the competition of different drugs or biologics for the same condition, which could be approved during the exclusivity period.

Fast Track Designation

The FDA is required to facilitate the development and expedite the review of pharmaceutical products that are intended for the treatment of a serious or life-threatening condition for which there is no effective treatment and which demonstrate the potential to address unmet medical needs for the condition. Under the fast track program, the sponsor of a new drug candidate may request the FDA to designate the product for a specific indication as a fast track product concurrent with or after the filing of the IND for the product candidate. The FDA must determine if the product candidate qualifies for fast track designation within 60 days after receipt of the sponsor's request.

In addition to other benefits, such as the ability to have more frequent interactions with the FDA, the agency may initiate review of sections of a fast track product's BLA before the application is complete. This rolling review is available if the applicant provides and the FDA approves a schedule for the submission of the remaining information and the applicant pays applicable user fees. However, the FDA's PDUFA review period for a fast track application does not begin until the last section of the BLA is submitted. In addition, the fast track designation may be withdrawn by the FDA if the agency believes that the designation is no longer supported by data emerging in the clinical trial process.

Coverage and Reimbursement

Sales of our drug candidates, if approved, will depend, in part, on the extent to which such products will be covered by third-party payors, such as government health care programs, commercial insurance and managed healthcare organizations. These third-party payors are increasingly limiting coverage or reducing reimbursements for medical products and services. In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Third-party payors decide which therapies they will pay for and establish reimbursement levels. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies. However, decisions regarding the extent of coverage and amount of reimbursement to be provided for any drug candidates that we develop will be made on a payor-by-payor basis. Each payor determines whether or not it will provide coverage for a therapy, what amount it will pay the manufacturer for the therapy, and on what tier of its formulary it will be placed. The position on a payor's list of covered drugs, or formulary, generally determines the co-payment that a patient will need to make to obtain the therapy and can strongly influence the adoption of such therapy by patients and physicians. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. Decreases in third-party reimbursement for our drug candidates or a decision by a third-party payor to not cover our drug candidates could reduce physician usage of our drug candidates, once approved, and negatively impact our sales, results of operations and financial condition.

Other Healthcare Laws

Because of our current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third-party payors, we will also be subject to healthcare regulation and enforcement

by the federal government and the states and foreign governments in which we will conduct our business, including our clinical research, proposed sales, marketing and educational programs. Failure to comply with these laws, where applicable, can result in the imposition of significant civil penalties, criminal penalties, or both. The U.S. laws that may affect our ability to operate, among others, include: HIPAA, as amended by HITECH, which is a federal law governing the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; certain state laws governing the privacy and security of health information in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts; the federal healthcare programs' Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs; federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent; federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters; the Physician Payments Sunshine Act, which requires manufacturers of drugs, devices, biologics and medical supplies to report annually to the U.S. Department of Health and Human Services information related to payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and ownership and investment interests held by physicians and their immediate family members; and state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers.

In addition, many states have similar laws and regulations, such as anti-kickback and false claims laws that may be broader in scope and may apply regardless of payor, in addition to items and services reimbursed under Medicaid and other state programs. Additionally, to the extent that our product is sold in a foreign country, we may be subject to similar foreign laws.

Current and future legislative proposals to further reform healthcare or reduce healthcare costs may result in lower reimbursement for our products. The cost containment measures that payors and providers are instituting and the effect of any healthcare reform initiative implemented in the future could significantly reduce our revenues from the sale of our products.

Orphan Drug Designation in the European Union

In accordance with Article 3 of Regulation (EC) No. 141/2000 of the European Parliament and of the Council of 16 December 1999 on orphan medicinal products, a medicinal product may be designated as an orphan medicinal product if: (1) it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition; (2) either (a) such condition affects no more than five in 10,000 persons in the European Union when the application is made, or (b) the product, without the incentives derived from orphan medicinal product status, would not generate sufficient return in the European Union to justify investment; and (3) there exists no satisfactory method of diagnosis, prevention or treatment of such condition authorized for marketing in the European Union, or if such a method exists, the product will be of significant benefit to those affected by the condition.

Products authorized in the European Union as orphan medicinal products are entitled to 10 years of market exclusivity. The 10-year market exclusivity may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan designation. Additionally, marketing authorization may be granted to a similar product during the 10-year period of market exclusivity for the same therapeutic indication at any time if:

- the second applicant can establish in its application that its product, although similar to the orphan medicinal product already authorized, is safer, more effective or otherwise clinically superior;

- the holder of the marketing authorization for the original orphan medicinal product consents to a second orphan medicinal product application; or
- the holder of the marketing authorization for the original orphan medicinal product cannot supply enough orphan medicinal product.

In November 2015, the EMA granted orphan drug designation in the European Union for 5F9 for the treatment of AML.

U.S. Healthcare Reform

Current and future legislative proposals to further reform healthcare or reduce healthcare costs may result in lower reimbursement for our products. The cost containment measures that payors and providers are instituting and the effect of any healthcare reform initiative implemented in the future could significantly reduce our revenues from the sale of our products.

For example, implementation of the Affordable Care Act has substantially changed healthcare financing and delivery by both governmental and private insurers, and significantly impacted the pharmaceutical industry. The Affordable Care Act, among other things, established an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents, revised the methodology by which rebates owed by manufacturers to the state and federal government for covered outpatient drugs under the Medicaid Drug Rebate Program are calculated, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, and provided incentives to programs that increase the federal government's comparative effectiveness research.

Some of the provisions of the Affordable Care Act have yet to be implemented, and there have been judicial and congressional challenges to certain aspects of the Affordable Care Act. In January 2017, President Trump signed an Executive Order directing federal agencies with authorities and responsibilities under the Affordable Care Act to waive, defer, grant exemptions from, or delay the implementation of any provision of the Affordable Care Act that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The U.S. House of Representatives passed legislation known as the American Health Care Act of 2017 in May 2017. More recently, the Senate Republicans introduced and then updated a bill to replace the Affordable Care Act known as the Better Care Reconciliation Act of 2017. The Senate Republicans also introduced legislation to repeal the Affordable Care Act without companion legislation to replace it, and a "skinny" version of the Better Care Reconciliation Act of 2017. Each of these measures was rejected by the full Senate. Congress will likely consider other legislation to replace elements of the Affordable Care Act.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. For example, in August 2011, then-President Obama signed into law the Budget Control Act of 2011, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction, which triggered the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of, on average, 2% per fiscal year through 2025 unless Congress takes additional action. Recently, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs and reform government program reimbursement methodologies for drugs.

We expect that additional federal and state, as well as foreign, healthcare reform measures will be adopted in the future, any of which could result in reduced demand for our products or additional pricing pressure.

Employees

As of December 31, 2017, we had 43 full-time employees, (i) 30 of whom were primarily engaged in research and development activities and (ii) 15 of whom had an M.D. or Ph.D. degree. None of our employees is represented by a labor union and we consider our employee relations to be good.

Facilities

Our principal executive offices are located at 1490 O'Brien Drive, Suite A, Menlo Park, California, under a lease that expires in 2021. We believe that our facilities are adequate to meet our current needs.

Legal Proceedings

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business.

MANAGEMENT

Executive Officers and Directors

The following table sets forth information concerning our directors and executive officers, including their ages as of December 31, 2017.

Name	Age	Position
Executive Officers		
Mark A. McCamish, M.D.	65	President, Chief Executive Officer and Director
Chris H. Takimoto, M.D.	59	Chief Medical Officer
Craig S. Gibbs, Ph.D.	55	Chief Business Officer
Non-Employee Directors		
Kristine M. Ball(1)(3)	46	Director
Jeffrey W. Bird, M.D.(2)(3)*	57	Director
Dennis J. Henner, Ph.D.(1)	66	Director
Ravindra Majeti, M.D.(2)(3)	45	Director
Christopher J. Schaepe(2)(3)	54	Director
Irving L. Weissman, M.D.	78	Director

(1) Member of the Audit Committee.
(2) Member of the Compensation Committee.
(3) Member of the Nominating and Corporate Governance Committee.
* Lead Director

Executive Officers

Mark A. McCamish, M.D. has served as our President and Chief Executive Officer and as a member of our board of directors since May 2017. From July 2009 to April 2017, Dr. McCamish served as Global Head of Biopharmaceutical Development at Sandoz Inc., a pharmaceutical company. He has over 25 years of experience in corporate management, clinical and pharmaceutical research and academics. Dr. McCamish received both a B.S. in Physical Education and an M.S. in Ergonomics from the University of California at Santa Barbara, a Ph.D. in Human Nutrition from the Pennsylvania State University and an M.D. from the University of California at Los Angeles. We believe Dr. McCamish's experience in the industry, his role as our President and Chief Executive Officer and his knowledge of our company enable him to make valuable contributions to our board of directors.

Chris H. Takimoto, M.D. has served as our Chief Medical Officer since February 2016. From September 2010 to January 2016, Dr. Takimoto served as Vice President of Experimental Medicine Early Development in the Oncology Therapeutic area for Janssen Global Services, LLC, a pharmaceutical company. From 2008 to 2010, Dr. Takimoto served as Senior Director of Translational Medicine of Ortho Biotech Oncology Research and Development, a biotechnology company. He has over twenty years of experience in the industry and academia. Dr. Takimoto received a B.S. in Chemistry from Stanford University, a Ph.D. in Pharmacology from Yale University and an M.D. from Yale University School of Medicine.

Craig S. Gibbs, Ph.D. has served as our Chief Business Officer since September 2015. Dr. Gibbs was an independent consultant from April 2013 to September 2015. From June 1992 to April 2013, Dr. Gibbs served in various positions at Gilead, including as Vice President of Commercial Strategy/Planning and Operations from 2007 to 2013 and as Senior Director, Corporate Development from 2004 to 2007, Senior Director, Biology

Research from 1998 to 2004 and in other research and development positions from 1992 to 1998. Prior to his time at Gilead, Dr. Gibbs served from 1989 to 1992 as Visiting Post-doctoral Scientist at Genentech. Dr. Gibbs received a B.S. in Biochemistry from Massey University, an M.B.A. from Golden Gate University and a Ph.D. in Molecular Biology from the University of Glasgow.

Non-Employee Directors

Kristine M. Ball has served as a member of our board of directors since February 2018. Since September 2017, she has served as Senior Vice President, Corporate Strategy and Chief Financial Officer of Menlo Therapeutics, Inc., a biopharmaceutical company. From November 2012 to October 2016, Ms. Ball served as Chief Financial Officer and Senior Vice President of Relypsa, Inc., a publicly listed pharmaceutical company acquired by Galenica. From June 2011 to October 2012, Ms. Ball was an independent consultant advising start up life science companies on various strategic and operational business matters. From 2005 to 2011, Ms. Ball served as Senior Vice President of Finance and Administration and Chief Financial Officer of KAI Pharmaceuticals, Inc. (acquired by Amgen), a drug discovery company. From 2000 to 2005, Ms. Ball served as Vice President of Finance at Exelixis, Inc., a biotechnology company. Prior to Exelixis, Ms. Ball was a senior manager in Ernst & Young's life sciences audit practice. Ms. Ball received a B.S. from Babson College. We believe Ms. Ball's experience in the pharmaceutical industry, her financial expertise and her executive experience at the public company level enable her to make valuable contributions to our board of directors.

Jeffrey W. Bird, M.D. has served as a member of our board of directors since June 2015. Since July 2003, Dr. Bird has been a managing director of Sutter Hill Ventures, a venture capital firm. Dr. Bird has served as a member of the board of directors of Restoration Robotics, Inc., a medical device company, and Portola Pharmaceuticals, Inc., a pharmaceutical company, since 2005. Previously, Dr. Bird served on the board of directors of Threshold Pharmaceuticals, Inc. from 2008 to 2017 and of Horizon Pharma, Inc. from 2011 to 2014. Dr. Bird received a B.S. in Biological Sciences from Stanford University, a Ph.D. in Cancer Biology from Stanford University and an M.D. from Stanford Medical School. We believe Dr. Bird's experience as an investor in and as a board member of biotechnology and life sciences companies enable him to make valuable contributions to our board of directors.

Dennis J. Henner, Ph.D. has served as a member of our board of directors since November 2015. He is the Chief Scientific Advisor of Clarus Ventures, LLC, a venture capital firm, where he served as Managing Director from the firm's inception in March 2005 to January 2018. Prior to Clarus, Dr. Henner was a General Partner at MPM Capital, a healthcare venture capital firm. From 1981 to 2001, Dr. Henner was an executive at Genentech, where he held various positions including Senior Vice President of Research, and was a member of Genentech's executive committee. Dr. Henner previously served as a member of the board of directors of Aerie Pharmaceuticals, Inc., a pharmaceutical company, from 2012 to 2015, and Humanigen, Inc., a pharmaceutical company, from 2012 to 2013. Dr. Henner received a Ph.D. in Microbiology from the University of Virginia and did postgraduate training at the Scripps Clinic and Research Foundation. We believe Dr. Henner's experience in the pharmaceutical industry and his role in guiding numerous companies in his role as a venture capital investor enable him to make valuable contributions to our board of directors.

Ravindra Majeti, M.D. co-founded our company and has served as a member of our board of directors since May 2015. Dr. Majeti served in various positions at Stanford University, including as an Associate Professor in the Department of Medicine, Division of Hematology, since November 2015, and as an Assistant Professor in the Department of Medicine, Division of Hematology, from 2009 to November 2015. He received an A.B. in Biochemical Sciences from Harvard University, a Ph.D. and an M.D. from the University of California, San Francisco and completed a residency in internal medicine at Brigham and Women's Hospital. Dr. Majeti completed a Fellowship in Hematology at Stanford University. We believe Dr. Majeti's experience as a co-founder of our company and experience in developing 5F9 and the underlying scientific discoveries, his role on our board of directors and his knowledge of our company enable him to make valuable contributions to our board of directors.

Christopher J. Schaepe has served on our board of directors since June 2015. He is a founder of Lightspeed Venture Partners, a venture capital firm, and has served as a Partner since its inception in September 2000. Mr. Schaepe has over 26 years of venture capital experience and has served as a member of the board of directors of Tintri, Inc., a data storage company, since 2009 and Aerohive Networks, Inc., a wireless networking company, since 2006, and previously served as a member of the board of directors of Riverbed Technology, Inc. (acquired by Thoma Bravo, LLC in 2015), a technology company, from 2002 to 2015. He also serves as a member of the board of directors of a number of privately held companies, including Personalis, Inc., a bioinformatics company. He received B.S. and M.S. degrees in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology and an M.B.A. from the Stanford Graduate School of Business. We believe Mr. Schaepe's broad perspective and experience in the industry, his experience guiding numerous companies in his role as a venture capital investor and board member and his substantial professional experience enable him to make valuable contributions to our board of directors.

Irving L. Weissman, M.D. co-founded our company and has served as a member of our board of directors since May 2015. Since 2003, Dr. Weissman has served as the Director of the Stanford Institute for Stem Cell Biology and Regenerative Medicine and Director of the Stanford Ludwig Center for Cancer Stem Cell Research. Dr. Weissman was a member of the founding Scientific Advisory Boards of Amgen, a biotechnology company, and T Cell Sciences, Inc., a biotechnology company. He also previously served as a member of the board of directors of StemCells, Inc., acquired by Microbot Medical Ltd. in 2016, a pharmaceutical company, from 1997 to 2016. He co-founded, served as a Director, and chaired the Scientific Advisory Board at SyStemix, Inc., a biotechnology company, StemCells, Inc., a biotechnology company, and Cellerant Therapeutics, Inc., a biotechnology company. Dr. Weissman is a member of the National Academy of Sciences, the National Academy of Medicine, and the American Association of Arts and Sciences. He received a B.S. from Montana State University and an M.D. from Stanford University School of Medicine. He has several honorary Ph.D.s. We believe Dr. Weissman's experience in the study of cancer stem cells, including the discovery that all cancer stem cells express CD47, his role on our board and his knowledge of our company enable him to make valuable contributions to our board of directors.

There are no family relationships among any of our directors or executive officers.

Board Composition

Certain members of our board of directors were elected pursuant to the provisions of a voting agreement, as amended. Under the terms of this voting agreement, the stockholders who are party to the voting agreement have agreed to vote their respective shares so as to elect: (1) one director designated by Lightspeed Venture Partners X, L.P., currently Mr. Schaepe; (2) one director designated by Sutter Hill Ventures, currently Dr. Bird; (3) one director designated by Clarus Lifesciences III, L.P., currently Dr. Henner; and (4) one director designated by Hadley Harbor Master Investors (Cayman) II L.P., currently Ms. Ball; (5) three directors designated by Drs. Majeti, McCamish and Weissman and other common stockholders, currently Drs. Majeti, McCamish and Weissman. The voting agreement will terminate upon the closing of this offering and none of our stockholders will have any special rights regarding the election or designation of members of our board of directors.

Our board of directors will consist of members upon the closing of this offering. In accordance with our amended and restated certificate of incorporation to be filed in connection with this offering, immediately after this offering, our board of directors will be divided into three classes with staggered three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- the Class I directors will be and and their terms will expire at the annual meeting of stockholders to be held in 2019;
- the Class II directors will be and and their terms will expire at the annual meeting of stockholders to be held in 2020; and

- the Class III directors will be and and their terms will expire at the annual meeting of stockholders to be held in 2021.

We expect that additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control.

Director Independence

Under the listing requirements and rules of the Nasdaq Global Market, independent directors must comprise a majority of our board of directors as a listed company within one year of the closing of this offering.

Our board of directors has undertaken a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that Drs. Bird, Henner, Majeti and Weissman, Ms. Ball and Mr. Schaepe do not have any relationships that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the applicable rules and regulations of the SEC and the listing requirements and rules of the Nasdaq Global Market. In making this determination, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director.

Lead Director

Our corporate governance guidelines and bylaws provide that one of our independent directors shall serve as a lead independent director at any time when an independent director is not serving as the chairperson of the board of directors.

Board Committees

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee. Our board of directors may establish other committees to facilitate the management of our business. The composition and functions of each committee are described below. Members serve on these committees until their resignation or until otherwise determined by our board of directors.

Audit Committee

Effective as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, our audit committee will consist of Ms. Ball and Dr. Henner, each of whom our board of directors has determined satisfies the independence requirements under the applicable listing standards and Rule 10A-3(b)(1) of the Exchange Act. The chair of our audit committee is Ms. Ball, whom our board of directors has determined is an "audit committee financial expert" within the meaning of the SEC regulations. Each member of our audit committee can read and understand fundamental financial statements in accordance with applicable listing standards. In arriving at these determinations, our board of directors has examined each audit committee member's scope of experience and the nature of her or his employment in the corporate finance sector. The functions of this committee include:

- helping our board of directors oversee our corporate accounting and financial reporting processes;
- reviewing and discussing with our management the adequacy and effectiveness of our disclosure controls and procedures;

- assisting with design and implementation of our risk assessment functions;
- evaluating the qualifications, performance and independence of our independent registered public accounting firm and deciding whether to retain its services;
- monitoring the rotation of partners of our independent registered public accounting firm on our engagement team as required by law;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing related party transactions;
- approving, or as permitted, pre-approving, audit and permissible non-audit services to be performed by an independent registered public accounting firm; and
- reviewing and assessing, at least annually, the performance of the audit committee and adequacy of its charter.

Compensation Committee

Effective as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, our compensation committee will consist of Dr. Bird, Dr. Majeti and Mr. Schaepe and the chair of our compensation committee will be Mr. Schaepe. Our board of directors has determined that each of Dr. Bird, Dr. Majeti and Mr. Schaepe is independent under the applicable listing standards, is a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act and is an "outside director" as that term is defined in Section 162(m) of the Internal Revenue Code of 1986, as amended, or Section 162(m). The functions of this committee include:

- reviewing, modifying and overseeing overall compensation strategy and policies;
- reviewing and approving the compensation and other terms of employment of our chief executive officer, other executive officers and senior management, as appropriate;
- reviewing and approving the compensation arrangements with our executive officers and other senior management, as appropriate;
- reviewing and recommending to the full board of directors the compensation of our directors;
- appointing and overseeing the work of compensation consultants, legal counsel or any other advisors and consultants engaged for the purpose of advising the compensation committee;
- adopting and administering equity award plans, compensation plans and similar programs, as well as modification or termination of plans and programs;
- establishing policies with respect to equity compensation arrangements;
- reviewing and evaluating with the chief executive officer the succession plans for our executive officers; and
- reviewing and assessing, at least annually, the performance of the compensation committee and the adequacy of its charter.

Nominating and Corporate Governance Committee

Effective as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, our nominating and corporate governance committee consists of Ms. Ball, Dr. Bird and Dr. Majeti and the chair of our nominating and corporate governance committee will be Dr. Bird. Our board of directors has

determined that Ms. Ball, Dr. Bird and Dr. Majeti are independent under the applicable listing standards. The functions of this committee include:

- reviewing periodically and evaluating director performance of our board of directors and its applicable committees, and recommending to our board of directors and management areas for improvement;
- identifying, evaluating, nominating and recommending individuals for membership on our board of directors;
- reviewing with our chief executive officer the plans for succession to the offices of our executive officers and make recommendations to our board of directors with respect to the selection of appropriate individuals to succeed to these positions;
- reviewing and recommending to our board of directors any amendments to our corporate governance policies; and
- reviewing and assessing, at least annually, the performance of the nominating and corporate governance committee and the adequacy of its charter.

Code of Conduct

We have adopted a Code of Conduct that applies to all of our employees, officers (including our principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions), agents and representatives, including directors and consultants. The full text of our Code of Conduct will be posted on our website at www.fortyseveninc.com. We intend to disclose future amendments to certain provisions of our Code of Conduct, or waivers of such provisions, applicable to any principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, and our directors, on our website identified above. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus.

Compensation Committee Interlocks and Insider Participation

None of the members of the compensation committee is currently, or has been at any time, one of our officers or employees. None of our executive officers currently serves, or has served during the last calendar year, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our board of directors or compensation committee.

Non-Employee Director Compensation

Cash Compensation

No cash compensation was paid to our non-employee directors in 2017 for their services as members of the board of directors. In June 2015 we entered into a consulting agreement with each of Dr. Majeti and Dr. Weissman, pursuant to which they are paid an annual consulting fee of $75,000 and $100,000, respectively, for providing input regarding our scientific and clinical development programs. Although we do not have a written policy, we generally reimburse our directors for their reasonable out-of-pocket expenses incurred in attending board of directors and committee meetings.

Equity Incentive Compensation

Kristine M. Ball joined our board of directors in February 2018 and in March 2018 received an option to purchase 540,000 shares of common stock at an exercise price of $1.13 per share.

Future Director Compensation

Prior to the closing of this offering, we expect to implement a formal policy pursuant to which our non-employee directors will be eligible to receive compensation for service on our board of directors and committees of our board of directors.

EXECUTIVE COMPENSATION

Our named executive officers for the year ended December 31, 2017, consisting of our principal executive officer and the next two most highly compensated executive officers, were:

- Mark A. McCamish, M.D., our President and Chief Executive Officer;
- Chris H. Takimoto, M.D., our Chief Medical Officer; and
- Craig S. Gibbs, Ph.D., our Chief Business Officer.

2017 Summary Compensation Table

The following table sets forth all of the compensation awarded to or earned by or paid to our named executive officers during 2017.

Name and Principal Position	Year	Salary	Option Awards(1)	All Other Compensation	Total
Mark A. McCamish, M.D. President and Chief Executive Officer	2017	$266,666	$3,378,384	$ 32,351(2)(3)	$3,677,401
Chris H. Takimoto, M.D. Chief Medical Officer	2017	386,776	314,176	14,999(2)(4)	715,951
Craig S. Gibbs, Ph.D. Chief Business Officer	2017	313,620	226,832	9,409(2)	549,861

(1) Amounts reported represent the aggregate grant date fair value of stock options granted to our named executive officers during 2017 under our 2015 Equity Incentive Plan, computed in accordance with ASC Topic 718. Assumptions used in the calculation of these amounts are included in Note 3 to our financial statements included in this prospectus. Our named executive officers will only realize compensation to the extent the trading price of our common stock is greater than the exercise price of such stock options.

(2) Includes contributions by us to the named executive officer's 401(k) plan account.

(3) Includes $24,351 in reimbursement paid to Dr. McCamish for housing expenses.

(4) Includes $3,396 in reimbursement paid to Dr. Takimoto for moving and relocation expenses.

Outstanding Equity Awards as of December 31, 2017

The following table provides information about outstanding equity awards held by each of our named executive officers at December 31, 2017. All awards were granted under our 2015 Equity Incentive Plan.

			Option Awards				Stock Awards	
Name	Grant Date	Vesting Commencement Date	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price	Option Expiration Date	Number of Shares of Stock That Have Not Vested (#)	Market Value of Shares of Stock That Have Not Vested
Mark A. McCamish, M.D.	06/08/2017	05/01/2017	—	3,750,000(1)(7)	$ 0.63	06/07/2027	—	—
	06/08/2017	05/01/2017	—	—	0.63	06/07/2027	250,000(9)	$ 170,000(10)
	08/15/2017	08/15/2017	1,252,236(2)(7)	—	0.63	08/14/2027	—	—
	11/28/2017	11/08/2017	2,590,354(2)(7)	—	0.68	11/27/2027	—	—
Chris H. Takimoto, M.D.	02/26/2016	02/08/2016	1,300,000(3)(8)	—	0.26	02/25/2026	—	—
	08/15/2017	08/15/2017	100,000(4)(8)	—	0.63	08/14/2027	—	—
	11/28/2017	11/08/2017	600,000(4)(8)	—	0.68	11/27/2027	—	—
Craig S. Gibbs, Ph.D.	01/22/2016	09/14/2015	875,000(5)	—	0.26	01/21/2026	—	—
	11/28/2017	11/08/2017	500,000(6)	—	0.68	11/27/2027	—	—

(1) 1/4th of the shares subject to the option will vest one year after the vesting commencement date and 1/48th of the shares subject to the option will vest monthly thereafter.

(2) 1/48th of the shares subject to the option vest monthly measured from the vesting commencement date. As of December 31, 2017, 104,353 shares and 53,965 shares are vested, respectively.

(3) 1/4th of the shares subject to the option will vest one year after the vesting commencement date and 1/48th of the shares subject to the option will vest monthly thereafter. As of December 31, 2017, 595,833 shares are vested.

(4) 1/48th of the shares subject to the option vest monthly measured from the vesting commencement date. As of December 31, 2017, 8,333 shares and 12,500 shares are vested, respectively.

(5) 1/4th of the shares subject to the option will vest one year after the vesting commencement date and 1/48th of the shares subject to the option will vest monthly thereafter. As of December 31, 2017, 109,375 shares are vested.

(6) 1/48th of the shares subject to the option vest monthly measured from the vesting commencement date. As of December 31, 2017, 10,416 shares are vested.

(7) During the 12 months following a change in control, if (a) Dr. McCamish is involuntarily terminated without cause or (b) Dr. McCamish resigns for good reason and in either case, other than as a result of death or disability, and provided such termination constitutes a separation from service, without regard to any alternative definition thereunder), then the vesting and exercisability of the option shall be accelerated such that 100% of the total unvested shares under the option shall be vested.

(8) During the 12 months following a change in control and the three months preceding a change of control, if (a) Dr. Takimoto is involuntarily terminated without cause or (b) Dr. Takimoto resigns for good reason and in either case, other than as a result of death or disability, and provided such termination constitutes a separation from service, without regard to any alternative definition thereunder), then the vesting and exercisability of the option shall be accelerated such that 50% of the total unvested shares under the option shall be vested.

(9) The shares were acquired pursuant to an early exercise provision and remain subject to our repurchase right in accordance with the vesting schedule of the options at the lower of fair market value or the exercise price of $0.63 per share. 1/4th of the shares will vest one year after the vesting commencement date and 1/48th of the shares subject to the option will vest monthly thereafter. During the 12 months following a change in control, if (a) Dr. McCamish is involuntarily terminated without cause or (b) Dr. McCamish resigns for

good reason and in either case, other than as a result of death or disability, and provided such termination constitutes a separation from service, without regard to any alternative definition thereunder), then the vesting and exercisability of the shares shall be accelerated such that 100% of the total unvested shares shall be vested.

(10) Based on an estimated fair market value of $0.68 per share as of December 31, 2017.

Emerging Growth Company Status

We are an "emerging growth company," as defined in the JOBS Act. As an emerging growth company we will be exempt from certain requirements related to executive compensation, including the requirements to hold a nonbinding advisory vote on executive compensation and to provide information relating to the ratio of total compensation of our President and Chief Executive Officer to the median of the annual total compensation of all of our employees, each as required by the Investor Protection and Securities Reform Act of 2010, which is part of the Dodd-Frank Act.

Pension Benefits

Our named executive officers did not participate in, or otherwise receive any benefits under, any pension or retirement plan sponsored by us during 2017.

Nonqualified Deferred Compensation

Our named executive officers did not participate in, or earn any benefits under, a nonqualified deferred compensation plan sponsored by us during 2017.

2018 Annual Bonus Plan

Our compensation committee adopted our Forty Seven, Inc. 2018 Annual Bonus Plan, or 2018 Bonus Plan, which provides for a cash bonus for our officers, including our Named Executive Officers. Under our 2018 Bonus Plan, the board of directors determined the individual and corporate performance goals applicable to any award for 2018. Each eligible participant has an opportunity to earn an annual payment based on achievement of these individual and corporate performance goals. Performance goals for individuals are assessed on a case by case basis. Individuals are eligible for a merit-based bonus in an amount set based on employment grade, which is then multiplied by a percentage, up to 100%, based on achievement of corporate performance goals. This is then eligible for a discretionary adjustment, up to 150%, based on individual performance.

Employment, Severance and Change in Control Agreements

We have offer letters with each of our executive officers. The offer letters generally provide for at-will employment and set forth the executive officer's initial base salary, eligibility for employee benefits and confirmation of the terms of previously issued equity grants, including in some cases severance benefits on a qualifying termination of employment. In addition, each of our executive officers has executed our standard proprietary information and inventions agreement. The key terms of employment with our named executive officers are described below. See "Executive Compensation—Outstanding Equity Awards as of December 31, 2017" for information on outstanding options for our named executive officers.

Mark A. McCamish

In November 2016, we entered into an offer letter with Dr. McCamish, our President and Chief Executive Officer. Pursuant to the offer letter, Dr. McCamish's initial base salary was established at $400,000 per year. In addition, Dr. McCamish was initially eligible to receive an annual cash bonus of up to 40% of his annual base salary based upon achievement of mutually agreed upon performance objectives and other criteria determined by our board of directors. He is entitled to reimbursement for up to $30,000 per year for commuting and living expenses in connection with his work at our headquarters. Pursuant to his offer letter, if within 12 months

following a change in control (as defined in the 2015 Equity Incentive Plan), Dr. McCamish is terminated without cause (as defined in the 2015 Equity Incentive Plan) or terminates his employment for good reason (as defined in his offer letter), (i) the vesting and exercisability of any unvested shares subject to Dr. McCamish's options will be accelerated and vest in full immediately prior to such termination, (ii) with respect to the 250,000 shares of common stock purchased by Dr. McCamish upon the early-exercise of a stock option, such shares will vest in full immediately prior to such termination and our right to repurchase such shares will terminate and (iii) he shall be entitled to receive certain additional severance benefits including 12 months of his current base salary and COBRA premium payments until the earlier of 12 months following his termination, the expiration of his eligibility for COBRA or the date he becomes eligible for health insurance coverage in connection with new employment.

If, at any time, Dr. McCamish's employment is terminated without cause (as defined in the 2015 Equity Incentive Plan), and other than as a result of his death or disability or in connection with a change in control (as defined in the 2015 Equity Incentive Plan), Dr. McCamish shall be entitled to receive certain severance benefits including six months of his current base salary and COBRA premium payments for the earlier of six months following his termination, the expiration of his eligibility or the date he becomes eligible for health insurance coverage in connection with new employment.

Chris H. Takimoto

In January 2016, we entered into an employment agreement with Dr. Takimoto, our Chief Medical Officer. Pursuant to the employment agreement, Dr. Takimoto's initial base salary was established at $375,000 per year.

If, at any time, Dr. Takimoto's employment is terminated without cause (as defined in his offer letter), and other than as a result of his death or disability or in connection with a change in control (as defined in the 2015 Equity Incentive Plan), Dr. Takimoto shall be entitled to receive certain severance benefits including six months of his current base salary and COBRA premium payments for the earlier of six months following his termination, the expiration of his eligibility for COBRA or the date he becomes eligible for health insurance coverage in connection with new employment.

Craig S. Gibbs

In August 2015, we entered into an offer letter with Dr. Gibbs, our Chief Business Officer. Pursuant to the offer letter, Dr. Gibbs' initial base salary was established at $300,000 per year. Dr. Gibbs' base salary for 2017 is $313,620 per year.

Employee Benefit Plans

We believe that our ability to grant equity-based awards is a valuable and necessary compensation tool that aligns the long-term financial interests of our employees, consultants and directors with the financial interests of our stockholders. In addition, we believe that our ability to grant options and other equity-based awards helps us to attract, retain and motivate employees, consultants and directors and encourages them to devote their best efforts to our business and financial success. The principal features of our equity incentive plans and our 401(k) plan are summarized below. These summaries are qualified in their entirety by reference to the actual text of the plans, which, other than the 401(k) plan, are filed as exhibits to the registration statement of which this prospectus is a part.

2018 Equity Incentive Plan

Our board of directors adopted our 2018 Equity Incentive Plan, or our 2018 Plan, in 2018, and our stockholders approved the 2018 Plan in 2018. Our 2018 Plan provides for the grant of incentive stock options to our employees and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, performance cash awards and other forms of equity compensation to our employees, directors and consultants.

Authorized Shares

We have initially reserved shares of common stock for issuance under the 2018 Plan. In addition, the number of shares of common stock reserved for issuance under our 2018 Plan will automatically increase on the first day of January for a period of up to ten years, commencing on January 1, 2019, in an amount equal to % of the total number of shares of our capital stock outstanding on the last day of the preceding year, or a lesser number of shares determined by our board of directors. The maximum number of shares of common stock that may be issued upon the exercise of incentive stock options under our 2018 Plan is .

Shares subject to stock awards granted under our 2018 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, do not reduce the number of shares available for issuance under our 2018 Plan. Additionally, shares issued pursuant to stock awards under our 2018 Plan that we repurchase or that are forfeited, as well as shares used to pay the exercise price of a stock award or to satisfy the tax withholding obligations related to a stock award, become available for future grant under our 2018 Plan.

Plan Administration

Our board of directors, or a duly authorized committee of our board of directors, will administer our 2018 Plan. Our board of directors may also delegate to one or more of our officers the authority to (1) designate employees (other than officers) to receive specified stock awards and (2) determine the number of shares subject to such stock awards. Under the 2018 Plan, our board of directors has the authority to determine the terms of awards, including recipients, the exercise, purchase or strike price of stock awards, if any, the number of shares subject to each stock award, the fair market value of a share of common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, the form of consideration, if any, payable upon exercise or settlement of the award and the terms of the award agreements.

The board of directors may also modify outstanding awards under our 2018 Plan, with the consent of any adversely affected participant. The board of directors has the authority to reprice any outstanding option or stock appreciation right, cancel any outstanding stock award in exchange for new stock awards, cash or other consideration, or take any other action that is treated as a repricing under generally accepted accounting principles, with the consent of any adversely affected participant.

Stock Options

Incentive stock options and nonstatutory stock options are granted pursuant to stock option agreements adopted by the plan administrator. The plan administrator determines the exercise price for stock options, within the terms and conditions of the 2018 Plan, provided that the exercise price of a stock option generally cannot be less than 100% of the fair market value of common stock on the date of grant. Options granted under the 2018 Plan vest at the rate specified by the plan administrator.

The plan administrator determines the term of stock options granted under the 2018 Plan, up to a maximum of ten years. Unless the terms of an option holder's stock option agreement provide otherwise, if an option holder's service relationship with us, or any of our affiliates, ceases for any reason other than disability, death or cause, the option holder may generally exercise any vested options for a period of three months following the option holder's cessation of service. The option term may be extended in the event that exercise of the option or sale of the underlying shares following such a termination of service is prohibited by applicable securities laws or by our insider trading policy. If an option holder's service relationship with us or any of our affiliates ceases due to disability or death, or an option holder dies within a certain period following cessation of service, the option holder or a beneficiary may generally exercise any vested options for a period of 12 months in the event of disability and 18 months in the event of death. Options generally terminate immediately upon the termination of the individual for cause. In no event may an option be exercised beyond the expiration of its term.

The plan administrator will determine acceptable consideration for the purchase of common stock issued upon the exercise of a stock option, which may include the following methods: (1) cash, check, bank draft or

money order; (2) a broker-assisted cashless exercise procedure; (3) the tender of shares of common stock previously owned by the option holder; (4) if the option is a nonstatutory stock option, by a net exercise arrangement; and (5) other legal consideration set forth in the applicable award agreement.

In general, options are not transferable except by will, the laws of descent and distribution, or as otherwise provided by the plan administrator under our 2018 Plan. An option holder may designate a beneficiary, however, who may exercise the option following the option holder's death.

Tax Limitations on Incentive Stock Options

The aggregate fair market value, determined at the time of grant, of common stock with respect to incentive stock options that are exercisable for the first time by an option holder during any calendar year under all of our stock plans may not exceed $100,000. Options or portions thereof that exceed such limit will generally be treated as nonstatutory stock options. No incentive stock option may be granted to any person who, at the time of grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our affiliates unless (1) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant and (2) the term of the incentive stock option does not exceed five years from the date of grant.

Restricted Stock Unit Awards

Restricted stock unit awards are granted pursuant to restricted stock unit award agreements adopted by the plan administrator. Restricted stock unit awards may be granted in consideration for any form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. A restricted stock unit award may be settled by cash, delivery of stock, a combination of cash and stock as deemed appropriate by the plan administrator, or in any other form of consideration set forth in the restricted stock unit award agreement. Additionally, dividend equivalents may be credited in respect of shares covered by a restricted stock unit award. Except as otherwise provided in the applicable award agreement, restricted stock units that have not vested will be forfeited upon the participant's cessation of continuous service for any reason.

Restricted Stock Awards

Restricted stock awards are granted pursuant to restricted stock award agreements adopted by the plan administrator. A restricted stock award may be awarded in consideration for cash, check, bank draft or money order, past services to us, or any other form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. The plan administrator determines the terms and conditions of restricted stock awards, including vesting and forfeiture terms. If a participant's service relationship with us ceases for any reason, we may receive through a forfeiture condition or a repurchase right any or all of the shares of common stock held by the participant that have not vested as of the date the participant terminates service with us.

Stock Appreciation Rights

Stock appreciation rights are granted pursuant to stock appreciation grant agreements adopted by the plan administrator. The plan administrator determines the purchase price or strike price for a stock appreciation right, which generally cannot be less than 100% of the fair market value of common stock on the date of grant. Upon the exercise of a stock appreciation right, we will pay the participant an amount equal to the product of (1) the excess, if any, of the per share fair market value of common stock on the date of exercise over the purchase price or strike price and (2) the number of shares of common stock with respect to which the stock appreciation right is exercised. This amount may be paid in shares of common stock, in cash, in any combination of cash and shares of common stock or in any other form of consideration, as determined by the plan administrator and set forth in the award agreement. A stock appreciation right granted under the 2018 Plan vests at the rate specified in the stock appreciation right agreement as determined by the plan administrator.

The plan administrator determines the term of stock appreciation rights granted under the 2018 Plan, which may be up to a maximum of ten years. Unless the terms of a participant's stock appreciation right agreement provides otherwise, if a participant's service relationship with us or any of our affiliates ceases for any reason other than cause, disability or death, the participant may generally exercise any vested stock appreciation right for a period of three months following the cessation of service. The term of the stock appreciation right may be further extended in the event that exercise of the stock appreciation right following such a termination of service is prohibited by applicable securities laws or by our insider trading policy. If a participant's service relationship with us, or any of our affiliates, ceases due to disability or death, or a participant dies within a certain period following cessation of service, the participant (or, if applicable, a beneficiary) may generally exercise any vested stock appreciation right for a period of 12 months (in the case of disability) or 18 months (in the case of death). Stock appreciation rights generally terminate immediately upon the occurrence of the event giving rise to the termination of the individual for cause. In no event may a stock appreciation right be exercised beyond the expiration of its term.

Performance Awards

The 2018 Plan permits the grant of performance-based stock and cash awards. Our compensation committee may structure awards so that the stock or cash will be issued or paid only following the achievement of certain pre-established performance goals during a designated performance period.

Our compensation committee may establish performance goals by selecting from one or more of the following performance criteria: (1) earnings (including earnings per share and net earnings); (2) earnings before interest, taxes and depreciation; (3) earnings before interest, taxes, depreciation and amortization; (4) earnings before interest, taxes, depreciation, amortization and legal settlements; (5) earnings before interest, taxes, depreciation, amortization, legal settlements and other income (expense); (6) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense) and stock-based compensation; (7) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense), stock-based compensation and changes in deferred revenue; (8) total stockholder return; (9) return on equity or average stockholder's equity; (10) return on assets, investment or capital employed; (11) stock price; (12) margin (including gross margin); (13) income (before or after taxes); (14) operating income; (15) operating income after taxes; (16) pre-tax profit; (17) operating cash flow; (18) sales or revenue targets; (19) increases in revenue or product revenue; (20) expenses and cost reduction goals; (21) improvement in or attainment of working capital levels; (22) economic value added (or an equivalent metric); (23) market share; (24) cash flow; (25) cash flow per share; (26) share price performance; (27) debt reduction; (28) implementation or completion of projects or processes; (29) stockholders' equity; (30) capital expenditures; (31) debt levels; (32) operating profit or net operating profit; (33) workforce diversity; (34) growth of net income or operating income; (35) billings; (36) bookings; (37) employee retention; (38) budget management; (39) partner satisfaction; (40) entry into or completion of strategic partnerships or transactions (including in-licensing and out-licensing of intellectual property and acquisitions); and (41) other measures of performance selected by board of directors.

Our board of directors may establish performance goals on a company-wide basis, with respect to one or more business units, divisions, affiliates or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless otherwise specified by our board of directors (i) in the award agreement at the time the award is granted or (ii) in such other document setting forth the performance goals at the time the performance goals are established, our board of directors will appropriately make adjustments in the method of calculating the attainment of the performance goals as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of any "extraordinary items" as determined under generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by us achieved performance

objectives at targeted levels during the balance of a performance period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of common stock by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock-based compensation and the award of bonuses under our bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; (11) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; and (12) to exclude the effect of any other unusual, nonrecurring gain or loss or other extraordinary item.

Other Stock Awards

The plan administrator may grant other awards based in whole or in part by reference to common stock. The plan administrator will set the number of shares under the stock award and all other terms and conditions of such awards.

Changes to Capital Structure

In the event there is a specified type of change in our capital structure, such as a stock split, reverse stock split, or recapitalization, appropriate adjustments will be made to (1) the class and maximum number of shares reserved for issuance under the 2018 Plan, (2) the class and maximum number of shares by which the share reserve may increase automatically each year, (3) the class and maximum number of shares that may be issued upon the exercise of incentive stock options, and (4) the class and number of shares and exercise price, strike price, or purchase price, if applicable, of all outstanding stock awards.

Corporate Transactions

Our 2018 Plan provides that in the event of certain specified significant corporate transactions, including: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) the consummation of a merger or consolidation where we do not survive the transaction and (4) the consummation of a merger or consolidation where we do survive the transaction but the shares of common stock outstanding prior to such transaction are converted or exchanged into other property by virtue of the transaction, each outstanding award will be treated as the administrator determines unless otherwise provided in an award agreement or other written agreement between us and the award holder. The administrator may (1) arrange for the assumption, continuation or substitution of a stock award by a successor corporation; (2) arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation; (3) accelerate the vesting, in whole or in part, of the stock award and provide for its termination prior to the transaction; (4) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us; (5) cancel or arrange for the cancellation of the stock award prior to the transaction in exchange for a cash payment, if any, determined by the board; or (6) make a payment, in the form determined by the board, equal to the excess, if any, of the value of the property the participant would have received upon exercise of the awards prior to the transaction over any exercise price payable by the participant in connection with the exercise. The plan administrator is not obligated to treat all stock awards or portions of stock awards, even those that are of the same type, in the same manner.

In the event of a change in control, awards granted under the 2018 Plan will not receive automatic acceleration of vesting and exercisability, although this treatment may be provided for in an award agreement. Under the 2018 Plan, a change in control is defined to include (1) the acquisition of any person of more than 50% of the combined voting power of our then outstanding stock; (2) a merger, consolidation or similar transaction in which our stockholders immediately prior to the transaction do not own, directly or indirectly, more than 50% of the combined voting power of the surviving entity (or the parent of the surviving entity); (3) a sale, lease, exclusive license or other disposition of all or substantially all of our assets to an entity that did not previously hold more than 50% of the voting power over our capital stock and (4) individuals who constitute our incumbent board of directors ceasing to constitute at least a majority of our board of directors.

Transferability

A participant may not transfer stock awards under our 2018 Plan other than by will, the laws of descent and distribution or as otherwise provided under our 2018 Plan.

Plan Amendment or Termination

Our board of directors has the authority to amend, suspend, or terminate our 2018 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. No incentive stock options may be granted after the tenth anniversary of the date our board of directors adopted our 2018 Plan. No stock awards may be granted under our 2018 Plan while it is suspended or after it is terminated.

2015 Equity Incentive Plan

Our board of directors adopted our 2015 Equity Incentive Plan, or our 2015 Plan, in May 2015 and our stockholders approved the 2015 Plan in November 2015. Our 2015 Plan was amended most recently in October 2017. Our 2015 Plan allows for the grant of incentive stock options to employees, including employees of any parent or subsidiary, and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards and other stock awards to employees, directors and consultants, including employees and consultants of our affiliates.

Our 2018 Plan will become effective on the execution of the underwriting agreement related to this offering. As a result, we do not expect to grant any additional awards under the 2015 Plan following that date. Any awards granted under the 2015 Plan will remain subject to the terms of our 2015 Plan and applicable award agreements.

Authorized Shares

The maximum number of shares of common stock that may be issued under our 2015 Plan is 23,579,943. Shares subject to stock awards granted under our 2015 Plan that expire, are forfeited, or terminate without being issued in full or are settled in cash do not reduce the number of shares available for issuance under our 2015 Plan. Additionally, shares used to pay the exercise price of a stock award or to satisfy the tax withholding obligations related to a stock award become available for future grant under our 2015 Plan.

Plan Administration

Our board of directors or a duly authorized committee of our board of directors administers our 2015 Plan and the stock awards granted under it. Our board of directors may also delegate to one or more of our officers the authority to (1) designate non-officer employees to receive specified stock awards and (2) determine the number of shares subject to such stock awards. Under our 2015 Plan, the board of directors has the authority to determine and amend the terms of awards and underlying agreements, including: recipients; the exercise, purchase or strike price of stock awards, if any; the number of shares subject to each stock award; the vesting schedule applicable to the awards, together with any vesting acceleration; and the form of consideration, if any, payable on exercise or settlement of the award.

Under the 2015 Plan, the board of directors also generally has the authority to effect, with the consent of any adversely affected participant: the reduction of the exercise price of any outstanding equity award; the cancellation of any outstanding equity award and the grant in substitution therefore of other awards, cash, or other consideration; or any other action that is treated as a repricing under generally accepted accounting principles.

Corporate Transactions

Our 2015 Plan provides that in the event of certain specified significant corporate transactions, generally including: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of at least 90% of our

outstanding securities, (3) the consummation of a merger or consolidation where we do not survive the transaction, and (4) the consummation of a merger or consolidation where we do survive the transaction but the shares of common stock outstanding before such transaction are converted or exchanged into other property by virtue of the transaction, unless otherwise provided in an award agreement or other written agreement between us and the award holder, the administrator may take one or more of the following actions with respect to such stock awards: (1) arrange for the assumption, continuation or substitution of a stock award by a successor corporation, (2) arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation (or the successor corporation's parent company), (3) accelerate the vesting, in whole or in part, of the stock award and provide for its termination before the transaction, (4) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us, (5) cancel or arrange for the cancellation of the stock award before the transaction in exchange for a cash payment, if any, as determined by the board of directors in its sole discretion, or (6) make a payment, in the form determined by the board of directors, equal to the excess, if any, of the value of the property the participant would have received on exercise of the stock award before the transaction over any exercise price payable by the participant in connection with the exercise. The plan administrator is not obligated to treat all stock awards, even those that are of the same type, or all participants, in the same manner.

In the event of a change in control, awards granted under the 2015 Plan will not receive automatic acceleration of vesting and exercisability, although the board of directors may provide for this treatment in an award agreement. Under the 2015 Plan, a change in control is defined to include (1) the acquisition by any person of more than 50% of the combined voting power of our then outstanding stock, (2) a merger, consolidation or similar transaction in which our stockholders immediately before the transaction do not own, directly or indirectly, more than 50% of the combined voting power of the surviving entity (or the parent of the surviving entity), (3) our stockholders approve or our board of directors approves a plan of complete dissolution or liquidation or a complete dissolution or liquidation otherwise occurs except for a liquidation into a parent corporation, (4) a sale, lease, exclusive license or other disposition of all or substantially all of the assets to an entity that did not previously hold more than 50% of the voting power of our stock and (5) individuals who constitute our incumbent board of directors ceasing to constitute at least a majority of our board of directors.

Transferability

Under our 2015 Plan, the board of directors may provide for limitations on the transferability of awards, in its sole discretion. Option awards are generally not transferable other than by will or the laws of descent and distribution, except as otherwise provided under our 2015 Plan.

Plan Amendment or Termination. Our board of directors has the authority to amend, suspend, or terminate our 2015 Plan, although certain material amendments require the approval of our stockholders, and amendments that would impair the rights of any participant require the consent of that participant. No stock awards may be granted under our 2015 Plan after it is terminated.

2018 Employee Stock Purchase Plan

Our board of directors adopted our 2018 Employee Stock Purchase Plan, or the ESPP in 2018, and our stockholders approved our ESPP in 2018. The ESPP will become effective upon the execution of the underwriting agreement related to this offering. The purpose of the ESPP is to secure the services of new employees, to retain the services of existing employees, and to provide incentives for such individuals to exert maximum efforts toward our success and that of our affiliates. The ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code for U.S. employees. In addition, the ESPP authorizes grants of purchase rights that do not comply with Section 423 of the Code under a separate non-423 component. In particular, where such purchase rights are granted to any employees who are foreign nationals or employed or located outside the United States, our board of directors may adopt rules that are beyond the scope of Section 423 of the Code.

Share Reserve. Following this offering, the ESPP authorizes the issuance of shares of common stock under purchase rights granted to our employees or to employees of any of our designated affiliates. The number of shares of common stock reserved for issuance will automatically increase on January 1st of each year, beginning on January 1, 2019 (assuming the ESPP becomes effective in 2018) through January 1, 2028, by the lesser of (1) % of the total number of shares of common stock outstanding on the last day of the calendar month before the date of the automatic increase, and (2) shares; provided that before the date of any such increase, our board of directors may determine that such increase will be less than the amount set forth in clauses (1) and (2). As of the date hereof, no shares of common stock have been purchased under the ESPP.

Administration. Our board of directors has delegated its authority to administer the ESPP to our compensation committee. The ESPP is implemented through a series of offerings under which eligible employees are granted purchase rights to purchase shares of common stock on specified dates during such offerings. Under the ESPP, we may specify offerings with durations of not more than 27 months, and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of common stock will be purchased for employees participating in the offering. We currently intend to have six month offerings with one purchase period per offering, except that the first purchase period under our first offering may be longer than six months, depending on the date on which the underwriting agreement relating to this offering becomes effective. An offering under the ESPP may be terminated under certain circumstances.

Payroll Deduction. Generally, all regular employees, including executive officers, employed by us or by any of our designated affiliates, may participate in the ESPP and may contribute, normally through payroll deductions, up to 15% of their earnings (as defined in the ESPP) for the purchase of common stock under the ESPP. Unless otherwise determined by our board of directors, common stock will be purchased for the accounts of employees participating in the ESPP at a price per share that is at least the lesser of (1) 85% of the fair market value of a share of common stock on the first date of an offering, or (2) 85% of the fair market value of a share of common stock on the date of purchase. For the initial offering, which we expect will commence on the execution and delivery of the underwriting agreement relating to this offering, the fair market value on the first day of the offering period will be the price at which shares of common stock are first sold to the public.

Limitations. Employees may have to satisfy one or more of the following service requirements before participating in the ESPP, as determined by our board of directors, including: (1) being customarily employed for more than 20 hours per week, (2) being customarily employed for more than five months per calendar year, or (3) continuous employment with us or one of our affiliates for a period of time (not to exceed two years). No employee may purchase shares under the ESPP at a rate in excess of $25,000 worth of common stock based on the fair market value per share of common stock at the beginning of an offering for each year such a purchase right is outstanding. Finally, no employee will be eligible for the grant of any purchase rights under the ESPP if immediately after such rights are granted, such employee has voting power over 5% or more of our outstanding capital stock measured by vote or value under Section 424(d) of the Code.

Changes to Capital Structure. In the event that there occurs a change in our capital structure through such actions as a stock split, merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, liquidating dividend, combination of shares, exchange of shares, change in corporate structure, or similar transaction, the board of directors will make appropriate adjustments to: (1) the number of shares reserved under the ESPP, (2) the maximum number of shares by which the share reserve may increase automatically each year, (3) the number of shares and purchase price of all outstanding purchase rights, and (4) the number of shares that are subject to purchase limits under ongoing offerings.

Corporate Transactions. In the event of certain significant corporate transactions, including: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) the consummation of a merger or consolidation where we do not survive the transaction, and (4) the consummation of a merger or consolidation where we do survive the transaction but the shares of common stock outstanding

immediately before such transaction are converted or exchanged into other property by virtue of the transaction, any then-outstanding rights to purchase our stock under the ESPP may be assumed, continued or substituted for by any surviving or acquiring entity (or its parent company). If the surviving or acquiring entity (or its parent company) elects not to assume, continue, or substitute for such purchase rights, then the participants' accumulated payroll contributions will be used to purchase shares of common stock within ten business days before such corporate transaction, and such purchase rights will terminate immediately.

ESPP Amendment or Termination. Our board of directors has the authority to amend or terminate our ESPP, provided that except in certain circumstances such amendment or termination may not materially impair any outstanding purchase rights without the holder's consent. We will obtain stockholder approval of any amendment to our ESPP as required by applicable law or listing requirements.

Health and Welfare Benefits

We pay premiums for medical insurance, dental insurance and vision insurance for all full-time employees, including our named executive officers. These benefits are available to all full-time employees, subject to applicable laws.

401(k) Plan

We maintain a defined contribution retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees may defer eligible compensation on a pre-tax, or after-tax, basis, up to the statutorily prescribed annual limits on contributions under the Code. Contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participants' directions. Employees are immediately and fully vested in their contributions. The 401(k) plan is intended to be qualified under Section 401(a) of the Code with the 401(k) plan's related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan are deductible by us when made, and contributions and earnings on those amounts are not taxable to the employees until withdrawn or distributed from the 401(k) plan. Pursuant to our 401(k) plan, during 2017, we made 100% matching contributions on up to 3% of an employee's eligible compensation deferred.

Limitations on Liability and Indemnification Matters

Upon the closing of this offering, our amended and restated certificate of incorporation will contain provisions that allow us to limit the liability of our current and former directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to the corporation or its stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper personal benefit.

Such limitation of liability does not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation will provide us with the authority to, and our amended and restated bylaws will provide that we are required to, indemnify our directors and executive officers to the fullest extent permitted by Delaware law. Our amended and restated bylaws will also provide that, upon

satisfaction of certain conditions, we shall advance expenses incurred by a director or executive officer in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee, or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our other officers and employees when determined appropriate by our board of directors. We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by the board of directors. With certain exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding.

We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain directors' and officers' liability insurance.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or executive officer when entering into the plan, without further direction from them. The director or executive officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information, subject to compliance with the terms of our insider trading policy. Prior to the end of the 180th day after the date of this offering (subject to potential early release or termination without notice), the sale of any shares under such plan would be subject to the lock-up agreement that the director or executive officer has entered into with Morgan Stanley & Co. LLC and Credit Suisse Securities (USA) LLC on behalf of the underwriters.

CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

The following is a summary of transactions since January 1, 2015, to which we have been a participant in which the amount involved exceeded or will exceed $120,000, and in which any of our directors, executive officers or holders of more than five percent of our capital stock, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest., other than compensation arrangements which are described in the sections titled “Executive Compensation” and “Management—Non-Employee Director Compensation.”

We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable, in arm’s-length transactions.

Convertible Note Financing

From June 2015 through November 2015, we issued and sold convertible promissory notes in the aggregate principal amount of $900,000. The convertible promissory notes accrued interest at a rate of 5% per annum. In November 2015, the aggregate principal amount of the convertible promissory notes and accrued interest totaling approximately $909,349 were converted into 909,349 shares of Series A-1 preferred stock at a conversion price of $1.00. The following table summarizes the convertible promissory notes issued to holders of more than five percent of our capital stock and their affiliated entities and our directors. None of our executive officers were issued convertible promissory notes.

Name of Stockholder	Loan Amount
Entities affiliated with Lightspeed Venture Partners(1)	$ 450,000
Sutter Hill Ventures(2)	450,000

(1) Includes convertible promissory notes purchased by Lightspeed Venture Partners X, L.P. and Lightspeed Affiliates X, L.P. Mr. Schaepe, a member of our board of directors, is a partner of Lightspeed General Partner X, L.P., the general partner of Lightspeed Venture Partners X, L.P. and Lightspeed Affiliates X, L.P., and a director of Lightspeed Ultimate General Partner X, Ltd., the general partner of Lightspeed General Partner X, L.P..

(2) Dr. Bird, a member of our board of directors, is a managing director and a member of the management committee and the general partner of Sutter Hill Ventures, a California Limited Partnership.

Preferred Stock Financings

In November 2015 and from February 2016 through April 2016, we issued and sold an aggregate of 34,400,000 shares of Series A-1 preferred stock at a purchase price of $1.00 per share for an aggregate purchase price of approximately $34.4 million.

In February 2017 and March 2017, we issued and sold an aggregate of 32,454,663 shares of our Series A-2 preferred stock at a purchase price of $1.2448132 per share for an aggregate purchase price of approximately $40.4 million.

In October 2017, we issued and sold an aggregate of 58,818,912 shares of our Series B preferred stock at a purchase price of $1.2751 per share for an aggregate purchase price of approximately $75.0 million.

The following table summarizes the Series A-1, Series A-2 and Series B preferred stock purchased by holders of more than five percent of our capital stock and their affiliated entities and our directors. None of our executive officers purchased shares of preferred stock.

Name of Stockholder	Series A-1 Preferred Stock	Series A-2 Preferred Stock	Series B Preferred Stock	Aggregate Purchase Price
Entities affiliated with Lightspeed Venture Partners(1)	10,909,943	8,785,943	10,195,279	$ 34,846,801
Entities and individuals affiliated with Sutter Hill Ventures(2)	10,909,943	8,785,943	10,195,279	34,846,801
Clarus Lifesciences III, L.P.(3)	7,273,296	5,857,295	14,900,792	33,564,534
Investment advisory clients of Wellington Management Company, LLP(4)	—	—	15,685,044	20,000,000
Entities affiliated with GV(5)	4,000,000	4,016,666	3,964,575	14,055,229

(1) Includes shares of preferred stock purchased by (a) Lightspeed Venture Partners X, L.P., (b) Lightspeed Affiliates X, L.P. and (c) Lightspeed Venture Partners Select II, L.P. Mr. Schaepe, a member of our board of directors, is a partner of Lightspeed General Partner Select II, L.P., the general partner of Lightspeed Venture Partners Select II, L.P., and a director of Lightspeed Ultimate General Partner Select II, Ltd., the general partner of Lightspeed General Partner Select II, L.P., and a partner of Lightspeed General Partner X, L.P., the general partner of Lightspeed Venture Partners X, L.P. and Lightspeed Affiliates X, L.P., and a director of Lightspeed Ultimate General Partner X, Ltd., the general partner of Lightspeed General Partner X, L.P.

(2) Includes shares of preferred stock purchased by (a) Sutter Hill Ventures, a California Limited Partnership, or SHV (b) entities affiliated with Jeffrey W. Bird and (c) individuals affiliated with SHV and entities affiliated with such individuals. Dr. Bird, a member of our board of directors, is a managing director and member of the management committee of the general partner of SHV.

(3) Dr. Henner, a member of our board of directors, is a managing director of Clarus Ventures III, LLC, the general partner of Clarus Ventures III GP, L.P., the general partner of this entity.

(4) Represents shares held by Hadley Harbor Master Investors (Cayman) II L.P.

(5) Includes shares of preferred stock purchased by GV 2015, L.P. and GV 2016, L.P.

Upon the closing of this offering, each share of preferred stock will convert into one share of common stock. For a description of the material rights and privileges of the preferred stock, see Note 7 to our audited financial statements included elsewhere in this prospectus.

Investors Rights Agreement

In October 2017, we entered into an amended and restated investor rights agreement, or IRA, with certain holders of our preferred stock and common stock, including entities affiliated with Lightspeed Venture Partners, Sutter Hill Ventures and Clarus and including certain members of, and affiliates of, our directors and certain of our executive officers. The IRA provides the holders of our preferred stock with certain registration rights, including the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing. Dr. Bird, Dr. Henner and Mr. Schaepe, members of our board of directors, are affiliated with Sutter Hill Ventures, Clarus and Lightspeed Venture Partners, respectively. The IRA also provides these stockholders with information rights, which will terminate upon the closing of this offering, and a right of first refusal with regard to certain issuances of our capital stock, which will not apply to, and will terminate upon, the closing of, this offering. After the closing of this offering, the holders of 125,673,575 shares of common stock issuable on conversion of outstanding preferred stock, will be entitled to rights with respect to the registration of their shares of common stock under the Securities Act under this agreement. For a description of these registration rights, see “Description of Capital Stock—Registration Rights.”

Indemnification Agreements

Our amended and restated certificate of incorporation will contain provisions limiting the liability of directors, and our amended and restated bylaws will provide that we will indemnify each of our directors and officers to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our employees and other agents when determined appropriate by the board. In addition, we have entered into an indemnification agreement with each of our directors and executive officers, which requires us to indemnify them. For more information regarding these agreements, see "Executive Compensation —Limitations on Liability and Indemnification Matters."

Relationship with Stanford University

In November 2015, we entered into a license agreement with Stanford University, pursuant to which Stanford was issued 7,751,242 shares of common stock. During 2016 and 2017, we made payments to Stanford of $960,722 and $638,954, respectively, under the Stanford license agreement for annual license fees and patent expense reimbursement.

Dr. Weissman and Dr. Majeti, members of our board of directors, are professors at Stanford. Dr. Weissman and Dr. Majeti are co-inventors of some of the patents that we license from Stanford. Under Stanford's policies, as co-inventors Dr. Weissman and Dr. Majeti are entitled to receive a share of any royalties that we pay to Stanford under the agreement with respect to the covered intellectual property. No royalty payments have been made to date.

Offer Letters

We have entered into offer letters or employment agreements with our executive officers. For more information regarding these agreements, see "Executive Compensation—Employment, Severance and Change in Control Agreements."

Equity Grants

We have granted stock options to our executive officers and certain members of our board of directors. For a description of these options, see "Executive Compensation" and "Management—Non-Employee Director Compensation."

Cash Bonus

We have established a cash bonus plan for certain of our executive officers. For a description of this plan, see "Executive Compensation" and "Management—2018 Annual Bonus Plan."

Related-Party Transaction Policy

We have adopted a formal written policy that our executive officers, directors, holders of more than five percent of any class of our voting securities, and any member of the immediate family of and any entity affiliated with any of the foregoing persons, will not be permitted to enter into a related-party transaction with us without the prior consent of our audit committee, or other independent members of our board of directors in the event it is inappropriate for our audit committee to review such transaction due to a conflict of interest. Any request for us to enter into a transaction with an executive officer, director, principal stockholder, or any of their immediate family members or affiliates, in which the amount involved exceeds $120,000 must first be presented to our audit committee for review, consideration and approval. In approving or rejecting any such proposal, our audit committee will consider the relevant facts and circumstances available and deemed relevant to our audit committee, including, but not limited to, whether the transaction will be on terms no less favorable than terms generally available to an unaffiliated third-party under the same or similar circumstances and the extent of the related-party's interest in the transaction.

All of the transactions described in this section were entered into prior to the adoption of this policy.

PRINCIPAL STOCKHOLDERS

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of December 31, 2017:

- each of our named executive officers;
- each of our directors;
- all of our directors and executive officers as a group; and
- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common stock.

We have determined beneficial ownership in accordance with the rules of the SEC and therefore it represents sole or shared voting or investment power with respect to our securities. Unless otherwise indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares that they beneficially owned, subject to community property laws where applicable. We have deemed shares of common stock subject to options that are currently exercisable or exercisable within 60 days of December 31, 2017, to be outstanding and to be beneficially owned by the person holding the option for the purpose of computing the percentage ownership of that person but have not treated them as outstanding for the purpose of computing the percentage ownership of any other person.

We have based percentage ownership of common stock before this offering on 177,995,168 shares of common stock outstanding as of December 31, 2017, which includes 125,673,575 shares of common stock resulting from the conversion of all outstanding shares of preferred stock immediately upon the closing of this offering, as if this conversion had occurred as of December 31, 2017. Percentage ownership of common stock after this offering assumes the sale of shares of common stock in this offering and no exercise of the underwriters' over-allotment option.

Unless otherwise indicated, the address for each beneficial owner listed in the table below is c/o Forty Seven, Inc., 1490 O'Brien Drive, Suite A, Menlo Park, California 94025.

Name and Address of Beneficial Owner	Number of Shares Beneficially Owned	Percent of Shares Beneficially Owned: Before the Offering	Percent of Shares Beneficially Owned: After the Offering
Principal Stockholders:			
Entities affiliated with Lightspeed Ventures Partners(1)	29,891,165	16.8%	%
Entities and individuals affiliated with Sutter Hill Ventures(2)	29,891,165	16.8	
Clarus Lifesciences III, L.P.(3)	28,031,383	15.7	
Investment advisory clients of Wellington Management Company, LLP(4)	15,685,044	8.8	
Entities affiliated with GV(5)	11,981,241	6.7	
Directors and Named Executive Officers:			
Mark A. McCamish, M.D.(6)	4,092,590	2.3	
Chris H. Takimoto, M.D.(7)	2,000,000	1.1	
Craig S. Gibbs, Ph.D.(8)	2,250,000	1.3	
Kristine M. Ball	—	—	
Jeffrey W. Bird, M.D., Ph.D.(9)	29,891,165	16.8	
Dennis J. Henner, Ph.D.(10)	28,031,383	15.7	
Ravindra Majeti, M.D.(11)	12,134,264	6.8	
Christopher J. Schaepe(12)	29,891,165	16.8	
Irving L. Weissman, M.D.(13)	17,599,172	9.9	
All directors and executive officers as a group (9 persons)(14)	125,889,739	68.0	

* Represents beneficial ownership of less than 1%.

(1) Consists of (i) 19,176,355 shares held by Lightspeed Venture Partners X, L.P., or Lightspeed X, (ii) 10,195,279 shares held by Lightspeed Venture Partners Select II, L.P., or Lightspeed Select II, and (iii) 519,531 shares held by Lightspeed Affiliates X, L.P., or Lightspeed Affiliates. Lightspeed General Partner X, L.P., or Lightspeed GP X, is the general partner of Lightspeed X and Lightspeed Affiliates. Lightspeed Ultimate General Partner X, Ltd., or Lightspeed UGP X, is the general partner of Lightspeed GP X. Christopher J. Schaepe, Barry Eggers, Ravi Mhatre, Peter Nieh and Jeremy Liew are the directors of Lightspeed UGP X and share voting and dispositive power with respect to the shares held by Lightspeed X. Lightspeed General Partner Select II, L.P., or Select II GP, is the general partner of Lightspeed Select II. Lightspeed Ultimate General Partner Select II, Ltd., or Select II UGP, is the general partner of Select II GP. Mr. Schaepe, Eggers, Mhatre, Nieh and Liew are the directors of Select II UGP and share voting and dispositive power with respect to the shares held by Lightspeed Select II. Messrs. Schaepe, Eggers, Liew, Mhatre and Nieh disclaim beneficial ownership of the shares held by Lightspeed X, Lightspeed Affiliates and Lightspeed Select II except to the extent of their pecuniary interest herein. The address for Lightspeed Venture Partners is 2200 Sand Hill Road, Menlo Park, California 94025.

(2) Consists of (a) 21,480,193 shares held by Sutter Hill Ventures, a California Limited Partnership, or SHV, and (b) an aggregate of 8,410,972 shares that are held by individuals affiliated with SHV and entities associated with such individuals, including the 1,674,335 shares beneficially owned by Dr. Bird and described in Footnote 9. Voting and investment authority over the shares held by SHV are shared by members of the management committee of the general partner of SHV, which consists of Jeffrey W. Bird, Tench Coxe, Stefan A. Dyckerhoff, Samuel J. Pullara III, Michael L. Speiser and James N. White. The address for Sutter Hill Ventures is 755 Page Mill Road, Suite A-200, Palo Alto, California 94304.

(3) Clarus Ventures III GP, L.P., or GPLP, as the sole general partner of Clarus Lifesciences III, L.P., or Clarus, may be deemed to beneficially own certain of the shares held by Clarus. GPLP disclaims beneficial ownership of all shares held by Clarus in which the GPLP does not have an actual pecuniary interest. Clarus Ventures III, LLC, or GPLLC, as the sole general partner of the GPLP, may be deemed to beneficially own certain of the shares held by Clarus. GPLLC disclaims beneficial ownership of all shares held by Clarus in which it does not have an actual pecuniary interest. Each of Dennis J. Henner, a member of our board of directors, Nicholas Galakatos, Robert Liptak, Nicholas Simon, Scott Requadt and Kurt Wheeler, as

individual managing directors of GPLLC, may be deemed to beneficially own certain of the shares held of record by Clarus. Each of Dr. Henner and Messrs. Galakatos, Liptak, Simon, Requadt and Wheeler disclaims beneficial ownership of all shares held of record by Clarus in which he does not have an actual pecuniary interest. The address for Clarus Lifesciences III, L.P. is 101 Main Street, 12th Floor, Cambridge, Massachusetts 02142.

(4) Represents shares held by Hadley Harbor Master Investors (Cayman) II L.P. Wellington Management Company, LLP, or Wellington Management, is an investment adviser registered under the Investment Advisers Act of 1940, as amended, and serves as the advisor to this entity. Wellington Management, in such capacity, may be deemed to share beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of the shares held by its client accounts. The address for Wellington Management Company, LLP is 280 Congress Street, Boston, Massachusetts 02210.

(5) Consists of (i) 8,016,666 shares held by GV 2015, L.P., or GV 2015 and (ii) 3,964,575 shares held by GV 2016, L.P., or GV 2016. Each of GV 2015 GP, L.L.C., the general partner of GV 2015, Alphabet Holdings LLC, or Alphabet Holdings, the sole member of GV 2015 GP, L.L.C., XXVI Holdings Inc., the managing member of Alphabet Holdings, and Alphabet Inc., or Alphabet, the sole stockholder of XXVI Holdings Inc. may be deemed to have sole power to vote or dispose of the shares held by GV 2015. Each of GV 2016 GP, L.P., the general partner of GV 2016, GV 2016 GP, L.L.C., the general partner of GV 2016 GP, L.P., Alphabet Holdings, the sole member of GV 2016 GP, L.L.C., XXVI Holdings Inc., the managing member of Alphabet Holdings and Alphabet, the sole stockholder of XXVI Holdings Inc., may be deemed to have sole power to vote or dispose of the shares held by GV 2016. The address for GV is 1600 Amphitheatre Parkway, Mountain View, California 94043.

(6) Includes (i) 250,000 shares subject to repurchase by us as of March 1, 2018 and (ii) 3,842,590 shares of common stock issuable to Dr. McCamish pursuant to options exercisable within 60 days of December 31, 2017, of which 3,524,164 shares would be subject to repurchase as of such date.

(7) Represents shares of common stock issuable to Dr. Takimoto pursuant to options exercisable within 60 days of December 31, 2017, of which 1,300,000 shares would be subject to repurchase as of such date.

(8) Includes 1,375,000 shares of common stock issuable to Dr. Gibbs pursuant to options exercisable within 60 days of December 31, 2017, of which 1,161,459 shares would be subject to repurchase as of such date.

(9) Includes (i) 5,170 shares held by Jeffrey W. Bird and Christina R. Bird, Co-Trustees of Jeffrey W. and Christina R. Bird Trust U/A/D 10/31/00, or the Bird Trust and (ii) 1,669,165 shares held by NestEgg Holdings, LP, or NestEgg. Dr. Bird is a managing director and member of the management committee of the general partner of SHV and shares voting and investment power over the shares held of record by SHV. Dr. Bird disclaims beneficial ownership of the shares held by the Bird Trust, NestEgg and SHV except to the extent of his pecuniary interest therein. See Footnote 2 above.

(10) Consists of the shares listed in Footnote 3 above. Dr. Henner is a managing director of GPLLC, the general partner of GPLP, the general partner of Clarus. Dr. Henner disclaims beneficial ownership of all the shares held of record by Clarus in which he does not have an actual pecuniary interest.

(11) Includes 3,779,328 shares subject to repurchase by us as of March 1, 2018.

(12) Consists of the shares listed in Footnote 1 above. Mr. Schaepe is a (i) director of Lightspeed X UGP, the general partner of Lightspeed X GP, the general partner of Lightspeed X and Lightspeed Affiliates and (ii) director of Select II UGP, the general partner of Select II GP, the general partner of Lightspeed Select II. Mr. Schaepe disclaims beneficial ownership of the shares held by Lightspeed X, Lightspeed Affiliates and Lightspeed Select II except to the extent of his pecuniary interest herein.

(13) Includes (i) 612,807 shares held by Dr. Weissman, individually, (ii) 16,079,327 shares held by Ann Tsukamoto and Irving Weissman, trustees of The Tsukamoto-Weissman 2011 Trust dated March 16, 2011, as community property and (iii) an aggregate of 907,038 shares held in trusts for the benefit of members of Dr. Weissman's immediate family. Dr. Weissman disclaims beneficial ownership of the shares held in trusts for the benefit of members of his immediate family.

(14) Includes (i) 118,672,149 shares of common stock beneficially owned by the directors and named executive officers, of which 4,029,328 shares are subject to repurchase by us as of March 1, 2018 and (ii) 7,217,590 shares issuable pursuant to options exercisable within 60 days of December 31, 2017, of which 5,985,623 of the shares would be subject to repurchase as of such date.

DESCRIPTION OF CAPITAL STOCK

The description below of our capital stock and provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws to be in effect upon the closing of this offering, which are filed as exhibits to the registration statement of which this prospectus is part, and by the applicable provisions of Delaware law.

General

Upon the closing of this offering, our amended and restated certificate of incorporation will authorize us to issue up to shares of common stock, $0.0001 par value per share, and shares of preferred stock, $0.0001 par value per share.

As of December 31, 2017, there were 52,321,593 shares of common stock issued and outstanding, held by 71 stockholders of record.

As of December 31, 2017, after giving effect to the conversion of all outstanding shares of preferred stock into 125,673,575 shares of common stock, there would have been 177,995,168 shares of common stock issued and outstanding, held by 125 stockholders of record.

Common Stock

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Under our amended and restated certificate of incorporation and amended and restated bylaws, our stockholders will not have cumulative voting rights. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election.

Dividend Rights

Subject to preferences that may apply to any then-outstanding preferred stock, the holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds. We do not anticipate paying any cash dividends in the foreseeable future.

Liquidation Rights

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Preemptive or Similar Rights

Holders of common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Preferred Stock

As of December 31, 2017, there were 125,673,575 shares of preferred stock outstanding. Upon the closing of this offering, each outstanding share of preferred stock will convert into one share of common stock. On the closing of this offering and under our amended and restated certificate of incorporation, our board of directors may, without further action by our stockholders, fix the rights, preferences, privileges and restrictions of up to an aggregate of shares of preferred stock in one or more series and authorize their issuance. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. Any issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders would receive dividend payments and payments on liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deterring or preventing a change of control or other corporate action. No shares of preferred stock will be outstanding immediately following the closing of this offering. We have no present plan to issue any shares of preferred stock.

Stock Options

As of December 31, 2017, options to purchase an aggregate of 16,294,994 shares of common stock were outstanding under our 2015 Equity Incentive Plan. Subsequent to December 31, 2017, we granted options to purchase shares of common stock under our 2015 Equity Incentive Plan. As of December 31, 2017, 1,774,598 additional shares of common stock were reserved for future issuance under our 2015 Equity Incentive Plan (excluding options granted subsequent to December 31, 2017), which shares will cease to be available for issuance at the time our 2018 Plan becomes effective in connection with this offering. For additional information regarding the terms of these plans, see the section titled “Executive Compensation —Employee Benefit Plans.”

Registration Rights

We are party to an Investor Rights Agreement, or IRA, which provides that certain holders of shares of common stock, including those shares of common stock that will be issued upon conversion of preferred stock in connection with this offering. These shares are referred to as registrable securities. The holders of these registrable securities possess registration rights pursuant to the terms of the IRA and are described in additional detail below. We, along with entities affiliated with Lightspeed Venture Partners, Sutter Hill Ventures, Clarus and GV, as well as other stockholders, are parties to the IRA. We entered into the IRA in connection with the issuance of Series B preferred stock in October 2017. The following summary discusses certain material provisions of the IRA and is qualified by the full text of the agreement, which is filed as an exhibit to the registration statement of which this prospectus is a part.

Certain stockholders who are party to the IRA have waived their registration rights and the registration rights of the other stockholders who are party to the IRA, in each case, with respect to this offering.

The registration of shares of common stock pursuant to the exercise of registration rights described below would enable the holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective. We will pay the registration expenses (other than underwriting discounts, selling commissions and stock transfer taxes) of the shares registered pursuant to the demand, piggyback and Form S-3 registrations described below.

Generally, in an underwritten offering, if we determine in good faith in consultation with the underwriters, we have the right, subject to specified conditions, to limit the number of shares the holders may include. The demand, piggyback and Form S-3 registration rights described below will terminate on the date five years following the closing part of this offering.

Demand Registration Rights

The holders of an aggregate of 125,673,575 shares of common stock issuable upon conversion of outstanding shares of preferred stock will be entitled to certain demand registration rights. Ending on the date 180 days following the effective date of the registration statement of which this prospectus is a part, upon the written request of the holders of more than 50% of our registrable securities then outstanding that we file a registration statement under the Securities Act covering at least 50% of the registrable securities then outstanding, or lesser percent if the anticipated aggregate offering price, net of selling expenses, would exceed $7,500,000, we are obligated to register the sale of all registrable securities that the holders may request in writing to be registered. We are required to effect no more than two registration statements that are declared or ordered effective. We may postpone the filing of a registration statement for up to 120 days once in a 12-month period if in the good faith judgment of our board of directors such registration would be seriously detrimental to us.

Piggyback Registration Rights

The holders of an aggregate of 125,673,575 shares of common stock issuable upon conversion of outstanding shares of preferred stock will be entitled to certain piggyback registration rights. If we register any of our securities for public sale, either for our own account or for the account of other security holders, we will also have to register all registrable securities that the holders of such securities request in writing be registered. This piggyback registration right does not apply to a registration relating to any of our stock plans, stock purchase or similar plan, a transaction under Rule 145 of the Securities Act or a registration related to stock issued upon conversion of debt securities. We, based on consultation with the underwriters of any underwritten offering will have the right to limit the number of shares registered by these holders if the underwriters determine that including all registrable securities will jeopardize the success of the offering.

Form S-3 Registration Rights

The holders of an aggregate of 125,673,575 shares of common stock issuable upon conversion of outstanding shares of preferred stock will be entitled to certain registration rights on Form S-3. The holders of these shares can request that we register all or a portion of their shares on Form S-3 if we are eligible to file a registration statement on Form S-3 and the aggregate price to the public of the shares offered is in excess of $1.0 million (net of underwriting discounts and commissions, if any). We are required to effect no more than two Form S-3 registration statements that are declared or ordered effective in any 12-month period. We may postpone the filing of a registration statement for up to 120 days not more than twice in a 12-month period if in the good faith judgment of our board of directors such registration would be seriously detrimental to us.

Anti-Takeover Provisions

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon closing of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not

have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a "business combination" to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

A Delaware corporation may "opt out" of these provisions with an express provision in its original certificate of incorporation or an express provision in its amended and restated certificate of incorporation or amended and restated bylaws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Certificate of Incorporation and Bylaws to be in Effect Upon the Closing of this Offering

Among other things, our amended and restated certificate of incorporation and amended and restated bylaws will:

- permit our board of directors to issue up to shares of preferred stock, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change of control;
- provide that the authorized number of directors may be changed only by resolution of our board of directors;
- provide that our board of directors will be classified into three classes of directors;
- provide that, subject to the rights of any series of preferred stock to elect directors, directors may only be removed for cause, which removal may be effected, subject to any limitation imposed by law, by the holders of at least a majority of the voting power of all of our then-outstanding shares of the capital stock entitled to vote generally at an election of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent or electronic transmission;

- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requirements as to the form and content of a stockholder's notice;
- provide that special meetings of our stockholders may be called only by the chairman of our board of directors, our chief executive officer or by our board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors; and
- not provide for cumulative voting rights, therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

The amendment of any of these provisions would require approval by the holders of at least 66 2/3% of the voting power of all of our then-outstanding capital stock entitled to vote generally in the election of directors, voting together as a single class.

The combination of these provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock.

Choice of Forum

Our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for: (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a breach of fiduciary duty owed by any director, officer or other employee to us or our stockholders; (iii) any action asserting a claim against us or any director or officer or other employee arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or amended and restated bylaws; or (iv) any action asserting a claim against us or any director or officer or other employee that is governed by the internal affairs doctrine. Our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

Limitations of Liability and Indemnification

See the section titled "Executive Compensation—Limitation on Liability and Indemnification."

Exchange Listing

Our common stock is currently not listed on any securities exchange. We intend to apply to have our common stock approved for listing on the Nasdaq Global Market under the symbol "FTSV."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock will be . The transfer agent's address is .

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market existed for our common stock. Future sales of shares of our common stock in the public market after this offering, and the availability of shares for future sale, could adversely affect the market price of our common stock prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nonetheless, sales of substantial amounts of our common stock, or the perception that these sales could occur, could adversely affect prevailing market prices for our common stock and could impair our future ability to raise equity capital.

Based on the number of shares outstanding on December 31, 2017, upon the closing of this offering, shares of common stock will be outstanding, assuming no exercise of the underwriters' over-allotment option, and no exercise of outstanding options. All of the shares of common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act, except for any shares sold to our "affiliates," as that term is defined under Rule 144 under the Securities Act.

The remaining shares of common stock and common stock subject to stock options will be on issuance "restricted securities," as that term is defined in Rule 144 under the Securities Act. Restricted securities may be sold in the public market only if registered under the Securities Act or if they qualify for exemption from registration under Rules 144 or 701 under the Securities Act, which are summarized below. Restricted securities may also be sold outside of the United States to non-U.S. persons in accordance with Rule 904 of Regulation S.

Rule 144

In general, persons who have beneficially owned restricted shares of our common stock for at least six months, and any of our affiliates who own either restricted or unrestricted shares of our common stock, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144 under the Securities Act.

In general, a person who has beneficially owned restricted shares of our common stock for at least six months would be entitled to sell their securities provided that (i) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale, (ii) we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale, and (iii) we are current in our Exchange Act reporting at the time of sale. Persons who have beneficially owned restricted shares of our common stock for at least six months, but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of common stock then outstanding, which will equal approximately shares immediately after the closing of this offering based on the number of shares of common stock outstanding as of December 31, 2017; or
- the average weekly trading volume of our common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale;

provided, in each case that we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

Substantially all of the restricted shares are subject to lock-up agreements as described below and in the section titled "Underwriters."

Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and in the section titled "Underwriters" and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Form S-8 Registration Statements

As soon as practicable after the closing of this offering, we intend to file with the SEC one or more registration statements on Form S-8 under the Securities Act to register the shares of common stock that are issuable pursuant to our 2015 Plan, 2018 Plan and 2018 ESPP. These registration statements will become effective immediately upon filing. Shares covered by these registration statements will then be eligible for sale in the public markets, subject to vesting restrictions, the applicable lock-up agreements described below and Rule 144 limitations applicable to affiliates.

Lock-Up Agreements

We and all of our directors and officers, as well as the other holders of substantially all of our common stock and securities convertible into or exercisable or exchangeable for our common stock outstanding immediately upon the closing of this offering, have agreed with Morgan Stanley & Co. LLC and Credit Suisse Securities (USA) LLC on behalf of the underwriters that, for a period ending on and including the 180th day following the date of this prospectus, subject to certain exceptions, we and they will not, directly or indirectly, dispose of any of our common stock or securities convertible into or exercisable or exchangeable for common stock, except with the prior written consent of Morgan Stanley & Co. LLC and Credit Suisse Securities (USA) LLC, in their sole discretion, with or without notice, on behalf of the underwriters. See the section titled "Underwriters" for a more complete description of the lock-up agreements with the underwriters.

In addition to the restrictions contained in the lock-up agreements described above, we have entered into agreements with certain security holders, including our IRA and our standard form of notice of exercise under our 2015 Plan, that contain market stand-off provisions imposing restrictions on the ability of such security holders to offer, sell or transfer our equity securities for a period ending on and including the 180th day following the date of this prospectus.

Registration Rights

Upon the closing of this offering, the holders of 125,673,575 shares of our common stock issuable upon conversion of outstanding shares of preferred stock, or their transferees, will be entitled to certain rights with respect to the registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See the section titled "Description of Capital Stock—Registration Rights" for additional information.

MATERIAL UNITED STATES FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a summary of the material U.S. federal income tax consequences to non-U.S. holders (as defined below) of the acquisition, ownership and disposition of our common stock issued pursuant to this offering. This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating thereto, does not address the potential application of the Medicare contribution tax on net investment income, and does not address any estate or gift tax consequences or any tax consequences arising under any state, local or foreign tax laws, or any other U.S. federal tax laws. This discussion is based on the Internal Revenue Code of 1986, as amended, or the Code, and applicable Treasury Regulations promulgated thereunder, judicial decisions and published rulings and administrative pronouncements of the Internal Revenue Service, or IRS, all as in effect as of the date hereof. These authorities are subject to differing interpretations and may change, possibly retroactively, resulting in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This discussion is limited to non-U.S. holders who purchase our common stock pursuant to this offering and who hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all of the U.S. federal income tax consequences that may be relevant to a particular holder in light of such holder's particular circumstances. This discussion also does not consider any specific facts or circumstances that may be relevant to holders subject to special rules under the U.S. federal income tax laws, including:

- certain former citizens or long-term residents of the United States;
- partnerships or other pass-through entities (and investors therein);
- "controlled foreign corporations";
- "passive foreign investment companies";
- corporations that accumulate earnings to avoid U.S. federal income tax;
- banks, financial institutions, investment funds, insurance companies, brokers, dealers or traders in securities;
- tax-exempt organizations and governmental organizations;
- tax-qualified retirement plans;
- persons subject to the alternative minimum tax;
- persons that own, or have owned, actually or constructively, more than 5% of our common stock;
- accrual-method taxpayers subject to special tax accounting rules under Section 451(b) of the Code;
- persons who have elected to mark securities to market; and
- persons holding our common stock as part of a hedging or conversion transaction or straddle, or a constructive sale, or other risk reduction strategy or integrated investment.

If an entity or arrangement that is classified as a partnership for U.S. federal income tax purposes holds our common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend on the status of the partner and the activities of the partnership. Partnerships holding our common stock and the partners in such partnerships are urged to consult their tax advisors about the particular U.S. federal income tax consequences to them of holding and disposing of our common stock.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL OR FOREIGN TAX LAWS AND ANY OTHER U.S. FEDERAL TAX LAWS. IN ADDITION, SIGNIFICANT CHANGES IN U.S. FEDERAL INCOME TAX LAWS WERE RECENTLY ENACTED. YOU SHOULD ALSO CONSULT WITH YOUR TAX ADVISOR WITH RESPECT TO SUCH CHANGES IN U.S. TAX LAW AS WELL AS POTENTIAL CONFORMING CHANGES IN STATE TAX LAWS.

Definition of Non-U.S. Holder

For purposes of this discussion, a non-U.S. holder is any beneficial owner of our common stock that is not a "U.S. person" or a partnership (including any entity or arrangement treated as a partnership) for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation (or entity treated as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust (1) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (2) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Distributions on Our Common Stock

As described under the section titled "Dividend Policy," we have not paid and do not anticipate paying dividends. However, if we make cash or other property distributions on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and will first be applied against and reduce a holder's tax basis in our common stock, but not below zero. Any excess will be treated as gain realized on the sale or other disposition of our common stock and will be treated as described under the section titled "—Gain on Disposition of Our Common Stock" below.

Subject to the discussions below regarding effectively connected income, backup withholding and Sections 1471 through 1474 of the Code (commonly referred to as FATCA), dividends paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends or such lower rate specified by an applicable income tax treaty. To receive the benefit of a reduced treaty rate, a non-U.S. holder must furnish us or our paying agent with a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or applicable successor form) including a U.S. taxpayer identification number and certifying such holder's qualification for the reduced rate. This certification must be provided to us or our paying agent before the payment of dividends and must be updated periodically. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Non-U.S. holders that do not provide the required certification on a timely basis, but that qualify for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

If a non-U.S. holder holds our common stock in connection with the conduct of a trade or business in the United States, and dividends paid on our common stock are effectively connected with such holder's U.S. trade or business (and are attributable to such holder's permanent establishment in the United States if required by an applicable tax treaty), the non-U.S. holder will be exempt from U.S. federal withholding tax. To claim the exemption, the non-U.S. holder must generally furnish a valid IRS Form W-8ECI (or applicable successor form) to the applicable withholding agent.

However, any such effectively connected dividends paid on our common stock generally will be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates in the same manner as if such holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Gain on Disposition of Our Common Stock

Subject to the discussions below regarding backup withholding and FATCA, a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized on the sale or other disposition of our common stock, unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States, and if required by an applicable income tax treaty, is attributable to a permanent establishment maintained by the non-U.S. holder in the United States;
- the non-U.S. holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition, and certain other requirements are met; or
- our common stock constitutes a "United States real property interest" by reason of our status as a United States real property holding corporation, or USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the non-U.S. holder's holding period for our common stock, and our common stock is not regularly traded on an established securities market during the calendar year in which the sale or other disposition occurs.

Determining whether we are a USRPHC depends on the fair market value of our U.S. real property interests relative to the fair market value of our other trade or business assets and our foreign real property interests. We believe that we are not currently and do not anticipate becoming a USRPHC for U.S. federal income tax purposes, although there can be no assurance we will not in the future become a USRPHC.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates in the same manner as if such holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Gain described in the second bullet point above will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate specified by an applicable income tax treaty), but may be offset by certain U.S.-source capital losses (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Annual reports are required to be filed with the IRS and provided to each non-U.S. holder indicating the amount of dividends on our common stock paid to such holder and the amount of any tax withheld with respect

to those dividends. These information reporting requirements apply even if no withholding was required because the dividends were effectively connected with the holder's conduct of a U.S. trade or business, or withholding was reduced or eliminated by an applicable income tax treaty. This information also may be made available under a specific treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides or is established. Backup withholding, currently at a 24% rate, generally will not apply to payments to a non-U.S. holder of dividends on or the gross proceeds of a disposition of our common stock provided the non-U.S. holder furnishes the required certification for its non-U.S. status, such as by providing a valid IRS Form W-8BEN, IRS Form W-8BEN-E or IRS Form W-8ECI, or certain other requirements are met. Backup withholding may apply if the payor has actual knowledge, or reason to know, that the holder is a U.S. person who is not an exempt recipient.

Backup withholding is not an additional tax. If any amount is withheld under the backup withholding rules, the non-U.S. holder should consult with a U.S. tax advisor regarding the possibility of and procedure for obtaining a refund or a credit against the non-U.S. holder's U.S. federal income tax liability, if any.

Withholding on Foreign Entities

FATCA imposes a U.S. federal withholding tax of 30% on certain payments made to a "foreign financial institution" (as specially defined under these rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding certain U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or an exemption applies. FATCA also generally will impose a U.S. federal withholding tax of 30% on certain payments made to a non-financial foreign entity unless such entity provides the withholding agent a certification identifying certain direct and indirect U.S. owners of the entity or an exemption applies. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. FATCA currently applies to dividends paid on our common stock. FATCA will also apply to gross proceeds from sales or other dispositions of our common stock after December 31, 2018.

Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of this legislation on their investment in our common stock.

UNDERWRITERS

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom Morgan Stanley & Co. LLC and Credit Suisse Securities (USA) LLC are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares of common stock indicated below:

Name	Number of Shares
Morgan Stanley & Co. LLC	
Credit Suisse Securities (USA) LLC	
Canaccord Genuity LLC	
BTIG, LLC	
Oppenheimer & Co. Inc.	
Total	

The underwriters and the representatives are collectively referred to as the "underwriters" and the "representatives," respectively. The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' over-allotment option described below.

The underwriters initially propose to offer part of the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus and part to certain dealers at a price that represents a concession not in excess of $ per share under the public offering price. After the initial offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representatives.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to additional shares of common stock at the public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with the offering of the shares of common stock offered by this prospectus. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriters' over-allotment option to purchase up to an additional shares of common stock.

		Total	
	Per Share	No Exercise	Full Exercise
Public offering price	$	$	$
Underwriting discounts and commissions to be paid by us:	$	$	$
Proceeds, before expenses, to us	$	$	$

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately $. We have agreed to reimburse the underwriters for expenses of up to $ relating to clearance of this offering with the Financial Industry Regulatory Authority, Inc. and compliance with state securities or "blue sky" laws.

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of shares of common stock offered by them.

We intend to apply to list our common stock on the Nasdaq Global Market under the trading symbol “FTSV.”

We and all of our directors and officers and the holders of substantially all of our common stock, stock options and other securities convertible into, exercisable or exchangeable for our common stock outstanding immediately prior to the closing of this offering have agreed that, without the prior written consent of the representatives on behalf of the underwriters, we and they will not, during the period ending on and including the 180th day after the date of this prospectus (the “restricted period”):

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock;
- file any registration statement with the SEC relating to the offering of any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock;

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of the representatives on behalf of the underwriters, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph are subject to specified exceptions, including, without limitation:

- the sale of shares to the underwriters;
- the issuance by us of shares of common stock upon the exercise of an option or a warrant or the conversion of a security outstanding on the date of this prospectus of which the underwriters have been advised in writing;
- transactions by any person other than us relating to shares of common stock or other securities acquired in this offering or in open market transactions after the closing of this offering, provided that no filing under Section 16(a) of the Exchange Act and no other public or filing is required or voluntarily made in connection with subsequent sales of the common stock or other securities acquired in this offering or such open market transactions;
- transfers of shares of common stock or any security convertible into common stock (a) as a bona fide gift or charitable contribution, (b) to an immediate family member or any trust for the direct or indirect benefit of the person subject to such restrictions or the immediate family of such person, (c) to a trustor or beneficiary of the trust or to the estate of a beneficiary of such trust, or (d) distributions of shares of common stock to limited partners, members, stockholders or holders of similar equity interests of the party making such distribution or to direct or indirect subsidiaries of such party, provided that (i) each donee or other distributee shall sign and deliver a lock-up letter substantially in the form attached as an exhibit to the underwriting agreement and (ii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of common stock, and no other public announcement or filing, shall be required or shall be voluntarily made during the restricted period;

- in connection with the disposition or transfer of shares of common stock or any security convertible into common stock to us upon the "net" or "cashless" exercise of stock options or other equity awards outstanding as of the date of this prospectus and granted pursuant to an employee benefit plan described in this prospectus, provided that (i) such shares of common stock received upon exercise shall continue to be subject to the restrictions on transfer set forth in the lock-up agreement and (ii) no filing under Section 16(a) of the Exchange Act and no other public announcement or filing shall be required or voluntarily made during the restricted period;
- the exercise solely with cash of stock options outstanding as of the date of this prospectus granted under an employee benefit plan or stock purchase plan described in this prospectus, provided that (i) the shares received upon exercise shall continue to be subject to the restrictions on transfer set forth in the lock-up agreement, (ii) if required, any public report or filing under Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto that the filing relates to the exercise of a stock option, that no shares were sold by the reporting person and that the shares received upon exercise are subject to a lock-up agreement with the underwriters, and (iii) no other public announcement or filing shall be required or voluntarily made during the restricted period;
- transfers of shares of common stock or other securities to us in connection with a repurchase by us pursuant to a repurchase right arising upon the termination of the transferee's employment with us pursuant to contractual agreements with us, provided that (i) any filing required by Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto that such transfer is being made pursuant to such repurchase right under such agreement and (ii) no other public announcement or filing shall be required or voluntarily made during the restricted period;
- transfers by operation of law pursuant to a qualified domestic order or in connection with a divorce settlement, provided that (i) any filing required by Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto that such transfer is being made pursuant to such court order and that such shares remain subject to a lock-up agreement with the underwriters, and (ii) no other public announcement or filing shall be required or voluntarily made during the restricted period;
- transfers of shares of our common stock or other securities pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction made to all holders of our common stock involving a change of control of our company that has been approved by our board of directors, provided that in the event that such tender offer, merger, consolidation or other such transaction is not completed, the securities shall continue to be subject to the restrictions on transfer set forth in the lock-up agreement; and
- the establishment or amendment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the restricted period.

The representatives, in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time with or without notice.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the over-allotment option described above. The underwriters can close out a covered short sale by exercising such option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under such option. The underwriters may also sell shares in excess of such

option, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or retard a decline in the market price of the common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Pricing of the Offering

Prior to this offering, there has been no public market for our common stock. The initial public offering price was determined by negotiations between us and the representatives. Among the factors considered in determining the initial public offering price were our future prospects and those of our industry in general, our results of operations and certain other financial and operating information in recent periods, and the price-earnings ratios, price-sales ratios, market prices of securities, and certain financial and operating information of companies engaged in activities similar to ours.

Selling Restrictions

Canada

The shares of our common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument

31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares of our common stock must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State") an offer to the public of any shares of our common stock may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase any shares of our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or FSMA) received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Cooley LLP, Palo Alto, California. As of the date of this prospectus, Cooley LLP beneficially owns 195,300 shares of our common stock. In addition, as of the date of this prospectus, GC&H Investments, LLC, an entity that is comprised of partners and associates of Cooley LLP, beneficially owns 134,757 shares of our preferred stock, which shares of preferred stock will be converted into 134,757 shares of common stock upon the closing of this offering. Davis Polk & Wardwell LLP, Menlo Park, California, is representing the underwriters.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements at December 31, 2016 and 2017, and for the years then ended, as set forth in their report. We have included our financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

CHANGES IN INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Dismissal of Independent Registered Public Accounting Firm

We dismissed PricewaterhouseCoopers LLP, or PwC, as our independent registered public accounting firm on December 5, 2017. The decision to dismiss PwC was approved by our board of directors.

The report of PwC on the financial statements for 2016 contained no adverse opinion or a disclaimer of opinion, and was not qualified or modified as to uncertainty, audit scope or accounting principle.

During 2016, and the subsequent period through December 5, 2017, (1) there were no disagreements (as that term is used in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) between us and PwC on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of PwC, would have caused PwC to make reference thereto in its report on our financial statements for the year ended December 31, 2016, and (2) there were no "reportable events" as such term is defined in Item 304(a)(1)(v) of Regulation S-K, except for the material weaknesses identified in our internal control over financial reporting related to our accounting for complex transactions and our timing of recognition of research and development expenses.

We have provided PwC with a copy of the disclosures set forth under the heading "Changes in Independent Registered Public Accounting Firm" included in this prospectus and have requested that PwC furnish a letter addressed to the SEC stating whether or not PwC agrees with statements related to them made by us under the heading "Change in Independent Registered Public Accounting Firm" in this prospectus. A copy of that letter is filed as Exhibit 16.1 to the registration statement of which this prospectus forms a part.

Newly Appointed Independent Registered Public Accounting Firm

We engaged Ernst & Young LLP, or Ernst & Young, as our independent registered public accounting firm on December 19, 2017 to audit our financial statements for 2016 and 2017. The decision to change our principal independent registered public accounting firm was approved by our board of directors.

During 2016, and the subsequent period preceding our engagement of Ernst & Young as our independent registered public accounting firm, we did not consult with Ernst & Young on matters that involved the application of accounting principles to a specified transaction, the type of audit opinion that might be rendered on our financial statements or any other matter that was either the subject of a disagreement or reportable event.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, with respect to the shares of common stock being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to our company and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our SEC filings, including the registration statement, over the internet at the SEC's website at http://www.sec.gov. You may also read and copy any document we file with the SEC at its public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

Upon the closing of this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for inspection and copying at the public reference room and website of the SEC referred to above. We also maintain a website at www.fortyseveninc.com, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus.

FORTY SEVEN, INC.

INDEX TO FINANCIAL STATEMENTS

Years Ended December 31, 2016 and 2017

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of
Forty Seven, Inc.:

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Forty Seven, Inc. (the Company) as of December 31, 2016 and 2017, and the related statements of operations and comprehensive loss, stockholders' equity, and cash flows for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2016 and 2017, and the results of its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2017
San Jose, California
March 22, 2018

FORTY SEVEN, INC.

Balance Sheets
(In thousands, except share and per share data)

	December 31, 2016	December 31, 2017	Pro Forma December 31, 2017 (unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 9,742	$ 24,417	
Short-term investments	—	63,694	
Prepaid expenses and other current assets	3,882	4,450	
Total current assets	13,624	92,561	
Property and equipment, net	1,615	1,358	
Other assets	1,749	1,546	
Total assets	$ 16,988	$ 95,465	
Liabilities and stockholders' equity			
Current liabilities:			
Accounts payable	$ 2,484	$ 3,705	
Accrued liabilities	1,448	4,808	
Deferred grant funding, current	—	2,759	
Total current liabilities	3,932	11,272	
Lease-related liabilities, noncurrent	570	476	
Other long-term liabilities	252	255	
Total liabilities	4,754	12,003	
Commitments and contingencies (Note 5)			
Stockholders' equity:			
Convertible preferred stock, $0.0001 par value; 71,031,997 and 125,673,575 shares authorized as of December 31, 2016 and 2017; 34,400,000 and 125,673,575 shares issued and outstanding as of December 31, 2016 and 2017, actual; aggregate liquidation preference of $149,800,000 as of December 31, 2017, actual; no shares issued and outstanding as of December 31, 2017, pro forma (unaudited)	34,245	149,397	$
Common stock, $0.0001 par value: 153,123,239 and 200,000,000 shares authorized as of December 31, 2016 and 2017; 51,486,242 and 52,321,593 shares issued and outstanding at December 31, 2016 and 2017, actual; shares issued and outstanding at December 31, 2017, pro forma (unaudited)	5	5	
Additional paid-in capital	2,485	3,503	
Accumulated other comprehensive loss	—	(44)	
Accumulated deficit	(24,501)	(69,399)	
Total stockholders' equity	12,234	83,462	$
Total liabilities and stockholders' equity	$ 16,988	$ 95,465	

The accompanying notes are an integral part of these financial statements.

FORTY SEVEN, INC.

Statements of Operations and Comprehensive Loss
(In thousands, except share and per share data)

	Year Ended December 31,	
	2016	2017
Operating expenses:		
Research and development	$ 14,464	$ 37,174
General and administrative	5,153	8,130
Total operating expenses	19,617	45,304
Loss from operations	(19,617)	(45,304)
Interest and other income, net	78	406
Net loss	(19,539)	(44,898)
Unrealized loss on available-for-sale securities	—	(44)
Comprehensive loss	$ (19,539)	$ (44,942)
Net loss per share, basic and diluted	$ (0.41)	$ (0.90)
Shares used in computing net loss per share, basic and diluted	48,028,336	50,131,995
Pro forma net loss per share, basic and diluted (unaudited)		$
Shares used in computing pro forma net loss per share, basic and diluted (unaudited)		

The accompanying notes are an integral part of these financial statements.

FORTY SEVEN, INC.

Statements of Stockholders' Equity
(In thousands, except share data)

	Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance — December 31, 2015	29,800,000	$ 29,655	42,060,000	$ 4	$ 2,036	$ —	$ (4,962)	$ 26,733
Issuance of Series A-1 convertible preferred shares at $1.00 per share, net of issuance costs of $10	4,600,000	4,590	—	—	—	—	—	4,590
Issuance of common stock related to Stanford license agreement	—	—	7,751,242	1	(1)	—	—	—
Issuance of common stock for exercise of stock options	—	—	1,675,000	—	203	—	—	203
Vesting of restricted common stock	—	—	—	—	2	—	—	2
Stock-based compensation	—	—	—	—	245	—	—	245
Net loss and comprehensive loss	—	—	—	—	—	—	(19,539)	(19,539)
Balance — December 31, 2016	34,400,000	34,245	51,486,242	5	2,485	—	(24,501)	12,234
Issuance of Series A-2 convertible preferred shares at $1.2448 per share, net of issuance costs of $23	32,454,663	40,377	—	—	—	—	—	40,377
Issuance of Series B convertible preferred shares at $1.2751 per share, net of issuance costs of $225	58,818,912	74,775	—	—	—	—	—	74,775
Issuance of common stock for exercise of stock options	—	—	835,351	—	155	—	—	155
Vesting of restricted common stock	—	—	—	—	2	—	—	2
Vesting of early exercised stock options	—	—	—	—	137	—	—	137
Stock-based compensation	—	—	—	—	724	—	—	724
Net loss	—	—	—	—	—	—	(44,898)	(44,898)
Other comprehensive loss	—	—	—	—	—	(44)	—	(44)
Balance — December 31, 2017	125,673,575	$149,397	52,321,593	$ 5	$ 3,503	$ (44)	$ (69,399)	$ 83,462

The accompanying notes are an integral part of these financial statements.

FORTY SEVEN, INC.

Statements of Cash Flows
(In thousands)

	Year Ended December 31, 2016	2017
Cash flows from operating activities:		
Net loss	$ (19,539)	$ (44,898)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	245	724
Depreciation and amortization	134	371
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(3,881)	(568)
Other assets	(1,691)	205
Accounts payable	1,995	1,221
Accrued liabilities	853	3,356
Deferred grant funding	—	2,759
Lease-related liabilities	53	(90)
Other long-term liabilities	16	(17)
Net cash used in operating activities	(21,815)	(36,937)
Cash flows from investing activities:		
Purchases of property and equipment	(1,103)	(114)
Purchases of available-for-sale securities	(4,000)	(79,738)
Proceeds from maturities of available-for-sale securities	4,000	16,000
Net cash used in investing activities	(1,103)	(63,852)
Cash flows from financing activities:		
Proceeds from issuance of convertible preferred stock, net of issuance costs	4,590	115,152
Proceeds from issuance of common stock upon exercise of stock options	436	312
Net cash provided by financing activities	5,026	115,464
Net (decrease) increase in cash and cash equivalents	(17,892)	14,675
Cash and cash equivalents — beginning of year	27,634	9,742
Cash and cash equivalents — end of year	$ 9,742	$ 24,417
Supplemental disclosures of cash flow information:		
Purchases of property and equipment through accounts payable and accrued liabilities	$ —	$ 10

The accompanying notes are an integral part of these financial statements.

FORTY SEVEN, INC.

Notes to the Financial Statements

1. Basis of Presentation

The Company is a clinical-stage immuno-oncology company focused on developing novel checkpoint therapies to activate macrophages in the fight against cancer. Forty Seven was founded based on the insight that blocking CD47, a key signaling molecule that is over-expressed on cancer cells, renders tumors susceptible to macrophages and the innate immune system. By harnessing macrophages, the Company believes that its lead product candidate, 5F9, dosed as a monotherapy and in combination with marketed cancer therapies, can transform the treatment of cancer. 5F9 has demonstrated promising antitumor activity in five Phase 1b/2 clinical trials in which we treated over 140 relapsed or refractory cancer patients with solid or hematologic tumors. The Company holds worldwide economic rights to all of its product candidates.

Liquidity

In the course of its development activities, the Company has sustained operating losses and expects to continue to generate operating losses for the foreseeable future. The Company's ultimate success depends on the outcome of its research and development activities. The Company had cash, cash equivalents and short-term investments of $88.1 million as of December 31, 2017. Since inception through December 31, 2017, the Company has incurred cumulative net losses of $69.4 million. Management expects to incur additional losses in the future to conduct product research and development and recognizes the need to raise additional capital to fully implement its business plan.

The Company intends to raise such capital through the issuance of additional equity financing and/or third-party collaboration funding. However, if such financing is not available at adequate levels, the Company will need to reevaluate its operating plan and may be required to delay the development of its products. Management considers that there are no conditions or events, in the aggregate, that raise substantial doubt about the entity's ability to continue as a going concern for a period of at least one year from the date the financial statements are issued. The Company expects that its cash, cash equivalents and short-term investments as of December 31, 2017 will be sufficient to fund operating expenses and capital expenditure requirements through the second quarter in 2019.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of expenses during the reporting period. Significant estimates and assumptions made in the accompanying financial statements include but are not limited to the fair value of common stock, the fair value of stock options, income tax uncertainties and certain accruals. The Company evaluates its estimates and assumptions on an ongoing basis using historical experience and other factors and adjusts those estimates and assumptions when facts and circumstances dictate. Actual results could differ from those estimates.

Unaudited Pro Forma Financial Information

Immediately upon the closing of this offering, all outstanding shares of convertible preferred stock will convert into common stock. Unaudited pro forma balance sheet information as of December 31, 2017 assumes

FORTY SEVEN, INC.

Notes to the Financial Statements

the conversion of all outstanding convertible preferred stock into shares of common stock. The shares of common stock issuable and the proceeds expected to be received in the initial public offering are excluded from such pro forma financial information.

Pro forma basic and diluted net loss per share has been computed to give effect to the conversion of all outstanding convertible preferred stock into shares of common stock. The unaudited pro forma net loss per share does not include the shares expected to be sold and related proceeds to be received from the initial public offering. The unaudited pro forma net loss per share for the year ended December 31, 2017 was computed using the weighted-average number of shares of common stock outstanding, including the pro forma effect of the conversion of all outstanding shares of convertible preferred stock into shares of common stock, as if such conversion had occurred at the beginning of the period, or their issuance dates if later.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with original maturities of three months or less from the purchase date to be cash equivalents. Cash equivalents consist primarily of amounts invested in money market accounts.

Investments

Investments have been classified as available-for-sale and are carried at estimated fair value as determined based upon quoted market prices or pricing models for similar securities. Management determines the appropriate classification of its investments in debt securities at the time of purchase. Investments with original maturities beyond three months at the date of purchase and which mature at, or less than twelve months from the balance sheet date are classified as current.

Unrealized gains and losses are excluded from earnings and are reported as a component of comprehensive loss. The Company periodically evaluates whether declines in fair values of its marketable securities below their book value are other-than-temporary. This evaluation consists of several qualitative and quantitative factors regarding the severity and duration of the unrealized loss as well as the Company's ability and intent to hold the marketable security until a forecasted recovery occurs. Additionally, the Company assesses whether it has plans to sell the security or it is more likely than not it will be required to sell any marketable securities before recovery of its amortized cost basis. Realized gains and losses and declines in fair value judged to be other than temporary, if any, on marketable securities are included in interest and other income, net. The cost of investments sold is based on the specific-identification method. There were no realized gains or losses on investments for the years ended December 31, 2016 and 2017. Interest on marketable securities is included in interest income.

Concentration of Credit Risk and Other Risks and Uncertainties

Financial instruments that potentially subject the Company to concentrations of risk consist of cash, cash equivalents and short-term investments. The Company's cash, cash equivalents and short-term investments are held by one financial institution in the United States, which management believes to be of high credit quality. Deposits in this financial institution may at times exceed federally insured limits. The Company has not experienced any losses on its deposits of cash, cash equivalents, or short-term investments.

Fair Value Measurement

Assets and liabilities recorded at fair value on a recurring basis in the balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Fair value is defined as

the exchange price that would be received for an asset or an exit price that would be paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

Level 1—Observable inputs such as unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date;

Level 2—Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the asset or liability. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active;

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Property and Equipment, Net

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation is computed on a straight-line basis over the estimated useful lives of the related assets, generally three to five years. Leasehold improvements are amortized using the straight-line method over the shorter of the assets' estimated useful lives or the remaining term of the lease. Maintenance and repairs are charged to operations as incurred. Upon sale or retirement of assets, the cost and related accumulated depreciation are removed from the balance sheet and the resulting gain or loss is reflected in operations.

Impairment of Long-Lived Assets

Long-lived assets are reviewed for indications of possible impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by comparison of the carrying amounts to the future undiscounted cash flows attributable to these assets. An impairment loss is recognized to the extent an asset group is not recoverable, and the carrying amount exceeds the projected discounted future cash flows arising from these assets. There were no impairments of long-lived assets for any of the periods presented.

Research and Development Expenditures

Research and development expenses consist of costs incurred for the Company's own and for sponsored and collaborative research and development activities. Research and development costs are expensed as incurred. Research and development costs consist of salaries and benefits, including associated stock-based compensation, and laboratory supplies and facility costs, as well as fees paid to other entities that conduct certain research and development activities on the Company's behalf. The Company estimates preclinical study and clinical trial expenses based on the services performed pursuant to contracts with research institutions and contract research organizations, or CROs, and clinical manufacturing organizations, or CMOs, that conduct and manage preclinical studies and clinical trials on the Company's behalf based on actual time and expenses incurred by them. Further, the Company accrues expenses related to clinical trials based on the level of patient activity according to the related agreement. The Company monitors patient enrollment levels and related activity to the extent reasonably possible and adjust estimates accordingly. If the Company does not identify costs that have begun to be incurred or if the Company underestimates or overestimates the level of services performed or the costs of these services, actual expenses could differ from the Company's estimates. To date, the Company has not experienced significant changes in its estimates of preclinical studies and clinical trial accruals.

FORTY SEVEN, INC.

Notes to the Financial Statements

The Company expenses payments for the acquisition and development of technology as research and development costs if, at the time of payment, the technology is under development; is not approved by the U.S. Food and Drug Administration or other regulatory agencies for marketing; has not reached technical feasibility; or otherwise has no foreseeable alternative future use. In addition, funding from research grants is offset against the related qualified research and development costs incurred.

Stock-Based Compensation

The Company measures its stock-based awards granted to employees and directors based on the estimated fair values of the awards and recognizes the compensation over the requisite service period. The Company uses the Black-Scholes option-pricing model to estimate the fair value of its stock-based awards. Stock-based compensation is recognized using the straight-line method.

Defined Contribution Plan

The Company has a defined contribution retirement savings plan under Section 401(k) of the Internal Revenue Code ("IRC"). This plan allows eligible employees to defer a portion of their annual compensation on a pre-tax or after-tax basis. The Company may make discretionary matching contributions. During 2016 and 2017, the Company made matching contributions on up to 3% of an employee's eligible compensation deferred. The Company recognized expense related to its contributions to the plan of $107,000 and $211,000 for the years ended December 31, 2016 and 2017.

Income Taxes

Income taxes are accounted for under the asset and liability method. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Management makes an assessment of the likelihood that the resulting deferred tax assets will be realized. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized. Due to the Company's historical operating performance and the recorded cumulative net losses in prior fiscal periods, the net deferred tax assets have been fully offset by a valuation allowance.

The Company recognizes uncertain income tax positions at the largest amount that is more likely than not to be sustained upon audit by the relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Changes in recognition or measurement are reflected in the period in which judgment occurs. The Company's policy is to recognize interest and penalties related to the underpayment of income taxes as a component of provision for income taxes.

Comprehensive Loss

The Company's comprehensive loss is currently comprised of changes in unrealized losses on available-for-sale securities.

Net Loss per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding for the period, without consideration for potential dilutive shares of common stock. The weighted-average number of shares of common stock outstanding for 2016 includes 7,751,242 shares of

common stock issuable under the Stanford license agreement (see Note 6) as if the shares were outstanding for the full period, as all the conditions for issuance had been satisfied in 2015. Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share since the effects of potentially dilutive securities are antidilutive. Shares of common stock subject to repurchase are excluded from the weighted-average shares.

Segment Reporting

The Company has one operating segment. The Company's chief operating decision maker, its Chief Executive Officer, manages the Company's operations on a consolidated basis for the purposes of allocating resources.

Recently Issued and Adopted Accounting Pronouncements

In March 2016, the FASB issued Accounting Standards Update No. 2016-09, *Stock Compensation—Improvements to Employee Share-Based Payment Accounting* (ASU 2016-09). ASU 2016-09 was issued to simplify accounting guidance by identifying, evaluating, and improving areas for which cost and complexity can be reduced while maintaining or improving the usefulness of the information provided to users of financial statements. The areas affected by ASU 2016-09 include accounting for income taxes, classification of excess tax benefits on the statement of cash flows, minimum statutory tax withholding requirements, and classification of employee taxes paid on the statement of cash flows when an employer withholds shares for tax-withholding purposes. In addition, under this guidance, an entity can make an accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur. Upon adoption of this guidance beginning with the year ended December 31, 2017, the Company changed its policy to account for forfeitures as they occur. The adoption of this guidance during the year ended December 31, 2017 did not have a material impact on the Company's financial statements.

Recent Accounting Pronouncements

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, *Leases* (ASU 2016-02) provides accounting guidance for both lessee and lessor accounting models. The principle of ASU 2016-02 is that a lessee should recognize the assets and liabilities that arise from leases. Lessees will need to recognize a right-of-use asset and a lease liability for virtually all of their leases (other than leases that meet the definition of a short-term lease). The liability will be equal to the present value of lease payments. The asset will be based on the liability. For income statement purposes, ASU 2016-02 requires leases to be classified as either operating or finance. Operating leases will result in straight-line expense while finance leases will result in a front-loaded expense pattern. ASU 2016-02 is effective for fiscal years beginning after December 15, 2019. Early adoption is permitted. The new standard must be adopted using a modified-retrospective transition and provides for certain practical expedients. The Company is currently evaluating the effects of the adoption of this ASU on its financial statements.

3. Fair Value Measurements

The Company measures and reports its cash equivalents and short-term investments at fair value.

Money market funds are measured at fair value on a recurring basis using quoted prices and are classified as a Level 1 input. Short-term investments are measured at fair value based on inputs other than quoted prices that

are derived from observable market data and are classified as Level 2 inputs. There were no transfers between Levels 1, 2 or 3 for any of the periods presented. All of the investments held as of December 31, 2017 had maturities of less than one year.

As of December 31, 2016, the Company held $8.6 million in money market funds (Level 1) with no unrealized gains or losses. The fair value and amortized cost of cash equivalents and available-for-sale securities by major security type as of December 31, 2017 are presented in the following table:

		As of December 31, 2017			
	Fair Value Hierarchy	Amortized Cost	Unrealized Gains	Unrealized Losses	Market Value
			(In thousands)		
Money market funds	Level 1	$ 19,052	$ —	$ —	$19,052
Commercial paper	Level 2	31,467	—	—	31,467
Corporate debt securities	Level 2	24,556	—	(35)	24,521
Asset-backed securities	Level 2	7,717	—	(7)	7,710
US government debt securities	Level 2	1,993	—	(2)	1,991
Total cash equivalents and available-for-sale securities		$ 84,785	$ —	$ (44)	$84,741

4. Balance Sheet Components

Property and Equipment, Net

Property and equipment, net consists of the following:

	As of December 31,	
	2016	2017
	(In thousands)	
Furniture and fixtures	$ 14	$ 14
Laboratory equipment	874	988
Computer equipment and software	91	91
Leasehold improvements	770	770
	1,749	1,863
Less: Accumulated depreciation and amortization	(134)	(505)
Total property and equipment, net	$1,615	$1,358

Depreciation and amortization expense for property and equipment amounted to $134,000 and $371,000 for the years ended December 31, 2016 and 2017.

FORTY SEVEN, INC.

Notes to the Financial Statements

Accrued Liabilities

Accrued liabilities consist of the following:

	As of December 31,	
	2016	2017
	(In thousands)	
Accrued research and development expenses	$1,239	$4,096
Lease-related liabilities, current	129	133
Other	80	579
Total accrued liabilities	$1,448	$4,808

5. Commitments and Contingencies

Lease

In August 2016, the Company entered into an operating lease agreement for its headquarters in Menlo Park, California. The lease term is for 60 months. The lease rental payments are on a graduated scale; however, rent expense is recognized on a straight-line basis over the lease term. The landlord provided the Company with a tenant improvement allowance of up to $646,000. The allowance is amortized as an offset to rent expense over the lease term. Rent expense for the years ended December 31, 2016 and 2017 was $587,000 and $993,000. At December 31, 2016 and 2017, $97,000 and $135,000 was accrued as deferred rent expense.

Effective September 2016, the Company entered into a sublease agreement to lease of portion of the Menlo Park facility to a tenant. Sublease income was $62,000 and $124,000 for the years ended December 31, 2016 and 2017 and was recorded as an offset to rent expense. In conjunction with the lease agreement, the Company paid a security deposit of $353,000 included in prepaid expenses and other current assets and other assets as of December 31, 2016. The security deposit was reduced to $265,000, included in prepaid expenses and other current assets and other assets as of December 31, 2017.

At December 31, 2017, future minimum payments are as follows (in thousands):

2018	$1,101
2019	1,134
2020	1,168
2021	794
Total future minimum lease payments	$4,197

Manufacturing Commitment

In August 2016, the Company entered into a development and manufacturing agreement with Lonza Sales AG and, in December 2017, the Company entered into a second manufacturing agreement with Lonza Biologics Tuas Pte Ltd, each relating to the manufacturing of 5F9-related products.

The August 2016 agreement was amended by the Company in November 2017 to provide for the manufacturing of the Company’s other preclinical program related products. Under the agreements, the Company is required to pay Lonza fixed fees based on manufacturing services performed on the Company’s behalf.

FORTY SEVEN, INC.

Notes to the Financial Statements

Payments are due beginning in January 2018 through the expiration of the agreements in December 2021. The fees payable under the August 2016 agreement and as amended in November 2017, are specified in British Pounds and are converted into U.S. Dollars based on the exchange rate as of December 31, 2017.

At December 31, 2017, future minimum payments under the Lonza development and manufacturing agreements are as follows, with potential payments totaling $13.1 million in 2021, subject to the Company's right to discontinue manufacturing services (in thousands):

2018	$ 9,688
2019	14,411
2020	13,088
Total future minimum payments	$37,187

6. Research and License Agreements

Stanford License Agreement

In November 2015, the Company entered into a technology license agreement with The Board of Trustees of the Leland Stanford Junior University, or Stanford, under which Stanford granted to the Company exclusive licenses under certain patents and other intellectual property rights relating to the Company's current product candidates and non-exclusive licenses under certain other patents and intellectual property rights to develop, manufacture and commercialize products for use in certain licensed fields, including oncology. With respect to these licenses, the Company could be required to pay Stanford up to $5.6 million in milestone payments based on the achievement of certain development and regulatory approval milestones. The first such milestone payment of $75,000 was paid to Stanford in February 2018. In addition, the Company is required to pay Stanford a minimum annual fee and a royalty of single digit percentage on net sales of licensed products, reimburse patent-related expenses, share any non-royalty sublicensing income received related to the licensed technology, and pay a change of control fee.

California Institute of Regenerative Medicine (CIRM) Grants

In January 2017, the Company was awarded a research grant from CIRM. The CIRM grant stipulates various milestone-based payments to the Company with the total award of $10.2 million over a period of four years. As of December 31, 2017, the Company had received $3.8 million under the award.

In November 2017, the Company was awarded a second research grant from CIRM for a separate clinical trial study. The total amount of the research grant awarded was $5.0 million in various milestone-based payments over a period of five years. As of December 31, 2017, the Company had received $1.1 million under the award. Under the terms of the CIRM grants, the Company is obligated to pay royalties and licensing fees based on a low single digit royalty percentage on net sales of CIRM-funded product candidates or CIRM-funded technology. The Company has the option to decline any and all amounts awarded by CIRM. As an alternative to revenue sharing, the Company has the option to convert the award to a loan. No such election has been made as of the date of the issuance of these financial statements. In the event that the Company terminates a CIRM-funded clinical trial, it will be obligated to repay the remaining CIRM funds on hand.

FORTY SEVEN, INC.

Notes to the Financial Statements

Leukemia & Lymphoma Society Grant

In March 2017, the Company entered into an agreement with the Leukemia & Lymphoma Society, Inc. ("LLS"). The LLS research grant stipulates various milestone-based payments with a total award of $4.0 million through December 2019. As of December 31, 2017, the Company had received $1.0 million under the award. The Company could be required in the future to pay amounts to LLS upon reaching certain development and regulatory approval milestones as well as a low single digit percentage royalty rate on net sales, up to a maximum of $15 million in total.

The Company recognizes research grants as a reduction of research and development expense when the eligible costs are incurred.

7. Convertible Preferred Stock

Convertible preferred stock consists of the following:

	As of December 31, 2016			
	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
	(In thousands, except share data)			
Series A-1	34,400,000	34,400,000	$ 34,245	$ 34,400
Series A-2	36,631,997	—	—	—
	71,031,997	34,400,000	$ 34,245	$ 34,400

	As of December 31, 2017			
	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
	(In thousands, except share data)			
Series A-1	34,400,000	34,400,000	$ 34,245	$ 34,400
Series A-2	32,454,663	32,454,663	40,377	40,400
Series B	58,818,912	58,818,912	74,775	75,000
	125,673,575	125,673,575	$ 149,397	$ 149,800

The holders of the Company's convertible preferred stock have various rights, preferences, and privileges as follows:

Optional Conversion Rights

Each share of convertible preferred stock shall be convertible, at the option of the holder, into such number of fully paid shares of common stock as is determined by dividing the Original Issue Price by the Conversion Price in effect at the time of conversion. As of December 31, 2016 and 2017, the initial conversion price per share of convertible preferred stock is equivalent to the original issue price. The original issuance price was $1.00 per share for the Series A-1 convertible preferred stock, $1.2448 per share for the Series A-2 convertible preferred stock, and $1.2751 per share for the Series B convertible preferred stock.

The respective applicable conversion price is subject to adjustment upon any future stock splits or stock combinations, reclassifications or exchanges of similar stock, upon a reorganization, merger or consolidation of the Company, upon the issuance or sale by the Company of common stock for consideration less than the applicable conversion price.

FORTY SEVEN, INC.

Notes to the Financial Statements

Mandatory Conversion Rights

Each share of Series A-1 and A-2 convertible preferred stock automatically converts into the number of shares of common stock determined in accordance with the conversion rate upon the earlier of (a) written consent of 66 ⅔ of the then outstanding shares of Series A-1 and A-2 convertible preferred stock, voting together as a single class or (b) the closing of a public offering in which the gross cash proceeds are at least $50.0 million. Each share of Series B convertible preferred stock automatically converts into the number of shares of common stock determined in accordance with the conversion rate upon the earlier of (a) written consent of 75% of the then outstanding shares of Series B convertible preferred stock or (b) the closing of a public offering in which the gross cash proceeds are at least $50.0 million.

Dividends

The holders of the outstanding shares of convertible preferred stock are entitled to receive, when and if declared by the Board of Directors, a noncumulative cash dividend at the rate of 8% of the applicable original issue price per annum on each outstanding share of convertible preferred stock. Such dividends are payable in preference to any dividends for common stock declared by the Board of Directors. In the case of a dividend on common stock, the dividend per share of convertible preferred stock would also include the dividend payable on each share determined, if applicable, as if all convertible preferred stock had been converted to common stock. No dividends had been declared as of December 31, 2017.

Liquidation

In the event of any liquidation, dissolution, or winding up of the Company, either voluntary or involuntary, the holders of convertible preferred stock shall be entitled to receive pro rata, prior and in preference to any distribution to the holders of the common stock, an amount equal to the original issuance prices of each series (in each case, as adjusted for stock splits, stock dividends or distributions, recapitalizations, and similar events) and all declared but unpaid dividends, if any. If the assets and funds to be distributed among the holders of convertible preferred stock are insufficient to permit the payment to such holders, then the entire assets and funds of the Company legally available for distribution will be distributed ratably among the holders of convertible preferred stock in proportion to the preferential amount each such holder is otherwise entitled to receive.

Upon the payment of the full liquidation preference of convertible preferred stock, the remaining assets of the Company, if any, shall be distributed ratably to the holders of common stock.

Voting Rights

Each share of convertible preferred stock has a number of votes equal to the number of shares of common stock into which it is convertible.

The holders of convertible preferred stock, voting together as a single class, shall be entitled to elect three members of the Company's Board of Directors. The holders of Series B convertible preferred stock have the right to elect one member of the Company's Board of Directors. The holders of common stock have the right to elect three members of the Company's Board of Directors. The holders of common stock and convertible preferred stock, voting together as a single class on an as-converted basis, are entitled to elect one member of the Board of Directors.

FORTY SEVEN, INC.

Notes to the Financial Statements

8. Stock-Based Compensation

In November 2015, the Company adopted the 2015 Equity Incentive Plan ("2015 Plan"). The 2015 Plan provides for the Company to sell or issue common stock or restricted common stock, or to grant incentive stock options or nonqualified stock options for the purchase of common stock, to employees, members of the Board of Directors and consultants of the Company under terms and provisions established by the Board of Directors. Under the terms of the Plan, options may be granted at an exercise price not less than fair market value. The Company generally grants stock-based awards with service conditions only. Options granted typically vest over a four-year period but may be granted with different vesting terms.

As of December 31, 2016 and 2017, there were 17,640,000 shares and 23,579,943 shares reserved by the Company to grant under the 2015 Plan.

The following summarizes option activity under the 2015 Plan:

	Shares Issuable Under Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contract Term (In years)	Aggregate Intrinsic Value (In thousands)
Balance, December 31, 2015	—	$ —		
Options granted	6,532,500	0.26		
Options exercised	(1,675,000)	0.26		
Options forfeited	(20,000)	0.26		
Balance, December 31, 2016	4,837,500	0.26	9.35	$ 1,790
Options granted	13,609,763	0.66		
Options exercised	(835,351)	0.37		
Options forfeited	(1,316,918)	0.35		
Balance Outstanding December 31, 2017	16,294,994	0.58	9.43	1,672
Exercisable, December 31, 2017	8,252,706	0.54	9.33	1,130
Vested and expected to vest, December 31, 2017	16,294,994	0.58	9.43	1,672

The aggregate intrinsic values of options outstanding, exercisable, vested and expected to vest were calculated as the difference between the exercise price of the options and the estimated fair value of the Company's common stock, as determined by the Board of Directors, as of December 31, 2017. The intrinsic value of options exercised for the years ended December 31, 2016 and 2017 was $0 and $226,000, respectively.

During the years ended December 31, 2016 and 2017, the estimated weighted-average grant-date fair value of the options vested was $0.17 and $0.20 per share and the estimated weighted-average grant-date fair value of employee options granted was $0.17 and $0.44 per share, respectively. As of December 31, 2017, there was $5.8 million of unrecognized stock-based compensation related to unvested stock options that is expected to be recognized over a weighted-average period of 3.5 years.

FORTY SEVEN, INC.

Notes to the Financial Statements

The fair value of employee and director stock option awards was estimated at the date of grant using a Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31,	
	2016	2017
Expected term (years)	6.0	6.0
Expected volatility	75%	75.5%
Weighted average risk-free interest rate	1.25% – 2.08%	1.77% – 2.21%
Dividend yield	0%	0%

The fair value of the shares of common stock underlying stock options has historically been determined by the Company's Board of Directors. Because there has been no public market for the Company's common stock, the Board of Directors has determined fair value of the common stock at the time of grant of the option by considering a number of objective and subjective factors including important developments in the Company's operations, valuations performed by an independent third party, sales of convertible preferred stock, actual operating results and financial performance, the conditions in the biotechnology industry and the economy in general, the stock price performance and volatility of comparable public companies, and the lack of liquidity of the Company's common stock, among other factors.

The Black-Scholes option-pricing model requires the use of highly subjective assumptions which determine the fair value of stock-based awards. These assumptions include:

Expected term—The expected term represents the period that stock-based awards are expected to be outstanding. The expected term for option grants is determined using the simplified method. The simplified method deems the term to be the average of the time-to-vesting and the contractual life of the stock-based awards.

Expected volatility—Since the Company is privately held and does not have any trading history for its common stock, the expected volatility was estimated based on the average volatility for comparable publicly traded biotechnology companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, stage in the life cycle or area of specialty.

Risk-free interest rate—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.

Expected dividend—The Company has never paid dividends on its common stock and has no plans to pay dividends on its common stock. Therefore, the Company used an expected dividend yield of zero.

Total stock-based compensation was as follows:

	Year Ended December 31,	
	2016	2017
	(In thousands)	
Research and development	$ 93	$ 206
General and administrative	152	518
Total	$ 245	$ 724

FORTY SEVEN, INC.

Notes to the Financial Statements

Restricted Stock

The Company typically allows its employees and directors to exercise options granted under the 2015 Plan prior to vesting. The Company has also issued restricted stock awards to employees and directors under the 2015 Plan. The shares related to early exercised stock options and restricted stock awards are subject to the Company's lapsing repurchase right upon termination of employment at the original purchase price. In order to vest, the holders are required to provide continued service to the Company. The proceeds are initially recorded in other long-term liabilities and are reclassified to common stock and paid-in capital as the repurchase right lapses. As of December 31, 2016 and 2017, there was $236,000 and $255,000 recorded in other long-term liabilities related to shares held by employees and directors that were subject to repurchase.

A summary of restricted stock activity follows:

	Number of Restricted Shares Outstanding
Unvested shares—As of December 31, 2015	2,500,000
Early exercised options	1,675,000
Restricted shares vested	(1,855,208)
Unvested shares—As of December 31, 2016	2,319,792
Early exercised options	250,000
Restricted shares vested	(1,353,125)
Unvested shares—As of December 31, 2017	1,216,667

9. Income Taxes

The provision for income taxes for the years ended December 31, 2016 and 2017 was an immaterial amount. The Company has incurred net operating losses for all the periods presented. The Company has not reflected any benefit of such net operating loss carryforwards in the accompanying financial statements. The Company has established a full valuation allowance against its deferred tax assets due to the uncertainty surrounding the realization of such assets.

A reconciliation of total provision for income taxes and the amount computed by applying the federal statutory income tax rate of 21% to loss before provision from income taxes is as follows:

	Year Ended December 31,	
	2016	2017
	(In thousands)	
Computed expected tax benefit	$ (6,540)	$ (9,428)
State taxes (net of federal tax benefits)	(1,111)	(3,119)
Increase in valuation allowance	7,685	10,185
Other	89	(65)
R&D tax credits	(123)	(326)
Federal rate change (pursuant to the Tax Act)	—	2,753
Total provision for income taxes	$ —	$ —

FORTY SEVEN, INC.

Notes to the Financial Statements

The components of the deferred tax assets and liabilities are as follows:

	As of December 31,	
	2016	2017
	(In thousands)	
Net operating loss carryforwards	$ 2,811	$ 4,309
Capitalized R&D	5,295	13,537
Stock-based compensation	—	122
Fixed assets and intangibles	1,231	896
Tax credits	146	637
Other	13	180
Total deferred tax assets	9,496	19,681
Less: valuation allowance	(9,496)	(19,681)
Net deferred tax assets	$ —	$ —

Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Due to the lack of earnings history, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by approximately $7.7 million and $10.2 million during the years ended December 31, 2016 and 2017.

The Company has net operating carryforwards for federal and California income tax purposes of approximately $15.3 million and $15.6 million, respectively, as of December 31, 2017. The federal net operating loss carryforwards, if not utilized, will expire beginning in 2035. The state net operating loss carryforwards, if not utilized, will expire beginning in 2035. Under the U.S. Tax Cuts & Jobs Act, passed into law in December 2017, effective January 1, 2018 (the “Tax Act”) net operating losses generated after December 31, 2017 will be carried forward indefinitely with the yearly net operating loss utilization limited to 80 percent of taxable income.

Federal and California tax laws impose significant restrictions on the utilization of net operating loss carryforwards in the event of a change in ownership of the Company, as defined by Internal Revenue Code Section 382 (“Section 382”). The Company does not believe a change in ownership, as defined by Section 382, has occurred but a formal study has not been completed. In addition, in the future the Company may experience ownership changes, which may limit the utilization of net operating loss carryforwards or other tax attributes.

Uncertain Tax Benefits

No liability related to uncertain tax positions is recorded on the financial statements related to uncertain tax positions. It is the Company’s policy to include penalties and interest expense related to income taxes as a component of interest and other income, net, as necessary.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	As of December 31,	
	2016	2017
	(In thousands)	
Balance at beginning of year	$ —	$ 93
Increases related to current year tax positions	93	189
Balance at end of year	$ 93	$ 282

FORTY SEVEN, INC.

Notes to the Financial Statements

The Company does not anticipate any significant changes to unrecognized tax benefits over the next 12 months.

Income tax returns are filed in the United States and California. The years 2015 through 2017 remain open to examination by the domestic taxing jurisdictions to which the Company is subject. Net operating losses generated on a tax return basis by the Company for 2015 through 2017 remain open to examination by the domestic taxing jurisdictions.

In December 2017, the Tax Act was signed into law. The Tax Act, among other changes, lowers the Company's federal tax rate from 34% to 21%. Based on provisions of the Tax Act, the Company remeasured its deferred tax assets and liabilities to reflect the lower statutory tax rate. However, since the Company established a valuation allowance to offset its deferred tax assets, there is no impact to the effective tax rate, as any changes to deferred taxes would be offset by the valuation allowance. The deferred tax remeasurement is provisional and is subject to revision as the Company completes its analysis of the Tax Act, collects and prepares necessary data and interprets any additional guidance issued by standard-setting bodies. The Company currently anticipates finalizing and recording any resulting adjustments related to the tax effects of the Tax Act in 2018.

10. Net Loss and Unaudited Pro Forma Net Loss Per Share

The following outstanding potentially dilutive shares have been excluded from the calculation of diluted net loss per share for the periods presented due to their anti-dilutive effect:

	As of December 31,	
	2016	2017
Convertible preferred stock	34,400,000	125,673,575
Stock options to purchase common stock	4,837,500	16,294,994
Restricted stock subject to future vesting	2,319,792	1,216,667
Total	41,557,292	143,185,236

Pro forma Net Loss per Share

The following table sets forth the computation of unaudited pro forma basic and diluted net loss per share during the year ended December 31, 2017 (in thousands, except share and per share data):

	Year Ended December 31, 2017 (unaudited)
Net loss, basic and diluted	$
Shares used in computing net loss per share, basic and diluted	
Pro forma adjustment to reflect assumed conversion of convertible preferred stock	
Shares used in computing pro forma net loss per share, basic and diluted	
Pro forma net loss per share, basic and diluted	$

FORTY SEVEN, INC.

Notes to the Financial Statements

11. Related-Party Relationship

Dr. Weissman and Dr. Majeti, co-founders and members of the Company's board of directors, are professors at Stanford. While employed by Stanford, Dr. Weissman was a co-inventor of some of the patents that the Company licenses under the Stanford License Agreement. Under Stanford's policies, as a co-inventor Dr. Weissman is entitled to receive a share of any royalties that the Company pays to Stanford under the agreement with respect to the covered intellectual property. No royalty payments have been made to date.

12. Subsequent Events

Subsequent events have been evaluated through March 22, 2018, which is the date that the financial statements were available to be issued.


Forty Seven

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth all costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the sale of the common stock being registered. All amounts shown are estimates except for the SEC registration fee, the Financial Industry Regulatory Authority, or FINRA, filing fee and the Nasdaq Global Market initial listing fee.

Item	Amount
SEC registration fee	$ *
FINRA filing fee	*
Initial listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees and expenses	*
Miscellaneous	*
Total	$ *

* To be filed by amendment.

Item 14. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act. Our amended and restated certificate of incorporation to be in effect upon the closing of this offering allows for our indemnification of our directors, officers, employees and other agents to the maximum extent permitted by the Delaware General Corporation Law, and our amended and restated bylaws to be in effect upon the closing of this offering provide for indemnification of our directors and executive officers to the maximum extent permitted by the Delaware General Corporation Law.

We have entered into indemnification agreements with our directors and officers, whereby we have agreed to indemnify our directors and officers to the fullest extent permitted by law, including indemnification against expenses and liabilities incurred in legal proceedings to which the director or officer was, or is threatened to be made, a party by reason of the fact that such director or officer is or was a director, officer, employee, or agent of Forty Seven, Inc., provided that such director or officer acted in good faith and in a manner that the director or officer reasonably believed to be in, or not opposed to, the best interest of Forty Seven, Inc.

At present, there is no pending litigation or proceeding involving a director or officer of Forty Seven, Inc. regarding which indemnification is sought, nor is the registrant aware of any threatened litigation that may result in claims for indemnification.

We maintain insurance policies that indemnify our directors and officers against various liabilities arising under the Securities Act and the Securities Exchange Act of 1934, as amended, that might be incurred by any director or officer in his or her capacity as such.

The underwriters are obligated, under certain circumstances, pursuant to the underwriting agreement to be filed as Exhibit 1.1 hereto, to indemnify us, our officers and our directors against liabilities under the Securities Act.

Item 15. Recent Sales of Unregistered Securities.

The following sets forth information regarding all unregistered securities sold since March 1, 2015:

Issuances of Capital Stock

(1) From May 2015 to June 2015, we sold, in a series of closings, an aggregate of 39,060,000 shares of common stock to nine accredited investors at a purchase prices ranging from of $0.001 to $0.0064 per share for an aggregate purchase price of approximately $43,278.

(2) In November 2015 and from February 2016 through April 2016, we sold, in a series of closings, an aggregate of 34,400,000 shares of our Series A-1 preferred stock to 37 accredited investors at a purchase price of $1.00 per share for an aggregate purchase price of $34.4 million.

(3) From February 2017 through March 2017, we sold, in a series of closings, an aggregate of 32,454,663 shares of our Series A-2 preferred stock to 29 accredited investors at a purchase price of $1.2448132 per share for an aggregate purchase price of approximately $40.4 million.

(4) In October 2017, we sold an aggregate of 58,818,912 shares of our Series B preferred stock to 32 accredited investors at a purchase price of $1.2751 per share for an aggregate purchase price of approximately $75.0 million.

Convertible Promissory Notes

(5) From June 2015 through November 2015, we issued and sold, in a series of closings, convertible promissory notes in the aggregate principal amount of $900,000 to three accredited investors, such notes were converted into 909,349 shares of Series A-1 preferred stock in November 2015.

Option and Common Stock Issuances

(6) From May 15, 2015 through March 16, 2018, we granted to certain of our directors, employees, consultants and other service providers options to purchase 20,703,032 shares of common stock with per share exercise prices ranging from $0.26 to $0.68 under our 2015 Plan.

(7) From May 15, 2015 through March 16, 2018, we issued and sold an aggregate of 2,510,351 shares of common stock upon the exercise of options under of 2015 Plan at exercise prices ranging from $0.26 to $0.68 per share, for an aggregate exercise price of approximately $747,904.

(8) From May 15, 2015 through March 16, 2018, we issued to certain of our directors, employees, consultants and other service providers an aggregate of 3,000,000 shares of common stock at a purchase price of $0.001 per share, or $0.0064 per share, for an aggregate purchase price of approximately $6,240 pursuant to restricted stock purchase grant notices under our 2015 Plan, of which 325,000 shares of common stock were repurchased by us at $0.001 per share for a repurchase price of $325.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. Unless otherwise specified above, we believe these transactions were exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act (and Regulation D promulgated thereunder), or Rule 701 promulgated under Section 3(b) of the Securities Act as transactions by an issuer not involving any public offering or under benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed on the share certificates issued in these transactions. All recipients had adequate access, through their relationships with us, to information about us. The sales of these securities were made without any general solicitation or advertising.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

Exhibit No.	Description
1.1*	Form of Underwriting Agreement.
3.1	Amended and Restated Certificate of Incorporation of Forty Seven, Inc., as currently in effect.
3.2*	Form of Amended and Restated Certificate of Incorporation of Forty Seven, Inc., to be in effect upon the closing of the offering.
3.3	Bylaws of Forty Seven, Inc., as currently in effect.
3.4*	Form of Amended and Restated Bylaws of Forty Seven, Inc., to be in effect upon the closing of the offering.
4.1*	Form of Common Stock Certificate.
5.1*	Form of Opinion of Cooley LLP.
10.1	Amended and Restated Investor Rights Agreement, by and among Forty Seven, Inc. and the investors listed on Exhibit A thereto, dated October 17, 2017.
10.2*+	Forty Seven, Inc. 2015 Equity Incentive Plan, as amended.
10.3*+	Forms of Stock Option Grant Notice, Option Agreement and Notice of Exercise under 2015 Equity Incentive Plan.
10.4*+	Forty Seven, Inc. 2018 Equity Incentive Plan, to be in effect when this registration statement is declared effective.
10.5*+	Forms of Stock Option Grant Notice, Option Agreement and Notice of Exercise under the 2018 Equity Incentive Plan, to be in effect when this registration statement is declared effective.
10.6*+	Forms of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the 2018 Equity Incentive Plan, to be in effect when this registration statement is declared effective.
10.7*+	Forty Seven, Inc. 2018 Employee Stock Purchase Plan.
10.8*+	Form of Indemnification Agreement, by and between Forty Seven, Inc. and each of its directors and executive officers.
10.9+	Offer Letter, by and between Forty Seven, Inc. and Mark McCamish, dated November 10, 2016.
10.10+	Executive Employment Agreement, by and between Forty Seven, Inc. and Chris Takimoto, effective as of January 7, 2016.
10.11	Lease Agreement, by and between Forty Seven, Inc. and MENLO PREHC I, LLC, dated as of April 13, 2016.
10.12*	Exclusive (Equity) Agreement, by and between Forty Seven, Inc. and The Board of Trustees of the Leland Stanford Junior University, dated November 19, 2015, as amended by Amendment No. 1 to Exclusive (Equity) Agreement, by and between Forty Seven, Inc. and The Board of Trustees of the Leland Stanford Junior University, dated April 19, 2017.
10.13*	Assigned Capacity and Manufacturing Agreement, by and between Forty Seven, Inc. and Lonza Sales AG, dated August 30, 2016.
10.14*	Amendment to the Assigned Capacity and Manufacturing Agreement, by and between Forty Seven, Inc. and Lonza Sales AG, dated June 9, 2017.
10.15*	Assigned Capacity and Manufacturing Agreement for 2000 L Scale, by and between Forty Seven, Inc. and Lonza Biologics Tuas Pte Ltd, dated December 21, 2017.
16.1	Letter from PricewaterhouseCoopers LLP to the Securities and Exchange Commission.

Exhibit No.	Description
23.1*	Consent of independent registered public accounting firm.
23.2*	Consent of Cooley LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (see signature pages).

* To be filed by amendment.
\+ Indicates management contract or compensatory plan.

(b) Financial Statement Schedules.

All financial statement schedules are omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or the notes thereto.

Item 17. Undertakings.

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance on Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act will be deemed to be part of this Registration Statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus will be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time will be deemed to be the initial *bona fide* offering thereof.

(3) For the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities: the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this Registration Statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(4) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Menlo Park, California on , 2018.

FORTY SEVEN, INC.

By: _____
Name: Mark A. McCamish
Title: President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoint Mark A. McCamish and , and each of them, his or her true and lawful agent, proxy and attorney-in-fact, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to (i) act on, sign and file with the Securities and Exchange Commission any and all amendments (including post-effective amendments) to this registration statement together with all schedules and exhibits thereto and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, together with all schedules and exhibits thereto, (ii) act on, sign and file such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith, (iii) act on and file any supplement to any prospectus included in this registration statement or any such amendment or any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and (iv) take any and all actions which may be necessary or appropriate to be done, as fully for all intents and purposes as he or she might or could do in person, hereby approving, ratifying and confirming all that such agent, proxy and attorney-in-fact or any of his substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
_____ Mark A. McCamish, M.D.	President and Chief Executive Officer and Director (*Principal Executive Officer*)	, 2018
_____	Chief Financial Officer (*Principal Financial and Accounting Officer*)	, 2018
_____ Kristine M. Ball	Director	, 2018
_____ Jeffrey W. Bird, M.D.	Director	, 2018
_____ Dennis J. Henner, Ph.D.	Director	, 2018
_____ Ravindra Majeti, M.D.	Director	, 2018
_____ Christopher J. Schaepe	Director	, 2018
_____ Irving L. Weissman, M.D.	Director	, 2018

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF FORTY SEVEN, INC.

Mark McCamish hereby certifies that:

ONE: The original name of this corporation is CD47 Sciences, Inc. and the date of filing the original Certificate of Incorporation of this corporation with the Secretary of State of the State of Delaware was October 14, 2014.

TWO: He is the duly elected and acting President of Forty Seven, Inc., a Delaware corporation.

THREE: The Certificate of Incorporation of this corporation is hereby amended and restated to read as follows:

I.

The name of this corporation is Forty Seven, Inc. (the "***Company***").

II.

The address of the registered office of this Company in the State of Delaware is 2711 Centerville Road, Suite 400, City of Wilmington, County of New Castle, 19808, and the name of the registered agent of this corporation in the State of Delaware at such address is Corporation Service Company.

III.

The purpose of the Company is to engage in any lawful act or activity for which a corporation may be organized under the Delaware General Corporation Law ("***DGCL***").

IV.

A. The Company is authorized to issue two classes of stock to be designated, respectively, "Common Stock" and "Preferred Stock." The total number of shares that the Company is authorized to issue is 325,673,575 shares, 200,000,000 shares of which shall be Common Stock (the "***Common Stock***") and 125,673,575 shares of which shall be Preferred Stock (the "***Preferred Stock***"). The Preferred Stock shall have a par value of $0.0001 per share and the Common Stock shall have a par value of $0.0001 per share.

B. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding) by the affirmative vote of the holders of a majority of the stock of the Company entitled to vote (voting together as a single class on an as-if-converted basis).

C. 34,400,000 of the authorized shares of Preferred Stock are hereby designated "Series A-1 Preferred Stock" (the "***Series A-1 Preferred***").

D. 32,454,663 of the authorized shares of Preferred Stock are hereby designated "Series A-2 Preferred Stock" (the "***Series A-2 Preferred***").

E. 58,818,912 of the authorized shares of Preferred Stock are hereby designated "Series B Preferred Stock" (the "***Series B Preferred***" and, together with the Series A-1 Preferred, and the Series A-2 Preferred, the "***Series Preferred***").

F. The rights, preferences, privileges, restrictions and other matters relating to the Series Preferred are as follows:

1. DIVIDEND RIGHTS.

(a) Holders of Series Preferred, on a pari passu basis with the holders of Common Stock, shall be entitled to receive but only out of funds that are legally available therefor, dividends at the rate of eight percent (8%) of the Applicable Original Issue Price (as defined below) per annum on each outstanding share of Series Preferred in proportion to the greatest whole number of shares of Common Stock which would be held by each such holder if all shares of Series Preferred were converted at the then-effective Applicable Series Preferred Conversion Rate. Such dividends shall be payable only when, as and if declared by the Company's Board of Directors (the "***Board***") and shall be non-cumulative. No dividends shall be declared or paid to the holders of Common Stock unless dividends on the Series Preferred have been declared or set aside for payment.

(b) Whenever a dividend provided for in this Section 1 shall be payable in property other than cash, the value of such dividend shall be deemed to be the fair market value of such property as determined in good faith by the Board.

2. VOTING RIGHTS.

(a) General Rights. Each holder of shares of the Series Preferred shall be entitled to the number of votes equal to the number of shares of Common Stock into which such shares of Series Preferred could be converted (pursuant to Section 4 hereof) immediately after the close of business on the record date fixed for such meeting or the effective date of such written consent and shall have voting rights and powers equal to the voting rights and powers of the Common Stock and shall be entitled to notice of any stockholders' meeting in accordance with the bylaws of the Company. Except as otherwise provided herein or as required by law, the Series Preferred shall vote together with the Common Stock at any annual or special meeting of the stockholders and not as a separate class, and may act by written consent in the same manner as the Common Stock.

(b) Separate Vote of Series Preferred. For so long as any shares of Series Preferred remain outstanding, in addition to any other vote or consent required herein or by law, the vote or written consent of the holders of a majority of the outstanding Series Preferred, voting together as a single class on an as-if-converted basis, shall be necessary for effecting or validating the following actions (whether by merger, recapitalization or otherwise), any such act or transactions effected without such approval being null and void *ab initio* and of no force or effect:

(i) Any authorization or any designation of any new class or series of stock or any other securities convertible into a new class or series of stock of the Company ranking on parity with or senior to the Series Preferred in right of redemption, liquidation preference, voting, dividend or other rights or any increase in the authorized or designated number of any such class or series;

(ii) Any declaration or payment of dividends with respect to Common Stock or Preferred Stock;

(iii) Any authorization or agreement by the Company or its stockholders regarding an Asset Transfer or Acquisition (each as defined in Section 3 hereof);

(iv) Any voluntary dissolution or liquidation of the Company;

(v) Any increase or decrease in the authorized number of members of the Company's Board;

(vi) Incur indebtedness in excess of $10,000,000;

(vii) Sell or transfer the Company's material intellectual property (other than ordinary course transfers approved by the Board); or

(viii) Any redemption, repurchase, payment or declaration of dividends or other distributions with respect to Common Stock or Preferred Stock (except for (i) acquisitions of Common Stock by the Company pursuant to agreements that permit the Company to repurchase such shares at no more than cost upon termination of services to the Company or (ii) distributions to holders of Common Stock in accordance with Section 3).

(c) Separate Vote of Series A-1 Preferred. For so long as any shares of Series A-1 Preferred remain outstanding, in addition to any other vote or consent required herein or by law, the vote or written consent of the holders of at least 66 2/3% of the outstanding Series A-1 Preferred shall be necessary for effecting or validating the following actions (whether by merger, recapitalization or otherwise), any such act or transactions effected without such approval being null and void *ab initio* and of no force or effect:

(i) Any amendment, alteration, repeal or waiver of any provision of the Certificate of Incorporation or Bylaws of the Company in a manner that adversely affects the powers, rights, preferences or privileges of the Series A-1 Preferred in a manner that is different from the effect on the powers, rights, preferences and privileges of all other series of Preferred Stock, provided that a senior or pari passu equity financing or debt financing shall not be deemed to cause an adverse change to the Series A-1 Preferred;

(ii) Following the Original Issue Date, any authorization or issuance of shares of Series A-1 Preferred or any increase or decrease in the authorized number of shares of Series A-1 Preferred;

(iii) Any authorization or amendment of any provision of the Certificate of Incorporation amending any of the requisite voting thresholds for the Series A-1 Preferred in which the Series A-1 Preferred vote as a single class; or

(iv) Any waiver of whether any Asset Transfer or Acquisition (each as defined below) shall be deemed to be a Liquidation Event (as defined below) or the treatment of any transaction or series of related transactions as an Asset Transfer or Acquisition.

(d) Separate Vote of Series A-2 Preferred. For so long as any shares of Series A-2 Preferred remain outstanding, in addition to any other vote or consent required herein or by law, the vote or written consent of the holders of at least 66 2/3% of the outstanding Series A-2 Preferred shall be necessary for effecting or validating the following actions (whether by merger, recapitalization or otherwise), any such act or transactions effected without such approval being null and void *ab initio* and of no force or effect:

(i) Any amendment, alteration, repeal or waiver of any provision of the Certificate of Incorporation or Bylaws of the Company in a manner that adversely affects the powers, rights, preferences or privileges of the Series A-2 Preferred in a manner that is different from the effect on the powers, rights, preferences and privileges of all other series of Preferred Stock, provided that a senior or pari passu equity financing or debt financing shall not be deemed to cause an adverse change to the Series A-2 Preferred;

(ii) Following the Original Issue Date, any authorization or issuance of shares of Series A-2 Preferred or any increase or decrease in the authorized number of shares of Series A-2 Preferred;

(iii) Any authorization or amendment of any provision of the Certificate of Incorporation amending any of the requisite voting thresholds for the Series A-2 Preferred in which the Series A-2 Preferred vote as a single class; or

(iv) Any waiver of whether any Asset Transfer or Acquisition shall be deemed to be a Liquidation Event or the treatment of any transaction or series of related transactions as an Asset Transfer or Acquisition.

(e) Separate Vote of Series B Preferred. For so long as any shares of Series B Preferred remain outstanding, in addition to any other vote or consent required herein or by law, the vote or written consent of the holders of at least 75% of the outstanding Series B Preferred shall be necessary for effecting or validating the following actions (whether by merger, recapitalization or otherwise), any such act or transactions effected without such approval being null and void *ab initio* and of no force or effect:

(i) Any amendment, alteration, repeal or waiver of any provision of the Certificate of Incorporation or Bylaws of the Company in a manner that adversely affects the powers, rights, preferences or privileges of the Series B Preferred in a manner that is different from the effect on the powers, rights, preferences and privileges of all other series of Preferred Stock, provided that a senior or pari passu equity financing or debt financing shall not be deemed to cause an adverse change to the Series B Preferred;

(ii) Following the Original Issue Date, any authorization or issuance of shares of Series B Preferred or any increase or decrease in the authorized number of shares of Series B Preferred;

(iii) Any authorization or amendment of any provision of the Certificate of Incorporation amending any of the requisite voting thresholds for the Series B Preferred in which the Series B Preferred vote as a single class; or

(iv) Any waiver of whether any Asset Transfer or Acquisition shall be deemed to be a Liquidation Event or the treatment of any transaction or series of related transactions as an Asset Transfer or Acquisition.

(f) Election of Board of Directors.

(i) For so long as any shares of Series Preferred remain outstanding, the holders of Series Preferred, voting as a separate class, shall be entitled to elect three (3) members of the Board at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors in accordance with applicable law and to fill any vacancy caused by the resignation, death or removal of such directors.

(ii) For so long as any shares of Series B Preferred remain outstanding, the holders of Series B Preferred, voting as a separate class, shall be entitled to elect one (1) member of the Board at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors in accordance with applicable law and to fill any vacancy caused by the resignation, death or removal of such directors.

(iii) The holders of Common Stock, voting as a separate class, shall be entitled to elect three (3) members of the Board at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors in accordance with applicable law and to fill any vacancy caused by the resignation, death or removal of such directors.

(iv) The holders of Common Stock and Series Preferred, voting together as a single class on an as-if-converted basis, shall be entitled to elect one (1) member of the Board at each meeting or pursuant to each consent of the Company's stockholders for the election of directors and to fill any vacancy caused by the resignation, death or removal of such director (the "***At-Large Director***"), and the holders of Common Stock or Series Preferred, voting separately on an as-if-converted basis, shall be entitled to remove from office such director in accordance with applicable law.

(v) The holders of Common Stock and Series Preferred, voting together as a single class on an as-if-converted basis, shall be entitled to elect all remaining members of the Board at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors in accordance with applicable law and to fill any vacancy caused by the resignation, death or removal of such directors.

(vi) Notwithstanding the provisions of Sections 223(a)(1) and 223(a)(2) of the DGCL, any vacancy, including newly created directorships resulting from any increase in the authorized number of directors or amendment of this Amended and Restated Certificate of Incorporation ("***Restated Certificate***"), and vacancies created by removal or resignation of a director, may be filled by a majority of the directors then in office, though less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced; provided, however, that where such vacancy occurs among the directors elected by the holders of a class or series of stock, the holders of shares of such class or series may override the Board of Directors' action to fill such vacancy by (i) voting for their own designee to fill such vacancy at a meeting of the Company's stockholders or (ii) written consent, if the consenting stockholders hold a sufficient number of shares to elect their designee at a meeting of the stockholders in which all members of such class or series are present and voted. Any director may be removed during his or her term of office without cause, by, and only by, the affirmative vote of the holders of the shares of the class or series of stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders, and any vacancy thereby created may be filled by the holders of that class or series of stock represented at the meeting or pursuant to written consent. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director.

(vii) No person entitled to vote at an election for directors may cumulate votes to which such person is entitled unless required by applicable law at the time of such election. During such time or times that applicable law requires cumulative voting, every stockholder entitled to vote at an election for directors may cumulate such stockholder's votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of votes to which such stockholder's shares are otherwise entitled, or distribute the stockholder's votes on the same principle among as many candidates as such stockholder desires. No stockholder, however, shall be entitled to so cumulate such stockholder's votes unless (A) the names of such candidate or candidates have been placed in nomination prior to the voting and (B) the stockholder has given notice at the meeting, prior to the voting, of such stockholder's intention to cumulate such stockholder's votes. If any stockholder has given proper notice to cumulate votes, all stockholders may cumulate their votes for any candidates who have been properly placed in nomination. Under cumulative voting, the candidates receiving the highest number of votes, up to the number of directors to be elected, are elected.

(g) Super-Voting Director and Non-Voting Director. One director so designated by the holders of a majority of the outstanding shares of Common Stock of the Company (the "***Super-Voting Director***") shall have two (2) votes on all matters to be voted upon by the Board until November 25, 2018. The At-Large Director shall have no vote on any matters to be voted upon by the Board until December 31, 2017. All other directors, other than the Super- Voting Director until November 25, 2018 and At-Large Director until December 31, 2017, shall each have one (1) vote on all matters to be voted upon by the Board. After November 25, 2018, the Super-Voting Director shall have one (1) vote on all matters to be voted upon by the Board. After December 31, 2017, the At-Large Director shall have one (1) vote on all matters to be voted upon by the Board.

3. LIQUIDATION RIGHTS.

(a) Upon any liquidation, dissolution, or winding up of the Company, whether voluntary or involuntary (a "***Liquidation Event***"), before any distribution or payment shall be made to the holders of any Common Stock, the holders of Series Preferred shall be entitled to be paid out of the assets of the Company legally available for distribution (or the consideration received by the Company or its stockholders in an Acquisition) for each share of Series Preferred held by them, an amount per share of Series Preferred equal to the Applicable Original Issue Price plus all declared and unpaid dividends on the Series Preferred. If, upon any such Liquidation Event, the assets of the Company shall be insufficient to make payment in full to all holders of Series Preferred of the liquidation preference set forth in this Section 3(a), then such assets (or consideration) shall be distributed among the holders of Series Preferred at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled.

(b) After the payment of the full liquidation preference of the Series Preferred as set forth in Section 3(a) above, the remaining assets of the Company legally available for distribution (or the consideration received by the Company or its stockholders in an Acquisition), if any, shall be distributed ratably to the holders of the Common Stock.

(c) Notwithstanding the foregoing, if the holders of Series Preferred would be entitled to greater proceeds if such Series Preferred were to convert into Common Stock and forego the amounts payable to the holders of Series Preferred pursuant to Section 3(a) above, then the holders of Series Preferred would be entitled to receive such greater amounts in lieu of the amounts payable to the holders of Series Preferred pursuant to Section 3(a) above.

(d) An Asset Transfer or Acquisition (each as defined below) shall be deemed a Liquidation Event for purposes of this Section 3.

(i) For the purposes of this Section 3: (i) "***Acquisition***" shall mean (A) any consolidation or merger of the Company with or into any other corporation or other entity or person, or any other corporate reorganization, other than any such consolidation, merger

or reorganization in which the holders of the voting securities of the Company immediately prior to such consolidation, merger or reorganization, continue to hold as of immediately after such consolidation, merger or reorganization, a majority of the voting power of the surviving entity (or, if the surviving entity is a wholly owned subsidiary, its parent) as a result of the shares in the Company held by such holders prior to such consolidation, merger or reorganization; or (B) any transaction or series of related transactions to which the Company is a party in which in excess of fifty percent (50%) of the Company's voting power is transferred; provided that an Acquisition shall not include any transaction or series of transactions principally for bona fide equity financing purposes in which cash is received by the Company or any successor or indebtedness of the Company is cancelled or converted or a combination thereof; and (ii) "***Asset Transfer***" shall mean a sale, lease, exclusive license or other disposition of all or substantially all of the assets of the Company.

(ii) In any Acquisition or Asset Transfer, if the consideration to be received is securities of a corporation or other property other than cash, its value will be deemed its fair market value as determined in good faith by the Board on the date such determination is made.

(iii) The Company shall not have the power to effect an Acquisition or Asset Transfer unless the definitive agreement for such transaction (the "***Agreement***") provides that the consideration payable to the stockholders of the Company in connection therewith shall be allocated among the holders of capital stock of the Company in accordance with this Section 3.

(iv) In the event of a Liquidation Event pursuant to this 3(d), if any portion of the consideration payable to the stockholders of the Company is payable only upon satisfaction of contingencies (the "***Additional Consideration***"), the agreement or plan of merger or consolidation for such transaction shall provide that (i) the portion of such consideration that is not Additional Consideration (such portion, the "***Initial Consideration***") shall be allocated among the holders of capital stock of the Company in accordance with Sections 3(a) and 3(b) as if the Initial Consideration were the only consideration payable in connection with such Liquidation Event; and (ii) any Additional Consideration which becomes payable to the stockholders of the Company upon satisfaction of such contingencies shall be allocated among the holders of capital stock of the Company in accordance with Sections 3(a) and 3(b) after taking into account the previous payment of the Initial Consideration as part of the same transaction. For the purposes of this Section 3(d)(iv), consideration placed into escrow or retained as holdback to be available for satisfaction of indemnification or similar obligations in connection with such Liquidation Event shall be deemed to be Additional Consideration.

(e) The "***Series A-1 Original Issue Price***" shall be $1.00 (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares after the filing date hereof). The "***Series A-2 Original Issue Price***" shall be $1.2448132 (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares after the filing date hereof). The "***Series B Original Issue Price***" shall be $1.2751 (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares after the filing date hereof). The "***Applicable Original Issue Price***" shall mean, (i) with respect to the Series A-1 Preferred, the Series A-1 Original Issue Price, (ii) with respect to the Series A-2 Preferred, the Series A-2 Original Issue Price, and (iii) with respect to the Series B Preferred, the Series B Original Issue Price.

4. CONVERSION RIGHTS.

The holders of the Series Preferred shall have the following rights with respect to the conversion of the Series Preferred into shares of Common Stock (the "***Conversion Rights***"):

(a) Optional Conversion. Subject to and in compliance with the provisions of this Section 4, any shares of Series Preferred may, at the option of the holder, be converted at any time into fully-paid and nonassessable shares of Common Stock. The number of shares of Common Stock to which a holder of Series Preferred shall be entitled upon conversion shall be the product obtained by multiplying the Applicable Series Preferred Conversion Rate then in effect (determined as provided in Section 4(b)) by the number of shares of Series Preferred being converted.

(b) Series Preferred Conversion Rate. The conversion rate in effect at any time for conversion of each series of Series Preferred (the "***Applicable Series Preferred Conversion Rate***") shall be the quotient obtained by dividing the Applicable Original Issue Price of such series of Series Preferred by the Applicable Series Preferred Conversion Price, calculated as provided in Section 4(c).

(c) Series Preferred Conversion Price. The conversion price for each series of Series Preferred shall initially be the Applicable Original Issue Price of such series of Series Preferred (the "***Applicable Series Preferred Conversion Price***"). Such initial Applicable Series Preferred Conversion Price shall be adjusted from time to time in accordance with this Section 4. All references to the Applicable Series Preferred Conversion Price herein shall mean the Applicable Series Preferred Conversion Price as so adjusted.

(d) Mechanics of Optional Conversion. Each holder of Series Preferred who desires to convert the same into shares of Common Stock pursuant to this Section 4 shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Company or any transfer agent for the Series Preferred, and shall give written notice to the Company at such office that such holder elects to convert the same. Such notice shall state the number of shares of Series Preferred being converted. Thereupon, the Company shall promptly issue and deliver at such office to such holder a certificate or certificates for the number of shares of Common Stock to which such holder is entitled and shall promptly pay (i) in cash or, to the extent sufficient funds are not then legally available therefor, in Common Stock (at the Common Stock's fair market value determined by the Board as of the date of such conversion), any declared and unpaid dividends on the shares of Series Preferred being converted and (ii) in cash (at the Common Stock's fair market value determined by the Board as of the date of conversion) the value of any fractional share of Common Stock otherwise issuable to any holder of Series Preferred. Such conversion shall be deemed to have been made at the close of business on the date of such surrender of the certificates representing the shares of Series Preferred to be converted, and the person entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder of such shares of Common Stock on such date.

(e) Adjustment for Stock Splits and Combinations. If at any time or from time to time on or after the date that the first share of Series B Preferred is issued (the "***Original Issue Date***") the Company effects a subdivision of the outstanding Common Stock, the Applicable Series Preferred Conversion Price in effect immediately before that subdivision shall be proportionately decreased. Conversely, if at any time or from time to time after the Original Issue Date the Company combines the outstanding shares of Common Stock into a smaller number of shares, the Applicable Series Preferred Conversion Price in effect immediately before the combination shall be proportionately increased. Any adjustment under this Section 4(e) shall become effective at the close of business on the date the subdivision or combination becomes effective.

(f) Adjustment for Common Stock Dividends and Distributions. If at any time or from time to time on or after the Original Issue Date the Company pays to holders of Common Stock a dividend or other distribution in additional shares of Common Stock, the Applicable Series Preferred Conversion Price then in effect shall be decreased as of the time of such issuance, as provided below:

(i) The Applicable Series Preferred Conversion Price shall be adjusted by multiplying the Applicable Series Preferred Conversion Price then in effect by a fraction equal to:

(A) the numerator of which is the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance, and

(B) the denominator of which is the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance plus the number of shares of Common Stock issuable in payment of such dividend or distribution;

(ii) If the Company fixes a record date to determine which holders of Common Stock are entitled to receive such dividend or other distribution, the Applicable Series Preferred Conversion Price shall be fixed as of the close of business on such record date and the number of shares of Common Stock shall be calculated immediately prior to the close of business on such record date; and

(iii) If such record date is fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Applicable Series Preferred Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Applicable Series Preferred Conversion Price shall be adjusted pursuant to this Section 4(f) to reflect the actual payment of such dividend or distribution.

(g) Adjustment for Reclassification, Exchange, Substitution, Reorganization, Merger or Consolidation. If at any time or from time to time on or after the Original Issue Date the Common Stock issuable upon the conversion of the Series Preferred is changed into the same or a different number of shares of any class or classes of stock, whether by recapitalization, reclassification, merger, consolidation or otherwise (other than an Acquisition as defined in Section 3 or a subdivision or combination of shares or stock dividend provided for elsewhere in this Section 4), in any such event each share of Series Preferred shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property that a holder of the number of shares of Common Stock of the Company issuable upon conversion of one share of Series Preferred immediately prior to such recapitalization, reclassification, merger, consolidation or other transaction would have been entitled to receive pursuant to such transaction, all subject to further adjustment as provided herein or with respect to such other securities or property by the terms thereof. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of Series Preferred after the capital reorganization to the end that the provisions of this Section 4 (including adjustment of the Applicable Series Preferred Conversion Price then in effect and the number of shares issuable upon conversion of the Series Preferred) shall be applicable after that event and be as nearly equivalent as practicable.

(h) Sale of Shares Below Series Preferred Conversion Price.

(i) If at any time or from time to time on or after the Original Issue Date the Company issues or sells, or is deemed by the express provisions of this Section 4(h) to have issued or sold, Additional Shares of Common Stock (as defined below), other than as provided in Section 4(e), 4(f) or 4(g) above, for an Effective Price (as defined below) less than the then effective Applicable Series Preferred Conversion Price (a "***Qualifying Dilutive Issuance***"), then and in each such case, the then existing Applicable Series Preferred Conversion Price shall be reduced, as of the opening of business on the date of such issue or sale, to a price determined by multiplying the Applicable Series Preferred Conversion Price in effect immediately prior to such issuance or sale by a fraction:

(A) the numerator of which shall be (A) the number of shares of Common Stock deemed outstanding (as determined below) immediately prior to such issue or sale, plus (B) the number of shares of Common Stock that the Aggregate Consideration (as defined below) received or deemed received by the Company for the total number of Additional Shares of Common Stock so issued would purchase at such then-existing Applicable Series Preferred Conversion Price, and

(B) the denominator of which shall be the number of shares of Common Stock deemed outstanding (as determined below) immediately prior to such issue or sale plus the total number of Additional Shares of Common Stock so issued.

For the purposes of the preceding sentence, the number of shares of Common Stock deemed to be outstanding as of a given date shall be the sum of (A) the number of shares of Common Stock outstanding, (B) the number of shares of Common Stock into which the then

outstanding shares of Series Preferred could be converted if fully converted on the day immediately preceding the given date, and (C) the number of shares of Common Stock that are issuable upon the exercise or conversion of all other rights, options and convertible securities outstanding on the day immediately preceding the given date.

(ii) No adjustment shall be made to the Applicable Series Preferred Conversion Price in an amount less than one percent (1%) of the Applicable Series Preferred Conversion Price then in effect. Any adjustment otherwise required by this Section 4(h) that is not required to be made due to the first sentence of this subsection (ii) shall be included in any subsequent adjustment to the Applicable Series Preferred Conversion Price. Any adjustment required by this Section 4(h) shall be rounded to the first decimal for which such rounding represents less than one percent (1%) of the Applicable Series Preferred Conversion Price in effect after such adjustment.

(iii) For the purpose of making any adjustment required under this Section 4(h), the aggregate consideration received by the Company for any issue or sale of securities (the "***Aggregate Consideration***") shall be defined as: (A) to the extent it consists of cash, the gross amount of cash received by the Company before deduction of any underwriting or similar commissions, compensation or concessions paid or allowed by the Company in connection with such issue or sale and without deduction of any expenses payable by the Company, (B) to the extent it consists of property other than cash, the fair market value of that property as determined in good faith by the Board, and (C) if Additional Shares of Common Stock, Convertible Securities (as defined below) or rights or options to purchase either Additional Shares of Common Stock or Convertible Securities are issued or sold together with other stock or securities or other assets of the Company for a consideration that covers both, the portion of the consideration so received that may be reasonably determined in good faith by the Board to be allocable to such Additional Shares of Common Stock, Convertible Securities or rights or options.

(iv) For the purpose of the adjustment required under this Section 4(h), if the Company issues or sells (x) Preferred Stock or other stock, options, warrants, purchase rights or other securities exercisable for or convertible into, Additional Shares of Common Stock (such convertible stock or securities being herein referred to as "***Convertible Securities***") or (y) rights or options for the purchase of Additional Shares of Common Stock or Convertible Securities and if the Effective Price of such Additional Shares of Common Stock is less than the Applicable Series Preferred Conversion Price, in each case the Company shall be deemed to have issued at the time of the issuance of such rights or options or Convertible Securities the maximum number of Additional Shares of Common Stock issuable upon exercise or conversion thereof and to have received as consideration for the issuance of such shares an amount equal to the total amount of the consideration, if any, received by the Company for the issuance of such rights or options or Convertible Securities plus:

(A) in the case of such rights or options, the minimum amounts of consideration, if any, payable to the Company upon the exercise of such rights or options; and

(B) in the case of Convertible Securities, the minimum amounts of consideration, if any, payable to the Company upon the conversion thereof (other than by cancellation of liabilities or obligations evidenced by such Convertible Securities); *provided* that if the minimum amounts of such consideration cannot be ascertained, but are a function of antidilution or similar protective clauses, the Company shall be deemed to have received the minimum amounts of consideration without reference to such clauses.

(C) If the minimum amount of consideration payable to the Company upon the exercise or conversion of rights, options or Convertible Securities is reduced over time or on the occurrence or non-occurrence of specified events other than by reason of antidilution adjustments, the Effective Price shall be recalculated using the figure to which such minimum amount of consideration is reduced; *provided further,* that if the minimum amount of consideration payable to the Company upon the exercise or conversion of such rights, options or Convertible Securities is subsequently increased, the Effective Price shall be again recalculated using the increased minimum amount of consideration payable to the Company upon the exercise or conversion of such rights, options or Convertible Securities.

(D) No further adjustment of the Applicable Series Preferred Conversion Price, as adjusted upon the issuance of such rights, options or Convertible Securities, shall be made as a result of the actual issuance of Additional Shares of Common Stock or the exercise of any such rights or options or the conversion of any such Convertible Securities. If any such rights or options or the conversion privilege represented by any such Convertible Securities shall expire without having been exercised, the Applicable Series Preferred Conversion Price as adjusted upon the issuance of such rights, options or Convertible Securities shall be readjusted to the Applicable Series Preferred Conversion Price that would have been in effect had an adjustment been made on the basis that the only Additional Shares of Common Stock so issued were the Additional Shares of Common Stock, if any, actually issued or sold on the exercise of such rights or options or rights of conversion of such Convertible Securities, and such Additional Shares of Common Stock, if any, were issued or sold for the consideration actually received by the Company upon such exercise, plus the consideration, if any, actually received by the Company for the granting of all such rights or options, whether or not exercised, plus the consideration received for issuing or selling the Convertible Securities actually converted, plus the consideration, if any, actually received by the Company (other than by cancellation of liabilities or obligations evidenced by such Convertible Securities) on the conversion of such Convertible Securities, *provided* that such readjustment shall not apply to prior conversions of Series Preferred.

(v) For the purpose of making any adjustment to the Conversion Price of the Series Preferred required under this Section 4(h), "***Additional Shares of Common Stock***" shall mean all shares of Common Stock issued by the Company or deemed to be issued pursuant to this Section 4(h) (including shares of Common Stock subsequently reacquired or retired by the Company), other than (the following exceptions, collectively, "***Excluded Issuances***"):

(A) shares of Common Stock issued upon conversion of the Series Preferred;

(B) shares of Common Stock or Convertible Securities issued after the Original Issue Date to employees, officers or directors of, or consultants or advisors to the Company or any subsidiary pursuant to stock purchase or stock option plans or other arrangements that are approved by the Board, including at least two (2) of the directors designated by holders of the Preferred Stock voting as a separate class;

(C) shares of Common Stock issued pursuant to the exercise or conversion of Convertible Securities outstanding as of the Original Issue Date;

(D) shares of Common Stock or Convertible Securities issued for consideration other than cash pursuant to a merger, consolidation, acquisition, strategic alliance or similar business combination approved by the Board, including at least two (2) of the directors designated by holders of the Preferred Stock voting as a separate class;

(E) shares of Common Stock or Convertible Securities issued pursuant to any equipment loan or leasing arrangement, real property leasing arrangement or debt financing from a bank or similar financial or lending institution approved by the Board, including at least two (2) of the directors designated by holders of the Preferred Stock voting as a separate class;

(F) shares of Common Stock or Convertible Securities issued to third-party service providers in exchange for or as partial consideration for services rendered to the Company as approved by the Board, including at least two (2) of the directors designated by holders of the Preferred Stock voting as a separate class;

(G) shares of Common Stock or Convertible Securities issued in connection with strategic transactions involving the Company and other entities approved by the Board, including at least two (2) of the directors designated by holders of the Preferred Stock voting as a separate class, including without limitation joint ventures, manufacturing, marketing, distribution, technology transfer or development arrangements; and

(H) shares of Common Stock or Convertible Securities that (i) with respect to the Conversion Price of the Series A-1 Preferred, the holders of at least 66 2/3% of the outstanding shares of Series A-1 Preferred elect in writing to exclude from the definition of "Additional Shares of Common Stock" for purposes of this Section 4; (ii) with respect to the Conversion Price of the Series A-2 Preferred, the holders of at least 66 2/3% of the outstanding shares of Series A-2 Preferred elect in writing to exclude from the definition of "Additional Shares of Common Stock" for purposes of this Section 4; or (iii) with respect to the Conversion Price of the Series B Preferred, the holders of at least 75% of the outstanding Series B Preferred elect in writing to exclude from the definition of "Additional Shares of Common Stock" for purposes of this Section 4.

References to Common Stock in the subsections of this clause (v) above shall mean all shares of Common Stock issued by the Company or deemed to be issued pursuant to this Section 4(h). The "***Effective Price***" of Additional Shares of Common Stock shall mean the quotient determined by dividing the total number of Additional Shares of Common Stock issued

or sold, or deemed to have been issued or sold by the Company under this Section 4(h), into the Aggregate Consideration received, or deemed to have been received by the Company for such issue under this Section 4(h), for such Additional Shares of Common Stock. In the event that the number of shares of Additional Shares of Common Stock or the Effective Price cannot be ascertained at the time of issuance, such Additional Shares of Common Stock shall be deemed issued immediately upon the occurrence of the first event that makes such number of shares or the Effective Price, as applicable, ascertainable.

(vi) In the event that the Company issues or sells, or is deemed to have issued or sold, Additional Shares of Common Stock in a Qualifying Dilutive Issuance (the "***First Dilutive Issuance***"), then in the event that the Company issues or sells, or is deemed to have issued or sold, Additional Shares of Common Stock in a Qualifying Dilutive Issuance other than the First Dilutive Issuance as a part of the same transaction or series of related transactions as the First Dilutive Issuance (a "***Subsequent Dilutive Issuance***"), then and in each such case upon a Subsequent Dilutive Issuance the Applicable Series Preferred Conversion Price shall be reduced to the Applicable Series Preferred Conversion Price that would have been in effect had the First Dilutive Issuance and each Subsequent Dilutive Issuance all occurred on the closing date of the First Dilutive Issuance.

(i) Certificate of Adjustment. In each case of an adjustment or readjustment of the Applicable Series Preferred Conversion Price for the number of shares of Common Stock or other securities issuable upon conversion of the Series Preferred, if the Series Preferred is then convertible pursuant to this Section 4, the Company, at its expense, shall compute such adjustment or readjustment in accordance with the provisions hereof and shall, upon request, prepare a certificate showing such adjustment or readjustment, and shall mail such certificate, by first class mail, postage prepaid, to each registered holder of Series Preferred so requesting at the holder's address as shown in the Company's books. The certificate shall set forth such adjustment or readjustment, showing in detail the facts upon which such adjustment or readjustment is based, including a statement of (i) the consideration received or deemed to be received by the Company for any Additional Shares of Common Stock issued or sold or deemed to have been issued or sold, (ii) the Applicable Series Preferred Conversion Price at the time in effect, (iii) the number of Additional Shares of Common Stock and (iv) the type and amount, if any, of other property that at the time would be received upon conversion of the Series Preferred. Failure to request or provide such notice shall have no effect on any such adjustment.

(j) Notices of Record Date. Upon (i) any taking by the Company of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, or (ii) any Acquisition (as defined in Section 3) or other capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company, any merger or consolidation of the Company with or into any other corporation, or any Asset Transfer (as defined in Section 3), or any voluntary or involuntary dissolution, liquidation or winding up of the Company, the Company shall mail to each holder of Series Preferred at least ten (10) days prior to (x) the record date, if any, specified therein; or (y) if no record date is specified, the date upon which such action is to take effect (or, in either case, such shorter period approved by the holders of a majority of the outstanding Series Preferred) a notice specifying (A) the date on which any such record is to be

taken for the purpose of such dividend or distribution and a description of such dividend or distribution, (B) the date on which any such Acquisition, reorganization, reclassification, transfer, consolidation, merger, Asset Transfer, dissolution, liquidation or winding up is expected to become effective, and (C) the date, if any, that is to be fixed as to when the holders of record of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such Acquisition, reorganization, reclassification, transfer, consolidation, merger, Asset Transfer, dissolution, liquidation or winding up.

(k) Automatic Conversion.

(i) Each share of Series A-1 Preferred and Series A-2 Preferred shall automatically be converted into shares of Common Stock, based on the then-effective Applicable Series Preferred Conversion Price, (A) at any time upon the affirmative election of the holders of 66 2/3% of the outstanding shares of the Series A-1 Preferred and Series A-2 Preferred, voting together as a single class, with advance notice provided to the holders of the Series A-1 Preferred and Series A-2 Preferred at least 30 days prior to such election, unless waived by 66 2/3% of the outstanding shares of Series A-1 Preferred and Series A-2 Preferred, or (B) immediately upon the closing of a firmly underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of Common Stock for the account of the Company in which the gross cash proceeds to the Company (before underwriting discounts, commissions and fees) are at least $50,000,000. Each share of Series B Preferred shall automatically be converted into shares of Common Stock, based on the then-effective Applicable Series Preferred Conversion Price, (A) at any time upon the affirmative election of the holders of 75% of the outstanding shares of the Series B Preferred, with advance notice provided to the holders of the Series B Preferred at least 30 days prior to such election, unless waived by 75% of the outstanding shares of Series B Preferred, or (B) immediately upon the closing of a firmly underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of Common Stock for the account of the Company in which the gross cash proceeds to the Company (before underwriting discounts, commissions and fees) are at least $50,000,000. Upon such automatic conversion, any declared and unpaid dividends shall be paid in accordance with the provisions of Section 4(d).

(ii) Upon the occurrence of either of the events specified in Section 4(k)(i) above, the outstanding shares of Series Preferred shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Company or its transfer agent; *provided*, *however*, that the Company shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless the certificates evidencing such shares of Series Preferred are either delivered to the Company or its transfer agent as provided below, or the holder notifies the Company or its transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement satisfactory to the Company to indemnify the Company from any loss incurred by it in connection with such certificates. Upon the occurrence of such automatic conversion of the Series Preferred, the holders of Series Preferred shall surrender the certificates representing such shares at the office of the Company or any transfer agent for the

Series Preferred. Thereupon, there shall be issued and delivered to such holder promptly at such office and in its name as shown on such surrendered certificate or certificates, a certificate or certificates for the number of shares of Common Stock into which the shares of Series Preferred surrendered were convertible on the date on which such automatic conversion occurred, and any declared and unpaid dividends shall be paid in accordance with the provisions of Section 4(d).

(l) Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of Series Preferred. All shares of Common Stock (including fractions thereof) issuable upon conversion of more than one share of Series Preferred by a holder thereof shall be aggregated for purposes of determining whether the conversion would result in the issuance of any fractional share. If after the aforementioned aggregation the conversion would result in the issuance of any fractional share, the Company shall, in lieu of issuing any fractional share, pay cash equal to the product of such fraction multiplied by the fair market value of one share of Common Stock (as determined by the Board) on the date of conversion.

(m) Reservation of Stock Issuable Upon Conversion. The Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of the Series Preferred, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series Preferred. If at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series Preferred, the Company will take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose.

(n) Notices. Any notice required by the provisions of this Section 4 shall be in writing and shall be deemed effectively given: (i) upon personal delivery to the party to be notified, (ii) when sent by electronic transmission in compliance with the provisions of the DGCL if sent during normal business hours of the recipient; if not, then on the next business day, (iii) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (iv) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with verification of receipt. All notices shall be addressed to each holder of record at the address of such holder appearing on the books of the Company.

(o) Payment of Taxes. The Company will pay all taxes (other than taxes based upon income) and other governmental charges that may be imposed with respect to the issue or delivery of shares of Common Stock upon conversion of shares of Series Preferred, excluding any tax or other charge imposed in connection with any transfer involved in the issue and delivery of shares of Common Stock in a name other than that in which the shares of Series Preferred so converted were registered.

5. NO REISSUANCE OF SERIES PREFERRED.

Any shares of Series Preferred redeemed, purchased, converted or exchanged by the Company shall be cancelled and retired and shall not be reissued or transferred.

V.

A. The liability of the directors of the Company for monetary damages shall be eliminated to the fullest extent under applicable law.

B. To the fullest extent permitted by applicable law, the Company is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the Company (and any other persons to which applicable law permits the Company to provide indemnification) through Bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise in excess of the indemnification and advancement otherwise permitted by such applicable law. If applicable law is amended after approval by the stockholders of this Article V to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director to the Company shall be eliminated or limited to the fullest extent permitted by applicable law as so amended.

C. Any repeal or modification of this Article V shall only be prospective and shall not affect the rights or protections or increase the liability of any director under this Article V in effect at the time of the alleged occurrence of any act or omission to act giving rise to liability or indemnification.

D. The Company renounces any interest or expectancy of the Company in, or in being offered an opportunity to participate in, any Excluded Opportunity. An "***Excluded Opportunity***" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of, any director of the Company who is not an employee of the Company or any of its subsidiaries, (collectively, "***Covered Persons***"), unless in either case such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of the Company.

VI.

For the management of the business and for the conduct of the affairs of the Company, and in further definition, limitation and regulation of the powers of the Company, of its directors and of its stockholders or any class thereof, as the case may be, it is further *provided* that:

A. The management of the business and the conduct of the affairs of the Company shall be vested in its Board. The number of directors that shall constitute the whole Board shall be fixed by the Board in the manner provided in the Bylaws, subject to any restrictions which may be set forth in this Restated Certificate.

B. The Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the Company, subject to any restrictions that may be set forth in this Restated Certificate. The stockholders shall also have the power to adopt, amend or repeal the Bylaws of the Company, subject to any restrictions that may be set forth in this Restated Certificate.

C. The directors of the Company need not be elected by written ballot unless the Bylaws so provide.

* * * *

FOUR: This Restated Certificate has been duly approved by the Board of Directors of the Company.

FIVE: This Restated Certificate was approved by the holders of the requisite number of shares of said corporation in accordance with Section 228 of the DGCL. This Restated Certificate has been duly adopted in accordance with the provisions of Sections 242 and 245 of the DGCL by the stockholders of the Company.

IN WITNESS WHEREOF, Forty Seven, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by its President this 16th day of October, 2017.

FORTY SEVEN, INC.

/s/ Mark McCamish

Mark McCamish President

BYLAWS

OF

FORTY-SEVEN, INC.

(A DELAWARE CORPORATION)

ARTICLE I

OFFICES

Section 1. Registered Office. The registered office of the corporation in the State of Delaware shall be 2711 Centerville Road, Suite 400, City of Wilmington, County of New Castle, 19808 or in such other location as the Board of Directors may from time to time determine or the business of the corporation may require.

Section 2. Other Offices. The corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the Board of Directors, and may also have offices at such other places, both within and without the State of Delaware, as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II

CORPORATE SEAL

Section 3. Corporate Seal. The Board of Directors may adopt a corporate seal. Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

ARTICLE III

STOCKHOLDERS' MEETINGS

Section 4. Place of Meetings. Meetings of the stockholders of the corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law ("***DGCL***").

Section 5. Annual Meeting.

(a) The annual meeting of the stockholders of the corporation, for the purpose of election of directors and for such other business as may lawfully come before it, shall be held on such date and at such time as may be designated from time to time by the Board of Directors. Nominations of persons for election to the Board of Directors of the corporation and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the corporation's notice of meeting of stockholders; (ii) by or at the direction of the Board of Directors; or (iii) by any stockholder of the corporation who was a stockholder of record at the time of giving of notice provided for in the following paragraph, who is entitled to vote at the meeting and who complied with the notice procedures set forth in this Section.

(b) At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. For nominations or other business to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of paragraph (a) of this Section, (i) the stockholder must have given timely notice thereof in writing to the Secretary of the corporation, (ii) such other business must be a proper matter for stockholder action under the DGCL and applicable law, (iii) if the stockholder, or the beneficial owner on whose behalf any such proposal or nomination is made, has provided the corporation with a Solicitation Notice (as defined in this paragraph), such stockholder or beneficial owner must, in the case of a proposal, have delivered a proxy statement and form of proxy to

holders of at least the percentage of the corporation's voting shares required under applicable law to carry any such proposal, or, in the case of a nomination or nominations, have delivered a proxy statement and form of proxy to holders of a percentage of the corporation's voting shares reasonably believed by such stockholder or beneficial owner to be sufficient to elect the nominee or nominees proposed to be nominated by such stockholder, and must, in either case, have included in such materials the Solicitation Notice, and (iv) if no Solicitation Notice relating thereto has been timely provided pursuant to this Section, the stockholder or beneficial owner proposing such business or nomination must not have solicited a number of proxies sufficient to have required the delivery of such a Solicitation Notice under this Section. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the 90th day nor earlier than the close of business on the 120th day prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced more than 30 days prior to or delayed by more than 30 days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the day on which public announcement of the date of such meeting is first made. In no event shall the public announcement of an adjournment of an annual meeting commence a new time period for the giving of a stockholder's notice as described above. Such stockholder's notice shall set forth: (A) as to each person whom the stockholder proposed to nominate for election or reelection as a director all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "***1934 Act***") and Rule 14a-4(d) thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (B) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made; and (C) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (ii) the class and number of shares of the corporation which are owned beneficially and of record by such stockholder and such beneficial owner, and (iii) whether either such stockholder or beneficial owner intends to deliver a proxy statement and form of proxy to holders of, in the case of the proposal, at least the percentage of the corporation's voting shares required under applicable law to carry the proposal or, in the case of a nomination or nominations, a sufficient number of holders of the corporation's voting shares to elect such nominee or nominees (an affirmative statement of such intent, a "***Solicitation Notice***").

(c) Notwithstanding anything in the second sentence of paragraph (b) of this Section to the contrary, in the event that the number of directors to be elected to the Board of Directors of the corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the corporation at least 100 days prior to the first anniversary of the preceding year's annual meeting, a stockholder's notice required by this Section shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the 10th day following the day on which such public announcement is first made by the corporation.

(d) Only such persons who are nominated in accordance with the procedures set forth in this Section (or elected or appointed pursuant to Article IV of these Bylaws) shall be eligible to serve as directors and only such business shall be conducted at a meeting of stockholders as shall have been brought before the meeting in accordance with the procedures set forth in this Section. Except as

otherwise provided by law, the Chairman of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, to declare that such defective proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded.

(e) Notwithstanding the foregoing provisions of this Section, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, stockholders must provide notice as required by the regulations promulgated under the 1934 Act. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation proxy statement pursuant to Rule 14a-8 under the 1934 Act.

(f) For purposes of this Section, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission (the "***SEC***") pursuant to Section 13, 14 or 15(d) of the 1934 Act.

Section 6. Special Meetings.

(a) Special meetings of the stockholders of the corporation may be called, for any purpose or purposes, by (i) the Chairman of the Board of Directors, (ii) the Chief Executive Officer, (iii) the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the Board of Directors for adoption) or (iv) by the holders of shares entitled to cast not less than 20% of the votes at the meeting, and shall be held at such place, on such date, and at such time as the Board of Directors shall fix.

At any time or times that the corporation is subject to Section 2115(b) of the California General Corporation Law ("***CGCL***"), stockholders holding 5% or more of the outstanding shares shall have the right to call a special meeting of stockholders as set forth in Section 18(b) of these Bylaws.

(b) If a special meeting is properly called by any person or persons other than the Board of Directors, the request shall be in writing, specifying the general nature of the business proposed to be transacted, and shall be delivered personally or sent by certified or registered mail, return receipt requested, or by telegraphic or other facsimile transmission to the Chairman of the Board of Directors, the Chief Executive Officer, or the Secretary of the corporation. No business may be transacted at such special meeting otherwise than specified in such notice. The Board of Directors shall determine the time and place of such special meeting, which shall be held not less than 35 nor more than 120 days after the date of the receipt of the request. Upon determination of the time and place of the meeting, the officer receiving the request shall cause notice to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. Nothing contained in this paragraph (b) shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the Board of Directors may be held.

Section 7. Notice of Meetings. Except as otherwise provided by law, notice, given in writing or by electronic transmission, of each meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting, such notice to specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at any such meeting. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such

stockholder's address as it appears on the records of the corporation. Notice of the time, place, if any, and purpose of any meeting of stockholders may be waived in writing, signed by the person entitled to notice thereof or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by his or her attendance thereat in person, by remote communication, if applicable, or by proxy, except when the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

Section 8. Quorum. At all meetings of stockholders, except where otherwise provided by statute or by the Certificate of Incorporation, or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute, or by the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of a majority of shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes of the shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute or by the Certificate of Incorporation or these Bylaws, a majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except where otherwise provided by statute or by the Certificate of Incorporation or these Bylaws, the affirmative vote of the majority (plurality, in the case of the election of directors) of shares of such class or classes or series present in person, by remote communication, if applicable, or represented by proxy at the meeting shall be the act of such class or classes or series.

Section 9. Adjournment and Notice of Adjourned Meetings. Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairman of the meeting or by the vote of a majority of the shares present in person, by remote communication, if applicable, or represented by proxy. When a meeting is adjourned to another time or place, if any, notice need not be given of the adjourned meeting if the time and place, if any, thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting pursuant to the Certificate of Incorporation, these Bylaws or applicable law. If the adjournment is for more than 30 days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Section 10. Voting Rights. For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders, except as otherwise provided by law, only persons in whose names shares stand on the stock records of the corporation on the record date, as provided in Section 12of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote or execute consents shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three years from its date of creation unless the proxy provides for a longer period.

Section 11. Joint Owners of Stock. If shares or other securities having voting power stand of record in the names of two or more persons, whether fiduciaries, members of a partnership, joint tenants, tenants in common, tenants by the entirety, or otherwise, or if two or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting (including giving consent pursuant to Section 13) shall have the following effect: (a) if only one votes, his or her act binds all; (b) if more than one votes, the act of the majority so voting binds all; (c) if more than one votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court of Chancery for relief as provided in the DGCL, Section 217(b). If the instrument filed with the Secretary shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of subsection (c) shall be a majority or even-split in interest.

Section 12. List of Stockholders. The Secretary shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. The list shall be open to examination of any stockholder during the time of the meeting as provided by law.

Section 13. Action Without Meeting.

(a) Unless otherwise provided in the Certificate of Incorporation, any action required by statute to be taken at any annual or special meeting of the stockholders, or any action which may be taken at any annual or special meeting of the stockholders, may be taken without a meeting, without prior notice and without a vote, if a consent in writing, or by electronic transmission setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

(b) Every written consent or electronic transmission shall bear the date of signature of each stockholder who signs the consent, and no written consent or electronic transmission shall be effective to take the corporate action referred to therein unless, within 60 days of the earliest dated consent delivered to the corporation in the manner herein required, written consents or electronic transmissions signed by a sufficient number of stockholders to take action are delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation’s registered office shall be by hand or by certified or registered mail, return receipt requested.

(c) Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing or by electronic transmission and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by

a sufficient number of stockholders to take action were delivered to the corporation as provided in Section 228(c) of the DGCL. If the action which is consented to is such as would have required the filing of a certificate under any section of the DGCL if such action had been voted on by stockholders at a meeting thereof, then the certificate filed under such section shall state, in lieu of any statement required by such section concerning any vote of stockholders, that written consent has been given in accordance with Section 228 of the DGCL.

(d) An electronic mail, facsimile or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this Section, provided that any such electronic mail, facsimile or other electronic transmission sets forth or is delivered with information from which the corporation can determine (i) that the electronic mail, facsimile or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder and (ii) the date on which such stockholder or proxyholder or authorized person or persons transmitted such electronic mail, facsimile or electronic transmission. The date on which such electronic mail, facsimile or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by electronic mail, facsimile or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the corporation by delivery to its registered office in the state of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by electronic mail, facsimile or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the board of directors of the corporation. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

Section 14. Organization.

(a) At every meeting of stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Chief Executive Officer, or, if the Chief Executive Officer is absent, a chairman of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairman. The Secretary, or, in his or her absence, an Assistant Secretary directed to do so by the Chief Executive Officer, shall act as secretary of the meeting.

(b) The Board of Directors shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the corporation and their duly authorized and constituted proxies and such other persons as the chairman shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters which are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

ARTICLE IV

DIRECTORS

Section 15. Number and Term of Office.

The authorized number of directors of the corporation shall be fixed by the Board of Directors from time to time.

Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient.

Section 16. Powers. The business and affairs of the corporation shall be managed by or under the direction of the Board of Directors, except as may be otherwise provided by statute or by the Certificate of Incorporation.

Section 17. Term of Directors.

(a) Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, directors shall be elected at each annual meeting of stockholders to serve until his or her successor is duly elected and qualified or until his or her death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

(b) No person entitled to vote at an election for directors may cumulate votes to which such person is entitled, unless, at the time of such election, the corporation is subject to Section 2115(b) of the CGCL. During such time or times that the corporation is subject to Section 2115(b) of the CGCL, every stockholder entitled to vote at an election for directors may cumulate such stockholder's votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of votes to which such stockholder's shares are otherwise entitled, or distribute the stockholder's votes on the same principle among as many candidates as such stockholder thinks fit. No stockholder, however, shall be entitled to so cumulate such stockholder's votes unless (i) the names of such candidate or candidates have been placed in nomination prior to the voting and (ii) the stockholder has given notice at the meeting, prior to the voting, of such stockholder's intention to cumulate such stockholder's votes. If any stockholder has given proper notice to cumulate votes, all stockholders may cumulate their votes for any candidates who have been properly placed in nomination. Under cumulative voting, the candidates receiving the highest number of votes, up to the number of directors to be elected, are elected.

Section 18. Vacancies.

(a) Unless otherwise provided in the Certificate of Incorporation, and subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum

of the Board of Directors, or by a sole remaining director, *provided, however*, that whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Bylaw in the case of the death, removal or resignation of any director.

(b) At any time or times that the corporation is subject to Section 2115(b) of the CGCL, if, after the filling of any vacancy, the directors then in office who have been elected by stockholders shall constitute less than a majority of the directors then in office, then

(i) any holder or holders of an aggregate of 5% or more of the total number of shares at the time outstanding having the right to vote for those directors may call a special meeting of stockholders; or

(ii) the Superior Court of the proper county shall, upon application of such stockholder or stockholders, summarily order a special meeting of the stockholders, to be held to elect the entire board, all in accordance with Section 305(c) of the CGCL, the term of office of any director shall terminate upon that election of a successor.

Section 19. Resignation. Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time, upon receipt by the Secretary or at the pleasure of the Board of Directors. If no such specification is made, it shall be deemed effective at the pleasure of the Board of Directors. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each Director so chosen shall hold office for the unexpired portion of the term of the Director whose place shall be vacated and until his or her successor shall have been duly elected and qualified.

Section 20. Removal.

(a) Subject to any limitations imposed by applicable law, the Board of Directors or any director may be removed from office at any time (i) with cause by the affirmative vote of the holders of a majority of the voting power of all then-outstanding shares of capital stock of the corporation entitled to vote generally at an election of directors or (ii) without cause by the affirmative vote of the holders of a majority of the voting power of all then-outstanding shares of capital stock of the corporation, entitled to elect such director.

(b) During such time or times that the corporation is subject to Section 2115(b) of the CGCL, the Board of Directors or any individual director may be removed from office at any time without cause by the affirmative vote of the holders of at least a majority of the outstanding shares entitled to vote on such removal; provided, however, that unless the entire Board is removed, no individual director may be removed when the votes cast against such director's removal, or not consenting in writing to such removal, would be sufficient to elect that director if voted cumulatively at an election which the same total number of votes were cast (or, if such action is taken by written consent, all shares entitled to vote were voted) and the entire number of directors authorized at the time of such director's most recent election were then being elected.

Section 21. Meetings

(a) Regular Meetings. Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and publicized among all directors, either orally or in writing, including a voice-messaging system or other system designated to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means. No further notice shall be required for a regular meeting of the Board of Directors.

(b) Special Meetings. Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairman of the Board, the Chief Executive Officer, the President or any director.

(c) Meetings by Electronic Communications Equipment. Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) Notice of Special Meetings. Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means, during normal business hours, at least 24 hours before the date and time of the meeting. If notice is sent by US mail, it shall be sent by first class mail, postage prepaid at least three days before the date of the meeting. Notice of any meeting may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

(e) Waiver of Notice. The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though had at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

Section 22. Quorum and Voting.

(a) Unless the Certificate of Incorporation requires a greater number, a quorum of the Board of Directors shall consist of a majority of the voting power of the total number of directors fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation; *provided, however,* at any meeting, whether a quorum be present or otherwise, a majority of the voting power of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

Section 23. Action Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 24. Fees and Compensation. Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

Section 25. Committees.

(a) Executive Committee. The Board of Directors may appoint an Executive Committee to consist of one or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in the resolution of the Board of Directors shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any bylaw of the corporation.

(b) Other Committees. The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board of Directors shall consist of one or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

(c) Term. The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of paragraphs (a) or (b) of this Section may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his or her death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

(d) Meetings. Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notice of any special meeting of any committee may be waived in writing at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

Section 26. Organization. At every meeting of the directors, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Chief Executive Officer (if a director), or if the Chief Executive Officer is not a director or is absent, the President (if a director), or if the President is not a director or is absent, the most senior Vice President, (if a director) or, in the absence of any such person, a chairman of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary, or in his or her absence, any Assistant Secretary directed to do so by the Chief Executive Officer or President, shall act as secretary of the meeting.

ARTICLE V

OFFICERS

Section 27. Officers Designated. The officers of the corporation shall include, if and when designated by the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer, the Treasurer and the Controller, all of whom shall be elected at the annual organizational meeting of the Board of Directors. The Board of Directors may also appoint one or more Assistant Secretaries, Assistant Treasurers, Assistant Controllers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the corporation shall be fixed by or in the manner designated by the Board of Directors.

Section 28. Tenure and Duties of Officers.

(a) General. All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors, or by the Chief Executive Officer or other officer if so authorized by the Board of Directors.

(b) Duties of Chairman of the Board of Directors. The Chairman of the Board of Directors, when present, shall preside at all meetings of the stockholders and the Board of Directors. The

Chairman of the Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time. If there is no Chief Executive Officer and no President, then the Chairman of the Board of Directors shall also serve as the Chief Executive Officer of the corporation and shall have the powers and duties prescribed in paragraph (c) of this Section.

(c) Duties of Chief Executive Officer. The Chief Executive Officer shall preside at all meetings of the stockholders and (if a director) at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. The Chief Executive Officer shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time.

(d) Duties of President. In the absence or disability of the Chief Executive Officer or if the office of Chief Executive Officer is vacant, the President shall preside at all meetings of the stockholders and (if a director) at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. If the office of Chief Executive Officer is vacant, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time.

(e) Duties of Vice Presidents. The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(f) Duties of Secretary. The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time. The Chief Executive Officer may direct any Assistant Secretary to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time.

(g) Duties of Chief Financial Officer. The Chief Financial Officer shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the Chief Executive Officer. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Chief Financial Officer shall perform other duties commonly incident to his or her office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time. The Chief Executive Officer may direct the Treasurer or any Assistant Treasurer, or the Controller or any Assistant Controller to assume and perform the duties of the Chief

Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each Controller and Assistant Controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time.

Section 29. Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

Section 30. Resignations. Any officer may resign at any time by giving notice in writing or by electronic transmission notice to the Board of Directors or to the Chief Executive Officer or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the corporation under any contract with the resigning officer.

Section 31. Removal. Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written or electronic consent of the directors in office at the time, or by any committee or superior officers upon whom such power of removal may have been conferred by the Board of Directors.

ARTICLE VI

EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

Section 32. Execution of Corporate Instruments. The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the corporation any corporate instrument or document, or to sign on behalf of the corporation the corporate name, or to enter into contracts on behalf of the corporation, except where otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the corporation.

All checks and drafts drawn on banks or other depositaries on funds to the credit of the corporation or in special accounts of the corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do.

Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

Section 33. Voting of Securities Owned by the Corporation. All stock and other securities of other corporations owned or held by the corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

ARTICLE VII

SHARES OF STOCK

Section 34. Form and Execution of Certificates. The shares of the corporation shall be represented by certificates, or shall be uncertificated. Certificates for the shares of stock, if any, of the corporation shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of shares of stock in the corporation represented by certificate shall be entitled to have a certificate signed by or in the name of the corporation by the Chairman of the Board of Directors, the Chief Executive Officer, or the President or any Vice President and by the Treasurer or Assistant Treasurer or the Secretary or Assistant Secretary, certifying the number of shares owned by him in the corporation. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

Section 35. Lost Certificates. A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the corporation in such manner as it shall require or to give the corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

Section 36. Restrictions on Transfer.

(a) No holder of any of the shares of stock of the corporation may sell, transfer, assign, pledge, or otherwise dispose of or encumber any of the shares of stock of the corporation or any right or interest therein, whether voluntarily or by operation of law, or by gift or otherwise (each, a "***Transfer***") without the prior written consent of the corporation, upon duly authorized action of its Board of Directors. The corporation may withhold consent for any legitimate corporate purpose, as determined by the Board of Directors. Examples of the basis for the corporation to withhold its consent include, without limitation, (i) if such Transfer to individuals, companies or any other form of entity identified by the corporation as a potential competitor or considered by the corporation to be unfriendly; or (ii) if such Transfer increases the risk of the corporation having a class of security held of record by 2,000 or more persons, or 500 or more persons who are not accredited investors (as such term is defined by the SEC), as described in Section 12(g) of the 1934 Act and any related regulations, or otherwise requiring the corporation to register any class of securities under the 1934 Act; or (iii) if such Transfer would result in the loss of any federal or state securities law exemption relied upon by the corporation in connection with the initial issuance of such shares or the issuance of any other securities; or (iv) if such Transfer is facilitated in any manner by any public posting, message board, trading portal, internet site, or similar method of communication, including without limitation any trading portal or internet site intended to facilitate secondary transfers of securities; or (v) if such Transfer is to be effected in a brokered transaction; or (vi) if such Transfer represents a Transfer of less than all of the shares then held by the stockholder and its affiliates or is to be made to more than a single transferee.

(b) If a stockholder desires to Transfer any shares, then the stockholder shall first give written notice thereof to the corporation. The notice shall name the proposed transferee and state the number of shares to be transferred, the proposed consideration, and all other terms and conditions of the proposed transfer. Any shares proposed to be transferred to which Transfer the corporation has consented pursuant to paragraph (a) of this Section will first be subject to the corporation's right of first refusal located in Section 37 of these Bylaws.

(c) Any Transfer, or purported Transfer, of shares not made in strict compliance with this Section shall be null and void, shall not be recorded on the books of the corporation and shall not be recognized by the corporation.

(d) The foregoing restriction on Transfer shall terminate upon the date securities of the corporation are first offered to the public pursuant to a registration statement filed with, and declared effective by, the SEC under the Securities Act of 1933, as amended (the "***1933 Act***").

(e) The certificates representing shares of stock of the corporation shall bear on their face the following legend so long as the foregoing Transfer restrictions are in effect:

> "THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A TRANSFER RESTRICTION, AS PROVIDED IN THE BYLAWS OF THE CORPORATION."

Section 37. Right of First Refusal. No stockholder shall Transfer any of the shares of stock of the corporation, except by a Transfer which meets the requirements set forth in this Section 37, in addition to any other restrictions or requirements set forth under applicable law or these Bylaws:

(a) If the stockholder desires to Transfer any of his or her shares of stock, then the stockholder shall first give written notice thereof to the corporation. The notice shall name the proposed transferee and state the number of shares to be transferred, the proposed consideration, and all other terms and conditions of the proposed transfer.

(b) For 30 days following receipt of such notice, the corporation shall have the option to purchase up to all the shares specified in the notice at the price and upon the terms set forth in such notice; *provided, however,* that, with the consent of the stockholder, the corporation shall have the option to purchase a lesser portion of the shares specified in said notice at the price and upon the terms set forth therein. In the event of a gift, property settlement or other Transfer in which the proposed transferee is not paying the full price for the shares, and that is not otherwise exempted from the provisions of this Section, the price shall be deemed to be the fair market value of the stock at such time as determined in good faith by the Board of Directors. In the event the corporation elects to purchase all of the shares or, with consent of the stockholder, a lesser portion of the shares, it shall give written notice to the transferring stockholder of its election and settlement for said shares shall be made as provided below in paragraph (d) of this Section.

(c) The corporation may assign its rights hereunder.

(d) In the event the corporation and/or its assignee(s) elect to acquire any of the shares of the transferring stockholder as specified in said transferring stockholder's notice, the Secretary of the corporation shall so notify the transferring stockholder and settlement thereof shall be made in cash within thirty (30) days after the Secretary of the corporation receives said transferring stockholder's notice; provided that if the terms of payment set forth in said transferring stockholder's notice were other than cash against delivery, the corporation and/or its assignee(s) shall pay for said shares on the same terms and conditions set forth in said transferring stockholder's notice.

(e) In the event the corporation and/or its assignees(s) do not elect to acquire all of the shares specified in the transferring stockholder's notice, said transferring stockholder may, subject to the corporation's approval and all other restrictions on Transfer located in Section 38 of these Bylaws, within the sixty-day period following the expiration or waiver of the option rights granted to the corporation and/or its assignees(s) herein, Transfer the shares specified in said transferring stockholder's

notice which were not acquired by the corporation and/or its assignees(s) as specified in said transferring stockholder's notice. All shares so sold by said transferring stockholder shall continue to be subject to the provisions of this Bylaw in the same manner as before said Transfer.

(f) Anything to the contrary contained herein notwithstanding, the following transactions shall be exempt from the right of first refusal in paragraph (a) of this Section:

(1) A stockholder's Transfer of any or all shares held either during such stockholder's lifetime or on death by will or intestacy to such stockholder's immediate family or to any custodian or trustee for the account of such stockholder or such stockholder's immediate family or to any limited partnership of which the stockholder, members of such stockholder's immediate family or any trust for the account of such stockholder or such stockholder's immediate family will be the general or limited partner(s) of such partnership. "Immediate family" as used herein shall mean spouse, lineal descendant, father, mother, brother, or sister of the stockholder making such Transfer;

(2) A stockholder's bona fide pledge or mortgage of any shares with a commercial lending institution, provided that any subsequent Transfer of said shares by said institution shall be conducted in the manner set forth in this Bylaw;

(3) A stockholder's Transfer of any or all of such stockholder's shares to the corporation or to any other stockholder of the corporation;

(4) A stockholder's Transfer of any or all of such stockholder's shares to a person who, at the time of such Transfer, is an officer or director of the corporation;

(5) A corporate stockholder's Transfer of any or all of its shares pursuant to and in accordance with the terms of any merger, consolidation, reclassification of shares or capital reorganization of the corporate stockholder, or pursuant to a sale of all or substantially all of the stock or assets of a corporate stockholder;

(6) A corporate stockholder's Transfer of any or all of its shares to any or all of its stockholders; or

(7) A Transfer by a stockholder which is a limited or general partnership to any or all of its partners or former partners in accordance with partnership interests.

In any such case, the transferee, assignee, or other recipient shall receive and hold such stock subject to the provisions of this Section and any other restrictions set forth in these Bylaws, and there shall be no further Transfer of such stock except in accord with this Section and the other provisions of these Bylaws.

(g) The provisions of this Bylaw may be waived with respect to any Transfer either by the corporation, upon duly authorized action of its Board of Directors, or by the stockholders, upon the express written consent of the owners of a majority of the voting power of the corporation (excluding the votes represented by those shares to be transferred by the transferring stockholder). This Bylaw may be amended or repealed either by a duly authorized action of the Board of Directors or by the stockholders, upon the express written consent of the owners of a majority of the voting power of the corporation.

(h) Any Transfer, or purported Transfer, of securities of the corporation shall be null and void unless the terms, conditions, and provisions of this Bylaw are strictly observed and followed.

(i) The foregoing right of first refusal shall terminate upon the date securities of the corporation are first offered to the public pursuant to a registration statement filed with, and declared effective by, the SEC under the Securities Act of 1933, as amended.

(j) The certificates representing shares of stock of the corporation that are subject to the right of first refusal in paragraph (a) of this Section shall bear on their face the following legend so long as the foregoing right of first refusal remains in effect:

"THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A RIGHT OF FIRST REFUSAL OPTION IN FAVOR OF THE CORPORATION AND/OR ITS ASSIGNEE(S), AS PROVIDED IN THE BYLAWS OF THE CORPORATION."

(k) To the extent this Section conflicts with any written agreements between the Company and the stockholder attempting to Transfer shares, such agreement shall control.

Section 38. Fixing Record Dates.

(a) In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than 60 nor less than 10 days before the date of such meeting. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however,* that the Board of Directors may fix a new record date for the adjourned meeting.

(b) In order that the corporation may determine the stockholders entitled to consent to corporate action in writing without a meeting, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which date shall not be more than 10 days after the date upon which the resolution fixing the record date is adopted by the Board of Directors. Any stockholder of record seeking to have the stockholders authorize or take corporate action by written consent shall, by written notice to the Secretary, request the Board of Directors to fix a record date. The Board of Directors shall promptly, but in all events within 10 days after the date on which such a request is received, adopt a resolution fixing the record date. If no record date has been fixed by the Board of Directors within 10 days of the date on which such a request is received, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting, when no prior action by the Board of Directors is required by applicable law, shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to the corporation's registered office shall be by hand or by certified or registered mail, return receipt requested. If no record date has been fixed by the Board of Directors and prior action by the Board of Directors is required by law, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting shall be at the close of business on the day on which the Board of Directors adopts the resolution taking such prior action.

(c) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than 60 days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

Section 39. Registered Stockholders. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VIII

OTHER SECURITIES OF THE CORPORATION

Section 40. Execution of Other Securities. All bonds, debentures and other corporate securities of the corporation, other than stock certificates (covered in Section 34 of these Bylaws), may be signed by the Chairman of the Board of Directors, the Chief Executive Officer, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; *provided*, *however*, that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the corporation.

ARTICLE IX

DIVIDENDS

Section 41. Declaration of Dividends. Dividends upon the capital stock of the corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

Section 42. Dividend Reserve. Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the Board of Directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the Board of Directors shall think conducive to the interests of the corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

ARTICLE X

FISCAL YEAR

Section 43. Fiscal Year. The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

ARTICLE XI

INDEMNIFICATION

Section 44. Indemnification of Directors, Executive Officers, Other Officers, Employees and Other Agents.

(a) Directors and Executive Officers. The corporation shall indemnify its directors and executive officers (for the purposes of this Article, "executive officers" shall have the meaning defined in Rule 3b-7 promulgated under the 1934 Act) to the fullest extent not prohibited by the DGCL or any other applicable law; *provided, however,* that the corporation may modify the extent of such indemnification by individual contracts with its directors and executive officers; and, *provided, further,* that the corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors of the corporation, (iii) such indemnification is provided by the corporation, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under paragraph (d) of this Section.

(b) Other Officers, Employees and Other Agents. The corporation shall have power to indemnify its other officers, employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person except executive officers to such officers or other persons as the Board of Directors shall determine.

(c) Expenses. The corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director or executive officer of the corporation, or is or was serving at the request of the corporation as a director or executive officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or executive officer in connection with such proceeding, provided, however, that, if the DGCL requires, an advancement of expenses incurred by a director or officer in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the corporation of an undertaking, by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal that such indemnitee is not entitled to be indemnified for such expenses under this Section or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (e) of this Section, no advance shall be made by the corporation to an executive officer of the corporation (except by reason of the fact that such executive officer is or was a director of the corporation, in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of a quorum consisting of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation.

(d) Enforcement. Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and executive officers under this Section shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the corporation and the director or executive officer. Any right to indemnification or advances granted by this Section to a director or executive officer shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within 90 days of request therefor. The claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the corporation to indemnify the claimant for the amount claimed. In connection with any claim by an executive officer of the corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such executive officer is or was a director of the corporation) for advances, the corporation shall be entitled to raise as a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his or her conduct was lawful. Neither the failure of the corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct.

(e) Non-Exclusivity of Rights. The rights conferred on any person by this Section shall not be exclusive of any other right which such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his or her official capacity and as to action in another capacity while holding office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL or any other applicable law.

(f) Survival of Rights. The rights conferred on any person by this Section shall continue as to a person who has ceased to be a director or executive officer and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) Insurance. To the fullest extent permitted by the DGCL, or any other applicable law, the corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this Section.

(h) Amendments. Any repeal or modification of this Section shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the corporation.

(i) Saving Clause. If this Section or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each director and executive officer to the full extent not prohibited by any applicable portion of this Bylaw that shall not have been invalidated, or by any other applicable law. If this Section shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the corporation shall indemnify each director and executive officer to the full extent under applicable law.

(j) Certain Definitions. For the purposes of this Section, the following definitions shall apply:

(1) The term “proceeding” shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(2) The term “expenses” shall be broadly construed and shall include, without limitation, court costs, attorneys’ fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(3) The term the “corporation” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Section with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(4) References to a “director,” “executive officer,” “officer,” “employee,” or “agent” of the corporation shall include, without limitation, situations where such person is serving at the request of the corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

(5) References to “other enterprises” shall include employee benefit plans; references to “fines” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “serving at the request of the corporation” shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or

beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the corporation" as referred to in this Section.

ARTICLE XII

NOTICES

Section 45. Notices.

(a) Notice to Stockholders. Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 of these Bylaws. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by law, written notice to stockholders for purposes other than stockholder meetings may be sent by United States mail or nationally recognized overnight courier, or by facsimile, telegraph or telex or by electronic mail or other electronic means.

(b) Notice to Directors. Any notice required to be given to any director may be given by the method stated in paragraph (a) of this Section, or as provided for in Section 21 of these Bylaws. If such notice is not delivered personally, it shall be sent to such address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known post office address of such director.

(c) Affidavit of Mailing. An affidavit of mailing, executed by a duly authorized and competent employee of the corporation or its transfer agent appointed with respect to the class of stock affected or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

(d) Methods of Notice. It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) Notice to Person with Whom Communication Is Unlawful. Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) Notice to Stockholders Sharing an Address. Except as otherwise prohibited under DGCL, any notice given under the provisions of DGCL, the Certificate of Incorporation or the Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the corporation within 60 days of having been given notice by the corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the corporation.

ARTICLE XIII

AMENDMENTS

Section 46. Amendments. The Board of Directors is expressly empowered to adopt, amend or repeal Bylaws of the corporation. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the corporation; *provided*, *however*, that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least a majority of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

ARTICLE XIV

LOANS TO OFFICERS

Section 47. Loans to Officers. Except as otherwise prohibited under applicable law, the corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a Director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

ARTICLE XV

MISCELLANEOUS

Section 48. Annual Report.

(a) Subject to the provisions of paragraph (b) of this Section, the Board of Directors shall cause an annual report to be sent to each stockholder of the corporation not later than one hundred 120 days after the close of the corporation's fiscal year. Such report shall include a balance sheet as of the end of such fiscal year and an income statement and statement of changes in financial position for such fiscal year, accompanied by any report thereon of independent accountants or, if there is no such report, the certificate of an authorized officer of the corporation that such statements were prepared without audit from the books and records of the corporation. When there are more than 100 stockholders of record of the corporation's shares, as determined by Section 605 of the CGCL, additional information as required by Section 1501(b) of the CGCL shall also be contained in such report, provided that if the corporation has a class of securities registered under Section 12 of the 1934 Act, the 1934 Act shall take precedence. Such report shall be sent to stockholders at least 15 days prior to the next annual meeting of stockholders after the end of the fiscal year to which it relates.

(b) If and so long as there are fewer than 100 holders of record of the corporation's shares, the requirement of sending of an annual report to the stockholders of the corporation is hereby expressly waived.

Section 49. Forum. Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the corporation; (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the corporation to the corporation or the corporation's stockholders; (iii) any action asserting a claim against the corporation or any director or officer or other employee of the corporation arising pursuant to any provision of the DGCL, the certificate of incorporation or the Bylaws of the corporation; or (iv) any action asserting a claim against the corporation or any director or officer or other employee of the corporation governed by the internal affairs doctrine.

FORTY-SEVEN, INC.
CERTIFICATE OF SECRETARY

I HEREBY CERTIFY THAT:

I am the duly elected and acting Secretary of **FORTY-SEVEN, INC.,** a Delaware corporation (the ***"Company");*** and

Attached hereto is a complete and accurate copy of the Bylaws of the Company as duly adopted by the Board of Directors by Unanimous Written Consent dated May 15, 2015 and said Bylaws are presently in effect.

Signed on May 15 2015.

/s/ Eric C. Jensen
ERIC C. JENSEN
Secretary

FORTY SEVEN, INC.

AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT

THIS AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT (the "***Agreement***") is entered into as of October 17, 2017, by and among **FORTY SEVEN, INC.**, a Delaware corporation (the "***Company***") and the investors listed on **EXHIBIT A** hereto, referred to hereinafter as the "***Investors***" and each individually as an "***Investor.***"

RECITALS

WHEREAS, certain of the Investors are purchasing shares of the Company's Series B Preferred Stock (the "***Series B Stock***"), pursuant to that certain Series B Preferred Stock Purchase Agreement (the "***Purchase Agreement***") of even date herewith (the "***Financing***");

WHEREAS, the obligations in the Purchase Agreement are conditioned upon the execution and delivery of this Agreement;

WHEREAS, certain of the Investors (the "***Prior Investors***") are holders of the Company's Series A-1 Preferred Stock (the "***Series A-1 Stock***"), Series A-2 Preferred Stock (the "***Series A-2 Stock***" and collectively with the Series A-1 Stock, the "***Series A Stock***") and Series B Stock (collectively with the Series A Stock, the "***Preferred Stock***");

WHEREAS, the Prior Investors and the Company are parties to an Investor Rights Agreement dated November 23, 2015 (the "***Prior Agreement***");

WHEREAS, the parties to the Prior Agreement desire to amend and restate the Prior Agreement and accept the rights and covenants hereof in lieu of their rights and covenants under the Prior Agreement; and

WHEREAS, in connection with the consummation of the Financing, the Company and the Investors have agreed to the registration rights, information rights, and other rights as set forth below.

NOW, THEREFORE, in consideration of these premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

SECTION 1. GENERAL.

1.1 Amendment and Restatement of Prior Agreement. The Prior Agreement is hereby amended in its entirety and restated herein. Such amendment and restatement is effective upon the execution of this Agreement by the Company and the holders of a majority of the Registrable Securities held by the Prior Investors outstanding as of the date of this Agreement in accordance with Section 6.5 of the Prior Agreement. Upon such execution, all provisions of, rights granted and covenants made in the Prior Agreement are hereby waived, released and superseded in their entirety and shall have no further force or effect, including, without limitation, all rights of first refusal and any notice period associated therewith otherwise applicable to the transactions contemplated by the Purchase Agreement.

1.2 Definitions. As used in this Agreement the following terms shall have the following respective meanings:

(a) "***Affiliated Fund***" means, with respect to an Investor that is a limited liability company, limited partnership or a limited liability partnership, a fund or entity managed by the same manager or managing member or general partner or management company or by an entity controlling, controlled by, or under common control with such manager or managing member or general partner or management company.

(b) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended.

(c) "***Form S-3***" means such form under the Securities Act as in effect on the date hereof or any successor or similar registration form under the Securities Act subsequently adopted by the SEC which permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

(d) "***Holder***" means any person owning of record Registrable Securities that have not been sold to the public or any assignee of record of such Registrable Securities in accordance with Section 2.9 hereof.

(e) "***Initial Offering***" means the Company's first firm commitment underwritten public offering of its Common Stock registered under the Securities Act.

(f) "***Major Investor***" means an Investor (with its affiliates) that owns not less than (i) 1,000,000 shares of Series A Stock (as adjusted for stock splits and combinations) or (ii) 3,000,000 shares of Series B Stock (as adjusted for stock splits and combinations); *provided, however,* that for purposes of Sections 3.1 and 3.2 of this Agreement, Hadley Harbor Master Investors (Cayman) II L.P. ("***Hadley***") shall be deemed to be a Major Investor as long as Hadley and its affiliates own any shares of Series B Stock or shares of Common Stock issuable upon conversion thereof.

(g) "***Register***," "***registered***," and "***registration***" refer to a registration effected by preparing and filing a registration statement in compliance with the Securities Act, and the declaration or ordering of effectiveness of such registration statement or document.

(h) "***Registrable Securities***" means (a) Common Stock of the Company issuable or issued upon conversion of the Shares and (b) any Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security which is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, such above-described securities. Notwithstanding the foregoing, Registrable Securities shall not include any securities (i) sold by a person to the public either pursuant to a registration statement or Rule 144 or (ii) sold in a private transaction in which the transferor's rights under Section 2 of this Agreement are not assigned.

(i) "***Registrable Securities then outstanding***" shall be the number of shares of the Company's Common Stock that are Registrable Securities and either (a) are then issued and outstanding or (b) are issuable pursuant to then exercisable or convertible securities.

(j) "***Registration Expenses***" shall mean all expenses incurred by the Company in complying with Sections 2.2, 2.3 and 2.4 hereof, including, without limitation, all registration and filing fees, printing expenses, fees and disbursements of counsel for the Company, reasonable fees and disbursements not to exceed $50,000 of a single special counsel for the Holders, blue sky fees and expenses and the expense of any special audits incident to or required by any such registration (but excluding the compensation of regular employees of the Company which shall be paid in any event by the Company).

(k) "***SEC***" or "***Commission***" means the Securities and Exchange Commission.

(l) "***Securities Act***" shall mean the Securities Act of 1933, as amended.

(m) "***Selling Expenses***" shall mean all underwriting discounts and selling commissions applicable to the sale.

(n) "***Shares***" shall mean the shares of the Company's Preferred Stock held from time to time by the Investors listed on **EXHIBIT A** hereto and their permitted assigns.

(o) "***Special Registration Statement***" shall mean (i) a registration statement relating to any employee benefit plan or (ii) with respect to any corporate reorganization or transaction under Rule 145 of the Securities Act, any registration statements related to the issuance or resale of securities issued in such a transaction or (iii) a registration related to stock issued upon conversion of debt securities.

SECTION 2. REGISTRATION; RESTRICTIONS ON TRANSFER.

2.1 Restrictions on Transfer.

(a) Each Holder agrees not to make any disposition of all or any portion of the Shares or Registrable Securities unless and until:

(i) there is then in effect a registration statement under the Securities Act covering such proposed disposition and such disposition is made in accordance with such registration statement; or

(ii) (A) The transferee has agreed in writing to be bound by the terms of this Agreement, (B) such Holder shall have notified the Company of the proposed disposition and shall have furnished the Company with a detailed statement of the circumstances surrounding the proposed disposition, and (C) if reasonably requested by the Company, such Holder shall have furnished the Company with an opinion of counsel, reasonably satisfactory to the Company, that such disposition will not require registration of such shares under the Securities Act. It is agreed that the Company will not require opinions of counsel for transactions made pursuant to Rule 144, except in unusual circumstances. After its Initial Offering, the Company will not require any transferee pursuant to Rule 144 to be bound by the terms of this Agreement if the shares so transferred do not remain Registrable Securities hereunder following such transfer.

(b) Notwithstanding the provisions of subsection (a) above, no such restriction shall apply to a transfer by a Holder that is (A) a partnership transferring to its partners or former partners in accordance with partnership interests, (B) a corporation transferring to a subsidiary or a parent corporation or other affiliate, (C) a limited liability company transferring to its members or former members in accordance with their interest in the limited liability company, (D) an individual transferring to the Holder's family member or trust for the benefit of an individual Holder, or (E) controlled by or under common control with one or more general partners or managing members of, or that shares the same management company with, a venture capital fund transferring to such fund; *provided* that in each case the transferee will agree in writing to be subject to the terms of this Agreement to the same extent as if he were an original Holder hereunder.

(c) Each certificate representing Shares or Registrable Securities shall be stamped or otherwise imprinted with legends substantially similar to the following (in addition to any legend required under applicable state securities laws):

> THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "***ACT***") AND MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, ASSIGNED, PLEDGED OR HYPOTHECATED UNLESS AND UNTIL REGISTERED UNDER THE ACT OR UNLESS THE COMPANY HAS RECEIVED AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY AND ITS COUNSEL THAT SUCH REGISTRATION IS NOT REQUIRED.
>
> THE SALE, PLEDGE, HYPOTHECATION OR TRANSFER OF THE SECURITIES REPRESENTED BY THIS CERTIFICATE IS SUBJECT TO THE TERMS AND CONDITIONS OF A CERTAIN AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT BY AND BETWEEN THE STOCKHOLDER AND THE COMPANY. COPIES OF SUCH AGREEMENT MAY BE OBTAINED UPON WRITTEN REQUEST TO THE SECRETARY OF THE COMPANY.

(d) The Company shall be obligated to reissue promptly unlegended certificates at the request of any Holder thereof if the Company has completed its Initial Offering and the Holder shall have obtained an opinion of counsel (which counsel may be counsel to the Company) reasonably acceptable to the Company to the effect that the securities proposed to be disposed of may lawfully be so disposed of without registration, qualification and legend, *provided that* the second legend listed above shall be removed only at such time as the Holder of such certificate is no longer subject to any restrictions hereunder.

(e) Any legend endorsed on an instrument pursuant to applicable state securities laws and the stop-transfer instructions with respect to such securities shall be removed upon receipt by the Company of an order of the appropriate blue sky authority authorizing such removal.

2.2 Demand Registration.

(a) Subject to the conditions of this Section 2.2, if the Company shall receive a written request from the Holders of a majority of the Registrable Securities (the "***Initiating Holders***") that the Company file a registration statement under the Securities Act covering the registration of at least a majority of the Registrable Securities then outstanding (or a lesser percent if the anticipated aggregate offering price, net of underwriting discounts and commissions, would exceed $7,500,000), then the Company shall, within thirty (30) days of the receipt thereof, give written notice of such request to all Holders, and subject to the limitations of this Section 2.2, effect, as expeditiously as reasonably possible, the registration under the Securities Act of all Registrable Securities that all Holders request to be registered.

(b) If the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 2.2 or any request pursuant to Section 2.4 and the Company shall include such information in the written notice referred to in Section 2.2(a) or Section 2.4(a), as applicable. In such event, the right of any Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by the Holders of a majority of the Registrable Securities held by all Initiating Holders (which underwriter or underwriters shall be reasonably acceptable to the Company). Notwithstanding any other provision of this Section 2.2 or Section 2.4, if the underwriter advises the Company that marketing factors require a limitation of the number of securities to be underwritten (including Registrable Securities) then the Company shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities on a *pro rata* basis based on the number of Registrable Securities held by all such Holders (including the Initiating Holders); *provided*, *however,* that the number of shares of Registrable Securities to be included in such underwriting and registration shall not be reduced unless all other securities of the Company are first entirely excluded from the underwriting and registration. Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(c) The Company shall not be required to effect a registration pursuant to this Section 2.2:

(i) prior to the earlier of (A) the third anniversary of the date of this Agreement or (B) of the expiration of the restrictions on transfer set forth in Section 2.11 following the Initial Offering;

(ii) after the Company has effected two (2) registrations pursuant to this Section 2.2, and such registrations have been declared or ordered effective;

(iii) during the period starting with the date of filing of, and ending on the date 180 days following the effective date of the registration statement pertaining to the Initial Offering (or such longer period as may be determined pursuant to Section 2.11 hereof); *provided* that the Company makes reasonable good faith efforts to cause such registration statement to become effective;

(iv) if within 30 days of receipt of a written request from Initiating Holders pursuant to Section 2.2(a), the Company gives notice to the Holders of the Company's intention to file a registration statement for its Initial Offering within ninety (90) days;

(v) if the Company shall furnish to Holders requesting a registration statement pursuant to this Section 2.2 a certificate signed by the Chief Executive Officer of the Company stating that in the good faith judgment of the Board of Directors of the Company (the "***Board***"), it would be seriously detrimental to the Company and its stockholders for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than 120 days after receipt of the request of the Initiating Holders; *provided* that such right to delay a request shall be exercised by the Company not more than once in any 12 month period;

(vi) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 2.4 below; or

(vii) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance.

2.3 Piggyback Registrations. The Company shall notify all Holders of Registrable Securities in writing at least 15 days prior to the filing of any registration statement under the Securities Act for purposes of a public offering of securities of the Company (including, but not limited to, registration statements relating to secondary offerings of securities of the Company, but excluding Special Registration Statements) and will afford each such Holder an opportunity to include in such registration statement all or part of such Registrable Securities held by such Holder. Each Holder desiring to include in any such registration statement all or any part of the Registrable Securities held by it shall, within 15 days after the above-described notice from the Company, so notify the Company in writing. Such notice shall state the intended method of disposition of the Registrable Securities by such Holder. If a Holder decides not to include all of its Registrable Securities in any registration statement thereafter filed by the Company, such Holder shall nevertheless continue to have the right to include any Registrable Securities in any subsequent registration statement or registration statements as may be filed by the Company with respect to offerings of its securities, all upon the terms and conditions set forth herein.

(a) Underwriting. If the registration statement of which the Company gives notice under this Section 2.3 is for an underwritten offering, the Company shall so advise the

Holders of Registrable Securities. In such event, the right of any such Holder to include Registrable Securities in a registration pursuant to this Section 2.3 shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their Registrable Securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by the Company. Notwithstanding any other provision of this Agreement, if the Company determines in good faith, based on consultation with the underwriter, that marketing factors require a limitation of the number of shares to be underwritten, the number of shares that may be included in the underwriting shall be allocated, first, to the Company; second, to the Holders on a *pro rata* basis based on the total number of Registrable Securities held by the Holders; and third, to any stockholder of the Company (other than a Holder) on a *pro rata* basis; *provided, however,* that no such reduction shall reduce the amount of securities of the selling Holders included in the registration below thirty percent (30%) of the total amount of securities included in such registration, unless such offering is the Initial Offering and such registration does not include shares of any other selling stockholders, in which event any or all of the Registrable Securities of the Holders may be excluded in accordance with the immediately preceding clause. In no event will shares of any other selling stockholder be included in such registration that would reduce the number of shares which may be included by Holders without the written consent of Holders of not less than a majority of the Registrable Securities proposed to be sold in the offering. If any Holder disapproves of the terms of any such underwriting, such Holder may elect to withdraw therefrom by written notice to the Company and the underwriter, delivered at least ten (10) business days prior to the effective date of the registration statement. Any Registrable Securities excluded or withdrawn from such underwriting shall be excluded and withdrawn from the registration. For any Holder which is a partnership, limited liability company or corporation, the partners, retired partners, members, retired members and stockholders of such Holder, or the estates and family members of any such partners, retired partners, members and retired members and any trusts for the benefit of any of the foregoing person shall be deemed to be a single "Holder," and any *pro rata* reduction with respect to such "Holder" shall be based upon the aggregate amount of shares carrying registration rights owned by all entities and individuals included in such "Holder," as defined in this sentence.

(b) Right to Terminate Registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.3 whether or not any Holder has elected to include securities in such registration, and shall promptly notify any Holder that has elected to include shares in such registration of such termination or withdrawal. The Registration Expenses of such withdrawn registration shall be borne by the Company in accordance with Section 2.5 hereof.

2.4 Form S-3 Registration. In case the Company shall receive from any Holder or Holders of Registrable Securities a written request or requests that the Company effect a registration on Form S-3 (or any successor to Form S-3) or any similar short-form registration statement and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder or Holders, the Company will:

(a) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders of Registrable Securities; and

(b) as soon as practicable, effect such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holder's or Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holder or Holders joining in such request as are specified in a written request given within fifteen (15) days after receipt of such written notice from the Company; *provided, however,* that the Company shall not be obligated to effect any such registration, qualification or compliance pursuant to this Section 2.4:

(i) if Form S-3 is not available for such offering by the Holders; or

(ii) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public of less than $1,000,000; or

(iii) if within 30 days of receipt of a written request from any Holder or Holders pursuant to this Section 2.4, the Company gives notice to such Holder or Holders of the Company's intention to make a public offering within 90 days, other than pursuant to a Special Registration Statement;

(iv) if the Company shall furnish to the Holders a certificate signed by the Chief Executive Officer of the Company stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its stockholders for such Form S-3 registration to be effected at such time, in which event the Company shall have the right to defer the filing of the Form S-3 registration statement for a period of not more than 120 days after receipt of the request of the Holder or Holders under this Section 2.4; *provided*, that such right to delay a request shall be exercised by the Company not more than twice in any 12 month period; or

(v) if the Company has, within the 12 month period preceding the date of such request, already effected two (2) registrations on Form S-3 for the Holders pursuant to this Section 2.4; or

(vi) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance.

(c) Subject to the foregoing, the Company shall file a Form S-3 registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the requests of the Holders. Registrations effected pursuant to this Section 2.4 shall not be counted as demands for registration or registrations effected pursuant to Section 2.2. All Registration Expenses incurred in connection with registrations requested pursuant to this Section 2.4 after the first two (2) registrations shall be paid by the selling Holders *pro rata* in proportion to the number of shares to be sold by each such Holder in any such registration.

2.5 Expenses of Registration. Except as specifically provided herein, all Registration Expenses incurred in connection with any registration, qualification or compliance pursuant to Section 2.2, 2.3 or 2.4 herein shall be borne by the Company. All Selling Expenses incurred in

connection with any registrations hereunder, shall be borne by the holders of the securities so registered *pro rata* on the basis of the number of shares so registered. The Company shall not, however, be required to pay for expenses of any registration proceeding begun pursuant to Section 2.2 or 2.4, the request of which has been subsequently withdrawn by the Initiating Holders unless (a) the withdrawal is based upon material adverse information concerning the Company of which the Initiating Holders were not aware at the time of such request or (b) the Holders of a majority of Registrable Securities agree to deem such registration to have been effected as of the date of such withdrawal for purposes of determining whether the Company shall be obligated pursuant to Section 2.2(c) or 2.4(b)(v), as applicable, to undertake any subsequent registration, in which event such right shall be forfeited by all Holders). If the Holders are required to pay the Registration Expenses, such expenses shall be borne by the holders of securities (including Registrable Securities) requesting such registration in proportion to the number of shares for which registration was requested. If the Company is required to pay the Registration Expenses of a withdrawn offering pursuant to clause (a) above, then such registration shall not be deemed to have been effected for purposes of determining whether the Company shall be obligated pursuant to Section 2.2(c) or 2.4(b)(5), as applicable, to undertake any subsequent registration.

2.6 Obligations of the Company. Whenever required to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use all reasonable efforts to cause such registration statement to become effective, and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for up to 30 days or, if earlier, until the Holder or Holders have completed the distribution related thereto; provided, however, that at any time, upon written notice to the participating Holders and for a period not to exceed 60 days thereafter (the "***Suspension Period***"), the Company may delay the filing or effectiveness of any registration statement or suspend the use or effectiveness of any registration statement (and the Initiating Holders hereby agree not to offer or sell any Registrable Securities pursuant to such registration statement during the Suspension Period) if the Company reasonably believes that there is or may be in existence material nonpublic information or events involving the Company, the failure of which to be disclosed in the prospectus included in the registration statement could result in a Violation (as defined below). In the event that the Company shall exercise its right to delay or suspend the filing or effectiveness of a registration hereunder, the applicable time period during which the registration statement is to remain effective shall be extended by a period of time equal to the duration of the Suspension Period. The Company may extend the Suspension Period for an additional consecutive 60 days with the consent of the holders of a majority of the Registrable Securities registered under the applicable registration statement, which consent shall not be unreasonably withheld. In no event shall any Suspension Period, when taken together with all prior Suspension Periods, exceed 120 days in the aggregate, and in no event shall the Company defer its obligation in this manner more than once in any twelve-month period. If so directed by the Company, all Holders registering shares under such registration statement shall (i) not offer to sell any Registrable Securities pursuant to the registration statement during the period in which the delay or suspension is in effect after receiving notice of such delay or suspension; and (ii) use their best efforts to deliver to the Company (at the Company's expense) all copies, other than permanent file copies then in such Holders' possession, of the prospectus relating to such Registrable Securities current at the time of receipt of such notice. Notwithstanding the foregoing, the

Company shall not be required to file, cause to become effective or maintain the effectiveness of any registration statement other than a registration statement on Form S-3 that contemplates a distribution of securities on a delayed or continuous basis pursuant to Rule 415 under the Securities Act.

(b) Prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement for the period set forth in subsection (a) above.

(c) Furnish to the Holders such number of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them.

(d) Use its reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or Blue Sky laws of such jurisdictions as shall be reasonably requested by the Holders; *provided* that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions.

(e) In the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter(s) of such offering. Each Holder participating in such underwriting shall also enter into and perform its obligations under such an agreement.

(f) Notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus relating thereto is required to be delivered under the Securities Act of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing. The Company will use reasonable efforts to amend or supplement such prospectus in order to cause such prospectus not to include any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing.

(g) Use its reasonable efforts to furnish, on the date that such Registrable Securities are delivered to the underwriters for sale, if such securities are being sold through underwriters, (i) an opinion, dated as of such date, of the counsel representing the Company for the purposes of such registration, in form and substance as is customarily given to underwriters in an underwritten public offering, addressed to the underwriters, if any, and (ii) a letter, dated as of such date, from the independent certified public accountants of the Company, in form and substance as is customarily given by independent certified public accountants to underwriters in an underwritten public offering addressed to the underwriters.

2.7 Delay of Registration; Furnishing Information.

(a) No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

(b) It shall be a condition precedent to the obligations of the Company to take any action pursuant to Section 2.2, 2.3 or 2.4 that the selling Holders shall furnish to the Company such information regarding themselves, the Registrable Securities held by them and the intended method of disposition of such securities as shall be required to effect the registration of their Registrable Securities.

(c) The Company shall have no obligation with respect to any registration requested pursuant to Section 2.2 or Section 2.4 if the number of shares or the anticipated aggregate offering price of the Registrable Securities to be included in the registration does not equal or exceed the number of shares or the anticipated aggregate offering price required to originally trigger the Company's obligation to initiate such registration as specified in Section 2.2 or Section 2.4, whichever is applicable.

2.8 Indemnification. In the event any Registrable Securities are included in a registration statement under Sections 2.2, 2.3 or 2.4:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, the partners, members, officers and directors of each Holder, any underwriter (as defined in the Securities Act) for such Holder and each person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any losses, claims, damages, or liabilities (joint or several) to which they may become subject under the Securities Act, the Exchange Act or other federal or state law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively a "***Violation***") by the Company: (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement or incorporated reference therein, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto, (ii) the omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any state securities law or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law in connection with the offering covered by such registration statement; and the Company will reimburse each such Holder, partner, member, officer, director, underwriter or controlling person for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action; provided however, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable in any such case for any such loss, claim, damage, liability or action to the extent that it arises out of or is based upon a Violation which occurs in reliance upon and in conformity with written information furnished expressly for use in connection with such registration by such Holder, partner, member, officer, director, underwriter or controlling person of such Holder.

(b) To the extent permitted by law, each Holder will, if Registrable Securities held by such Holder are included in the securities as to which such registration qualifications or compliance is being effected, indemnify and hold harmless the Company, each of its directors, its officers and each person, if any, who controls the Company within the meaning of the Securities Act, any underwriter and any other Holder selling securities under such registration statement or any of such other Holder's partners, directors or officers or any person who controls such Holder, against any losses, claims, damages or liabilities (joint or several) to which the Company or any such director, officer, controlling person, underwriter or other such Holder, or partner, director, officer or controlling person of such other Holder may become subject under the Securities Act, the Exchange Act or other federal or state law, insofar as such losses, claims, damages or liabilities (or actions in respect thereto) arise out of or are based upon any of the following statements: (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement or incorporated reference therein, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto, (ii) the omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act (collectively, a "***Holder Violation***"), in each case to the extent (and only to the extent) that such Holder Violation occurs in reliance upon and in conformity with written information furnished by such Holder under an instrument duly executed by such Holder and stated to be specifically for use in connection with such registration; and each such Holder will reimburse any legal or other expenses reasonably incurred by the Company or any such director, officer, controlling person, underwriter or other Holder, or partner, officer, director or controlling person of such other Holder in connection with investigating or defending any such loss, claim, damage, liability or action if it is judicially determined that there was such a Holder Violation; *provided, however,* that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; *provided further*, that in no event shall any indemnity under this Section 2.8 exceed the net proceeds from the offering received by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action), such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; *provided, however,* that an indemnified party shall have the right to retain its own counsel, with the fees and expenses thereof to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8 to the extent, and only to the extent, prejudicial to its ability to defend such action, but the omission so to deliver written notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) If the indemnification provided for in this Section 2.8 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any losses, claims, damages or liabilities referred to herein, the indemnifying party, in lieu of indemnifying such indemnified party thereunder, shall to the extent permitted by applicable law contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or liability in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other in connection with the Violation(s) or Holder Violation(s) that resulted in such loss, claim, damage or liability, as well as any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by a court of law by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission; *provided, that* in no event shall any contribution by a Holder hereunder exceed the net proceeds from the offering received by such Holder.

(e) The obligations of the Company and Holders under this Section 2.8 shall survive completion of any offering of Registrable Securities in a registration statement and, with respect to liability arising from an offering to which this Section 2.8 would apply that is covered by a registration filed before termination of this Agreement, such termination. No indemnifying party, in the defense of any such claim or litigation, shall, except with the consent of each indemnified party, consent to entry of any judgment or enter into any settlement which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such indemnified party of a release from all liability in respect to such claim or litigation.

2.9 Assignment of Registration Rights. The rights to cause the Company to register Registrable Securities pursuant to this Section 2 may be assigned by a Holder to a transferee or assignee of Registrable Securities (for so long as such shares remain Registrable Securities) that (a) is a subsidiary, parent, general partner, limited partner, retired partner, member or retired member, or stockholder of a Holder that is a corporation, partnership or limited liability company, (b) is a Holder's family member or trust for the benefit of an individual Holder, or (c) acquires sufficient shares of Registrable Securities (as adjusted for stock splits and combinations) to be a Major Investor (as defined below); or (d) is an entity affiliated by common control (or other related entity) with such Holder; *provided, however,* (i) the transferor shall, within 10 days after such transfer, furnish to the Company written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned and (ii) such transferee shall agree to be subject to all restrictions set forth in this Agreement.

2.10 Limitation on Subsequent Registration Rights. Other than as provided in Section 6.10, after the date of this Agreement, the Company shall not enter into any agreement with any holder or prospective holder of any securities of the Company that would grant such holder rights to demand the registration of shares of the Company's capital stock, or to include such shares in a registration statement that would reduce the number of shares includable by the Holders.

2.11 Market Stand-Off Agreement. Each Holder hereby agrees that such Holder shall not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale, any shares of Common Stock (or other securities) of the Company held by such Holder immediately before the effective date of the registration statement for such offering (other than those included in the registration) during the 180-day period following the effective date of the Initial Offering (or such longer period, not to exceed 34 days after the expiration of the 180-day period, as the underwriters or the Company shall request in order to facilitate compliance with NASD Rule 2711 or NYSE Member Rule 472 or any successor or similar rule or regulation); provided, that, (i) with respect to the above, all officers and directors of the Company and holders of at least one percent (1%) of the Company's voting securities are bound by and have entered into similar agreements and (ii) the foregoing provisions shall only be applicable to the Holders if all stockholders, officers and directors are treated similarly with respect to any release prior to the termination of the lock-up period (including any extension thereof) such that if any such persons are released all Holders shall also be released to the same extent on a *pro rata* basis.

2.12 Agreement to Furnish Information. Each Holder agrees to execute and deliver such other agreements as may be reasonably requested by the Company or the managing underwriters that are consistent with the Holder's obligations under Section 2.11 or that are necessary to give further effect thereto. In addition, if requested by the Company or the representative of the underwriters of Common Stock (or other securities) of the Company, each Holder shall provide, within ten (10) days of such request, such information as may be required by the Company or such representative in connection with the completion of any public offering of the Company's securities pursuant to a registration statement filed under the Securities Act. The obligations described in Section 2.11 and this Section 2.12 shall not apply to a Special Registration Statement. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to such shares of Common Stock (or other securities) until the end of such period. Each Holder agrees that any transferee of any shares of Registrable Securities shall be bound by Sections 2.11 and 2.12. The underwriters of the Company's stock are intended third party beneficiaries of Sections 2.11 and 2.12 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

2.13 Rule 144 Reporting. With a view to making available to the Holders the benefits of certain rules and regulations of the SEC which may permit the sale of the Registrable Securities to the public without registration, the Company agrees to use its best efforts to:

(a) Make and keep public information available, as those terms are understood and defined in SEC Rule 144 or any similar or analogous rule promulgated under the Securities Act, at all times after the effective date of the first registration filed by the Company for an offering of its securities to the general public;

(b) File with the SEC, in a timely manner, all reports and other documents required of the Company under the Exchange Act; and

(c) So long as a Holder owns any Registrable Securities, furnish to such Holder forthwith upon request: a written statement by the Company as to its compliance with the reporting requirements of said Rule 144 of the Securities Act, and of the Exchange Act (at any time after it has become subject to such reporting requirements); a copy of the most recent annual or quarterly report of the Company filed with the Commission; and such other reports and documents as a Holder may reasonably request in connection with availing itself of any rule or regulation of the SEC allowing it to sell any such securities without registration.

2.14 Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Section 2.2, Section 2.3, or Section 2.4 hereof shall terminate upon the earlier of: (i) the date three (3) years following an initial public offering that results in the conversion of all outstanding shares of Preferred Stock; or (ii) such time as such Holder holds less than 1% of the Company's outstanding Common Stock (treating all shares of Preferred Stock on an as converted basis), the Company has completed its Initial Offering and all Registrable Securities of the Company issuable or issued upon conversion of the Shares held by and issuable to such Holder (and its affiliates) may be sold pursuant to Rule 144 during any ninety (90) day period. Upon such termination, such shares shall cease to be "Registrable Securities" hereunder for all purposes.

SECTION 3. COVENANTS OF THE COMPANY.

3.1 Basic Financial Information and Reporting.

(a) The Company will maintain true books and records of account in which full and correct entries will be made of all its business transactions pursuant to a system of accounting established and administered in accordance with generally accepted accounting principles consistently applied (except as noted therein or as disclosed to the recipients thereof), and will set aside on its books all such proper accruals and reserves as shall be required under generally accepted accounting principles consistently applied.

(b) As soon as practicable after the end of each fiscal year of the Company, and in any event within 180 days thereafter, the Company will furnish each Major Investor a balance sheet of the Company, as at the end of such fiscal year, and a statement of income and a statement of cash flows of the Company, for such year, all prepared in accordance with generally accepted accounting principles consistently applied (except as noted therein or as disclosed to the recipients thereof) and setting forth in each case in comparative form the figures for the previous fiscal year, all in reasonable detail. Such financial statements shall be audited and accompanied by a report and opinion thereon by independent public accountants selected by the Board.

(c) The Company will furnish such Major Investor, as soon as practicable after the end of the first, second and third quarterly accounting periods in each fiscal year of the Company, and in any event within 30 days thereafter, a balance sheet of the Company as of the end of each such quarterly period, and a statement of income and a statement of cash flows of the Company for such period and for the current fiscal year to date, prepared in accordance with generally accepted accounting principles consistently applied (except as noted therein or as disclosed to the recipients thereof), with the exception that no notes need be attached to such statements and year-end audit adjustments may not have been made.

(d) The Company will furnish such Major Investor, as soon as practicable after the end of each month, and in any event within 30 days thereafter, a balance sheet of the Company as of the end of each such monthly period, and a statement of income and a statement of cash flows of the Company for such period and for the current fiscal year to date, prepared in accordance with generally accepted accounting principles consistently applied (except as noted therein or as disclosed to the recipients thereof), with the exception that no notes need be attached to such statements and year-end audit adjustments may not have been made.

(e) The Company will furnish such Major Investor at least 30 days after the beginning of each fiscal year an annual budget and operating plans for such fiscal year (and as soon as available, any subsequent written revisions thereto).

3.2 Inspection Rights. Each Major Investor shall have the right to visit and inspect any of the properties of the Company or any of its subsidiaries, and to discuss the affairs, finances and accounts of the Company or any of its subsidiaries with its officers, and to review such information as is reasonably requested all at such reasonable times and as often as may be reasonably requested; *provided, however,* that the Company shall not be obligated under this Section 3.2 with respect to a competitor of the Company or with respect to information which the Board determines in good faith constitutes a trade secret, is attorney-client privileged, or subject to a confidentiality obligation to a third party, and should not, therefore, be disclosed.

3.3 Confidentiality of Records. Each Major Investor agrees to use commercially reasonable efforts to keep confidential any information furnished to such Major Investor pursuant to Section 3.1 and 3.2 hereof that the Company identifies as being confidential or proprietary (so long as such information is not in the public domain), except that such Major Investor may disclose such proprietary or confidential information (i) to any partner, subsidiary or parent of such Major Investor as long as such partner, subsidiary or parent is advised of and agrees or has agreed to be bound by the confidentiality provisions of this Section 3.3 or comparable restrictions; (ii) at such time as it enters the public domain through no fault of such Major Investor; (iii) that is communicated to it free of any obligation of confidentiality; (iv) that is developed by Major Investor or its agents independently of and without reference to any confidential information communicated by the Company; or (v) as required by applicable law.

3.4 Reservation of Common Stock. The Company will at all times reserve and keep available, solely for issuance and delivery upon the conversion of the Preferred Stock, all Common Stock issuable from time to time upon such conversion.

3.5 Proprietary Information and Inventions Agreement. The Company shall require all employees and consultants to execute and deliver a Proprietary Information and Inventions Agreement substantially in a form approved by the Company's counsel or Board.

3.6 Assignment of Right of First Refusal. In the event the Company elects not to exercise any right of first refusal or right of first offer the Company may have on a proposed transfer of any of the Company's outstanding capital stock pursuant to the Company's charter documents, by contract or otherwise, the Company shall, to the extent it may do so, assign such right of first refusal or right of first offer to each Major Investor. In the event of such assignment, each Major Investor shall have a right to purchase its *pro rata* portion of the capital stock proposed

to be transferred. Each Major Investor's *pro rata* portion shall be equal to the product obtained by multiplying (i) the aggregate number of shares proposed to be transferred by (ii) a fraction, the numerator of which is the number of shares of Common Stock and Preferred Stock held by such Major Investor at the time of the proposed transfer and the denominator of which is the total number of outstanding shares of Common Stock and Preferred Stock at the time of the proposed transfer.

3.7 FCPA. The Company represents that it shall not (and shall not permit any of its subsidiaries or affiliates or any of its or their respective directors, officers, managers, employees, independent contractors, representatives or agents to) promise, authorize or make any payment to, or otherwise contribute any item of value to, directly or indirectly, to any third party, including any Non-U.S. Official (as such term is defined in the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "***FCPA***")), in each case, in violation of the FCPA, the U.K. Bribery Act, or any other applicable anti-bribery or anti-corruption law. The Company further represents that it shall (and shall cause each of its subsidiaries and affiliates to) cease all of its or their respective activities, as well as remediate any actions taken by the Company, its subsidiaries or affiliates, or any of their respective directors, officers, managers, employees, independent contractors, representatives or agents in violation of the FCPA, the U.K. Bribery Act, or any other applicable anti-bribery or anti-corruption law. The Company further represents that it shall (and shall cause each of its subsidiaries and affiliates to) maintain systems of internal controls (including, but not limited to, accounting systems, purchasing systems and billing systems) to ensure compliance with the FCPA, the U.K. Bribery Act, or any other applicable anti-bribery or anti-corruption law. Upon request, the Company agrees to provide responsive information and/or certifications concerning its compliance with applicable anti-corruption laws. The Company shall promptly notify each Investor if the Company becomes aware of any Enforcement Action (as defined in the Purchase Agreement). The Company shall, and shall cause any direct or indirect subsidiary or entity controlled by it, whether now in existence or formed in the future, to comply with the FCPA. The Company shall use its best efforts to cause any direct or indirect subsidiary, whether now in existence or formed in the future, to comply in all material respects with all applicable laws

3.8 Termination of Covenants. All covenants of the Company contained in Section 3 of this Agreement (other than the provisions of Section 3.3) shall expire and terminate as to each Investor upon the earlier of (i) the effective date of the registration statement pertaining to an Initial Offering that results in the Preferred Stock being converted into Common Stock or (ii) upon an "***Acquisition***" as defined in the Company's Amended and Restated Certificate of Incorporation as in effect as of the date hereof.

SECTION 4. COVENANT OF THE INVESTORS.

4.1 Commerce Department Compliance. The Company may be required to file reports with the Bureau of Economic Analysis (the "***BEA***") of the US Commerce Department when a US affiliate of a foreign Investor if such foreign Investor, together with its affiliates, directly or indirectly controls ten percent (10%) or more of the voting securities of the Company. Such foreign Investor that is a foreign individual or entity or a US subsidiary or affiliate of a foreign parent covenants to provide information reasonably necessary for the Company to comply with BEA filings required under the International Investment and Trade in Services Act.

SECTION 5. RIGHTS OF FIRST REFUSAL.

5.1 Subsequent Offerings. Subject to applicable securities laws, each Major Investor shall have a right of first refusal to purchase its Major Investor Pro Rata Share (as defined below) of all Equity Securities, as defined below, that the Company may, from time to time, propose to sell and issue after the date of this Agreement, other than the Equity Securities excluded by Section 5.6 hereof. For purposes of this Section 5, a Major Investor who chooses to exercise the right of first refusal may designate as purchasers under such right itself or any of its general partners, managing members and/or affiliates, including Affiliated Funds, in such proportions as it deems appropriate. The "***Major Investor Pro Rata Share***" for each Major Investor is equal to the ratio of (a) the number of shares of the Company's Common Stock (including all shares of Common Stock issuable or issued upon conversion of the Shares or other Preferred Stock) of which such Major Investor is deemed to be a holder immediately prior to the issuance of such Equity Securities to (b) the total number of shares of the Company's Common Stock (including all shares of Common Stock issuable or issued upon conversion of the Shares or other Preferred Stock) immediately prior to the issuance of such Equity Securities. The term "***Equity Securities***" shall mean (i) any Common Stock, Preferred Stock or other security of the Company, (ii) any security convertible into or exercisable or exchangeable for, with or without consideration, any Common Stock, Preferred Stock or other security (including any option to purchase such a convertible security), (iii) any security carrying any warrant or right to subscribe to or purchase any Common Stock, Preferred Stock or other security or (iv) any such warrant or right.

5.2 Exercise of Rights. If the Company proposes to issue any Equity Securities, it shall give each Major Investor written notice of its intention, describing the Equity Securities, the price and the terms and conditions upon which the Company proposes to issue the same. Each Major Investor shall have 15 days from the giving of such notice to agree to purchase its Major Investor Pro Rata Share of the Equity Securities for the price and upon the terms and conditions specified in the notice by giving written notice to the Company and stating therein the quantity of Equity Securities to be purchased. Notwithstanding the foregoing, the Company shall not be required to offer or sell such Equity Securities to any Major Investor who would cause the Company to be in violation of applicable federal securities laws by virtue of such offer or sale.

5.3 Issuance of Equity Securities to Other Persons. If not all of the Major Investors elect to purchase their Major Investor Pro Rata Share of the Equity Securities, then the Company shall promptly notify in writing the Major Investors who do so elect and shall offer each such Major Investor the right to acquire its Subsequent Major Investor Pro Rata Share (as defined below) of such unsubscribed shares. The "***Subsequent Major Investor Pro Rata Share***" for each such Major Investor is equal to the ratio of (a) the number of shares of the Company's Common Stock (including all shares of Common Stock issuable or issued upon conversion of the Shares) of which such Major Investor is deemed to be a holder immediately prior to the issuance of such Equity Securities to (b) the total number of shares of the Company's Common Stock (including all shares of Common Stock issuable or issued upon conversion of the Shares) of which all Major Investors who elected to purchase their Major Investor Pro Rata Shares of the Equity Securities pursuant to Section 5.2 hereof are deemed to be holders immediately prior to the issuance of such Equity Securities. Each such Major Investor shall have five (5) days after receipt of such notice to notify the Company of its election to purchase all or a portion thereof of the unsubscribed shares. The Company shall have 90 days thereafter to sell the Equity Securities in respect of which the

Major Investor's rights were not exercised, at a price not lower and upon general terms and conditions not materially more favorable to the purchasers thereof than specified in the Company's notice to the Major Investors pursuant to Section 5.2 hereof. If the Company has not sold such Equity Securities within 90 days of the notice provided pursuant to Section 5.2, the Company shall not thereafter issue or sell any Equity Securities, without first offering such securities to the Major Investors in the manner provided above.

5.4 Termination and Waiver of Rights of First Refusal. The rights of first refusal established by this Section 5 shall not apply to, and shall terminate upon the earlier of (i) the effective date of the registration statement pertaining to the Company's Initial Offering or (ii) an Acquisition. Notwithstanding Section 6.5 hereof, the rights of first refusal established by this Section 5 may be amended, or any provision waived with and only with the written consent of the Company and the Major Investors holding a majority of the Registrable Securities held by all Major Investors, or as permitted by Section 6.5; and provided further, that (i) in the event that the rights of a Major Investor to purchase Equity Securities under this Section 5 are waived with respect to a particular offering of Equity Securities without such Major Investor's prior written consent (a "***Waived Investor***") and any Major Investor that participated in waiving such rights, or any affiliate of any such Major Investor, actually purchases Equity Securities in such offering, then the Company shall grant, and hereby grants, each Waived Investor the right to purchase, in a subsequent closing of such issuance on substantially the same terms and conditions, the same percentage of its full pro rata share of such Equity Securities as the highest percentage of any such purchasing Major Investor and (ii) this sentence may be amended or modified, and the obligations of the Company and the rights of the Waived Investors under this sentence may be waived, in each case with respect to any Waived Investor only with the written consent of such Waived Investor.

5.5 Assignment of Rights of First Refusal. The rights of first refusal of each Major Investor under this Section 5 may be assigned to the same parties, subject to the same restrictions as any transfer of registration rights pursuant to Section 2.9.

5.6 Excluded Securities. The rights of first refusal established by this Section 5 shall have no application to any of the following Equity Securities:

(a) any Equity Securities defined as an Excluded Issuance under the Company's Certificate of Incorporation, as amended from time to time;

(b) stock issued or issuable pursuant to any rights or agreements, options, warrants or convertible securities outstanding as of the date of this Agreement; and stock issued pursuant to any such rights or agreements granted after the date of this Agreement, so long as the rights of first refusal established by this Section 5 were complied with, waived, or were inapplicable pursuant to any provision of this Section 5.6 with respect to the initial sale or grant by the Company of such rights or agreements; and

(c) any Equity Securities issued by the Company pursuant to the Purchase Agreement.

SECTION 6. MISCELLANEOUS.

6.1 Governing Law. This Agreement shall be governed by and construed under the laws of the State of California in all respects as such laws are applied to agreements among California residents entered into and to be performed entirely within California, without reference to conflicts of laws or principles thereof. The parties agree that any action brought by either party under or in relation to this Agreement, including without limitation to interpret or enforce any provision of this Agreement, shall be brought in, and each party agrees to and does hereby submit to the jurisdiction and venue of, any state or federal court located in the County of Santa Clara, California.

6.2 Successors and Assigns. Except as otherwise expressly provided herein, the provisions hereof shall inure to the benefit of, and be binding upon, the parties hereto and their respective successors, assigns, heirs, executors, and administrators and shall inure to the benefit of and be enforceable by each person who shall be a holder of Registrable Securities from time to time; *provided*, *however,* that prior to the receipt by the Company of adequate written notice of the transfer of any Registrable Securities specifying the full name and address of the transferee, the Company may deem and treat the person listed as the holder of such shares in its records as the absolute owner and holder of such shares for all purposes, including the payment of dividends or any redemption price.

6.3 Entire Agreement. This Agreement, the Exhibits and Schedules hereto, the Purchase Agreement and the other documents delivered pursuant thereto constitute the full and entire understanding and agreement between the parties with regard to the subjects hereof and no party shall be liable or bound to any other in any manner by any oral or written representations, warranties, covenants and agreements except as specifically set forth herein and therein. Each party expressly represents and warrants that it is not relying on any oral or written representations, warranties, covenants or agreements outside of this Agreement.

6.4 Severability. In the event one or more of the provisions of this Agreement should, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provisions of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

6.5 Amendment and Waiver.

(a) Except as otherwise expressly provided, this Agreement may be amended or modified, and the obligations of the Company and the rights of the Holders under this Agreement may be waived, only upon the written consent of the Company and the holders of at least a majority of the then outstanding Registrable Securities. Notwithstanding the foregoing, this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion.

(b) For the purposes of determining the number of Holders or Investors entitled to vote or exercise any rights hereunder, the Company shall be entitled to rely solely on the list of record holders of its stock as maintained by or on behalf of the Company.

6.6 Delays or Omissions. It is agreed that no delay or omission to exercise any right, power, or remedy accruing to any party, upon any breach, default or noncompliance by another party under this Agreement shall impair any such right, power, or remedy, nor shall it be construed to be a waiver of any such breach, default or noncompliance, or any acquiescence therein, or of any similar breach, default or noncompliance thereafter occurring. It is further agreed that any waiver, permit, consent, or approval of any kind or character on any party's part of any breach, default or noncompliance under the Agreement or any waiver on such party's part of any provisions or conditions of this Agreement must be in writing and shall be effective only to the extent specifically set forth in such writing. All remedies, either under this Agreement, by law, or otherwise afforded to any party, shall be cumulative and not alternative.

6.7 Notices. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient; if not, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to the party to be notified at the address as set forth on the signature pages hereof or **EXHIBIT A** hereto or at such other address or electronic mail address as such party may designate by 10 days advance written notice to the other parties hereto.

6.8 Attorneys' Fees. In the event that any suit or action is instituted under or in relation to this Agreement, including without limitation to enforce any provision in this Agreement, the prevailing party in such dispute shall be entitled to recover from the losing party all fees, costs and expenses of enforcing any right of such prevailing party under or with respect to this Agreement, including without limitation, such reasonable fees and expenses of attorneys and accountants, which shall include, without limitation, all fees, costs and expenses of appeals.

6.9 Titles and Subtitles. The titles of the sections and subsections of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement.

6.10 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company shall issue additional shares of its Preferred Stock pursuant to the Purchase Agreement, any purchaser of such shares of Preferred Stock shall become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement and shall be deemed an "Investor," a "Holder" and a party hereunder. Notwithstanding anything to the contrary contained herein, if the Company shall issue Equity Securities in accordance with Section 5.6 of this Agreement, any purchaser of such Equity Securities may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement and shall be deemed an "Investor," a "Holder" and a party hereunder.

6.11 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

6.12 Aggregation of Stock. All shares of Registrable Securities held or acquired by affiliated entities or persons or persons or entities under common management or control shall be aggregated together for the purpose of determining the availability of any rights under this Agreement.

6.13 Pronouns. All pronouns contained herein, and any variations thereof, shall be deemed to refer to the masculine, feminine or neutral, singular or plural, as to the identity of the parties hereto may require.

6.14 Termination. This Agreement shall terminate and be of no further force or effect upon the earlier of (i) an Acquisition; or (ii) the date five (5) years following the Closing of the Initial Offering that results in the conversion of all outstanding shares of Preferred Stock.

6.15 Acknowledgment. The Company acknowledges that the Investors are in the business of venture capital investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises which may have products or services which compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise whether or not such enterprise has products or services which compete with those of the Company; *provided, however,* that the foregoing shall not relieve any of the Investors from liability associated with the unauthorized disclosure of the Company's confidential information obtained pursuant to this Agreement.

[THIS SPACE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

COMPANY:

FORTY SEVEN, INC.

By: /s/ Mark McCamish
Name: Mark McCamish
Title: Chief Executive Officer

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

LIGHTSPEED VENTURE PARTNERS X, L.P.

By: Lightspeed General Partner X, L.P.,
its general partner

By: Lightspeed Ultimate General Partner X, Ltd.,
its general partner

Name: Christopher Schaepe
Title: Duly authorized signatory

LIGHTSPEED AFFILIATES X, L.P.

By: Lightspeed General Partner X, L.P.,
its general partner

By: Lightspeed Ultimate General Partner X, Ltd.,
its general partner

Name: Christopher Schaepe
Title: Duly authorized signatory

LIGHTSPEED VENTURE PARTNERS SELECT II, L.P.

By: Lightspeed General Partner Select II, L.P.,
its general partner

By: Lightspeed Ultimate General Partner Select II, Ltd., its general partner

Name: Christopher Schaepe
Title: Duly authorized signatory

Address: Lightspeed Venture Partners
2200 Sand Hill Road
Menlo Park, CA 94025
T: 650-234-8300

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

CLARUS LIFESCIENCES III, L.P.

By: Clarus Ventures III GP, LP, its general partner

By: Clarus Ventures III LLC, its general partner

/s/ Dennis Henner
Name: Dennis Henner
Managing Director

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

THE FREIDENRICH FAMILY TRUST (JOHN FREIDENRICH TRUSTEE)

By: /s/ John Freidenrich
John Freidenrich, Trustee

FREIDENRICH TWENTY-FIFTY, LTD.

/s/ John Freidenrich
John Freidenrich, General Partner

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

SUTTER HILL VENTURES,
A CALIFORNIA LIMITED PARTNERSHIP

By: Sutter Hill Ventures, L.L.C.
Its: General Partner

By: /s/ Robert Yin, Under Power of Attorney

Name: _____

Title: Managing Director

WILLIAM H. YOUNGER, JR., TRUSTEE OF THE WILLIAM H. YOUNGER, JR. REVOCABLE TRUST U/A/D 8/5/09

By: /s/ Robert Yin, Under Power of Attorney
William H. Younger, Jr., Trustee

YOVEST, L.P.

By: /s/ Robert Yin, Under Power of Attorney
William H. Younger, Jr., Trustee of The William H. Younger, Jr. Revocable Trust U/A/D 8/5/09, General Partner

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

TENCH COXE AND SIMONE OTUS COXE, CO-TRUSTEES OF THE COXE REVOCABLE TRUST U/A/D 4/23/98

By: /s/ Robert Yin, Under Power of Attorney
Tench Coxe, Trustee

ROOSTER PARTNERS, L.P. – FUND NO. 2

By: /s/ Robert Yin, Under Power of Attorney
Tench Coxe, Trustee of The Coxe Revocable Trust U/A/D 4/23/98, General Partner

JEFFREY W. BIRD AND CHRISTINA R. BIRD, CO-TRUSTEES OF JEFFREY W. AND CHRISTINA R. BIRD TRUST U/A/D 10/31/00

By: /s/ Robert Yin, Under Power of Attorney
Jeffrey W. Bird, Trustee

NESTEGG HOLDINGS, LP

By: /s/ Robert Yin, Under Power of Attorney
Jeffrey W. Bird, Trustee of Jeffrey W. Bird and Christina R. Bird Trust U/A/D 10/31/00, General Partner

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

JAMES N. WHITE AND PATRICIA A. O'BRIEN, CO-TRUSTEES OF THE WHITE REVOCABLE TRUST U/A/D 4/3/97

By: /s/ Robert Yin, Under Power of Attorney
James N. White, Trustee

JAMES N. WHITE, TRUSTEE OF SIERRA TRUST U/A/D 12/16/1997

By: /s/ Robert Yin, Under Power of Attorney
James N. White, Trustee

ROSETIME PARTNERS L.P.

By: /s/ Robert Yin, Under Power of Attorney
James N. White, Trustee of The White Revocable Trust U/A/D 4/3/97, General Partner

ANDREW T. SHEEHAN AND NICOLE J. SHEEHAN AS TRUSTEES OF SHEEHAN 2003 TRUST

By: /s/ Robert Yin, Under Power of Attorney
Andrew T. Sheehan, Trustee

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

MICHAEL L. SPEISER AND MARY ELIZABETH SPEISER, CO-TRUSTEES OF SPEISER TRUST U/A/D 7/19/06

By: /s/ Robert Yin, Under Power of Attorney
Michael L. Speiser, Trustee

STEFAN A. DYCKERHOFF AND WENDY G. DYCKERHOFF-JANSSEN, OR THEIR SUCCESSOR(S) AS TRUSTEES UNDER THE DYCKERHOFF 2001 REVOCABLE TRUST AGREEMENT DATED AUGUST 30, 2001

By: /s/ Robert Yin, Under Power of Attorney
Stefan A. Dyckerhoff, Trustee

SAMUEL J. PULLARA III AND LUCIA CHOI PULLARA, CO-TRUSTEES OF THE PULLARA REVOCABLE TRUST U/A/D 8/21/13

By: /s/ Robert Yin, Under Power of Attorney
Samuel J. Pullara III, Trustee

DOUGLAS T. MOHR AND BETH Z. MOHR, CO-TRUSTEES OF THE MOHR FAMILY TRUST U/A/D 2/17/15

By: /s/ Robert Yin, Under Power of Attorney
Douglas T. Mohr, Trustee

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

DAVID E. SWEET AND ROBIN T. SWEET AS TRUSTEES OF THE DAVID AND ROBIN SWEET LIVING TRUST DATED 7/6/04

By: /s/ Robert Yin, Under Power of Attorney
David E. Sweet, Trustee

PATRICK ANDREW CHEN AND YU-YING CHIU CHEN AS TRUSTEES OF PATRICK AND YING CHEN 2001 LIVING TRUST DATED 3/17/01

By: /s/ Robert Yin, Under Power of Attorney
Yu-Ying Chiu Chen, Trustee

BARBARA NISS, TRUSTEE BARBARA NISS 2013 REVOCABLE TRUST DATED DECEMBER 18, 2013

By: /s/ Robert Yin, Under Power of Attorney
Barbara Niss, Trustee

PATRICIA TOM

By: /s/ Robert Yin, Under Power of Attorney

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

ANVEST, L.P.

By: /s/ Robert Yin, Under Power of Attorney

Name: _____

Title: _____

SAUNDERS HOLDINGS, L.P.

By: /s/ Robert Yin, Under Power of Attorney

Name: _____

Title: _____

JAMES C. GAITHER, TRUSTEE OF THE GAITHER REVOCABLE TRUST U/A/D 9/28/2000

By: /s/ Robert Yin, Under Power of Attorney

Name: _____

Title: _____

TALLACK PARTNERS, L.P.

By: /s/ Robert Yin, Under Power of Attorney

Name: _____

Title: _____

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

CHATTER PEAK PARTNERS, L.P.

By: /s/ Robert Yin, Under Power of Attorney

Name: _____

Title: _____

WELLS FARGO BANK, N.A. FBO SHV PROFIT SHARING PLAN FBO DAVID E. SWEET (ROLLOVER)

By: _____

Name: _____

Title: _____

WELLS FARGO BANK, N.A. FBO SHV PROFIT SHARING PLAN FBO YU-YING CHEN

By: _____

Name: _____

Title: _____

WELLS FARGO BANK, N.A. FBO SHV PROFIT SHARING PLAN FBO PATRICIA TOM (PRE)

By: _____

Name: _____

Title: _____

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

CHATTER PEAK PARTNERS, L.P.

By: _____

Name: _____

Title: _____

WELLS FARGO BANK, N.A. FBO SHV PROFIT SHARING PLAN FBO DAVID E. SWEET (ROLLOVER)

By: /s/ India Jones

Name: India Jones

Title: AVP

WELLS FARGO BANK, N.A. FBO SHV PROFIT SHARING PLAN FBO YU-YING CHEN

By: /s/ India Jones

Name: India Jones

Title: AVP

WELLS FARGO BANK, N.A. FBO SHV PROFIT SHARING PLAN FBO PATRICIA TOM (PRE)

By: /s/ India Jones

Name: India Jones

Title: AVP

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

WELLS FARGO BANK, N.A. FBO
SHV PROFIT SHARING PLAN FBO
TENCH COXE

By: /s/ India Jones

Name: India Jones

Title: AVP

WELLS FARGO BANK, N.A. FBO
JAMES N. WHITE ROTH IRA

By: /s/ India Jones

Name: India Jones

Title: AVP

WELLS FARGO BANK, N.A. FBO
SHV PROFIT SHARING PLAN FBO
ANDREW T. SHEEHAN (ROLLOVER)

By: /s/ India Jones

Name: India Jones

Title: AVP

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

WELLS FARGO BANK, N.A. FBO
SHV PROFIT SHARING PLAN FBO
SAMUEL J. PULLARA III

By: /s/ India Jones

Name: India Jones

Title: AVP

WELLS FARGO BANK, N.A. FBO
SHV PROFIT SHARING PLAN FBO
DIANE J. NAAR

By: /s/ India Jones

Name: India Jones

Title: AVP

WELLS FARGO BANK, N.A. FBO
SHV PROFIT SHARING PLAN FBO
BARBARA NISS

By: /s/ India Jones

Name: India Jones

Title: AVP

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTORS:

WELLS FARGO BANK, N.A. FBO
SHV PROFIT SHARING PLAN FBO
ROBERT YIN

By: /s/ India Jones

Name: India Jones

Title: AVP

WELLS FARGO BANK, N.A. FBO
SHV PROFIT SHARING PLAN FBO
ANDREW T. SHEEHAN

By: /s/ India Jones

Name: India Jones

Title: AVP

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

GC&H INVESTMENTS, LLC

By: /s/ Jim Kindler
Jim Kindler, Manager

Address: 101 California Street, 5th Floor
San Francisco, CA 94111-5800

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

OLIVIER NOMELLINI REVOCABLE TRUST UA 03/24/2011, KENNETH EDWARD OLIVIER AND ANGELA NOMELLINI, TRUSTEES

By: /s/ Kenneth Olivier

Name: Kenneth Olivier

Title: Trustee

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

GOLDEN RIDGE DEVELOPMENTS LIMITED

By: /s/ J.M.D. Cha

Name: J.M.D. Cha

Title: Director

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

GV 2015, L.P.
By: GV 2015 GP, L.L.C., its General Partner

By: /s/ Daphne M. Chang
Name: Daphne M. Chang
Title: Authorized Signatory

GV 2016, L.P.
By: GV 2016 GP, L.P., its General Partner
By: GV 2016 GP, L.L.C., its General Partner

By: /s/ Daphne M. Chang
Name: Daphne M. Chang
Title: Authorized Signatory

Attn: GV Legal Department
1600 Amphitheatre Parkway
Mountain View, CA 94043
Email: notice@gv.com

IN WITNESS WHEREOF, the parties hereto have executed this **AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT** as of the date set forth in the first paragraph hereof.

INVESTOR:

HADLEY HARBOR MASTER INVESTORS (CAYMAN) II, L.P.

By: Wellington Management Company LLP, as investment adviser

By: /s/ Emily Babalas
Name: Emily Babalas
Title: Managing Director and Counsel

c/o Wellington Management Company LLP
Legal and Compliance
280 Congress Street
Boston, MA 02210
Telephone number: (617) 790-7429
Attn: Emily Babalas
Email: seclaw@wellington.com

EXHIBIT A

LIST OF INVESTORS

Lightspeed Venture Partners X, L.P.

Lightspeed Affiliates X, L.P.

Lightspeed Venture Partners Select II

Clarus Lifesciences III, L.P.

The Freidenrich Family Trust (John Freidenrich Trustee)

Freidenrich Twenty-Fifty, Ltd.

Sutter Hill Ventures, A California Limited Partnership

William H. Younger, Jr., Trustee of The William H. Younger, Jr. Revocable Trust U/A/D 8/5/09

Yovest, L.P.

Tench Coxe and Simone Otus Coxe, Co-Trustees of The Coxe Revocable Trust U/A/D 4/23/98

Rooster Partners, L.P. – Fund No. 2

Jeffrey W. Bird and Christina R. Bird, Co-Trustees of Jeffrey W. and Christina R. Bird Trust U/A/D 10/31/00

NestEgg Holdings, LP

James N. White and Patricia A. O'Brien, Co-Trustees of The White Revocable Trust U/A/D 4/3/97

James N. White, Trustee of Sierra Trust U/A/D 12/16/1997

RoseTime Partners L.P.

Andrew T. Sheehan and Nicole J. Sheehan as Trustees of Sheehan 2003 Trust

Michael L. Speiser and Mary Elizabeth Speiser, Co-Trustees of Speiser Trust U/A/D 7/19/06

Stefan A. Dyckerhoff and Wendy G. Dyckerhoff-Janssen, or their successor(s) as Trustees under the Dyckerhoff 2001 Revocable Trust Agreement dated August 30, 2001

Samuel J. Pullara III and Lucia Choi Pullara, Co-Trustees of The Pullara Revocable Trust U/A/D 8/21/13

Douglas T. Mohr and Beth Z. Mohr, Co-Trustees of The Mohr Family Trust U/A/D 2/17/15

David E. Sweet and Robin T. Sweet as Trustees of The David and Robin Sweet Living Trust Dated 7/6/04

Patrick Andrew Chen and Yu-Ying Chiu Chen as Trustees of Patrick and Ying Chen 2001 Living Trust Dated 3/17/01

Barbara Niss, Trustee Barbara Niss 2013 Revocable Trust Dated December 18, 2013

Patricia Tom

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Tench Coxe

Wells Fargo Bank, N.A. FBO James N. White Roth IRA

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Andrew T. Sheehan

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Andrew T. Sheehan (Rollover)

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Samuel J. Pullara III

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Diane J. Naar

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Robert Yin

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Barbara Niss

Anvest, L.P.

Saunders Holdings, L.P.

James C. Gaither, Trustee of The Gaither Revocable Trust U/A/D 9/28/2000

Tallack Partners, L.P.

Chatter Peak Partners, L.P.

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO David E. Sweet (Rollover)

Wells Fargo Bank, N.A. FBO SHV Profit Sharing Plan FBO Yu-Ying Chen

Wells Fargo Bank, N.A. SHV Profit Sharing Plan FBO Patricia Tom (Pre)

GV 2015, L.P.

GV 2016, L.P.

WS Investment Company, LLC (2016A)

GC&H Investments, LLC

Allen Revocable Trust

ALBI Consulting

Brook Byers

The Board of Trustees of the Leland Stanford Junior University

Olivier Nomellini Revocable Trust UA 03/24/2011, Kenneth Edward Olivier and Angela Nomellini, Trustees

Golden Ridge Developments Limited

Hadley Harbor Master Investors (Cayman) II L.P.

Exhibit 10.9

November 10, 2016

Mark McCamish

Re: Offer of Employment as CEO

Dear Mark:

Forty Seven, Inc. (the "***Company***") is pleased to offer you employment as the Company's Chief Executive Officer and President on the terms and conditions set forth in this letter agreement (the "***Agreement***").

1. Commencement of Employment. Your employment with the Company as Chief Executive Officer and President will start on or before May 1, 2017 or such earlier date as you may be able to initiate employment (the "***Start Date***"). Prior to commencing employment you agree to make yourself available for various internal meetings and discussions. You will work at the Company's headquarters, currently Menlo Park, California.

2. Duties. You will be responsible for planning and supervising all of the Company's activities and for such other matters as authorized by the Board of Directors. You will report to the Board of Directors. You shall devote your best efforts and full business time, skill and attention to the performance of your duties: provided that you may also serve on the Board of Directors of one biosimilar company, so long as the name and strategy of such company is disclosed to the Board of the Company and such service does not create a conflict of interest. You will also be expected to adhere to the general employment policies and practices of the Company that may be in effect from time to time, except that when the terms of this Agreement conflict with the Company's general employment policies or practices, this Agreement will control. The Company may change your position, duties, work location and compensation from time to time in its discretion, subject to the terms and conditions set forth herein. All the terms hereunder shall be subject to approval by the Board of Directors.

3. Salary. You will be paid an annual base salary of $400,000 less applicable deductions and withholdings, to be paid each month in accordance with the Company's payroll practices, as may be in effect from time to time.

4. Benefits and Commuting/Travel Allowance. You will be eligible to participate in the Company's standard benefit programs, subject to the terms and conditions of such plans. The Company may, from time to time, change these benefits in its discretion. Such benefits include medical insurance for employees and dependents, and a 401(k) plan which includes an employer contribution feature of up to 3% of salary, even if any employee does not otherwise participate in such 401(k) plan. Additional information regarding these benefits is available for your review upon request_ The Company agrees to reimburse you for reasonable (i) commuting expenses actually incurred in connection with your commute to the Company's headquarters, and (ii) living expenses actually incurred in connection with your work at the Company's headquarters, in an aggregate amount up to a maximum of $30,000 per year, plus a single one-time payment, to be made upon commencement of employment, of $15,000 related to travel costs, in each case upon submission of receipts or other documents evidencing such expenses satisfactory to the Company ("***Commuting/Travel Allowance***"). The Commuting/Travel Allowance is intended to cover your travel to and from Ventura, California and a portion of the cost of a local apartment in the San Francisco Bay Area, and meal costs incurred while you are performing services at the Company's headquarters. The Commuting/Travel Allowance (or portions thereof) may be treated as taxable income to you, depending upon the nature of the costs incurred and other factors, and you shall be solely responsible for any taxes which may be associated with the Commuting/Travel Allowance. The Company makes no representations, guarantees or warranties with respect to the potential taxability of any payments.

5. Stock Option. At the first Board meeting following the Start Date, the Company will grant you an option to purchase 4,000,000 shares of the Company's common stock (the "***Option***"). The Option shall vest over a four-year period, with one quarter (1/4) of the shares subject to the Option vesting on the one year anniversary of the date of grant, and the remaining shares vesting equally over the following thirty-six (36) months of continuous service. The Option shall be issued pursuant to the terms and conditions of the Company's 2015 Equity Incentive Plan (the "***Plan***"), at an exercise price equal to 100% of the fair market value of the Company's common stock on the date of grant, as provided in the Plan and consistent with the requirements for an exemption from the application of Section 409A of the Internal Revenue Code (the "***Code***"), and shall be governed in all respects by the terms of the Plan, the grant notices and the option agreements.

6. Performance Bonus. Each year, commencing in calendar 2017, you will be eligible to earn an annual incentive bonus equal to 40 percent of your annual base salary as actually paid during the year. Whether you receive such a bonus, and the amount of any such bonus, shall be determined by the Board in its sole discretion, and shall be based upon achievement of performance objectives to be mutually agreed upon between you and the Board (or duly authorized committee thereof) and other criteria to be determined by the Board. Any bonus shall be paid within thirty (30) days after the Board's determination that a bonus shall be awarded. You must be employed on the day that your bonus (if any) is paid in order to earn the bonus. Therefore, if your employment is terminated either by you or the Company for any reason prior to the bonus being paid, you will not have earned the bonus and no partial or prorated bonus will be paid.

7. Severance and Change in Control Benefits.

(a) Termination for Cause. If, at any time, the Company terminates your employment for Cause (as defined in the Plan), or if either party terminates your employment as a result of your death or disability, you will receive your base salary accrued through your last day of employment, as well as any unused vacation (if applicable) accrued through your last day of employment. Under these circumstances, you will not be entitled to any other form of compensation from the Company, including any severance benefits.

(b) Termination without Cause. If, at any time, the Company terminates your employment without Cause, and other than as a result of your death or disability or in connection with a Change in Control (as defined in the Plan), and provided such termination constitutes a "***separation from service***" (as defined under Treasury Regulation Section 1.409A-1(h), without regard to any alternative definition thereunder, a "***Separation from Service***"), then subject to your satisfaction of the Additional Obligations (as defined below), you shall be entitled to receive the following severance benefits (collectively, the "***Severance Benefits***"):

(i) an amount equal to six (6) months of your then current base salary, less all applicable withholdings and deductions, paid over such six (6) month period, on the schedule in paragraph (d) below (the "***Severance Salary Continuation***");

(ii) if you timely elect continued coverage under COBRA for yourself and your covered dependents under the Company's group health plans following such termination or resignation of employment, then the Company shall pay the COBRA premiums necessary to continue your health insurance coverage in effect for yourself and your eligible dependents on the termination date (the "***COBRA Benefits***") until the earliest of (A) the close of the six (6) month period following the termination of your employment, (B) the expiration of your eligibility for the continuation coverage under COBRA, or (C) the date when you become eligible for substantially equivalent health insurance coverage in connection with

new employment or self-employment (such period from the termination date through the earliest of (A) through (C), the "***COBRA Payment Period***"). Notwithstanding the foregoing, if the Company determines, in its sole discretion, that the payment of the COBRA premiums could result in a violation of the nondiscrimination rules of Section 105(h)(2) of the Code or any statute or regulation of similar effect (including but not limited to the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA premiums, the Company, in its sole discretion, may elect to instead pay you on the first day of each month of the COBRA Payment Period, a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings (such amount, the "***Special Severance Payment***"), for the remainder of the COBRA Payment Period. You may, but are not obligated to, use such Special Severance Payment toward the cost of COBRA premiums. On the sixtieth (60th) day following your Separation from Service, the Company will make the first payment under this clause (and, in the case of the Special Severance Payment, such payment will be you, in a lump sum) equal to the aggregate amount of payments that the Company would have paid through such date had such payments commenced on the Separation from Service through such sixtieth (60th) day, with the balance of the payments paid thereafter on the schedule described above. If you become eligible for coverage under another employer's group health plan or otherwise cease to be eligible for COBRA during the period provided in this clause, you must immediately notify the Company of such event, and all payments and obligations under this clause shall cease;

(c) Change in Control Benefits. Subject to your satisfaction of the Additional Requirements, upon the effectiveness of or during the twelve (12) month period following a Change in Control, if (a) you are involuntarily terminated without Cause (as defined in the Plan) or (b) you resign for Good Reason (as defined below) and in either case other than as a result of death or disability, and provided such termination constitutes a Separation from Service, then you will be entitled to the following (collectively, the "***Change in Control Benefits***"): (i) the vesting and exercisability of the Option shall be accelerated such that 100% of the total unvested shares under the Option shall be vested, (ii) you will be entitled to receive an amount equal to twelve (12) months of your then current base salary, less all applicable withholdings and deductions, paid over such twelve (12) month period on the schedule described in paragraph (d) below (the "***Change in Control Salary Continuation***"), and (iii) you will be entitled to the COBRA Benefits for the COBRA Benefit Period.

(d) Additional Requirements. The Change in Control Benefits and Severance Benefits are conditional upon (a) your past and continuing compliance with your obligations under your Confidential Information and Inventions Assignment Agreement; (b) your delivering to the Company an effective, general release of claims in favor of the Company in a form acceptable to the Company within 60 days following your termination date; and (c) if you are a member of the Board, your resignation from the Board, to be effective no later than the date of your termination date (or such other date as requested by the Board) (collectively, the "***Additional Requirements***"). The Change in Control Salary Continuation or Severance Salary Continuation will be paid in equal installments on the Company's regular payroll schedule and will be subject to applicable tax withholdings over the period outlined above following the date of your termination date; provided, however, that no payments will be made prior to the 60th day following your Separation from Service. On the 60th day following your Separation from Service, the Company will pay you in a lump sum the applicable Salary Continuation and COBRA Benefits that you would have received on or prior to such date under the original schedule but for the delay while waiting for the 60th day in compliance with Code Section 409A and the effectiveness of the release, with the balance of the applicable Salary Continuation and COBRA Benefits being paid as originally scheduled. For the absence of doubt, in no circumstance will you be entitled to receive both the Change in Control Benefits and the Severance Benefits.

(e) Definition of Good Reason. For purposes of this Agreement, "***Good Reason***" shall mean you resign within ninety (90) days after one of the following conditions has come into existence without your consent: (i) a reduction in your base salary by more than 10% (other than in connection with similar decreases of other comparable employees of the Company); (ii) a material diminution of your authority, duties or responsibilities; provided, however, that a change in your position following a Change

in Control shall not constitute Good Reason so long as you retain substantially the same duties and responsibilities of a division, subsidiary or business unit that constitutes substantially the same business of the Company following the Change in Control; or (iii) a relocation of your principal workplace by more than thirty-five (35) miles.

8. Section 409A. It is intended that all of the severance benefits and other payments payable under this letter satisfy, to the greatest extent possible, the exemptions from the application of Code Section 409A provided under Treasury Regulations 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9), and this letter will be construed to the greatest extent possible as consistent with those provisions. For purposes of Code Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), your right to receive any installment payments under this letter (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this letter, if you are deemed by the Company at the time of your Separation from Service to be a "***specified employee***" for purposes of Code Section 409A(a)(2)(B)(i), and if any of the payments upon Separation from Service set forth herein and/or under any other agreement with the Company are deemed to be "***deferred compensation***", then to the extent delayed commencement of any portion of such payments is required in order to avoid a prohibited distribution under Code Section 409A(a)(2)(B)(i) and the related adverse taxation under Section 409A, such payments shall not be provided to you prior to the earliest of (i) the expiration of the six-month period measured from the date of your Separation from Service with the Company, (ii) the date of your death or (iii) such earlier date as permitted under Section 409A without the imposition of adverse taxation. Upon the first business day following the expiration of such applicable Code Section 409A(a)(2)(B)(i) period, all payments deferred pursuant to this paragraph shall be paid in a lump sum to you, and any remaining payments due shall be paid as otherwise provided herein or in the applicable agreement. No interest shall be due on any amounts so deferred.

9. Confidentiality Obligations. As condition of your employment, you must sign and abide by the Company's standard form of Confidential Information and Inventions Assignment Agreement, a copy of which is attached hereto as Exhibit A.

10. At-Will Employment. Your employment with Company will be "***at-will.***" This means that either you or Company may terminate your employment at any time, with or without Cause, and with or without advance notice.

11. Arbitration. To ensure the rapid and economical resolution of disputes that may arise in connection with your employment with the Company, you and the Company agree that any and all disputes, claims, or causes of action, in law or equity, arising from or relating to the enforcement, breach, performance, or interpretation of this Agreement, your employment with the Company, or the termination of your employment, shall be resolved, to the fullest extent permitted by law, by final, binding and confidential arbitration in San Jose, California by JAMS, Inc. ("***JAMS***") or its successor, under JAMS' then applicable rules and procedures. You acknowledge that by agreeing to this arbitration procedure, both you and the Company waive the right to resolve any such dispute through a trial by jury or judge or administrative proceeding. You will have the right to be represented by legal counsel at any arbitration proceeding. The arbitrator shall: (a) have the authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be permitted by law; and (b) issue a written statement signed by the arbitrator regarding the disposition of each claim and the relief, if any, awarded as to each claim, the reasons for the award, and the arbitrator's essential findings and conclusions on which the award is based. The arbitrator shall be authorized to award all relief that you or the Company would be entitled to seek in a court of law. The Company shall pay all JAMS arbitration fees in excess of the administrative fees that you would be required to pay if the dispute were decided in a court of law. Nothing in this Agreement is intended to prevent either you or the Company from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration.

12. Miscellaneous. This Agreement is the complete and exclusive statement of all of the terms and conditions of your employment with the Company, and supersedes and replaces any and all prior agreements or representations with regard to the subject matter hereof, whether written or oral. It is entered into without reliance on any promise or representation other than those expressly contained herein, and it cannot be modified, amended or extended except in a writing signed by you and a duly authorized member of the Board. This Agreement is intended to bind and inure to the benefit of and be enforceable by you and the Company, and our respective successors, assigns, heirs, executors and administrators, except that you may not assign any of your duties or rights hereunder without the express written consent of the Company. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced as if such invalid, illegal or unenforceable provisions had never been contained herein. This Agreement and the terms of your employment with the Company shall be governed in all aspects by the laws of the State of California.

This offer is subject to satisfactory proof of your right to work in the United States and satisfactory completion of a Company-required background check. If you agree to the terms and conditions set forth herein, please sign below.

We look forward to having you join us. If you have any questions about this Agreement, please do not hesitate to call me.

Best regards,

FORTY SEVEN, INC.

/s/ Jonathan MacQuitty

Accepted and agreed:

/s/ Mark McCamish
Mark McCamish

Date: November 10, 2016

FORTY SEVEN, INC.

EXECUTIVE EMPLOYMENT AGREEMENT

for

CHRIS TAKIMOTO

This Executive Employment Agreement (the ***"Agreement"),*** is made and entered into effective as of January 7, 2016, by and between Chris Takimoto ***("Executive")*** and Forty Seven, Inc. (the *"**Company"**).*

WHEREAS, the Company and Executive wish to set forth in this Agreement the terms and conditions under which Executive is to be employed by the Company;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the parties hereto agree as follows:

1. EMPLOYMENT BY THE COMPANY.

1.1 Position and Employment Start Date. Subject to the terms set forth herein, as of the Employment Start Date (as defined below), Executive shall serve as the Company's Chief Medical Officer, reporting to the Company's Chief Executive Officer. The ***"Employment Start Date"*** means the first day of Executive's employment with the Company as mutually agreed by the Executive and the Company. It is anticipated that the Employment Start Date will be February 8, 2016.

1.2 Duties and Location. Executive shall perform such duties as are customarily associated with the position of Chief Medical Officer. Executive will work at the Company's headquarters, currently in Palo Alto, California. Subject to the terms of this Agreement, the Company reserves the right to: (a) reasonably require Executive to perform Executive's duties at places other than Executive's primary work locations from time to time and to require reasonable business travel; and (b) modify Executive's job title and duties as it deems necessary and appropriate in light of the Company's needs.

1.3 Policies and Procedures. The employment relationship between the parties shall be governed by the general employment policies and practices of the Company, except that when the terms of this Agreement differ from or are in conflict with the Company's general employment policies or practices, this Agreement shall control.

2. COMPENSATION.

2.1 Base Salary. For services to be rendered hereunder, Executive shall receive a base salary at the rate of $375,000 per year (the ***"Base Salary"),*** less standard payroll deductions and withholdings and payable in accordance with the Company's regular payroll schedule.

2.2 Bonus. The Company does not currently offer any bonus program and does not grant any bonus to its employees. As such, Executive will not be entitled to receive any bonus from the Company following the Employment Start Date. In the event the Company implements a bonus program for any employee, Executive shall be eligible to earn a bonus pursuant to the terms of any such bonus program.

3. STANDARD COMPANY BENEFITS. Executive shall be eligible to participate in the standard benefit plans offered to similarly situated employees by the Company from time to time, subject to plan terms and generally applicable Company policies. The Company may change benefits from time to time in its discretion.

4. VACATION. Executive will not accrue vacation, and there is no set guideline as to how much vacation Executive will be permitted to take. Instead, the Company will approve paid vacation requests based on the employee's progress on work goals or milestones, status of projects, fairness to the working team, and productivity and efficiency of Executive. Since vacation is not allotted or accrued, "unused" vacation time will not be carried over from one year to the next nor paid out upon termination.

5. EXPENSES.

5.1 Moving Allowance. The Company agrees to reimburse Executive for reasonable expenses actually incurred in connection with Executive's move to the Bay Area, including costs of initial housing in the Bay Area, but excluding any costs related to the purchase of a house, until the Executive's current house in Pennsylvania is sold, but not to exceed six months, and upon submission of receipts or other documents evidencing such expenses reasonably satisfactory to the Company reimbursement will be made up to a maximum amount of $80,000 ***("Moving* Allowance").** The Moving Allowance is intended to cover Executive's move to the Bay Area from Pennsylvania. The Moving Allowance (or portions thereof) may be treated as taxable income to Executive, depending upon the nature of the costs incurred and other factors, and Executive shall be solely responsible for any taxes which may be associated with the Moving Allowance. The Company makes no representations, guarantees or warranties with respect to the potential taxability of any payments.

5.2 Business Expenses. The Company will reimburse Executive for reasonable travel, entertainment or other expenses incurred by Executive in furtherance or in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policy as in effect from time to time.

6. EQUITY. Subject to approval by the Board, the Company anticipates granting Executive an option to purchase 1,300,000 shares of the Company's common stock (representing on the date hereof not less than 1.3% of the shares outstanding, calculated including this grant and all other shares reserved, but unissued under the Plan, all then-outstanding stock and as though all then-outstanding preferred shares and convertible warrants/debt are converted into common) at the fair market value as determined by the Board as of the date of grant, based on a third-party 409A valuation (the ***"Option").*** The anticipated Option will be granted from, and governed by, the terms and conditions of the Company's 2015 Equity Incentive Plan (the ***"Plan")*** and the grant agreement, and will include a four year vesting schedule, under which 25%

of the Option will vest 12 months after the Employment Start Date, and 1148th of the total shares will vest at the end of each month thereafter, until either the Option is fully vested or Executive's continuous service (as defined in the Plan) terminates, whichever occurs first. Executive will be entitled to "early exercise" the Option, prior to vesting.

7. CONFIDENTIAL INFORMATION OBLIGATIONS. As a condition of employment, Executive shall execute and abide by the Company's standard form of Employee Confidential Information and Inventions Assignment Agreement, attached hereto as Exhibit A (the ***"Confidentiality Agreement").***

8. OUTSIDE ACTIVITIES AND NON-COMPETITION DURING EMPLOYMENT.

8.1 Outside Activities. During Executive's employment with the Company, Executive will devote Executive's best efforts and substantially all of Executive's business time and attention to the business of the Company, except for approved vacation periods and reasonable periods of illness or other incapacities permitted by the Company's general employment policies.

8.2 Non-Competition During Employment. Except as otherwise provided below, during Executive's employment by the Company, Executive will not, without the express written consent of the Board, directly or indirectly serve as an officer, director, stockholder, employee, partner, proprietor, investor, joint ventures, associate, representative or consultant of any person or entity engaged in, or planning or preparing to engage in, business activity competitive with any line of business engaged in (or planned to be engaged in) by the Company or its affiliates, including, without limitation, in the field of ImmunoOncology. For purposes of this Agreement, ***"ImmunoOncology"*** shall mean antibody or small molecule therapeutics for cancer therapy which have as their mechanism of action the alteration of immunologic activity. Notwithstanding the foregoing, during Executive's employment, Executive may purchase or otherwise acquire up to (but not more than) one percent (1%) of any class of securities of any enterprise (without participating in the activities of such enterprise) if such securities are listed on any national or regional securities exchange.

9. TERMINATION OF EMPLOYMENT; SEVERANCE AND CHANGE IN CONTROL BENEFITS.

9.1 At-Will Employment. Executive's employment relationship is at-will. Either Executive or the Company may terminate the employment relationship at any time, with or without Cause (as defined below) or advance notice.

9.2 Termination Without Cause or Resignation for Good Reason Unrelated to Change in **Control** If Executive's employment with the Company is terminated by the Company without Cause (and other than as a result of Executive's death or disability) or Executive resigns for Good Reason, in either case, at any time except during the Change in Control Period (as defined below), then provided such termination constitutes a "separation from service" (as defined under Treasury Regulation Section l.409A-l(h), without regard to any alternative definition thereunder, a ***"Separation from Service"),*** and provided that Executive satisfies the Release Requirement in Section 10 below, and remains in compliance with the terms of this Agreement, the Company shall provide Executive with the following "***Severance Benefits***":

9.2.1 Severance Payments. Severance pay in the form of continuation of Executive's final base salary for a period of six (6) months following termination, subject to required payroll deductions and tax withholdings (the "***Severance Payments***"). Subject to Section 10 below, the Severance Payments shall be made on the Company's regular payroll schedule in effect following Executive's date of Separation from Service; provided, however that any such payments that are otherwise scheduled to be made prior to the Effective Date of the Release (as defined below) shall instead accrue and be made on the first regular payroll date following the later of the Effective Date of the Release or the date of Separation from Service. For such purposes, Executive's final base salary will be calculated prior to giving effect to any reduction in base salary that would give rise to Executive's right to resign for Good Reason.

9.2.2 Health Care Continuation Coverage Payments.

(i) **COBRA Premiums.** If Executive timely elects continued coverage under COBRA, the Company will pay Executive's COBRA premiums to continue Executive's coverage (including coverage for Executive's eligible dependents, if applicable) ***("COBRA Premiums")*** through the period starting on the termination date and ending six (6) months after the termination date (the ***"COBRA Premium Period");*** provided, however, that the Company's provision of such COBRA Premium benefits will immediately cease if during the COBRA Premium Period Executive becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination. In the event Executive becomes covered under another employer's group health plan or otherwise ceases to be eligible for COBRA during the COBRA Premium Period, Executive must immediately notify the Company of such event.

(ii) Special Cash Payments in Lieu of COBRA Premiums. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the COBRA Premiums without potentially incurring financial costs or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), regardless of whether Executive or Executive's dependents elect or are eligible for COBRA coverage, the Company instead shall pay to Executive, on the first day of each calendar month following the termination date, a fully taxable cash payment equal to the applicable COBRA premiums for that month (including the amount of COBRA premiums for Executive's eligible dependents), subject to applicable tax withholdings (such amount, the ***"Special Cash Payment"),*** for the remainder of the COBRA Premium Period. Executive may, but are not obligated to, use such Special Cash Payments toward the cost of COBRA premiums.

9.3 Termination Without Cause or Resignation for Good Reason During Change in **Control Period.** If Executive's employment with the Company is terminated by the Company without Cause (and other than as a result of Executive's death or disability) at any time during the Change in Control Period, or if Executive gives timely notice of an event constituting Good Reason, provided such event occurs at any time during the Change in Control Period, then in lieu of (and not additional to) the Severance Benefits described in Section 9.2, and provided that Executive satisfies the Release Requirement in Section 10 below and remains in compliance

with the terms of this Agreement, the Company shall instead provide Executive with the benefits specified below in Sections 9.3.1, 9.32 and 9.3.3, defined as the "***CIC Severance Benefits***". In no event will Executive be entitled to severance benefits under Section 9.2 and this Section 9.3, and if the Company has commenced providing Severance Benefits to Executive under Section 9.2 prior to the date that Executive becomes eligible to receive CIC Severance Benefits under this Section 9.3, the Severance Benefits previously provided to Executive under Section 9.2 of this Agreement shall reduce the CIC Severance Benefits provided under this Section 9.3.

9.3.1 CIC Severance Payments. Severance pay in the form of continuation of Executive's final base salary for a period of twelve (12) months following termination, subject to required payroll deductions and tax withholdings (the ***"CIC Severance Payments").*** Subject to Section 10 below, the CIC Severance Payments shall be made on the Company's regular payroll schedule in effect following Executive's date of Separation from Service; provided, however that any such payments that are otherwise scheduled to be made prior to the Effective Date of the Release (as defined below) shall instead accrue and be made on the first regular payroll date following the later of the Effective Date of the Release or date of Separation from Service. For such purposes, Executive's final base salary will be calculated prior to giving effect to any reduction in base salary that would give rise to Executive's right to resign for Good Reason.

9.3.2 CIC Health Care Continuation Coverage Payments.

(i) **COBRA Premiums.** If Executive timely elects continued coverage under COBRA, the Company will pay Executive's COBRA premiums to continue Executive's coverage (including coverage for Executive's eligible dependents, if applicable) ("***CIC COBRA Premiums***") through the period starting on the termination date and ending twelve (12) months after the termination date (the *"**CIC COBRA Premium Period**");* provided, however, that the Company's provision of such CIC COBRA Premium benefits will immediately cease if during the CIC COBRA Premium Period Executive becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination. In the event Executive becomes covered under another employer's group health plan or otherwise ceases to be eligible for COBRA during the CIC COBRA Premium Period, Executive must immediately notify the Company of such event.

(ii) **Special Cash Payments** in **Lieu of CIC COBRA Premiums.** Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the CIC COBRA Premiums without potentially incurring financial costs or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), regardless of whether Executive or Executive's dependents elect or are eligible for COBRA coverage, the Company instead shall pay to Executive, on the first day of each calendar month following the termination date, a fully taxable cash payment equal to the applicable COBRA premiums for that month (including the amount of COBRA premiums for Executive's eligible dependents), subject to applicable tax withholdings (such amount, the "***Special CIC Cash Payment***"), for the remainder of the CIC COBRA Premium Period. Executive may, but are not obligated to, use such Special CIC Cash Payments toward the cost of COBRA premiums.

9.3.3 Equity Acceleration. Notwithstanding anything to the contrary set forth in the Plan or form of award agreement, effective as of Executive's employment termination date occurring either (i) during the Change in Control Period if termination is without Cause, or (ii) upon resignation for Good Reason, if the event upon which the resignation for Good Reason is founded occurred during the Change in Control Period, the vesting and exercisability of a portion of the Option shall accelerate such that shares equal to fifty percent (50%) of the unvested shares under the Option become immediately vested and exercisable, if applicable, by Executive upon such termination and shall remain exercisable, if applicable, following Executive's termination as set forth in the applicable equity award documents.

9.4 Termination for Cause; Resignation Without Good Reason; Death or Disability. Executive will not be eligible for, or entitled to any severance benefits, including (without limitation) the Severance Benefits and Change in Control Benefits listed in Sections 9.2 and 9.3 above, if the Company terminates Executive's employment for Cause, Executive resigns Executive's employment without Good Reason, or Executive's employment terminates due to Executive's death or disability.

10. CONDITIONS TO RECEIPT OF SEVERANCE BENEFITS AND CHANGE IN CONTROL SEVERANCE BENEFITS. To be eligible for any of the Severance Benefits or Change in Control Severance Benefits pursuant to Sections 9.2 and 9.3 above, Executive must satisfy the following release requirement (the ***"Release Requirement"):*** (a) return to the Company a signed and dated general release of all known and unknown claims in the form attached hereto as **Exhibit B** (the *"Release*, within the applicable deadline set forth therein, but in no event later than forty-five (45) days following Executive's termination date; and (b) permit the Release to become effective and irrevocable in accordance with its terms (such effective date of the Release, the *"Effective Date*,. No Severance Benefits or Change in Control Severance Benefits will be paid hereunder prior to the Effective Date of the Release. Accordingly, if Executive breaches the preceding sentence and/or refuses to sign and deliver to the Company the executed Release or signs and delivers to the Company the Release but exercises Executive's right, if any, under applicable law to revoke the Release (or any portion thereof), then Executive will not be entitled to any severance, payment or benefit under this Agreement.

11. SECTION 409A. It is intended that all of the severance benefits and other payments payable under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Code Section 409A provided under Treasury Regulations l.409A-l(b)(4), l.409A-l(b)(5) and l.409A-l(b)(9), and this Agreement will be construed to the greatest extent possible as consistent with those provisions, and to the extent no so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A. For purposes of Code Section 409A (including, without limitation, for purposes of Treasury Regulation Section l.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by the Company at the time of Executive's Separation from Service to be a "specified employee" for purposes of Code Section 409A(a)(2)(B)(i), and if any of the payments upon Separation from Service set forth herein and/or under any other agreement with the Company are deemed to be "deferred compensation", then to the extent delayed commencement of any portion of such payments is required in order to avoid a prohibited distribution under Code Section 409A(a)(2)(B)(i) and the related adverse taxation under Section 409A, such payments shall not be provided to Executive prior to the earliest of: (a) the expiration of the six-month and one day period measured from the date of Executive's Separation from Service with the Company; (b) the date of Executive's death; or (c) such earlier date as permitted under Section 409A without the imposition of adverse taxation. Upon the first business day following the expiration of such applicable Code Section 409A(a)(2)(B)(i) period, all payments deferred pursuant to this Paragraph shall be paid in a lump sum to Executive, and any remaining payments due shall be paid as otherwise provided herein or in the applicable agreement. No interest shall be due on any amounts so deferred. If the Company determines that any severance benefits provided under this Agreement constitutes "deferred compensation" under Section 409A, for purposes of determining the schedule for payment of the severance benefits, the Effective Date of the Release will not be deemed to have occurred any earlier than the sixtieth (60th) date following the Separation From Service, regardless of when the Release actually becomes effective. In addition to the above, to the extent required to comply with Section 409A and the applicable regulations and guidance issued thereunder, if the applicable deadline for Executive to execute (and not revoke) the applicable Release spans two calendar years, the applicable severance benefits shall commence to be paid in installments on the first regularly scheduled payroll date that occurs in the second calendar year.

12. SECTION 280G; LIMITATIONS ON PAYMENT.

12.1 If any payment or benefit Executive will or may receive from the Company or otherwise (a "***280G Payment***) would (i) constitute a "parachute payment" within the meaning of Section 2800 of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "***Excise Tax***'"), then any such 280G Payment provided pursuant to this Agreement (a "***Payment***') shall be equal to the Reduced Amount. The ***"Reduced Amount'*** shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Executive's receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the ***"Reduction Method")*** that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "***Pro Rata Reduction Method***").

12.2 Notwithstanding any provision of section 12.1 to the contrary, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A that would not otherwise be subject to taxes pursuant to Section 409A, then the Reduction Method and/or the Pro Rata Reduction Method**,** as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A as follows: (A) as a first priority, the modification shall preserve to the greatest extent

possible, the greatest economic benefit for Executive as determined on an after-tax basis; (B) as a second priority, Payments that are contingent on future events *(e.g.,* being terminated without Cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (C) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A.

12.3 Unless Executive and the Company agree on an alternative accounting firm or law firm, the accounting firm engaged by the Company for general tax compliance purposes as of the day prior to the effective date of the Change in Control transaction shall perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control transaction, the Company shall appoint a nationally recognized accounting or law firm to make the determinations required by this Section 12. The Company shall bear all expenses with respect to the determinations by such accounting or law firm required to be made hereunder. The Company shall use commercially reasonable efforts to cause the accounting or law firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to Executive and the Company within fifteen (15) calendar days after the date on which Executive's right to a 280G Payment becomes reasonably likely to occur (if requested at that time by Executive or the Company) or such other time as requested by Executive or the Company.

12.4 If Executive receives a Payment for which the Reduced Amount was determined pursuant to clause (x) of Section 12.1 and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, Executive agrees to promptly return to the Company a sufficient amount of the Payment (after reduction pursuant to clause (x) of Section 12.1) so that no portion of the remaining Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) of Section 12.1, Executive shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

13. DEFINITIONS.

13.1 Cause. For the purposes of this Agreement, "***Cause***" means the occurrence of any one or more of the following: (i) Executive's commission of any felony or any crime involving fraud, dishonesty or moral turpitude under the laws of the United States or any state thereof (excluding traffic violations); (ii) Executive's attempted commission of, or material participation in, a fraud or act of material dishonesty against the Company; (iii) Executive's intentional, material violation of any contract or agreement between Executive and the Company or of any statutory duty owed to the Company; or **(iv)** Executive's unauthorized use or disclosure of the Company's confidential information or trade secrets. The determination that a termination of Executive's employment is either for Cause or without Cause will be made by the Company, in its sole discretion.

13.2 Change in Control. For the purposes of this Agreement, **"Change in Control"** shall have the meaning described in the Plan.

13.3 Change in **Control Period.** For the purposes of this Agreement, **"Change in Control Period"** means the time period commencing three (3) months before the effective date of a Change in Control and ending on the date that is twelve (12) months after the effective date of a Change in Control.

13.4 Good Reason. For purposes of this Agreement, Executive shall have **"Good Reason"** for resignation from employment with the Company if either of the following actions are taken by the Company without Executive's prior written consent: (a) a material reduction in Executive's Base Salary**,** unless pursuant to a salary reduction program applicable generally to the Company's senior executives and in no greater percentage than the average reduction across all senior executives; or (b) a material diminution of Executive's authority, duties or responsibilities; provided, however, that a change in Executive's position following a Change in Control shall not constitute Good Reason so long as Executive retains substantially the same duties and responsibilities of a division, subsidiary or business unit that constitutes substantially the same business of the Company following the Change in Control; or (c) the relocation of the principal place of the Company's business to a location that is more than fifty (50) miles from its present location (other than a relocation which reduces the distance between the Company's principal place of business and Executive's then residence). In order for Executive to resign for Good Reason, each of the following requirements must be met: (a) Executive must provide written notice to the Company's Board within 30 days after the first occurrence of the event giving rise to Good Reason setting forth the basis for Executive's resignation; (b) Executive must allow the Company at least 30 days from receipt of such written notice to cure such event; (c) such event is not reasonably cured by the Company within such 30 day period (the ***"Cure Period");*** and (d) Executive must resign from all positions Executive then holds with the Company not later than 30 days after the expiration of the Cure Period

14. Dispute Resolution. To ensure the rapid and economical resolution of disputes that may arise in connection with Executive's employment with the Company, Executive and the Company agree that any and all disputes, claims, or causes of action, in law or equity, including but not limited to statutory claims, arising from or relating to the enforcement, breach, performance, or interpretation of this Agreement, Executive's employment with the Company, or the termination of Executive's employment from the Company, will be resolved pursuant to the Federal Arbitration Act, 9 U.S.C. §1-16, and to the fullest extent permitted by law, by final, binding and confidential arbitration conducted in Santa Clara County, California by JAMS, Inc. ***("JAMS")*** or its successors, under JAMS' then applicable rules and procedures for employment disputes (which can be found at http://www.jamsadr.com/rules-clauses/, and which will be provided to Executive on request); provided that the arbitrator shall: (a) have the authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be permitted by law; and (b) issue a written arbitration decision including the arbitrator's essential findings and conclusions and a statement of the award. Executive and the Company shall be entitled to all rights and remedies that either would be entitled to pursue in a court of law. Both Executive and the Company acknowledge that by agreeing to this arbitration procedure, they waive the right to resolve any such dispute through a trial by jury or judge or administrative proceeding. The Company shall pay all filing fees in excess of those which would be required if the dispute were decided in a court of law, and shall pay the arbitrator's fee. Nothing in this Agreement is intended to prevent either the Company or Executive from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration.

15. GENERAL PROVISION.

15.1 Notices. Any notices provided must be in writing and will be deemed effective upon the earlier of personal delivery (including personal delivery by fax) or the next day after sending by overnight carrier, to the Company at its primary office location and to Executive at the address as listed on the Company payroll.

15.2 Severability. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction to the extent possible in keeping with the intent of the Parties.

15.3 Waiver. Any waiver of any breach of any provisions of this Agreement must be in writing to be effective, and it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision of this Agreement.

15.4 Complete Agreement. This Agreement, together with the Confidentiality Agreement and Release, constitutes the entire agreement between Executive and the Company with regard to the subject matter hereof and is the complete, final, and exclusive embodiment of the Company's and Executive's agreement with regard to this subject matter. This Agreement is entered into without reliance on any promise or representation, written or oral, other than those expressly contained herein, and it supersedes any other such promises, warranties or representations. It cannot be modified or amended except in a writing signed by a duly authorized officer of the Company, with the exception of those changes expressly reserved to the Company's discretion in this Agreement.

15.5 Counterparts. This Agreement may be executed in separate counterparts, any one of which need not contain signatures of more than one party, but both of which taken together will constitute one and the same Agreement.

15.6 Headings. The headings of the paragraphs hereof are inserted for convenience only and shall not be deemed to constitute a part hereof nor to affect the meaning thereof.

15.7 Successors and Assigns. This Agreement is intended to bind and inure to the benefit of and be enforceable by Executive and the Company, and their respective successors, assigns, heirs, executors and administrators, except that Executive may not assign any of Executive's duties hereunder and Executive may not assign any of Executive's rights hereunder without the written consent of the Company, which shall not be withheld unreasonably.

15.8 Tax Withholding. All payments and awards contemplated or made pursuant to this Agreement will be subject to withholdings of applicable taxes in compliance

with all relevant laws and regulations of all appropriate government authorities. Executive acknowledges and agrees that the Company has neither made any assurances nor any guarantees concerning the tax treatment of any payments or awards contemplated by or made pursuant to this Agreement. Executive has had the opportunity to retain a tax and financial advisor and fully understands the tax and economic consequences of all payments and awards made pursuant to the Agreement.

15.9 Choice of Law. All questions concerning the construction, validity and interpretation of this Agreement will be governed by the laws of the State of California.

[Remainder of Page Intentionally Blank- Signature Page Follows]

IN WITNESS WHEREOF, the Parties have executed this Executive Employment Agreement on the day and year first written above.

FORTY SEVEN, INC.

By: /s/ Jonathan MacQuitty
Jonathan MacQuitty

EXECUTIVE

By: /s/ Chris Takimoto
Chris Takimoto

Exhibit 10.11

LEASE

BY AND BETWEEN

MENLO PREHC I, LLC, a Delaware limited liability company, MENLO PREPI I, LLC, a Delaware limited liability company, and TPI INVESTORS 9, LLC, a California limited liability company, LESSOR

AND

FORTY SEVEN, INC., a Delaware corporation, LESSEE

Menlo Business Park
1490 O'Brien Drive, Suites A, B and E
Menlo Park, California 94025

April 13, 2016

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LEASE

Menlo Business Park
Portion of Building #10
1490 O'Brien Drive, Suites A, B and E,
Menlo Park, California 94025

THIS LEASE, referred to herein as this "Lease," is made and entered into as of April 13, 2016, by and between MENLO PREHC I, LLC, a Delaware limited liability company, MENLO PREPI I, LLC, a Delaware limited liability company, and TPI Investors 9, LLC, a California limited liability company, hereafter collectively referred to as "Lessor," and FORTY SEVEN, INC., a Delaware corporation, hereafter referred to as "Lessee".

RECITALS:

A. Lessor is the owner of the real property located in Menlo Business Park, Menlo Park, California, commonly referred to as 1490 O'Brien Drive, Menlo Park, California 94025 more particularly described on Exhibit "A" attached hereto and incorporated by reference herein, consisting of a parcel of land containing approximately 1.68 acres, together with all easements and appurtenances thereto (collectively, the "***Land***") and the existing building thereon, referred to as Building #10, containing approximately thirty thousand six hundred twenty three (30,623) rentable square feet and all other improvements located thereon (collectively, the "***Improvements***"). The Land and Improvements are referred to herein collectively as the "Property." The Menlo Business Park Master Plan is attached hereto as Exhibit "B" and incorporated by reference herein, and identifies the properties that comprise the Menlo Business Park. Building #10 is referred to herein as the "Building." The floor plan of the Premises is attached hereto as Exhibit "C" and incorporated by reference herein.

B. Lessor and Lessee wish to enter into this Lease of the Premises defined in Paragraph 1 upon the terms and conditions set forth herein.

NOW, THEREFORE, the parties agree as follows:

1. **Lease**. Lessor hereby leases to Lessee, and Lessee leases from Lessor, at the rental rate and upon the terms and conditions set forth herein, the Premises (as hereinafter defined). Beginning on the Commencement Date (as defined in Paragraph 2(a)), Lessor hereby leases to Lessee, and Lessee leases from Lessor, the portion of the Building consisting of approximately twenty one thousand five hundred nineteen (21,519) rentable square feet as shown on the floor plan of the Building attached hereto as Exhibit "C" (the "***Premises***"). The Premises shall include the right to use Lessee's share of the on-site parking spaces pursuant to Paragraph 28, the exclusive right to use the common areas on the second floor of the Building as depicted and described on Exhibit "C", so long as the Premises includes both Suite "B" and Suite "E" of the Building, the non-exclusive right to use the common areas of the Building as depicted on Exhibit "C", and the other Improvements on the Property intended for use in common by the tenants of the Building. Lessee's Pro Rata Share of the Building shall mean 70.27% throughout the Term.

2. **Term**.

(a) The term of this Lease (the "***Term***") shall commence on the sooner of (i) the date that Lessor delivers the Premises to Lessee in the required condition with the Tenant Improvements summarized on Exhibit "F" and Exhibit "G" attached hereto Substantially Completed (the "***Commencement Date***") and (ii) the date Lessee first commences business operations in the Premises. Upon the Commencement Date, the Building and all of the systems of the Building (including lighting systems, the back-up generator and fume hoods), shall be in vacant, broom clean, good operating condition and repair, including the HVAC, mechanical, electrical, and plumbing systems. Notwithstanding anything to the contrary in this Lease, if the Building or any of the systems of the building are not delivered in good operating condition, and such condition is not due to Lessee's use of, or activities or work in, the Premises or Building, Lessor shall (as Lessee's sole remedy therefor) correct such condition at Lessor's cost within a commercially reasonable time after Lessor's receipt of written notice from Lessee (provided that such notice from Lessee must be received within sixty (60) days following the Commencement Date). The Commencement Date shall be confirmed in writing by Lessor and Lessee by the execution and delivery of the Commencement Memorandum in the form attached hereto as "Exhibit "D."

(b) The Term of this Lease shall expire, unless sooner terminated in accordance with the provisions hereof or as permitted by law, on the last day of the sixtieth (60th) full calendar month after the Commencement Date.

(c) Lessee acknowledges that the applicable ordinance of the City of Menlo Park (the "***City***") requires that Lessee must obtain a Conditional Use Permit ("***CUP***") from the City if Lessee maintains on the Premises five (5) gallons or more of Hazardous Materials (as defined in Paragraph 9). Accordingly, for the period from the Commencement Date until the date Lessee obtains the CUP from the City permitting Lessee to maintain on the Premises five (5) gallons or more of Hazardous Materials, Lessee shall maintain less than five (5) gallons of Hazardous Materials on the Premises. Lessee shall promptly apply for and shall use its commercially reasonable good faith diligent efforts to comply with the City's requirements for the issuance to Lessee of the CUP. Lessor shall not be responsible for the issuance of the CUP. Lessee shall deliver a copy of the CUP to Lessor and Lessee shall comply with the provisions thereof.

(d) If possession of the Premises is not delivered to Lessee in the required condition by November 1, 2016, Lessee may, at its option, by notice in writing received by Lessor after such date and before the date possession is so delivered, terminate this Lease, in which event Lessor shall refund to Lessee the prepaid Monthly Base Rent and the Security Deposit, and the parties shall be discharged from all further obligations hereunder, except for those obligations which by the express terms hereof survive the termination of this Lease. If such written notice is not received by Lessor on or before the date possession is so delivered, Lessee's right to cancel this Lease pursuant to this Paragraph 2(d) shall terminate and be of no further force or effect.

3. **Option to Extend.**

(a) Lessor hereby grants to Lessee one (1) option to extend the term of this Lease (the "***Option to Extend***") for a period of sixty (60) months (the "***Extended Term***") immediately following the expiration of the Term. Lessee may exercise the Option to Extend by giving written notice of exercise to Lessor at least twelve (12) months but no more than fifteen (15) months prior to the expiration of the initial Term of this Lease (the "***Option Exercise Period***"), time being of the essence; provided that if Lessee is in a state of uncured default after the expiration of all applicable notice and cure periods under this Lease at either the time of the exercise of the Option to Extend or on the commencement date of the Extended Term, such notice shall be void and of no force or effect. The Extended Term, if the Option to Extend is exercised, shall be upon the same terms and conditions as the initial Term of this Lease, including the payment by Lessee of the Additional Rent pursuant to Paragraph 5, except that (1) Lessee shall pay Monthly Base Rent, as determined as set forth in this Paragraph 3, during the Extended Term, (2) there shall be no additional option to extend, and (3) Lessee shall accept the Premises in their then "as is" condition. If Lessee does not exercise the Option to Extend in a timely manner the Option to Extend shall lapse, time being of the essence.

(b) The Option to Extend granted to Lessee by this Paragraph 3 is granted for the personal benefit of Forty Seven, Inc., a Delaware corporation only, and shall be exercisable only by Forty Seven, Inc., a Delaware corporation or a Permitted Transferee. The Option to Extend may not be assigned or transferred to any assignee or sublessee other than a Permitted Transferee.

(c) The Monthly Base Rent for the Premises during the Extended Term shall be determined pursuant to the provisions of this Paragraph 3(c) and shall equal the then current fair market rental for the Premises on the commencement date of the Extended Term as determined by agreement between the Lessor and Lessee reached prior to the expiration of the Option Exercise Period, if possible, and by the process of appraisal if the parties cannot reach agreement.

(d) Upon the written request by Lessee to Lessor received by Lessor at any time during the thirty (30) day period prior to the expiration of the Option Exercise Period and prior to the exercise by Lessee of the Option to Extend, Lessor shall give Lessee written notice of Lessor's good faith opinion of the amount equal to the fair market rental value of the Premises for the Extended Term. Thereafter, upon the request of Lessee, Lessor and Lessee shall enter into good faith negotiations during the remainder of the thirty (30) days prior to the expiration of the Option Exercise Period in an effort to reach agreement on the initial Monthly Base Rent for the Premises during the Extended Term.

If Lessor and Lessee are unable to agree upon the amount equal to the fair market rental value of the Premises for the Extended Term, and thereafter, prior to the expiration of the Option Exercise Period, Lessee exercises the Option to Extend, said amount shall be determined by appraisal. The appraisal shall be performed by one appraiser if the parties are able to agree upon one appraiser. If the parties are unable to agree upon one appraiser, then each party shall appoint an appraiser and the two appraisers shall select a third appraiser. Each appraiser selected shall be a member of the American Institute of Real Estate Appraisers (AIREA) with at least five (5) years of full-time commercial real estate appraisal experience in the Menlo Park office/R&D/manufacturing rental market.

If only one appraiser is selected, that appraiser shall notify the parties in simple letter form of its determination of the amount equal to the fair market Monthly Base Rent for the Premises on the commencement date of the Extended Term within fifteen (15) days following its selection. Said appraisal shall be binding on the parties as the appraised current "fair market rental" for the Premises which shall be based upon what a willing new lessee would pay and a willing lessor would accept at arm's length for comparable premises in the Menlo Business Park of similar age, size, quality of construction and specifications (excluding the value of any improvements to the Premises made at Lessee's cost with Lessor's prior written consent except as otherwise permitted herein) for a lease similar to this Lease and taking into consideration that there will be no free rent, improvement allowance, or other rent concessions. If multiple appraisers are selected, each appraiser shall within ten (10) days of being selected make its determination of the amount equal to the fair market Monthly Base Rent for the Premises on the commencement date of the Extended Term in simple letter form. If two (2) or more of the appraisers agree on said amount, such agreement shall be binding upon the parties. If multiple appraisers are selected and two (2) appraisers are unable to agree on said amount, the amount equal to the fair market Monthly Base Rent for the Premises on the commencement date of the Extended Term shall be determined by taking the mean average of the appraisals; provided, that any high or low appraisal, differing from the middle appraisal by more than ten percent (10%) of the middle appraisal, shall be disregarded in calculating the average.

If only one appraiser is selected, then each party shall pay one-half of the fees and expenses of that appraiser. If three appraisers are selected, each party shall bear the fees and expenses of the appraiser it selects and one-half of the fees and expenses of the third appraiser.

(e) Thereafter, provided that Lessee has previously given timely notice to Lessor of the exercise by Lessee of the Option to Extend, Lessor and Lessee shall execute an amendment to this Lease stating that the initial Monthly Base Rent for the Premises during the Extended Term shall be equal to the determination by appraisal.

4. **Monthly Base Rent.**

(a) Commencing on the Commencement Date and continuing on the first day of each calendar month thereafter until the end of the Term, Lessee shall pay to Lessor in monthly installments in advance the Monthly Base Rent for the Premises in lawful money of the United States as follows:

Months	Square Feet	$/SF/Mo./NNN	Monthly Base Rent
1-12*	21,519	$4.10	$88,227.90
13-24	21,519	$4.22	$90,874.74
25-36	21,519	$4.35	$93,600.98
37-48	21,519	$4.48	$96,409.01
49-60	21,519	$4.61	$99,301.28

* Notwithstanding the rental amounts set forth herein, during months 1-4, until such time as Lessee or a subtenant of Lessee occupies any portion of the Premises located on the second (2nd) floor of the Building, Monthly Base Rent shall be Sixty-Eight Thousand Two Hundred Twenty-Four and 00/100 Dollars ($68,224) per month.

(b) Upon the execution and delivery of this Lease by Lessee, Lessee shall pay to Lessor the cash sum of Sixty Eight Thousand Two Hundred Twenty Four and 00/100 Dollars ($68,224.00) representing the installment of Monthly Base Rent due for the first month following the Commencement Date. Thereafter, Monthly Base Rent shall be paid monthly in advance on the first day of each calendar month. Lessee shall also pay to Lessor upon execution and delivery of this Lease, the amount of Thirty Five Thousand Five Hundred Fifty-Nine and 00/100 Dollars ($35,559.00) which amount shall be applied to the Additional Rent (as hereinafter defined) for the first calendar month of the Term. Lessee shall also pay to Lessor upon the execution and delivery of this Lease the additional amount of Three Hundred Thousand Nine Hundred Eleven and 60/100 Dollars ($352,911.60) representing the Security Deposit (as defined in Paragraph 7 below).

5. **Additional Rent; Operating Expenses and Taxes.**

(a) In addition to the Monthly Base Rent payable by Lessee pursuant to Paragraph 4, commencing on the Commencement Date Lessee shall pay to Lessor, as "Additional Rent," (1) Lessee's Pro Rata Share of the Operating Expenses of the Property, (2) Lessee's pro rata share of the operating expenses for the Menlo Business Park of which the Property is a part (the "***Park Expenses***"), and (3) Lessee's Pro Rata Share of the Taxes (as defined in Paragraph 5(c) below). Lessee's pro rata share of the operating expenses of Menlo Business Park is 2.5% based upon Lessee's Pro Rata Share of the ratio of the number of square feet of the Land in the Property to the total number of square feet of land in Menlo Business Park, as shown on Exhibit "B." The Park Expenses, of which the Property is a part, currently include maintenance of the common areas of Menlo Business Park, parking lot lighting (cost of electricity and maintenance of the fixtures), maintenance of the network conduit, all landscape maintenance and irrigation of Menlo Business Park, Lessor's insurance coverages of Menlo Business Park, and security patrol. The Park Expenses may include other commercially reasonable and customary items from time to time during the term of this Lease. Monthly Base Rent and Additional Rent are referred to herein collectively as "rent."

(b) "Operating Expenses," as used herein, shall include all commercially reasonable and customary direct costs actually incurred by Lessor in the management, operation, maintenance, repair and replacement of the Property, including the cost of all maintenance, repairs, and restoration of the Property performed by Lessor pursuant to Paragraphs 14(b) and 14(c) hereof, as determined by generally accepted accounting principles (unless excluded by this Lease), including, but not limited to:

Personal property taxes related to the Premises; any parking taxes or parking levies imposed on the Premises in the future by any governmental agency; a management fee charged for the management and operation of Menlo Business Park, in an amount equal to four percent (4%) of the total gross income received by Lessor from the Lessee (including Monthly Base Rent and Additional Rent), and not just Lessee's Pro Rata Share of this fee; water and sewer charges; waste disposal; insurance premiums for insurance coverages maintained by Lessor pursuant to Paragraph 11(b) hereof; license, permit, and inspection fees; charges for electricity, heating, air conditioning, gas, and any other utilities (including, without limitation, any temporary or permanent utility surcharge or other exaction); security; maintenance, repair, and replacement of the roof membrane; painting and repairing, interior and exterior; maintenance and replacement of floor and window coverings; repair, maintenance, and replacement of air-conditioning, heating,

mechanical and electrical systems, elevators, plumbing and sewage systems; janitorial service; landscaping, gardening, and tree trimming; glazing; repair, maintenance, cleaning, sweeping, striping, and resurfacing of the parking area; exterior Building lighting and parking lot lighting; supplies, materials, equipment and tools used in the maintenance of the Property; costs for accounting services incurred in the calculation of Operating Expenses and Taxes; and the cost of any other capital expenditures for any improvements or changes to the Building which are required by laws, ordinances, or other governmental regulations adopted after the Commencement Date, or for any items or capital expenditures voluntarily made by Lessor which are intended to reduce Operating Expenses; provided, however, that except for capital improvements required because of Lessee's specific use of the Property, if Lessor is required to or voluntarily makes such capital improvements, Lessor shall amortize the cost of said improvements over the useful life of said improvements calculated in accordance with generally accepted accounting principles (together with interest on the unamortized balance at the rate equal to the effective rate of interest on Lessor's bank line of credit at the time of completion of said improvements, but in no event in excess of ten percent (10%) per annum) as an Operating Expense in accordance with generally accepted accounting principles, except that with respect to capital improvements made to save Operating Expenses such amortization shall not be at a rate greater than the actual savings in Operating Expenses. Operating Expenses shall also include any other expense or charge, whether or not described herein not specifically excluded by other provisions of this Lease, which in accordance with generally accepted accounting principles would be considered an expense of managing, operating, maintaining, and repairing the Property.

(c) Real property taxes and assessments upon the Property, during each lease year or partial lease year during the term of this Lease are referred to herein as "Taxes."

As used herein, "Taxes" shall mean:

(1) all real estate taxes, assessments, charges and any other taxes which are levied or assessed against the Property including the Land, the Building, and all improvements located thereon, including any increase in Taxes resulting from a reassessment following any transfer of ownership of the Property or any interest therein or following any improvements to the Property, or the Property's pro rata share of improvements to Menlo Business Park which are for the benefit of all occupants of Menlo Business Park; and

(2) all other taxes which may be levied in lieu of real estate taxes, assessments, and other fees, charges, and levies, general and special, ordinary and extraordinary, unforeseen as well as foreseen, of any kind and nature by any authority having the direct or indirect power to tax, including without limitation any governmental authority or any improvement or other district or division thereof, for public improvements, services, or benefits which are assessed, levied, confirmed, imposed, or become a lien (1) upon the Property, and/or any legal or equitable interest of Lessor in any part thereof; or (2) upon this transaction or any document to which Lessee is a party creating or transferring any interest in the Property; and (3) any tax or excise, however described, imposed in addition to, or in substitution partially or totally of, any tax previously included within the definition of "Taxes" or any tax the nature of which was previously included in the definition "Taxes."

Not included within the definition of "Taxes" or "Park Expenses" are any net income, profits, transfer, franchise, estate, gift, rental income, or inheritance taxes imposed by any governmental authority. "Taxes" also shall not include penalties or interest charges assessed on delinquent Taxes so long as Lessee is not in default in the payment of Monthly Base Rent or Additional Rent.

With respect to any assessments which may be levied against or upon the Property, which under the laws then in force may be evidenced by improvement or other bonds, or may be paid in annual installments, only the amount of such annual installment (with appropriate proration of any partial year) and statutory interest shall be included within the computation of the annual Taxes levied against the Property.

(d) The following costs ("***Costs***") shall be excluded from the definition of Operating Expenses and Park Expenses:

(1) Costs occasioned by the act, omission or violation of law by Lessor, any other occupant of Menlo Business Park, or their respective agents, employees or contractors;

(2) Costs for which Lessor receives reimbursement from others, including reimbursement from insurance;

(3) Interest, charges and fees incurred on debt or payments on any deed of trust or ground lease on the Property, or Menlo Business Park;

(4) Advertising or promotional costs or other costs incurred by Lessor in procuring tenants for the Property or other portions of Menlo Business Park;

(5) Costs incurred in repairing, maintaining or replacing any structural elements of the Building for which Lessor is responsible pursuant to Paragraph 14(a) hereof or incurred in repairing, maintaining, or replacing any structural elements of other buildings in Menlo Business Park for which Lessor is contractually responsible;

(6) Any wages, bonuses or other compensation of employees above the grade of building manager and any executive salary of any officer or employee of Lessor or for employees to the extent not stationed at Menlo Business Park, including fringe benefits other than insurance plans and tax-qualified benefit plans, or any fee, profit or compensation retained by Lessor or its affiliates for management and administration of the Property in excess of the management fee referred to in Paragraph 5(b) of this Lease; if any building manager stationed at Menlo Business Park is less than full-time, only the pro rata portion of the compensation paid to such employee shall be included in Operating Expenses;

(7) General office overhead and general and administrative expenses of Lessor, except as specifically provided in Paragraph 5(b);

(8) Leasing expenses and broker commissions payable by Lessor;

(9) Costs occasioned by casualties or by the exercise of the power of eminent domain;

(10) Costs to correct any construction defect in the Building or the Premises existing on the Commencement Date, or to comply with any covenant, condition, restriction, underwriter's requirement or Law applicable on the Commencement Date except to the extent that such costs to comply arise or result from the Tenant Improvements or any subsequent Alterations requested by Lessee hereunder except as otherwise set forth in Paragraph 13 below;

(11) Costs of any renovation, improvement, painting or redecorating of any portion of the Property or the Menlo Business Park not made available for Lessee's use;

(12) Costs incurred in connection with negotiations or disputes with any other occupant of the Menlo Business Park and Costs arising from the violation by Lessor or any other occupant of the Menlo Business Park of the terms and conditions of any lease or other agreement;

(13) Costs incurred in connection with the presence of any Hazardous Materials on the Property or on other property in Menlo Business Park that were not caused by or the result of a release by Lessee or its employees, agents, contractors, invitees, sublessees, successors or assigns;

(14) Expense reserves; and

(15) Capital costs, except to the extent permitted in Paragraph 5(b) above; provided, however, that all capital costs shall be amortized as described in Paragraph 5(b).

Lessor shall at all times use its best efforts to operate the Property in an economically reasonable manner at costs not disproportionately higher than those experienced by other comparable premises in the market area in which the Property is located.

(e) Prior to the execution of this Lease, Lessor has delivered to Lessee Lessor's estimate of 2016 Operating Expenses, Taxes and Park Expenses. Throughout the term of this Lease, as close as reasonably possible after the end of each calendar year thereafter but no later than April 1 of the following year, Lessor shall notify Lessee of the Operating Expenses, Taxes and Park Expenses estimated by Lessor for each following calendar year. Concurrently with such notice, Lessor shall provide a description of such Operating Expenses, Taxes and Park Expenses. Commencing on the Commencement Date, and on the first (1st) day of each calendar month thereafter, Lessee shall pay to Lessor, as Additional Rent, one-twelfth (1/12th) of the estimated Operating Expenses, Taxes and Park Expenses. If at any time during any such calendar year, it appears to Lessor that the Operating Expenses, Taxes or Park Expenses for such year will vary from Lessor's estimate, Lessor may, by written notice to Lessee, revise Lessor's estimate for such year and the Additional Rent payments by Lessee for such year shall thereafter be based upon such revised estimate. Lessor shall furnish to Lessee with such revised estimate written verification showing that the actual Operating Expenses, Taxes or Park Expenses are greater than or equal to Lessor's estimate. The increase in the monthly installments of Additional Rent resulting from Lessor's revised estimate shall not be retroactive, but the Additional Rent for each calendar year shall be subject to adjustment between Lessor and Lessee after the close of the calendar year, as provided below.

Within approximately ninety (90) days after the expiration of each calendar year of the term, Lessor shall furnish Lessee a statement certified by a responsible employee or agent of Lessor (the "***Operating Statement***") with respect to such year, prepared by an employee or agent of Lessor, showing the actual Operating Expenses, Taxes and Park Expenses for such year broken down by component expenses, and the total payments made by Lessee for such year on the basis of any previous estimate of such Operating Expenses, Taxes and Park Expenses, all in sufficient detail for verification by Lessee. Unless Lessee raises any objections to the Operating Statement within ninety (90) days after receipt of the same, such statement shall conclusively be deemed correct and Lessee shall have no right thereafter to dispute such statement or any item therein or the computation of Operating Expenses and/or Taxes and/or Park Expenses. Upon giving Lessor five (5) days advance written notice, Lessee or its accountants shall have the right to inspect and audit Lessor's books and records with respect to the Operating Statement in an office of Lessor, or Lessor's agent, during normal business hours, once each Lease Year to verify actual Operating Expenses and/or Taxes and/or Park Expenses. Should Lessee retain any accountant or accounting firm to audit or inspect Lessor's books and records pursuant to this Paragraph 5(e), such accountant or accounting firm shall be one of national standing and retained on an hourly rate basis or based upon a fixed fee and shall not be paid on a contingency basis. Lessor's books and records shall be kept in accordance with generally accepted accounting principles. If Lessee's audit of the Operating Expenses and/or Taxes and/or Park Expenses for any year reveals a net overcharge of more than five percent (5%), Lessor shall promptly reimburse Lessee for the cost of the audit; otherwise, Lessee shall bear the cost of Lessee's audit. If Lessee reasonably objects to Lessor's Operating Statement, Lessee shall nonetheless continue to pay on a monthly basis the Operating Expenses, Taxes and Park Expenses based upon the Lessor's most current estimate until such dispute is resolved.

If Lessee's Pro Rata Share of the Operating Expenses and Taxes and Lessee's pro rata share of Park Expenses for any year as finally determined exceed the total payments made by Lessee for such year based on Lessor's estimates, Lessee shall pay to Lessor the deficiency, within thirty (30) days after the receipt of Lessor's Operating Statement. If the total payments made by Lessee based on Lessor's estimate of the Operating Expenses and/or Taxes and/or Park Expenses exceed the Lessee's Pro Rata Share of Operating Expenses and/or Taxes and/or Lessee's pro rata share of Park Expenses, Lessee's extra payment, plus the cost of an audit which is the responsibility of Lessor as set forth herein, if any, shall be credited against payments of Monthly Base Rent and Additional Rent next due hereunder or returned within thirty (30) days if the term has expired or this Lease has been terminated.

Notwithstanding the expiration or termination of this Lease, within thirty (30) days after Lessee's receipt of Lessor's Operating Statement or the completion of Lessee's audit regarding the Operating Expenses and/or Taxes and/or Park Expenses for the calendar year in which this Lease terminates, Lessee shall pay to Lessor or shall receive from Lessor, as the case may be, an amount equal to the difference between the Operating Expenses and/or Taxes and/or Park Expenses for such year, as finally determined, and the amount previously paid by Lessee on account thereof (prorated to the expiration date or the termination date of this Lease).

6. **Payment of Rent.**

(a) All rent shall be due and payable in lawful money of the United States of America, made payable to: Menlo Park Portfolio, and mailed to the following address of Lessor: Menlo Park Portfolio, Property 435010, P.O. Box 310300, Des Moines, IA 50331-0300, without deduction or offset and without prior demand or notice, unless otherwise specified herein. Monthly Base Rent and Additional Rent shall be payable monthly, in advance, on the first day of each month. Additional Rent shall be payable monthly, in advance, on the first day of each month for the entire Premises for the entire term of his Lease. Lessee's obligation to pay rent for any partial month at the commencement of the term, for any partial month immediately prior to a rental adjustment date (if the rental adjustment date is other than the first day of the calendar month), and for any partial month at the expiration or termination of the term shall be based upon the number of days in such month.

(b) If any installment of Monthly Base Rent, Additional Rent or any other sum due from Lessee is not received by Lessor within five (5) days after the same is due, Lessee shall pay to Lessor an additional sum equal to five percent (5%) of the amount overdue as a late charge. The parties agree that this late charge represents a fair and reasonable estimate of the costs that Lessor will incur by reason of the late payment by Lessee. Acceptance of any late charge shall not constitute a waiver of Lessee's default with respect to the overdue amount. Any amount not paid within ten (10) days after Lessee's receipt of written notice that such amount is due shall bear interest from the date due until paid at the lesser rate of (1) the prime rate of interest as published in the "Wall Street Journal," plus two percent (2%) or (2) the maximum rate allowed by law (the "***Interest Rate***"), in addition to the late payment charge.

Initials: Lessor _____ Lessee _____

7. **Security Deposit**. Lessee shall deposit with Lessor upon execution hereof the sum of Three Hundred Fifty Two Thousand Nine Hundred Eleven and 60/100 Dollars ($352,911.60) (the "***Security Deposit***"), as security for Lessee's faithful performance of Lessee's obligations under this Lease. If Lessee fails to pay Monthly Base Rent or Additional Rent or charges due hereunder within applicable notice and cure periods, or otherwise defaults under this Lease (as defined in Paragraph 22), Lessor may use, apply or retain all or any portion of said Security Deposit to the extent reasonably necessary to cure the default, for the payment of any amount due Lessor, and to reimburse or compensate Lessor for any liability, cost, expense, loss or damage (including attorneys' fees) which Lessor may suffer or incur by reason thereof. If Lessor uses or applies all or any portion of the Security Deposit, Lessee shall within ten (10) days after written request therefor deposit with Lessor the amount sufficient to restore the Security Deposit to the amount then required by this Lease. Provided that no default beyond applicable notice and cure periods has occurred and is continuing, the amount of the Security Deposit shall be reduced to Two Hundred Sixty-Four Thousand Six Hundred Eighty-Three and 70/100 Dollars ($264,683.70) on the first anniversary of the Commencement Date. On the second anniversary of the Commencement Date, provided that no default beyond applicable notice and cure periods under this Lease has occurred and is continuing, the amount of the Security Deposit shall be reduced to One Hundred Seventy-Six Thousand Four Hundred Fifty-Five and 80/100 Dollars ($176,455.80). Lessor shall not be required to keep all or any part of the Security Deposit separate from its general accounts. In no event or circumstance shall Lessee have the right to any use of the Security Deposit

and, specifically, Lessee may not use the Security Deposit as a credit or to otherwise offset any payments required hereunder, including, but not limited to, rent or any portion thereof. Lessee waives (i) California Civil Code Section 1950.7 and any and all other laws, rules and regulations applicable to security deposits in the commercial context ("***Security Deposit Laws***"), and (ii) any and all rights, duties and obligations either party may now has, or in the future will have, relating to or arising from the Security Deposit Laws. Notwithstanding anything to the contrary herein, the Security Deposit may be retained and applied by Lessor (a) to offset rent which is unpaid either before or after termination of this Lease, and (b) against other damages suffered by Lessor before or after termination of this Lease. No part of the Security Deposit shall be considered to be held in trust, to bear interest or other increment for its use, or to be prepayment for any moneys to be paid by Lessee under this Lease.

8. **Use**. Lessee may only use and occupy the Premises for general office uses, administrative purposes, research and development, laboratory, light manufacturing of medical devices and related legal uses which are permitted by applicable zoning ordinances and the covenants, conditions, and restrictions for Menlo Business Park and which are approved by Lessor in writing, and for no other use or purpose without Lessor's prior written consent; provided, that the use of the Premises for the manufacture of integrated circuits is expressly prohibited. Any use of the Premises by Lessee or by any sublessee or assignee approved by Lessor pursuant to Paragraph 17 shall comply with the provisions of this Paragraph 8.

9. **Hazardous Materials.**

(a) The term "Hazardous Materials" as used in this Lease shall include any substance defined or regulated as radioactive, flammable, toxic, a biohazard, medical waste, "hazardous material", "extremely hazardous material", "hazardous waste", "hazardous substance," "toxic substance," "industrial process waste," or "special waste" in any Environmental Laws as hereafter defined. Hazardous Materials shall include, but not be limited to, petroleum, gasoline, natural gas, natural gas liquids, liquefied natural gas, synthetic gas, and/or crude oil or any products, by-products or fractions thereof.

(b) Lessee shall not engage in any activity in or on the Premises or the Property which constitutes a Reportable Use of Hazardous Materials without the express prior written consent of Lessor and timely compliance (at Lessee's expense) with all Environmental Laws. "Reportable Use" shall mean (i) the installation or use of any above or below ground storage tank, (ii) the generation, possession, storage, use, transportation, or disposal of Hazardous Materials that require a permit from, or with respect to which a report, notice, registration or business plan is required to be filed with, any governmental authority, and/or (iii) the presence at the Premises or the Property of Hazardous Materials with respect to which any Environmental Law requires that a notice be given to persons entering or occupying the Premises, or the Property, or neighboring properties. Notwithstanding the foregoing, subject to the provision of Paragraph 2(d) (including the requirement that Lessee shall obtain a Conditional Use Permit from the City before Lessee maintains on the Premises five (5) gallons or more of any Hazardous Materials) Lessee may use the Hazardous Materials on the Premises that are listed on Exhibit "E" attached hereto and incorporated by reference herein, and any ordinary and customary office supplies, cleaning materials, and other materials reasonably required to be used in the normal course of Lessee's agreed use of the Premises, so long as such use is in compliance with all Environmental Laws, and

does not expose the Premises, or the Property, or neighboring property to any risk of contamination or damage or expose Lessor to any unusual or atypical liability therefor. In addition, Lessor may condition its consent to any Reportable Use upon receiving such additional assurances as Lessor reasonably deems necessary to protect itself, the public, the Premises and the Property, and/or the environment against damage, contamination, injury and/or liability, including, but not limited to, the installation (and removal on or before Lease expiration or termination) of any protective modifications installed by Lessee (such as concrete encasements).

(c) "Environmental Laws" shall mean and include any Federal, State, or local statute, law, ordinance, code, rule, regulation, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, element, compound, mixture or material, as now or at any time hereafter in effect including, without limitation, California Health and Safety Code §§25100 et seq., §§25300 et seq., Sections 25281(f) and 25501 of the California Health and Safety Code, Section 13050 of the Water Code, the Federal Comprehensive Environmental Response, Compensation and Liability Act, as amended, 42 U.S.C. §§9601 et seq. ("***CERCLA***"), the Superfund Amendments and Reauthorization Act, 42 U.S.C. §§9601 et seq., the Federal Toxic Substances Control Act, 15 U.S.C. §§2601 et seq., the Federal Resource Conservation and Recovery Act as amended, 42 U.S.C. §§6901 et seq., the Federal Hazardous Material Transportation Act, 49 U.S.C. §§1801 et seq., the Federal Clean Air Act, 42 U.S.C. §7401 et seq., the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq., the River and Harbors Act of 1899, 33 U.S.C. §§401 et seq., and all rules and regulations of the EPA, the California Environmental Protection Agency, or any other state or federal department, board or any other agency or governmental board or entity having jurisdiction over the environment, as any of the foregoing have been, or are hereafter amended.

(d) If Lessee knows, or has reasonable cause to believe, that Hazardous Materials have come to be located in, on, under or about the Premises or the Property, other than as previously consented to by Lessor, Lessee shall immediately give written notice of such fact to Lessor and provide Lessor with a copy of any report, notice, claim or other documentation which it has concerning the presence of such Hazardous Materials.

(e) Lessee and Lessee's agents, employees, and contractors shall not cause any Hazardous Materials to be discharged or released into the Building or into the plumbing or sewage system of the Building or into or onto the Land underlying or adjacent to the Building in violation of any Environmental Laws. Lessee shall promptly, at Lessee's expense, take all investigatory and/or remedial action reasonably recommended, whether or not formally ordered or required, for the cleanup of any contamination in violation of Environmental Laws or the terms of this Lease caused by Lessee or caused by any of Lessee's employees, agents, or contractors, and for the maintenance, security and/or monitoring of the Premises, the Property, or neighboring properties if such contamination is caused by a release or emission of any Hazardous Materials by Lessee or by any of Lessee's employees, agents, or contractors.

(f) Lessee shall indemnify, defend and hold Lessor and its agents, employees, and lenders and the Premises and the Property harmless from any and all claims, damages, fines, judgments, penalties, costs, liabilities or losses (including, without limitation, any and all sums paid for settlement of claims, attorneys' fees, consultant and expert fees) arising during or after the term of this Lease out of or involving any Hazardous Materials brought on to the Premises, the

Property, or Menlo Business Park by or for Lessee or by anyone under Lessee's control in violation of Environmental Laws or the terms of this Lease. Lessee's obligations under this Paragraph 9(f) shall include, but not be limited to, the effects of any contamination or injury to person, property or the environment created or suffered by Lessee, and the cost of investigation (including consultants' and attorneys' fees and testing), removal, remediation, restoration and/or abatement thereof, or of any contamination therein involved, as required by Environmental Laws, and shall survive the expiration or earlier termination of this Lease. No termination, cancellation or release agreement entered into by Lessor and Lessee shall release Lessee from its obligations under this Lease with respect to Hazardous Materials, unless specifically so agreed by Lessor in writing at the time of such agreement.

(g) To the current actual knowledge and without any duty to make investigation or inquiry, of John C. Tarlton, President of Tarlton Properties, Inc., Lessor's property manager, except as disclosed to Lessee in writing by Lessor or as contained in any environmental site assessment report delivered by Lessor to Lessee prior to the execution of this Lease, (1) no Hazardous Materials are present on the Property or the soil, surface water or groundwater thereof, (2) no underground storage tanks are present on the Property, and (3) Lessor has not received written notice of any action, proceeding or claim pending or threatened regarding the Property concerning any Hazardous Materials or pursuant to any environmental law. Lessee shall have no responsibility for Hazardous Materials present on the Premises prior to the Commencement Date and for Hazardous Materials not brought on to the Premises, the Property, or Menlo Business Park by or for Lessee or by anyone under Lessee's control in violation of Environmental Laws or the terms of this Lease.

10. **Taxes on Lessee's Property**. Lessee shall pay before delinquency any and all taxes, assessments, license fees, and public charges levied, assessed, or imposed and which become payable during the Term and any extension thereof upon Lessee's equipment, fixtures, furniture, and personal property installed or located on the Premises.

11. **Insurance.**

(a) Lessee shall, at Lessee's sole cost and expense, provide and keep in force commencing with the Commencement Date of the Term and continuing during the Term, (i) a commercial general liability insurance policy with a recognized casualty insurance company qualified to do business in California, insuring against any and all liability occasioned by any occurrence in, on, about, or related to the Premises, or arising out of the condition, use, occupancy, alteration or maintenance of the Premises and covering the contractual liability referred to in Paragraph 12(a) of this Lease, having a combined single limit for both bodily injury and property damage in an amount not less than Three Million Dollars ($3,000,000); (ii) an "all risk" property policy on all of its personal property in, on or about the Premises in an amount not less than one hundred percent (100%) of the full replacement cost valuation; (iii) workers' compensation insurance, as required by law and (iv) business interruption insurance in such amounts as will reimburse Lessee for direct and indirect loss of earnings and incurred costs attributable to the perils commonly covered by Lessee's property insurance described above but in no less than One Million Dollars ($1,000,000). All such insurance carried by Lessee shall be in a form reasonably satisfactory to Lessor and its mortgage lender and shall be carried with companies that have a general policyholder's rating of not less than "A" and a financial rating of not less than Class "X"

in the most current edition of Best's Insurance Reports or such similar rating as may be reasonably selected by Lessor; shall provide that such policies shall not be subject to reduction or cancellation except after at least thirty (30) days' prior written notice to Lessor. On or before the earlier of (i) the date on which any Lessee party first enters the Premises for any reason or (ii) the Commencement Date and upon renewal of such policies not less than thirty (30) days prior to the expiration of the term of such coverage, Lessee shall deliver to Lessor certificates of insurance confirming such coverage and that all insurance requirements set forth herein have been met, together with evidence of the payment of the premium therefor. To the fullest extent permitted by law, the insurance policies required to be carried by Lessee hereunder shall name Lessor, Lessor's property manager, Tarlton Properties, Inc., and such other persons as Lessor may reasonably request from time to time as additional insureds with respect to liability arising out of this Lease or the operations of Lessee by ISO form CG 20 11 or its equivalent (collectively, "***Additional Insureds***"). Such insurance shall provide primary coverage without contribution from any other insurance carried by or for the benefit of Lessor, Lessor's property manager, or other Additional Insured. For avoidance of doubt, each primary policy and each excess/umbrella policy through which Lessee satisfies its obligations under this section must provide coverage to the Additional Insureds that is primary and noncontributory. Upon request by Lessor, a true and complete copy of any insurance policy required by this Lease shall be delivered within ten (10) days following Lessor's request. If Lessee fails to procure and maintain the insurance required hereunder, Lessor may, but shall not be required to, order such insurance at Lessee's expense and Lessee shall reimburse Lessor for all costs incurred by Lessor with respect thereto. Lessee's reimbursement to Lessor for such amounts shall be deemed Additional Rent, and shall include all sums disbursed, incurred or deposited by Lessor, including Lessor's costs, expenses and reasonable attorneys' fees with interest thereon at the Interest Rate.

(b) Lessor shall obtain and carry in Lessor's name, as insured, as an Operating Expense of the Property to the extent provided in Paragraph 5(b), during the lease term, "all risk" property insurance coverage (with rental loss insurance coverage for a period of one year), flood insurance, public liability and property damage insurance, and insurance against such other risks or casualties as Lessor shall reasonably determine, including, but not limited to, insurance coverages required of Lessor by the beneficiary of any deed of trust which encumbers the Property, including earthquake insurance coverage insuring Lessor's interest in the Property (including the initial Tenant Improvements constructed in the Premises pursuant to Paragraph 13 and any other leasehold improvements to the Premises constructed by Lessor or by Lessee with Lessor's prior written approval) in an amount not less than the full replacement cost of the Building and all other Improvements from time to time. The proceeds of any such insurance shall be payable solely to Lessor, and Lessee shall have no right or interest therein. Lessor shall have no obligation to insure against loss by Lessee to Lessee's equipment, fixtures, furniture, inventory, or other personal property of Lessee in or about the Premises occurring from any cause whatsoever.

(c) Notwithstanding anything to the contrary contained in this Lease, the parties release each other, and their respective authorized representatives, employees, officers, directors, shareholders, managers, members, trustees, beneficiaries, assignees, subtenants, invitees, successors, agents, contractors and property managers, from any claims for damage to any person or to the Premises or the Property and to the fixtures, personal property, leasehold improvements and alterations of either Lessor or Lessee in or on the Premises or the Property, that are caused by or result from risks required by this Lease to be insured against or are actually insured against

under any property insurance policies carried by the parties that are in force at the time of any such damage, whichever is greater. This waiver applies whether or not the loss is due to the negligent acts or omissions of Lessor or Lessee or their respective authorized representatives, employees, officers, directors, shareholders, managers, members, trustees, beneficiaries, assignees, subtenants, invitees, successors, agents, contractors and property managers. Subject to the foregoing, this release and waiver shall be complete and total even if such loss or damage may have been caused by the negligence of the other party, its managers, members, employees, agents, contractors, property managers or invitees. Lessee covenants that the insurance policies required to be maintained by Lessee under this Lease will contain waiver of subrogation endorsements.

12. **Indemnification.**

(a) Lessee shall indemnify, defend, and hold harmless Lessor from claims, suits, actions, or liabilities for personal injury, death or for loss or damage to property that arise from (1) any activity, work, or thing done by Lessee, its employees, agents, contractors or invitees in or about the Premises, the Property or the Park (except to the extent due to Lessor's active negligence or willful misconduct or breach of this Lease), (2) bodily injury or damage to property which arises in or about the Property to the extent the injury or damage to property results from the acts or omissions of Lessee, its employees, agents or contractors, and (3) based on any event of default by Lessee in the performance of any obligation on Lessee's part to be performed under this Lease. Lessee also waives all claims against Lessor and its employees, agents and contractors for damages to property, or to goods, wares, and merchandise stored in, upon, or about the Premises or the Property, and for injuries to persons in, upon, or about the Premises or the Property from any cause arising at any time, except to the extent caused by the active negligence or willful misconduct of Lessor or its employees, agents or contractors.

(b) Lessor shall indemnify, defend, and hold harmless Lessee from claims, suits, actions, or liabilities for personal injury, death or for loss or damage to property for bodily injury or damage to property which arises in or about the Property to the extent the injury or damage to property results from the active negligent acts of Lessor, its employees, agents or contractors.

(c) In the absence of comparative or concurrent negligence on the part of Lessee or Lessor, their respective agents, affiliates, and subsidiaries, or their respective officers, directors, members, employees or contractors, the foregoing indemnities by Lessee and Lessor shall also include reasonable costs, expenses and attorneys' fees incurred in connection with any indemnified claim or incurred by the indemnitee in successfully establishing the right to indemnity. The indemnitor shall have the right to assume the defense of any claim subject to the foregoing indemnities with counsel reasonably satisfactory to the indemnitee. The indemnitee agrees to cooperate fully with the indemnitor and its counsel in any matter where the indemnitor elects to defend, provided the indemnitor shall promptly reimburse the indemnitee for reasonable costs and expenses incurred in connection with its duty to cooperate.

The foregoing indemnities shall survive the expiration or earlier termination of this Lease and are conditioned upon the indemnitee providing prompt notice to the indemnitor of any claim or occurrence that is likely to give rise to a claim, suit, action or liability that will fall within the scope of the foregoing indemnities, along with sufficient details that will enable the indemnitor to make a reasonable investigation of the claim.

When the claim is caused by the joint negligence or willful misconduct of Lessee and Lessor or by the indemnitor party and a third party unrelated to the indemnitor party (except indemnitor's agents, officers, employees or invitees), the indemnitor's duty to indemnify and defend shall be proportionate to the indemnitor's allocable share of joint negligence or willful misconduct.

(d) Lessor shall not be liable to Lessee for any damage because of any act or negligence of any other occupant of the Building or any other owner or occupant of adjoining or contiguous property, nor for overflow, breakage, or leakage of water, steam, gas, or electricity from pipes, wires, or otherwise in the Premises or the Building, except to the extent caused by the gross negligence or willful misconduct of Lessor or Lessor's employees, agents, or contractors. Except as otherwise provided herein, Lessee will pay for damage to the Premises or the Property caused by the misuse or neglect of the Premises or the Property by Lessee or its employees, agents, or contractors, including, but not limited to, the breakage of glass in the Building.

13. **Market Ready Improvements and Additional Tenant Improvements**

(a) Lessor shall cause to be constructed the interior tenant improvements and modifications to the Premises described on Exhibit "F" attached hereto, including the cost estimate therefor described on Exhibit "F-1" attached hereto (the "***Market Ready Improvements***"). The costs of the Market Ready Improvements shall be shared by Lessor and Lessee as set forth herein and paid on a pro rata basis. Lessor agrees to pay costs (hard and soft costs) to complete the Market Ready Improvements up to the amount of Two Hundred Fifteen Thousand One Hundred Ninety and 00/100 Dollars ($215,190.00) ("***Market Ready Improvement Allowance***"). Lessor shall disburse the Market Ready Improvement Allowance directly to the applicable design professional, contractor, materialman or other laborer in connection with the construction of the Market Ready Improvements. Lessee shall be liable for all fees and costs of the design and construction of the Market Ready Improvements in excess of the Market Ready Improvement Allowance or which are outside of the scope of work described on Exhibit "F" attached hereto (such amount referred to herein as the "***Market Ready Improvement Shortfall***"). Lessee shall pay the Market Ready Improvement Shortfall upon written request from Lessor accompanied by invoices reflecting such amounts due within thirty (30) days following Lessor's delivery of such payment request.

(b) Lessor shall cause to be constructed the interior tenant improvements and modifications to the Premises described on Exhibit "C" attached hereto, including the cost estimate therefor described on Exhibit "F-1" attached hereto (the "***Additional Tenant Improvements***" and, collectively with the Market Ready Improvements, the "***Tenant Improvements***"). The costs of the Additional Tenant Improvements shall be shared by Lessor and Lessee as set forth herein and paid on a pro rata basis. Lessor agrees to pay costs to complete the Additional Tenant Improvements up to the amount of Six Hundred Forty Five Thousand Five Hundred Seventy and 00/100 Dollars ($645,570.00) ("***Additional Tenant Improvement Allowance***"). Lessor shall disburse the Additional Tenant Improvement Allowance directly to the applicable design professional, contractor, materialman or other laborer in connection with the construction

of the Additional Tenant Improvements. Lessee shall be liable for all fees and costs of the design and construction of the Additional Tenant Improvements in excess of the Additional Tenant Improvement Allowance or which are requested by Lessee and outside of the scope of work described on Exhibit "G" attached hereto (such amount referred to herein as the "***Additional Tenant Improvement Shortfall***"). Lessee shall pay the Additional Tenant Improvement Shortfall upon written request from Lessor accompanied by invoices reflecting such amounts due within thirty (30) days following Lessor's delivery of such payment request. Lessor shall employ Tarlton Properties, Inc., as construction manager for the Tenant Improvements at a fee equal to five percent (5%) of hard construction costs (i.e., the amounts paid to any general contractor, subcontractors, vendors, and suppliers for labor and materials for the construction of the Additional Tenant Improvements). Notwithstanding any of the following, if the Market Ready Improvement Allowance is for any reason not fully applied toward the cost of the Market Ready Improvements, or the Additional Tenant Improvement Allowance is not fully applied toward the cost of the Additional Tenant Improvements, such unapplied amounts may be applied to the cost of the other portion of the Tenant Improvements.

(c) The terms "Substantially Complete," "Substantially Completed" or "Substantial Completion" shall mean the date the Tenant Improvements are completed and the Premises are in the condition required hereunder and Landlord has received final governmental approval of the Tenant Improvements, excepting only minor Punch List items (as defined below), which do not unreasonably interfere with Lessee's ability to commence business operations at the Premises.

(d) The Tenant Improvements shall be constructed in accordance with all applicable laws and the terms of this Lease, in a good and workmanlike manner, free of defects and using new materials and equipment of good quality. Upon delivery of the Premises to Lessee, Lessor and Lessee shall coordinate a walk through of the Premises and Lessor and Lessee shall complete a punch list indicating any deficiencies in the Tenant Improvements ("***Punch List***"). Lessor shall promptly cause such items set forth in the Punch List to be completed as required for compliance with the Tenant Improvements.

(e) Lessor shall cause to be prepared, as quickly as possible, final plans, specifications and working drawings of the Tenant Improvements ("***Final Plans***"), as well as an estimate of the total cost for the Tenant Improvements ("***Final Cost Estimate***"), all of which conform to or represent logical evolutions of or developments from the work described in Exhibits "F" and "G". The Final Plans and Final Cost Estimate shall be delivered to Lessee immediately upon completion. Within three (3) days after receipt thereof, at its election (1) Lessee may approve the Final Plans and Final Cost Estimate, or (2) Lessee may deliver to Lessor the specific written changes to such plans that are necessary, in Lessee's reasonable opinion, to conform such plans to the work described in the Preliminary Plans or to reduce costs. If Lessee desires changes, the parties shall confer and negotiate in good faith to reach agreement on modifications to the Final Plans. As soon as all such matters are approved by Lessor and Lessee, Lessor shall submit the Final Plans to all appropriate governmental agencies and thereafter the Lessor shall use its commercially reasonable efforts to obtain required governmental approvals. All change orders shall specify any change in the Final Cost Estimate and any change in the scheduled completion dates as a consequence of the change order.

(f) The cost of the Tenant Improvements shall not include (and Lessee shall have no responsibility for and none of Lessor's or Lessee's contributions referred to in Paragraph 13(a) or (b) shall be used for) and Lessor shall be solely responsible for the following: (i) costs in connection with the presence of Hazardous Materials existing on or prior to the Commencement Date; (ii) costs to bring the restroom on the second floor of the Building into compliance with Applicable Requirements and, to the extent required, costs to install a ramp outside of the Premises on the east side of the Building; (iii) construction management, profit and overhead charges in excess of the amount set forth in Paragraph 13(b); and (iv) costs in excess of the Final Cost Estimate, unless as a result of any change in the work requested by Lessee (and then in the amount set forth in the applicable change order). Notwithstanding the foregoing, Lessor and Lessee shall equally share in costs arising or resulting from the Tenant Improvements to bring the Premises or the Building into compliance with Applicable Requirements other than as specifically set forth in this subsection (f)(ii) above; provided, however, that if such costs to comply with Applicable Requirements are budgeted to exceed One Hundred Thousand and 00/100 Dollars ($100,000.00) ("***Compliance Threshold***"), then the parties shall meet to discuss revisions to the Tenant Improvements in an effort to reduce such costs. If the parties are unable modify the Tenant Improvements to reduce such costs below the Compliance Threshold, then either party may, at its option, by notice in writing received by the other party no later than May 15, 2016, terminate this Lease, in which event Lessor shall refund to Lessee the prepaid Monthly Base Rent and the Security Deposit, and the parties shall be discharged from all further obligations hereunder, except for those obligations which by the express terms hereof survive the termination of this Lease. If such written notice is not received on or before May 15, 2016, each party's right to cancel this Lease pursuant to this Paragraph 13(f) shall terminate and be of no further force or effect.

(g) Subject to completion of the Tenant Improvements, Lessee waives all right to make repairs at the expense of Lessor, or to deduct the costs thereof from the rent, and Lessee waives all rights under Section 1941 and 1942 of the Civil Code of the State of California. At the expiration or sooner termination of this Lease, Lessee shall surrender the Premises in a clean and good condition (including the Tenant Improvements upon completion thereof which Lessee shall not be required to remove) and in accordance with Paragraph 14, except for ordinary wear and tear, damage caused by casualty, a taking by eminent domain, maintenance that is Lessor's responsibility hereunder, Hazardous Materials not Lessee's responsibility under Paragraph 9 of the Lease, and alterations or other improvements made by Lessee with Lessor's prior written consent which Lessee is not required to remove as a condition to Lessor's approval of such alterations or improvements.

14. **Maintenance and Repairs; Alterations; Surrender and Restoration.**

(a) Lessor shall, at Lessor's sole expense, keep in good order, condition, and repair and replace when necessary, the structural elements of the roof (excluding the roof membrane which Lessor shall maintain, but the cost of which shall be included as an Operating Expense as permitted under Paragraph 5), the structural elements of the foundation and exterior walls (except the interior faces thereof) of the Building, and other structural elements of the Building and the Property as "structural elements" are defined in building codes applicable to the Building, excluding any alterations, structural or otherwise, made by Lessee to the Building which are not approved in writing by Lessor prior to the construction or installation thereof by Lessee. Lessor shall perform and construct, and Lessee shall not be responsible for performing or

constructing, any repairs, maintenance, or improvements (1) required as a result of any casualty damage, which shall be subject to Paragraph 20 below, or as a result of any taking pursuant to the exercise of the power of eminent domain, or (2) for which Lessor has a right of reimbursement from third parties based on construction or other warranties, contractor guarantees, or insurance claims.

(b) Lessor shall provide or cause to be provided and shall supervise the performance of, as an Operating Expense of the Property as permitted under Paragraph 5(b) hereof, all services and work relating to the operation, maintenance, repair, and replacement, as needed, of the Property, including the HVAC, mechanical, electrical, and plumbing systems in the Building; the interior of the Building; the roof membrane; the outside areas of the Property; the janitorial service for the Building; landscaping, tree trimming, resurfacing and restriping of the parking lot, repairing and maintaining the walkways; exterior building painting, exterior building lighting, parking lot lighting, and exterior security patrol. In the event Lessee provides Lessor with written notice of the need for any repairs, Lessor shall commence any such repairs promptly following receipt by Lessor of such notice and Lessor shall diligently prosecute such repairs to completion.

(c) Subject to the foregoing and except as provided elsewhere in this Lease, Lessee shall at all times use and occupy the Premises in a manner which keeps the Premises in good and safe order, condition, and repair. Lessor shall execute and maintain in full force and effect throughout the term as an Operating Expense of the Property pursuant to Paragraph 5(b) a service contract with a recognized air conditioning service company. Lessor may, if Lessor determines that it is necessary to do so, obtain on a semi-annual basis an inspection report of the HVAC system from a separate HVAC service firm designated by Lessor for the purpose of monitoring the performance of the HVAC maintenance and repair work performed by the HVAC service firm which performs the regular repair and maintenance. The cost of such inspection report shall be an Operating Expense pursuant to Paragraph 5. Subject to the release of claims and waiver of subrogation contained in Paragraphs 11(c) and 11(d), if Lessor is required to make any repairs to the Property by reason of Lessee's negligent acts or omissions, Lessor may add the cost of such repairs to the next installment of rent which shall thereafter become due, and Lessee shall promptly pay the same upon receipt of an invoice therefor.

(d) Lessee may, from time to time, at its own cost and expense and without the consent of Lessor make nonstructural alterations to the interior of the Premises the cost of which in any one instance is Ten Thousand and 00/100 Dollars ($10,000.00) or less, and the aggregate cost of all such work during the Term this Lease does not exceed Twenty Thousand and 00/100 Dollars ($20,000.00), provided Lessee first notifies Lessor in writing of any such nonstructural alterations. Otherwise, Lessee shall not make any additional alterations, improvements, or additions to the Premises without delivering to Lessor a complete set of plans and specifications for such work, obtaining and delivering copies to Lessor of all permits or other governmental approvals required for such work and obtaining Lessor's prior written consent thereto. All alterations and additions shall be installed by a licensed contractor approved by Lessor, at Lessee's sole expense in compliance with all applicable laws, rules, regulations and ordinances. Lessee shall keep the Premises and the Property on which the Premises are situated free from any liens arising out of any work performed, materials furnished or obligations incurred by or on behalf of Lessee. If any nonstructural alterations to the interior of the Premises exceed Ten Thousand and 00/100

Dollars ($10,000.00) in cost in any one instance, or exceed the aggregate cost of Twenty Thousand and 00/100 Dollars ($20,000.00) during the Term of this Lease, Lessee shall employ, at Lessee's expense, Tarlton Properties, Inc. as construction manager for such alterations at a fee equal to five percent (5%) of the first Two Hundred Fifty Thousand and 00/100 Dollars ($250,000.00) of hard construction costs (i.e., the amounts paid to any general contractor, subcontractors, vendors, and suppliers for labor and materials for the construction of the alterations or improvements) and then four percent (4%) of such hard construction costs in excess of Two Hundred Fifty Thousand and 00/100 Dollars ($250,000.00). Lessor may condition its consent to, among other things, Lessee agreeing in writing to remove any such alterations prior to the expiration of the Lease term and Lessee agreeing to restore the Premises to its condition prior to such alterations at Lessee's expense. Upon Lessee's written request, Lessor shall advise Lessee in writing at the time consent is granted whether Lessor reserves the right to require Lessee to remove any alterations from the Premises prior to the expiration or sooner termination of this Lease.

All alterations, trade fixtures and personal property installed in the Premises solely at Lessee's expense shall during the term of this Lease remain Lessee's property and Lessee shall be entitled to all depreciation, amortization and other tax benefits with respect thereto (excluding the Tenant Improvements). Upon the expiration or sooner termination of this Lease all alterations, fixtures and improvements to the Premises, whether made by Lessor or installed by Lessee at Lessee's expense, shall be surrendered by Lessee with the Premises and shall become the property of Lessor; provided, however, that Lessee's furniture and other personal property, not provided by or paid for by Lessor and not permanently affixed to the Premises which can be removed without damaging the Premises may be removed by Lessee. Lessee shall repair to Lessor's reasonable satisfaction all damage to the Premises occasioned by removal of Lessee's Property.

(e) Lessee shall, at Lessee's sole cost and expense, fully, diligently and in a timely manner, comply with all present and future "Laws," which term is used in this Lease to mean all laws, rules, regulations, ordinances, directives, orders, covenants, permits of all governmental agencies and authorities, easements and restrictions of record, the requirements of any applicable fire insurance underwriter or rating bureau or board of fire underwriters, relating in any manner to the Premises and/or Lessee's use or occupancy of the Premises (including but not limited to matters pertaining to industrial hygiene, environmental conditions on, in, under or about the Premises, including soil and groundwater conditions, subject to the provisions of Paragraph 9 hereof, and the use, generation, manufacture, production, installation, maintenance, removal, transportation, storage, spill, or release of any Hazardous Materials (which are addressed in Paragraph 9 hereof)), now in effect or which may hereafter come into effect. Lessee shall, within five (5) days after receipt of Lessor's written request, provide Lessor with copies of all documents and information, including but not limited to permits, registrations, manifests, applications, reports and certificates, evidencing Lessee's compliance with any Laws specified by Lessor, and shall immediately upon receipt, notify Lessor in writing (with copies of any documents involved) of any threatened or actual claim, notice, citation, warning, complaint or report pertaining to or involving failure by Lessee or the Premises to comply with any Laws. Notwithstanding the foregoing, any structural changes or repairs or other changes or repairs to the Property of any nature which would be considered a capital expenditure under generally accepted accounting principles shall be made by Lessor at Lessee's expense if such structural repairs or changes are required by reason of the specific nature of the use of the Premises by Lessee. If such changes or repairs are not required by reason of the specific nature of Lessee's use of the Premises and are capital expenditures, the cost of such changes or repairs shall be treated as an Operating Expense and amortized in accordance with the provisions of Paragraph 5(b).

(f) Subject to Paragraph 30, Lessor, Lessor's agents, employees, contractors and designated representatives, and the holders of any mortgages, deeds of trust or ground leases on the Premises ("***Lenders***") shall have the right to enter the Premises at any time in the case of an emergency, and otherwise at reasonable times, for the purpose of inspecting the condition of the Premises and for verifying compliance by Lessee with this Lease and all Laws, and Lessor shall be entitled to employ experts and/or consultants in connection therewith to advise Lessor with respect to Lessee's activities, including but not limited to Lessee's installation, operation, use, monitoring, maintenance, or removal of any Hazardous Substance on or from the Premises. The costs and expenses of any such inspections shall be paid by the party requesting same, unless a default or breach of this Lease by Lessee or a violation of Laws or a contamination, caused or materially contributed to by Lessee, is found to exist or to be imminent, or unless the inspection is requested or ordered by a governmental authority as the result of any such existing or imminent violation or contamination. In such case, Lessee shall upon request reimburse Lessor or Lessor's Lender, as the case may be, for the costs and expenses of such inspections.

(g) During the term of this Lease, Lessee shall comply, at Lessee's expense, with all of the covenants, conditions, and restrictions affecting the Premises which are recorded in the Official Records of San Mateo County, California, and which are in effect as of the date of this Lease.

(h) Lessee shall surrender the Premises by the last day of the lease Term or any earlier termination date, in accordance with Paragraph 13(d) and this Paragraph 14(h), with all of the improvements to the Premises, parts, and surfaces thereof clean and free of debris and in good operating order, condition, and state of repair, ordinary wear and tear excepted. Lessee's failure to surrender the Premises in accordance with the terms and conditions of this Lease, including, without limitation, this Paragraph 14(h) shall be deemed to be a material default under the Lease. "Ordinary wear and tear" shall not include any damage or deterioration that would have been prevented by good maintenance practice or by Lessee performing all of its obligations under this Lease. Notwithstanding the foregoing, prior to the last day of the Term (or earlier termination of the Lease), Lessee shall (i) restore all walls in the Premises to the same condition existing immediately following completion of the Tenant Improvements, including patching and sanding all holes to match the original texture of the walls and painting; (ii) replace any broken, chipped, stained or discolored ceiling tiles in the Premises to match the existing tiles; and (iii) vacuum and steam clean all carpets and remove all stains, or, to the extent any stains cannot be removed, then Lessee shall replace the stained areas with carpet squares of consistent color and quality to match the carpet existing as of the Commencement Date. In addition to the foregoing, the obligations of Lessee shall include the repair of any damage occasioned by the installation, maintenance, or removal of Lessee's trade fixtures, furnishings, equipment, and alterations, and the restoration by Lessee of the Premises to its condition upon completion of the Tenant Improvements (Lessee shall not be required to remove any of the Tenant Improvements) (A) if Lessor's consent to alteration, additions or improvements was conditioned upon such removal and restoration upon expiration or sooner termination of the Lease term pursuant to Paragraph 14(d), or (B) if Lessee made any such alterations, additions, or improvements without obtaining Lessor's prior written consent in breach of Paragraph 14(d), and within a reasonable time after the expiration or sooner termination of the

Lease term Lessor gives written notice to Lessee requiring Lessee to perform such removal and restoration. Prior to the expiration of the term of this Lease or any earlier termination date, Lessee shall, at Lessee's expense, obtain written closure reports from the San Mateo County Health Department and from the Menlo Park Fire Protection District with respect to any Hazardous Materials used, stored, or released by Lessee on or about the Premises. Both written closure reports shall provide written certification that all Tenant's Hazardous Materials have been removed from the Premises and that no further action is required in connection with the closure of the Premises. Any removal and remediation of Hazardous Materials by Lessee shall be certified in writing as (1) complete and (2) having been properly performed, by the San Mateo County Health Department and the Menlo Park Fire Protection District and a copy of such written certifications shall be delivered by Lessee to Lessor no later than the last day of the Term of this Lease.

(i) Lessor shall, upon at least five (5) calendar days prior notice to Lessee, have the right to alter, improve, install, maintain, repair, replace and relocate any other portion (other than the Premises) of the interior or exterior of the Building and any other portion of the Property, including, without limitation, the right to alter, improve, install, maintain, repair, replace and relocate pipes, ducts, conduits, wires, meters and other equipment within the demising walls, floors, bearing columns and the ceilings of any other portion of the Building or the Property (other than the Premises) and the right to alter, improve, install, maintain, repair, replace and relocate entrances, doors, corridors, elevators, or other Property facilities or systems or temporarily to abate the operations of such facilities or systems at the Property, and Lessor may for such purposes erect scaffolding and other necessary structures where reasonably required by the character of the work to be performed, provided that the normal business of Tenant shall be interfered with as little as is reasonably practicable and Lessee's access to the Premises shall not be materially adversely affected by such work. Lessee hereby waives any claim for damages for any injury or inconvenience to or interference with Lessee's business, any loss of occupancy or quiet enjoyment of the Premises, any claim of actual or constructive eviction, any claim for any compensation or abatement of rent and any other loss occasioned thereby. In addition, if at any time, any windows of the Premises are temporarily darkened or covered over by reason of any such work to the Building or any other portion of the Property or there is otherwise a diminution of light, air or view by another structure which may hereafter be erected, Lessor shall not be liable for any damages, any loss of occupancy or quiet enjoyment of the Premises and Lessee shall not be entitled to any compensation or abatement of any rent or any other loss, nor shall the same release Lessee from its obligations under this Lease or constitute an actual or constructive eviction.

15. **Utilities and Services.**

(a) Lessor shall contract for and pay for, and Lessee shall reimburse Lessor therefor pursuant to Paragraph 5 as an Operating Expense, all electricity, gas, water, heat and air conditioning service, janitorial service, refuse pick-up, sewer charges, back-up generator service, and all other utilities or services supplied to or consumed by Lessee, its agents, employees, contractors, and invitees on or about the Premises, excluding telephone service to the Building for which Lessee shall contract and pay directly.

(b) Lessee shall have the right to use 16.5 kw of the back-up generator service (which equals an approximately seventy percent (70%) share) provided by Lessor to the Building, which shall be provided by Lessor throughout the Term at least the level provided to the Building as of the date hereof.

(c) Lessor shall not be liable to Lessee for any interruption or failure of any utility services including, without limitation, the back-up generator to the Building or the Premises which is not caused by the active negligence or willful acts of Lessor, or Lessor's employees, agents, or contractors. Lessee shall not be relieved from the performance of any covenant or agreement in this Lease because of any such failure. Lessor shall make all repairs to the Property required to restore such services and the cost thereof shall be payable by Lessee pursuant to Paragraph 5 as a current Operating Expense, or as a capital improvement which is amortized over its useful life (together with interest thereon) as an Operating Expense in accordance with generally accepted accounting principles as described in Paragraph 5(b); provided, however, if such failure is caused by the active negligence or willful acts of Lessor or its agents, employees or contractors, then Lessor shall bear such costs.

16. **Liens**. Lessee agrees to keep the Premises free from all liens arising out of any work performed, materials furnished, or obligations incurred by Lessee. Lessee shall give Lessor at least ten (10) calendar days prior written notice before commencing any work of improvement on the Premises, the contract price for which exceeds Ten Thousand and 00/100 Dollars ($10,000.00). Lessor shall have the right to post notices of non-responsibility with respect to any such work. If Lessee shall, in good faith, contest the validity of any such lien, claim or demand, then Lessee shall, at its sole expense, defend and protect itself, Lessor and the Property against the same, and shall pay and satisfy any such adverse judgment that may be rendered thereon before the enforcement thereof against the Lessor or the Property. If Lessor shall require, Lessee shall furnish to Lessor a surety bond satisfactory to Lessor in an amount equal to one and one-half times the amount of such contested claim or demand, indemnifying Lessor against liability for the same, as required by law for the holding of the Property free from the effect of such lien or claim.

17. **Assignment and Subletting**.

(a) Except as otherwise provided in this Paragraph 17, Lessee shall not assign this Lease, or any interest, voluntarily or involuntarily, and shall not sublet the Premises or any part thereof, or any right or privilege appurtenant thereto, or suffer any other person (the agents and servants of Lessee excepted) to occupy or use the Premises, or any portion thereof, without the prior written consent of Lessor in each instance pursuant to the terms and conditions set forth below, which consent shall not be unreasonably withheld or delayed, subject to the following provisions; provided, however, Lessee shall not assign this Lease, or any interest, voluntarily or involuntarily, and shall not sublet the Premises or any part thereof, or any right or privilege appurtenant thereto, or suffer any other person (the agents and servants of Lessee excepted) to occupy or use the Premises, or any portion thereof, if Lessee shall be in default under this Lease past any applicable cure period.

(b) Prior to any assignment or sublease which Lessee desires to make, other than a Permitted Transfer (as defined in Paragraph 17(f) below), Lessee shall provide to Lessor the name and address of the proposed assignee or sublessee, and true and complete copies of all documents relating to Lessee's prospective agreement to assign or sublease, a copy of a current financial statement for such proposed assignee or sublessee, and any other relevant information

requested by Lessor within five (5) days after receipt of notice of the proposed assignment or sublease and Lessee shall specify all consideration to be received by Lessee for such assignment or sublease in the form of lump sum payments, installments of rent, or otherwise. For purposes of this Paragraph 17, the term "consideration" shall include all money or other consideration to be received by Lessee for such assignment or sublease. Within ten (10) days after the receipt of such documentation and other information, Lessor (1) shall notify Lessee in writing that Lessor elects to consent to the proposed assignment or sublease subject to the terms and conditions hereinafter set forth; (2) shall notify Lessee in writing that Lessor refuses such consent, specifying reasonable grounds for such refusal; or (3) except with respect to a Permitted Transferee, if at the time Lessee requests that Lessor consent to an assignment or sublease Lessee has vacated the Premises and is not conducting on-going operations in the Building, Lessor may notify Lessee that Lessor elects to terminate this Lease, provided that with respect to a proposed sublease of a portion of the Premises Lessor's termination right shall apply only to the proposed sublease space, and specifying the effective date of termination which shall be the same as the commencement date of the proposed sublease. If Lessor elects to terminate this Lease pursuant to the foregoing provision, upon the effective date of termination, Lessor and Lessee shall each be released and discharged from any liability or obligation to the other under this Lease accruing thereafter with respect to the Premises or the portion thereof to which the termination applies, except for any obligations then outstanding and except for any indemnity obligations which survive the expiration or termination of this Lease by the express terms hereof, and Lessee agrees that Lessor may enter into a direct lease with such proposed assignee or sublessee without any obligation or liability to Lessee.

In deciding whether to consent to any proposed assignment or sublease, Lessor may take into account whether reasonable conditions have been satisfied, including, but not limited to, the following:

(1) In Lessor's reasonable judgment, the proposed assignee or subtenant is engaged in such a business, that the Premises, or the relevant part thereof, will be used in such a manner which complies with Paragraph 8 hereof entitled "Use" and Lessee or the proposed assignee or sublessee submits to Lessor documentary evidence reasonably satisfactory to Lessor that such proposed use constitutes a permitted use of the Premises pursuant to the ordinances and regulations of the City of Menlo Park;

(2) The proposed assignee or subtenant is a reputable entity or individual with sufficient financial net worth so as to reasonably indicate that it will be able to meet its obligations under this Lease or the sublease in a timely manner;

(3) If at the time of the proposed transfer, Lessor has substantially similar space available for rent in the Menlo Business Park, the proposed assignee or subtenant is not a tenant of the Building or any other building in the Menlo Business Park; and

(4) The proposed assignment or sublease is approved by Lessor's mortgage lender if such lender has the right to approve or disapprove proposed assignments or subleases. Lessor shall use its good faith efforts to obtain such approval from its lender within ten (10) days after receipt by Lessor of Lessee's written request for consent and the documentation and information referred to in the first sentence of Paragraph 17(b) above.

(c) As a condition to Lessor's granting its consent to any assignment or sublease, except with respect to any Permitted Transferees, (1) Lessor may require that Lessee pay to Lessor, as and when received by Lessee, fifty percent (50%) of the amount of any excess of the consideration to be received by Lessee in connection with said assignment or sublease over and above the Monthly Base Rent and Additional Rent fixed by this Lease and payable by Lessee to Lessor, after deducting only (A) a standard leasing commission payable by Lessee in consummating such assignment or sublease, (B) the cost of reasonable tenant improvements performed specifically for the sublease and required to be made to the Premises to effectuate the sublease, provided that such improvements are performed in compliance with Paragraph 14(d) of this Lease, and (C) reasonable attorneys' fees incurred by Lessee and Lessor in negotiating and reviewing the assignment or sublease documentation; and (2) Lessee and the proposed assignee or sublessee shall demonstrate to Lessor's reasonable satisfaction that each of the criteria referred to in subparagraph (b) above is satisfied.

(d) Each assignment or sublease agreement to which Lessor has consented shall be an instrument in writing in form satisfactory to Lessor, and shall be executed by both Lessee and the assignee or sublessee, as the case may be. Each such assignment or sublease agreement shall recite that it is and shall be subject and subordinate to the provisions of this Lease, that the assignee or sublessee accepts such assignment or sublease, that Lessor's consent thereto shall not constitute a consent to any subsequent assignment or subletting by Lessee or the assignee or sublessee, and, except as otherwise set forth in a sublease approved by Lessor, agrees to perform all of the obligations of Lessee hereunder (to the extent such obligations relate to the portion of the Premises assigned or subleased), and that the termination of this Lease shall, at Lessor's sole election, constitute a termination of every such assignment or sublease.

(e) In the event Lessor shall consent to an assignment or sublease, Lessee shall nonetheless remain primarily liable for all obligations and liabilities of Lessee under this Lease, including but not limited to the payment of rent.

(f) Notwithstanding the foregoing, Lessee may, without Lessor's prior written consent and without any participation by Lessor in assignment and subletting proceeds, but with prior notice and documentation, as required pursuant to this Paragraph 17(f), provided to Lessor, sublet a portion or the entire Premises or assign this Lease to (i) a subsidiary, affiliate, division or corporation controlling, controlled or under common control with Lessee ("***affiliate***"); (ii) to a successor corporation related to Lessee by merger, consolidation or reorganization; or (iii) to a purchaser of substantially all of Lessee's business operations conducted on the Premises (each such transaction referred to herein as a "Permitted Transfer" and each of the foregoing transferees referred to herein as a "***Permitted Transferee***"), provided that any such Permitted Transferee shall have a current verifiable net worth prior to the transfer at least equal to that of Lessee on the Commencement Date of this Lease, or, if less, financial resources sufficient, in Lessor's reasonable good faith judgment, to perform the obligations under the assignment or sublease, as applicable. Lessee's foregoing rights in this Paragraph 17(f) to assign this Lease or to sublease all or a portion of the entire Premises shall be subject to the following conditions: (1) Lessee shall not be in default hereunder past any applicable cure period; (2) in the case of an assignment or subletting to an affiliate, Lessee shall remain liable to Lessor hereunder if Lessee is a surviving entity; (3) the transferee or successor entity shall expressly assume in writing all of Lessee's obligations hereunder; and (4) Lessee shall provide Lessor with prior notice of such proposed transfer and

deliver to Lessor all documents reasonably requested by Lessor relating to such transfer, including but not limited to documentation sufficient to establish such proposed transferee's current verifiable net worth prior to the transfer at least equal to that of Lessee on the Commencement Date of this Lease, or, if less, financial resources sufficient, in Lessor's reasonable good faith judgment, to perform the obligations under the assignment or sublease, as applicable.

(g) Neither the sale nor transfer of Lessee's capital stock shall be deemed an assignment, subletting, or other transfer of this Lease or the Premises, provided, that in the event of the sale, transfer or issuance of Lessee's securities to an affiliate or in connection with a transaction described in Paragraph 17(f), the conditions set forth in Paragraph 17(f) shall apply.

(h) Subject to the provisions of this Paragraph 17 any assignment or sublease (if such consent is required hereunder) without Lessor's prior written consent shall at Lessor's election be void. The consent by Lessor to any assignment or sublease shall not constitute a waiver of the provisions of this Paragraph 17, including the requirement of Lessor's prior written consent, with respect to any subsequent assignment or sublease. If Lessee shall purport to assign this Lease, or sublease all or any portion of the Premises, or permit any person or persons other than Lessee to occupy the Premises, without Lessor's prior written consent (if such consent is required hereunder), Lessor may collect rent from the person or persons then or thereafter occupying the Premises and apply the net amount collected to the rent reserved herein, but no such collection shall be deemed a waiver of Lessor's rights and remedies under this Paragraph 17, or the acceptance of any such purported assignee, sublessee, or occupant, or a release of Lessee from the further performance by Lessee of covenants on the part of Lessee herein contained.

(i) Lessee shall not hypothecate or encumber its interest under this Lease or any rights of Lessee hereunder, or enter into any license or concession agreement respecting all or any portion of the Premises, without Lessor's prior written consent which consent Lessor may grant or withhold in Lessor's absolute discretion without any liability to Lessee. Lessee's granting of any such encumbrance, license, or concession agreement shall constitute an assignment for purposes of this Paragraph 17.

(j) In the event of any sale or exchange of the Premises by Lessor and assignment of this Lease by Lessor, Lessor shall, upon providing Lessee with written confirmation that the assignee has assumed all obligations of Lessor under this Lease and Lessor has delivered any Security Deposit held by Lessor to Lessor's successor in interest, be and hereby is entirely relieved of all liability under any and all of Lessor's covenants and obligations contained in or derived from this Lease with respect to the period commencing with the consummation of the sale or exchange and assignment.

(k) Lessee hereby acknowledges that the foregoing terms and conditions are reasonable and, therefore, that Lessor has the remedy described in California Civil Code Section 1951.4 (Lessor may continue the Lease in effect after Lessee's breach and abandonment and recover rent as it becomes due, if Lessee has the right to sublet or assign, subject only to reasonable limitations).

18. **Non-Waiver.**

(a) No waiver of any provision of this Lease shall be implied by any failure of Lessor to enforce any remedy for the violation of that provision, even if that violation continues or is repeated. Any waiver by Lessor of any provision of this Lease must be in writing.

(b) No receipt of Lessor of a lesser payment than the rent required under this Lease shall be considered to be other than on account of the earliest rent due, and no endorsement or statement on any check or letter accompanying a payment or check shall be considered an accord and satisfaction. Lessor may accept checks or payments without prejudice to Lessor's right to recover all amounts due and pursue all other remedies provided for in this Lease.

Lessor's receipt of any rent or other payment from Lessee after giving notice to Lessee terminating this Lease shall in no way reinstate, continue, or extend the Lease term or affect the termination notice given by Lessor before the receipt of such rent or payment. After serving notice terminating this Lease, filing an action, or obtaining final judgment for possession of the Premises, Lessor may receive and collect any rent, and the payment of that rent shall not waive or affect such prior notice, action, or judgment.

19. **Holding Over**. Lessee shall vacate the Premises and deliver the same to Lessor upon the expiration or sooner termination of this Lease. In the event of holding over by Lessee after the expiration or termination of this Lease, such holding over shall be on a month-to-month tenancy and all of the terms and provisions of this Lease shall he applicable during such period, except that in addition to the payment of Additional Rent, Lessee shall pay Lessor as Monthly Base Rent during such holdover an amount equal to the greater of (i) one hundred fifty percent (150%) of the Monthly Base Rent in effect at the expiration of the term, or (ii) the then market rent for comparable research and development/office space. If such holdover is without Lessor's written consent, Lessee shall be liable to Lessor for all costs, expenses, and consequential damages incurred by Lessor as a result of such holdover, including but not limited to damages resulting from Lessor's inability to timely deliver possession of the Premises to a new tenant. The rental payable during such holdover period without Lessor's written consent shall be payable to Lessor on demand.

20. **Damage or Destruction.**

(a) In the event of a total destruction of the Building during the term from any cause, either party may elect to terminate this Lease by giving written notice of termination to the other party within thirty (30) days after the casualty occurs. A total destruction shall be deemed to have occurred for this purpose if the Building or the Premises that are the subject of this Lease are destroyed to the extent of seventy-five percent (75%) or more of the replacement cost thereof. If the Lease is not terminated, Lessor shall repair and restore the Premises in a diligent manner and this Lease shall continue in full force and effect, except that Monthly Base Rent and Additional Rent of the Premises which are the subject of this Lease shall be abated in accordance with Paragraph 20(d) below.

(b) In the event of a partial destruction of the Building, which materially affects the Premises, to an extent less than seventy-five percent (75%) of the replacement cost thereof,

and if Lessor reasonably believes that the damage thereto can be repaired, reconstructed, or restored within a period of two hundred seventy (270) days from the date of such casualty, there are at least twelve (12) months remaining in the term of this Lease (if the damage would take more than sixty (60) days to restore), and the casualty is from a cause which is insured under Lessor's "all risk" property insurance, or is insured under any other coverage then carried by Lessor, Lessor shall forthwith repair the same, and this Lease shall continue in full force and effect, except that Monthly Base Rent and Additional Rent shall be abated in accordance with Paragraph 20(d) below. If any of the foregoing conditions are not met, Lessor shall have the option of either repairing and restoring the Building and Improvements, or terminating this Lease by giving written notice of termination to Lessee within sixty (60) days after the casualty. Notwithstanding anything to the contrary contained in this Paragraph 20, Lessor shall not have the right to terminate this Lease if the cost to repair the damage to the Building or to restore the Premises would cost less than five percent (5%) of the replacement cost of the Building, regardless of whether or not the casualty is insured provided that there are at least twelve (12) months remaining in the term of this Lease (if the damage would take more than sixty (60) days to restore).

(c) Lessor's election to repair and restore the Building and Improvements or to terminate this Lease, shall be made and written notice thereof shall be given to Lessee within sixty (60) days after the casualty. Notwithstanding the foregoing, (1) Lessee may terminate this Lease by written notice to Lessor if Lessor has not obtained all necessary governmental permits for the restoration and commenced construction of the restoration within ninety (90) days after the casualty; or (2) if Lessor elects to repair and restore the Building and Improvements under subparagraph (b) or (c), but the repairs and restoration are not substantially completed within two hundred seventy (270) days after the casualty, Lessee may terminate this Lease by written notice to Lessor given within thirty (30) days after the expiration of said period of two hundred seventy (270) days after the casualty, provided that the repairs and restoration are not substantially completed prior to the receipt by Lessor of such notice of termination. If this Lease is not terminated by Lessor or Lessee pursuant to the foregoing provisions, Lessor shall complete the repairs in a diligent manner and this Lease shall continue in full force and effect, except that Monthly Base Rent and Additional Rent shall be abated in accordance with Paragraph 20(f) below.

(d) In the event of repair, reconstruction, or restoration as provided herein, the Monthly Base Rent and Additional Rent shall be abated proportionally based on the portion of the Premises for which Lessee's use thereof is completely impaired and Lessee does not use such portion of the Premises during the period of such repair, reconstruction, or restoration, from the date of the casualty until such repair, reconstruction or restoration is substantially completed.

(e) With respect to any destruction of the Building and Improvements which Lessor is obligated to repair, or may elect to repair, under the terms of this Paragraph 20, the provisions of Section 1932, Subdivision 2, and of Section 1933, Subdivision 4, of the Civil Code of the State of California are waived by the parties. Lessor's obligation to repair and restore the Building and Improvements shall include the Tenant Improvements referred to in Paragraph 13(a). Lessor shall also repair and restore any other leasehold improvements constructed thereafter by Lessor, or by Lessee with Lessor's prior written consent. Lessor's time for completion of the repairs and restoration of the Building and Improvements referred to above shall be extended by a period equal to any delays ("f***orce majeure delays***") caused by strikes, labor disputes, unavailability of materials, inclement weather, circumstances not within Lessor's control, or acts of God, but in no event by more than sixty (60) days.

(f) In the event of termination of this Lease pursuant to any of the provisions of this Paragraph 20, the Monthly Base Rent and Additional Rent shall be apportioned on a per diem basis and shall be paid to the date of the casualty. In no event shall Lessor be liable to Lessee for any damages resulting to Lessee from the occurrence of such casualty, or from the repairing or restoration of the Building and Improvements, or from the termination of this Lease as provided herein, nor shall Lessee be relieved thereby from any of Lessee's obligations hereunder, except to the extent and upon the conditions expressly set forth in this Paragraph 20.

21. **Eminent Domain.**

(a) If the whole or any substantial part of the Property is taken or condemned by any competent public authority for any public use or purpose, the term of this Lease shall end upon the earlier to occur of the date when the possession of the part so taken shall be required for such use or purpose or the vesting of title in such public authority. Rent shall be apportioned as of the date of such termination. Any award arising from the condemnation of any portion of the Property or the settlement thereof shall belong to and be paid to Lessor. However, Lessee may file a separate claim at Lessee's sole cost and expense for (i) leasehold improvements installed at Lessee's expense or other property owned by Lessee, and (ii) reasonable costs of moving by Lessee to another location in San Mateo County or surrounding areas within the San Francisco Bay Area. In all events, Lessor shall be solely entitled to any award with respect to the real property, including the bonus value of the leasehold.

(b) If there is a partial taking of the Property by eminent domain which is not a substantial part of the Property and the Premises remain reasonably suitable for continued use and occupancy by Lessee for the purposes referred to in Paragraph 8, Lessor shall complete any necessary repairs in a diligent manner and this Lease shall remain in full force and effect with a just and proportionate abatement of the Monthly Base Rent and Additional Rent, based on the extent to which Lessee's use of any portion of the Premises is completely impaired thereafter. If after a partial taking, the Premises are not reasonably suitable for Lessee's continued use and occupancy for the uses permitted herein, Lessee may terminate this Lease effective on the earlier of the date title vests in the public authority or the date possession is taken. Subject to the provisions of Paragraph 21(a), the entire award for such taking shall be the property of Lessor.

22. **Remedies**. If Lessee fails to make any payment of rent or any other sum due under this Lease for five (5) days after receipt by Lessee of written notice from Lessor; or if Lessee fails to comply with any term, provision or covenant of this Lease and does not cure such failure within fifteen (15) days after receipt by Lessee of written notice from Lessor or such shorter cure period as may be specified in this Lease following notice of Lessee's failure to comply (unless such default is incapable of cure within fifteen (15) days) and Lessee commences cure within fifteen (15) days and thereafter diligently prosecutes the cure to completion within a reasonable time, not to exceed thirty (30) days); or if Lessee's interest herein, or any part thereof, is assigned or transferred, either voluntarily or by operation of law (except as expressly permitted by other provisions of this Lease); or if Lessee makes a general assignment for the benefit of its creditors; or if this Lease is rejected (i) by a bankruptcy trustee for Lessee, (ii) by Lessee as debtor in

possession, or (iii) by failure of Lessee as a bankrupt debtor to act timely in assuming or rejecting this Lease; then any of such events shall constitute an event of default and breach of this Lease by Lessee and Lessor may, at its option, elect the remedies specified in either subparagraph (a) or (b) below. Any such rejection of this Lease referred to above shall not cause an automatic termination of this Lease. Whenever in this Lease reference is made to a default by Lessee, such reference shall refer to an event of default as defined in this Paragraph 22.

(a) Lessor may repossess the Premises and remove all persons and property therefrom. If Lessor repossesses the Premises because of a breach of this Lease, this Lease shall terminate and Lessor may recover from Lessee:

(1) the worth at the time of award of the unpaid rent which had been earned at the time of termination including interest thereon at a rate equal to the discount rate established by the Federal Reserve Bank of San Francisco for member banks, plus one percent (1%), or the maximum legal rate of interest, whichever is less, from the time of termination until paid;

(2) the worth at the time of award of the amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Lessee proves could have been reasonably avoided, including interest thereon at a rate equal to the Federal discount rate plus one percent (1%) per annum, or the maximum legal rate of interest, whichever is less, from the time of termination until paid;

(3) the worth at the time of award of the amount by which the unpaid rent for the balance of the term after the time of award exceeds the amount of such rental loss for the same period that Lessee proves could be reasonably avoided discounted at the discount rate established by the Federal Reserve Bank of San Francisco for member banks at the time of the award plus one percent (1%); and

(4) any other amount necessary to compensate Lessor for all the detriment proximately caused by Lessee’s breach or by Lessee’s failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom.

(b) If Lessor does not repossess the Premises, then this Lease shall continue in effect for so long as Lessor does not terminate Lessee’s right to possession and Lessor may enforce all of its rights and remedies under this Lease, including the right to recover the rent and other sums due from Lessee hereunder. For the purposes of this Paragraph 22, the following do not constitute a repossession of the Premises by Lessor or a termination of the Lease by Lessor:

(1) Acts of maintenance or preservation by Lessor or efforts by Lessor to relet the Premises; or

(2) The appointment of a receiver by Lessor to protect Lessor’s interests under this Lease.

(c) Lessor’s failure to perform or observe any of its obligations under this Lease or to correct a breach of any warranty or representation made in this Lease within thirty (30) days after receipt of written notice from Lessee setting forth in reasonable detail the nature and extent

of the failure referencing pertinent Lease provisions or if more than thirty (30) days is required to cure the breach, Lessor's failure to begin curing within the thirty (30) day period and diligently prosecute the cure to completion, shall constitute a default. If Lessor commits a default, Lessee's sole remedy shall be to institute an action against Lessor for damages or for equitable or injunctive relief, but Lessee shall not have the right to punitive damages, consequential damages, rent abatement, offset against rent, or to terminate this Lease in the event of any default by Lessor.

(d) All covenants and agreements to be performed by Lessee under this Lease shall be at its sole cost and expense and without abatement of rent or other sums due under this Lease, unless otherwise specified in this Lease. If Lessee shall fail to pay any sum of money required to be paid by Lessee under this Lease or shall fail to perform any other act on Lessee's part to be performed under this Lease within the time periods described in the first paragraph of Paragraph 22(a), Lessor may, but shall not be obligated so to do and without waiving or releasing Lessee from any obligations of Lessee, make any such payment or perform any such other act on Lessee's part to be made or performed as provided in this Lease. All sums paid by Lessor, whether to fulfill Lessee's unfulfilled payment obligations, to perform Lessee's unfulfilled performance obligations, or to compel Lessee to fulfill or perform its obligations under this Lease, and all incidental costs, including attorneys' fees, plus an administrative fee of five percent (5%) of all amounts so expended by Lessor, shall be deemed additional rent hereunder and shall be payable to Lessor upon demand.

23. **Lessee's Personal Property**. If any personal property of Lessee remains on the Premises after (1) Lessor terminates this Lease pursuant to Paragraph 22 above following an event of default by Lessee, or (2) after the expiration of the Lease Term or after the termination of this Lease pursuant to any other provisions hereof, Lessor shall give written notice thereof to Lessee pursuant to applicable law. Furthermore, Lessor shall thereafter release, store, and dispose of any such personal property of Lessee in accordance with the provisions of applicable law. Lessor agrees that if Lessee grants to a lender a first priority security interest in certain items of Lessee's furniture, equipment and other personal property which are not affixed to the Building (collectively, the "***Collateral***"), then, in such event, Lessor agrees that such lender's rights in the Collateral shall be superior to any right or claim which Lessor may have or hereafter acquire in the Collateral. Within fifteen (15) days following Lessee's request, Lessor shall execute a document reasonably acceptable to Lessor to (1) evidence Lessor's acknowledgment that Lessor's rights in the Collateral will be subject and subordinate to the lender's rights in the Collateral; provided, however, that Lessor shall continue to retain all rights and remedies available at law, including, without limitation, a right to bring an action in unlawful detainer and trespass for Lessee's nonpayment of rent under this Lease or any other breaches of this Lease, and (ii) give any lender holding a security interest or lien on Lessee's personal property reasonable rights of access to the Premises to remove such Lessee's personal property, provided that the document submitted to Lessor for execution by Lessor shall contain a detailed inventory describing Lessee's personal property, and such lender shall expressly agree in such document for the benefit of Lessor to repair at such lender's expense any damage caused by such removal.

24. **Notices**. All notices, demands, consents or approvals (collectively, "***Notices***") which may or are required to be given by either party to the other under this Lease shall be in writing and shall be deemed to have been fully given (a) when received or refused, if personally delivered, (b) three (3) business days after being deposited in the United States mail, postage

prepaid, sent by Certified or Registered Mail, (c) one (1) business day after being deposited with a nationally recognized overnight courier service or (d) except for notices under Section 22, upon receipt by electronic mail, provided that that such notice is also promptly delivered by one of the methods described in subparagraphs (a), (b) or (c) of this Paragraph 24. Each Notice shall be addressed to Lessor and Lessee at the following address or to such place as either party may from time to time designate in a written notice to the other party:

Lessor: Menlo Park Portfolio
c/o Tarlton Properties, Inc.
1530 O'Brien Drive, Suite C
Menlo Park, California 94025
Attention: John C. Tarlton, President
Telephone: (650) 330-3600
Email: JTarlton@tarlton.com

Lessee: Before the Commencement Date:
Forty Seven, Inc.
1661 Page Mill Road, Suite C
Palo Alto, CA 94304
Attention: Kyle Elrod, Sr. Director Operations
Email: kelrod@fortyseveninc.com

After the Commencement Date:
Forty Seven, Inc.
1490 O'Brien Drive, Suite A
Menlo Park, California 94025
Attention: Kyle Elrod, Sr. Director Operations
Email: kelrod@fortyseveninc.com

25. **Estoppel Certificate**. Lessee and Lessor shall within ten (10) days following request by the other party (the "***Requesting Party***"), execute and deliver to the Requesting Party an estoppel certificate (1) certifying that this Lease has not been modified and certifying that this Lease is in full force and effect, or, if modified, stating the nature of such modification and certifying that this Lease, as so modified, is in full force and effect; (2) stating the date to which the rent and other charges are paid in advance, if at all; (3) stating the amount of any Security Deposit held by Lessor; (4) acknowledging that there are not, to the responding party's knowledge, any uncured defaults on the part of the Requesting Party hereunder, or if there are uncured defaults on the part of the Requesting Party, stating the nature of such uncured defaults; and (5) any other provisions reasonably requested by either party.

26. **Signage**. Lessee shall have the use of Lessee's Pro Rata Share of the monument sign for Building 10 for Lessee's sign. Lessee may place Lessee's vinyl lettering signage on the glass near the front door entrance to the Building and in the interior of the Building, subject to Lessor's reasonable requirements and consent and subject to the requirements of the City of Menlo Park. All of Lessee's signage shall comply with the City of Menlo Park sign ordinances and regulations and shall be subject to Lessor's approval as to the specific location, size and design thereof. The cost of the installation of Lessee's signage on the glass near the front entrance to the

Building and on the monument shall be paid by Lessee and the standard directory and suite entry signage shall be paid as set forth herein. Lessee shall be required to use Lessor's sign vendor for the monument signage, building directory and suite entry signage. Lessor shall pay the costs for the standard directory and suite entry signage up to a maximum amount of Five Hundred Dollars ($500). Any additional signage shall be subject to Lessor's prior approval and, if approved, shall be installed at Lessee's expense.

27. **Real Estate Brokers**. Lessee's broker is Kidder Matthews ("***Lessee's Broker***") and Lessor's broker is Kidder Matthews ("***Lessor's Broker***" and collectively with Lessee's Broker, the "***Brokers***"). Lessor shall pay a leasing commission to the Brokers pursuant to a separate agreement. Each party represents and warrants to the other party that it has not had any dealings with any real estate broker, finder, or other person with respect to this Lease other than Lessee's Broker and Lessor's Broker and each party shall hold harmless the other party from all damages, expenses, and liabilities resulting from any claims that may be asserted against the other party by any broker, finder, or other person with whom the other party has or purportedly has dealt, other than the above named brokers.

28. **Parking**. Lessee shall have the right to the nonexclusive use of sixty five (65) unreserved on-site vehicular parking spaces on the Land at no additional cost to Lessee in the parking area for the Building; provided, however, that twenty-one (21) of the foregoing parking spaces may be located in nearby parking areas in Menlo Business Park located no more than two hundred and fifty (250) paces from the Premises, such use shall be subject to such rules and regulations for such parking facilities which may be established or altered by Lessor at any time from time to time during the Lease Term, provided that such rules and regulations shall not unreasonably interfere with Lessee's parking rights. Vehicles of Lessee or its employees shall not park in driveways or occupy parking spaces or other areas reserved for deliveries, or loading or unloading.

29. **Subordination; Attornment.**

(a) This Lease, without any further instrument, shall at all times be subject and subordinate to the lien of any and all mortgages and deeds of trust which may now or hereafter be placed on, against or affect Lessor's estate in the real property of which the Premises form a part, and to all advances made or hereafter to be made upon the security thereof, and to all renewals, modifications, consolidations, replacements and extensions thereof.

(b) In confirmation of such subordination, Lessee covenants and agrees to execute and deliver within ten (10) days of Lessor's request any certificate or other instrument which Lessor may reasonably deem proper to evidence such subordination in commercially reasonable form (which document recognizes Lessee's rights under this Lease), without expense to Lessee; provided, however, that if any person or persons purchasing or otherwise acquiring the real property of which the Premises form a part by any sale, sales and/or other proceedings under such mortgages and/or deeds of trust, shall elect to continue this Lease in full force and effect in the same manner and with like effect as if such person or persons had been named as Lessor herein, then this Lease shall continue in full force and effect as aforesaid, and Lessee hereby attorns and agrees to attorn to such person or persons in writing upon request.

(c) If Lessee is notified in writing of Lessor's default under any deed of trust affecting the Premises and if Lessee is instructed in writing by the party giving notice to make Lessee's rental payments to such beneficiary, Lessee shall comply with such request without liability to Lessor (and with full credit of any amounts paid to such party by Lessee to the corresponding amounts owed to Lessor) until Lessee receives written confirmation from such party that such default has been cured by Lessor and that the deed of trust has been reinstated.

30. **No Termination Right**. Lessee shall not have the right to terminate this Lease as a result of any default by Lessor, and Lessee's remedies in the event of a default by Lessor shall be limited to the remedy set forth in Paragraph 22(c). Lessee expressly waives the defense of constructive eviction.

31. **Lessor's Entry**. Except in the case of an emergency and except for permitted entry during Lessee's normal working hours or for regularly scheduled maintenance, both of which may occur without prior notice to Lessee, Lessor and Lessor's agents shall provide Lessee with at least twenty-four (24) hours' notice prior to entry of the Premises. Lessor may enter the Premises for any reasonable purpose related to Lessor's ownership of the Property. Such entry by Lessor and Lessor's agents shall not impair Lessee's operations more than reasonably necessary and shall comply with Lessee's reasonable security and if entering the clean facility hygiene measures, if any. Lessor and Lessor's agents shall at all times be accompanied by Lessee during any such entry except in case of emergency and except for janitorial work. Lessor may enter the Premises at any time without prior notice to Lessee if the Premises are vacant, if Lessee is no longer conducting its ordinary business at the Premises, or if Lessee has made a general assignment for the benefit of creditors.

32. **Attorneys' Fees**. If any action at law or in equity shall be brought to recover any rent under this Lease, or for or on account of any breach of or to enforce or interpret any of the provisions of this Lease or for recovery of the possession of the Premises, the prevailing party shall be entitled to recover from the other party costs of suit and reasonable attorneys' fees, the amount of which shall be fixed by the court and shall be made a part of any judgment rendered.

33. **Quiet Enjoyment**. Upon payment by Lessee of the rent for the Premises and the observance and performance of all of the covenants, conditions, and provisions on Lessee's part to be observed and performed under this Lease within applicable notice and cure periods, Lessee shall have quiet enjoyment and possession of the Premises for the entire term hereof subject to all of the provisions of this Lease.

34. **Financial Information**. Lessee represents and warrants to Lessor that all financial and other information that it has provided to Lessor prior to the date of this Lease is true, correct and complete as of the date thereof.

35. **SDN List**. Lessee represents and warrants to Lessor that Lessee is not, and the entities that own or control Lessee, or that may be owned or controlled by Lessee (in all cases, other than through the ownership of publicly traded, direct or indirect ownership interests) (each a "***Subject Lessee Party***") are not, (i) in violation of any Applicable Laws relating to terrorism or money laundering, or (ii) among the individuals or entities identified on any list compiled pursuant to Executive Order 13224 or published by the Office of Foreign Assets Control, U.S. Department

of the Treasury ("***OFAC***") for the purpose of identifying suspected terrorists or on the most current list published by the OFAC at its official website, http://www.treas.gov/ofac/tllsdn.pdf or any replacement website or other replacement official publication of such list which identifies an "Specially Designated National" or "blocked person" (either of which are referred to herein as a "***SDN***"). If at any time during the Lease Term Lessor discovers that Lessee has breached the foregoing representations and warranties, or Lessor reasonably believes that Lessee or any Subject Lessee Party is in violation of any Applicable Laws relating to terrorism or money laundering or that Lessee or any Subject Lessee Party is identified as an SDN, Lessee shall be deemed in default under this Lease following three (3) days written notice from Lessor to Lessee unless, within such three day period, Lessee delivers written evidence, reasonably acceptable to Lessor, that Lessee is not in violation of such Applicable Laws or that Lessee (or the Subject Lessee Party, as applicable) is not a person or entity identified as an SDN. Except as otherwise expressly provided in the foregoing sentence, and without further notice, any default by Lessee under this Paragraph 35 shall be deemed an incurable default by Lessee and, in addition to any other rights and remedies that Lessor may have upon such default, Lessor shall also have the right to immediately terminate this Lease upon written notice to Lessee and recover possession of the Premises.

36. **Right of First Offer**. If at any time during the Term space in the remainder of Building 10 becomes available for lease (the "***Available Space***"), then Lessor, prior to entering into a lease with any third party respecting the Available Space, shall first offer to lease the same to Lessee by delivery of notice to Lessee (the "***Availability Notice***"). The Availability Notice shall set forth the terms upon which Lessor would be willing to lease to Lessee the Available Space, as determined by Lessor in its sole discretion. Lessee shall have ten (10) days after receipt of the Availability Notice to unconditionally accept in writing or reject the terms set forth in the Availability Notice it being understood that Lessee's failure to respond within the foregoing period shall be deemed a rejection of such terms. If Lessee does not unconditionally accept in writing the terms set forth in the Availability Notice within such ten (10) day period, then Lessee's rights under this Paragraph shall lapse and terminate and Lessor shall be entitled to lease the Available Space to any other party on such terms as Lessor desires; provided that the rental rate (taking into account adjustments for any differences between so-called "net" leases and "gross" leases) and Lessee improvement allowance, if any, shall not be materially less than that originally offered to Lessee, unless Lessor has first again offered the Available Space to Lessee for lease on the terms offered to the third party in accordance with the procedures specified above in this Paragraph. If Lessee accepts in writing the terms set forth in the Availability Notice, then for the period starting on the date of Lessee's delivery of the Availability Notice to Lessee and ending thirty (30) days thereafter (the "***Waiting Period***"), Lessor shall not enter into any binding agreement to lease the Available Space to any other party, provided Lessor shall have the right to market the Available Space for lease. During the Waiting Period, Lessor and Lessee shall negotiate in good faith the terms of a definitive written amendment to this Lease (a "***Definitive Lease Amendment***"), consistent with the terms set forth in the Availability Notice and otherwise consistent with the terms and conditions set forth in this Lease or reasonably acceptable to Lessor and Lessee. If Lessee and Lessor fail to execute and deliver a Definitive Lease Amendment within the Waiting Period, then Lessee's rights under this Paragraph shall lapse and terminate, and Lessor shall be entitled to lease the Available Space to any other party on such terms as Lessor desires; provided that the rental rate (taking into account adjustments for any differences between so-called "net" leases and "gross" leases) and Lessee improvement allowance, if any, shall not be materially less than that originally offered to Lessee, unless Lessor has first again offered the Available Space to

Lessee for lease on the terms offered to the third party in accordance with the procedures specified above in this Paragraph. Lessor shall not be required to offer the Available Space to Lessee during any period in which an event of default beyond applicable notice and cure periods has occurred and is continuing. Furthermore, unless expressly mentioned and approved in the written consent of Lessor to any assignment or sublet as provided in this Lease, the right of first offer to lease under this Paragraph 36 is granted for the personal benefit of Forty Seven, Inc., or a Permitted Transferee and may not be assigned or transferred by Forty Seven, Inc. to anyone other than a Permitted Transferee.

37. **Early Access Period**. Commencing on the date hereof but subject to the satisfaction of the conditions precedent set forth in this Paragraph 37 (the "***Early Access Period***"), Lessee shall have the right to access the Premises for the purpose of the installation of furniture, fixtures and equipment including laboratory set up therein; provided, however, that during such Early Access Period, all of the terms and conditions of this Lease shall apply; provided further, however, that during such Early Access Period, Lessee shall not be obligated to pay Monthly Base Rent or Additional Rent or utilities for the Premises so accessed by Lessee until the occurrence of the Commencement Date. Such early access shall be at Lessee's sole risk and conditioned upon full execution of this Lease and delivery to Lessor of payment of Base Rent, Additional Rent and Security Deposit in accordance with Paragraph 4(b) of this Lease, and insurance certificates evidencing that Lessee has obtained the insurance required pursuant to this Lease. Lessee shall not conduct its business in the Premises at any time during such Early Access Period. In addition to the foregoing, Lessor shall have the right to impose such reasonable additional conditions on Lessee's early entry as Lessor shall deem appropriate.

38. **General Provisions.**

(a) Nothing contained in this Lease shall be deemed or construed by the parties hereto or by any third person to create the relationship of principal and agent or of partnership or of joint venture of any association between Lessor and Lessee, and neither the method of computation of rent nor any other provisions contained in this Lease nor any acts of the parties hereto shall be deemed to create any relationship between Lessor and Lessee other than the relationship of landlord and tenant.

(b) Each and all of the provisions of this Lease shall be binding upon and inure to the benefit of the parties hereto, and except as otherwise specifically provided elsewhere in this Lease, their respective heirs, executors, administrators, successors, and assigns, subject at all times, nevertheless, to all agreements and restrictions contained elsewhere in this Lease with respect to the assignment, transfer, encumbering, or subletting of all or any part of Lessee's interest in this Lease.

(c) The captions of the paragraphs of this Lease are for convenience only and shall not be considered or referred to in resolving questions of interpretation or construction.

(d) This Lease is and shall be considered to be the only agreement between the parties hereto and their representatives and agents. All negotiations and oral agreements acceptable to both parties have been merged into and are included herein. There are no other representations or warranties between the parties and all reliance with respect to representations is solely upon the representations and agreements contained in this instrument.

(e) The laws of the State of California shall govern the validity, performance, and enforcement of this Lease. Notwithstanding which of the parties may be deemed to have prepared this Lease, this Lease shall not be interpreted either for or against Lessor or Lessee, but this Lease shall be interpreted in accordance with the general tenor of the language in an effort to reach an equitable result.

(f) Time is of the essence with respect to the performance of each of the covenants and agreements contained in this Lease.

(g) Recourse by Lessee for breach of this Lease by Lessor shall be expressly limited to the amount of Lessor's interest in the Property and the rents, issues, insurance, condemnation, and sales proceeds actually received by Lessor, and profits therefrom, and in the event of any such breach or default by Lessor, Lessee hereby waives the right to proceed against any other assets of Lessor or against any other assets of any manager or member of Lessor.

(h) Any provision or provisions of this Lease which shall be found to be invalid, void or illegal by a court of competent jurisdiction, shall in no way affect, impair, or invalidate any other provisions hereof, and the remaining provisions hereof shall nevertheless remain in full force and effect.

(i) This Lease may be modified in writing only, signed by the parties in interest at the time of such modification.

(j) Each party represents to the other that the person signing this Lease on its behalf is properly authorized to do so, and in the event this Lease is signed by an agent or other third party on behalf of either Lessor or Lessee, written authority to sign on behalf of such party in favor of the agent or third party shall be provided to the other party hereto either prior to or simultaneously with the return to such other party of a fully executed copy of this Lease.

(k) No binding agreement between the parties with respect to the Premises shall arise or become effective until this Lease has been duly executed by both Lessee and Lessor and a fully executed copy of this Lease has been delivered to both Lessee and Lessor.

(l) Lessor and Lessee acknowledge that the terms and conditions of this Lease constitute confidential information of Lessor and Lessee. Each party shall use its reasonable good faith efforts to prevent the dissemination orally or in written form, of this Lease, lease proposals, lease drafts, or other documentation containing the terms, details or conditions contained herein to any third party without obtaining the prior written consent of the other party, except to the attorneys, accountants, lenders, investors, potential investors, potential business or merger partners, potential subtenants and assignees, or other authorized business representatives or agents of the parties, or except to the extent required to comply with applicable laws, including any filings by Lessee pursuant to state or federal securities laws. Neither Lessor nor Lessee shall make any public announcement of the consummation of this Lease transaction without the prior approval of the other party. A violation of this subparagraph (1) shall not permit either party to terminate this Lease. Nothing in this Paragraph shall prevent Lessor from submitting a copy of this Lease to the Court in connection with any action to enforce the provisions hereof.

(m) Except as provided in Paragraph 22(c), the rights and remedies that either party may have under this Lease or at law or in equity, upon any breach, are distinct, separate and cumulative and shall not be deemed inconsistent with each other, and no one of them shall be deemed to be exclusive of any other.

(n) Lessee waives any claim for consequential damages which Lessee may have against Lessor for breach of or failure to perform or observe the requirements and obligations created by this Lease.

(o) Lessor and Lessee each agree to and they hereby do, to the maximum extent permitted by law, waive trial by jury in any action, proceeding or counterclaim brought by either of the parties hereto against the other on any matters whatsoever arising out of or in any way connected with this Lease, the relationship of Lessor and Lessee, Lessee's use or occupancy of the Premises and/or any claim of injury or damage, and any statutory remedy.

(p) In the event that the Lessee is permitted and elects to contract directly for the provision of electricity, gas and/or water services to the Premises with the third-party provider thereof (all in Lessor's reasonable discretion), Lessee shall within ten (10) business days following its receipt of written request from Lessor, provide Lessor with a copy of each requested invoice from the applicable utility provider. Lessee acknowledges that pursuant to California Public Resources Code Section 25402.10 and the regulations adopted pursuant thereto (collectively the "***Energy Disclosure Requirements***"), Lessor may be required to disclose information concerning Lessee's energy usage at the Building to certain third parties, including, without limitation, prospective purchasers, lenders and tenants of the Building (the "***Lessee Energy Use Disclosure***"). Lessee hereby (i) consents to all such Lessee Energy Use Disclosures, and (ii) acknowledges that Lessor shall not be required to notify Lessee of any Lessee Energy Use Disclosure. Further, Lessee hereby releases Lessor from any and all losses, costs, damages, expenses and liabilities relating to, arising out of and/or resulting from any Lessee Energy Use Disclosure. The terms of this Paragraph 36(p) of the Lease shall survive the expiration or earlier termination of this Lease.

(q) Lessee hereby waives any and all rights under and benefits of California Civil Code Section 1938 and acknowledges that neither the Building nor the Premises has undergone inspection by a Certified Access Specialist (CASp). Lessee shall not engage any CASp to inspect the Premises without Lessor's prior written consent, which shall not be unreasonably withheld, conditioned or delayed. Lessor may require that Lessee select a CASp approved by Lessor for any inspection of the Premises.

(r) This Lease shall not be recorded.

(s) This Agreement may be executed in counterparts. All executed counterparts shall constitute one agreement, and each counterpart shall be deemed an original. The parties hereby acknowledge and agree that electronic signatures, facsimile signatures or signatures transmitted by electronic mail in so-called "pdf' format shall be legal and binding and shall have the same full force and effect as if an original of this Agreement had been delivered. Lessor and

Lessee (i) intend to be bound by the signatures (whether original, faxed or electronic) on any document sent by facsimile or electronic mail, (ii) are aware that the other party will rely on such signatures, and (iii) hereby waive any defenses to the enforcement of the terms of this Agreement based on the foregoing forms of signature

(t) Whenever this Lease requires an approval, consent, determination, selection or judgment by either Lessor or Lessee, unless another standard is expressly set forth, such approval, consent, determination, selection or judgment and any conditions imposed thereby shall be reasonable and shall not be unreasonably withheld or delayed and, in exercising any right or remedy hereunder, each party shall at all times act reasonably and in good faith.

(u) Any expenditure by a party permitted or required under this Lease, for which such party demands reimbursement from the other party, shall be limited to the fair market value of the goods and services involved, shall be reasonably incurred, and shall be substantiated by documentary evidence available for inspection and review by the other party.

IN WITNESS WHEREOF, the Lessor and Lessee have duly executed this Lease as of the date first set forth herein.

"Lessor"

MENLO PREHC I, LLC,
a Delaware limited liability company

By: PRINCIPAL REAL ESTATE
INVESTORS, LLC, a Delaware limited
liability company, its authorized signatory

By /s/ Jeffrey D. Uittenbogaard
Jeffrey D. Uittenbogaard
Investment Director

By /s/ Kevin R. Anderegg
Kevin R. Anderegg
Assistant Managing Director

MENLO PREPI I, LLC,
a Delaware limited liability company

By: PRINCIPAL REAL ESTATE
INVESTORS, LLC, a Delaware limited
liability company, its authorized signatory

By /s/ Jeffrey D. Uittenbogaard
Jeffrey D. Uittenbogaard
Investment Director

By /s/ Kevin R. Anderegg
Kevin R. Anderegg
Assistant Managing Director

TPI INVESTORS 9, LLC,
a California limited liability company,

By /s/ John C. Tarlton
John C. Tarlton
Manager

"Lessee"

FORTY SEVEN, INC.,
a Delaware corporation

By: /s/ Jonathan MacQuitty
Jonathan MacQuitty
Chief Executive Officer

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EXHIBIT “A”

Legal Description of 1490 O’Brien Drive, Menlo Park CA

The land referred to in this Exhibit is situated in the State of California, County of San Mateo, City of Menlo Park and is described as follows:

PARCEL D:

PARCEL I:

Lot 10, as shown on that certain map entitled “MENLO BUSINESS PARK, MENLO PARK, SAN MATED COUNTY, CALIFORNIA”, filed in the office of the County Recorder of San Mateo County, State of California, on April 9, 1984 in Book 111 of Maps at pages 50, 51 and 52.

PARCEL II:

Easement for parking, ingress, egress, and landscaping on and across the following described Parcels:

BEGINNING at the Northwesterly corner of Lot 10 above described and running thence North 2° 12’ 04” West 80 feet; thence North 89° 11’ 17” East 280.08 feet; thence South 20 12’ 04” East 80 feet to the Northerly line of said Lot 10; thence along said last mentioned line, South 89° 11’ 17” West 280.08 feet to the point of the beginning.

A.P. No: 055-473-120 JPN 111 050 000 10 T
055-473-130

EXHIBIT “A”

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EXHIBIT “B”

MENLO BUSINESS PARK MASTER PLAN

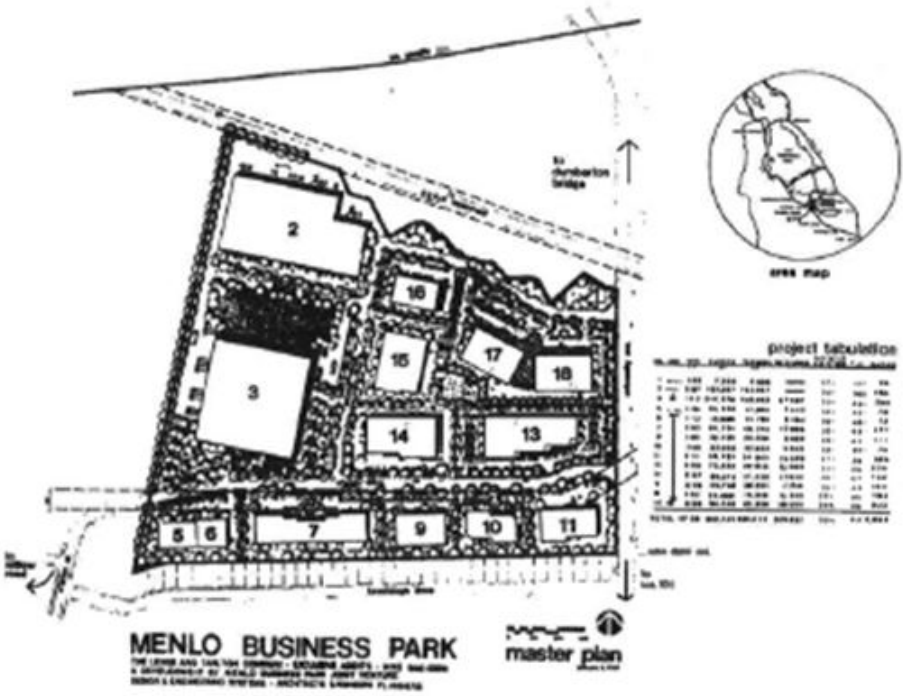

EXHIBIT “B”

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EXHIBIT “C”

Floor Plan of Premises

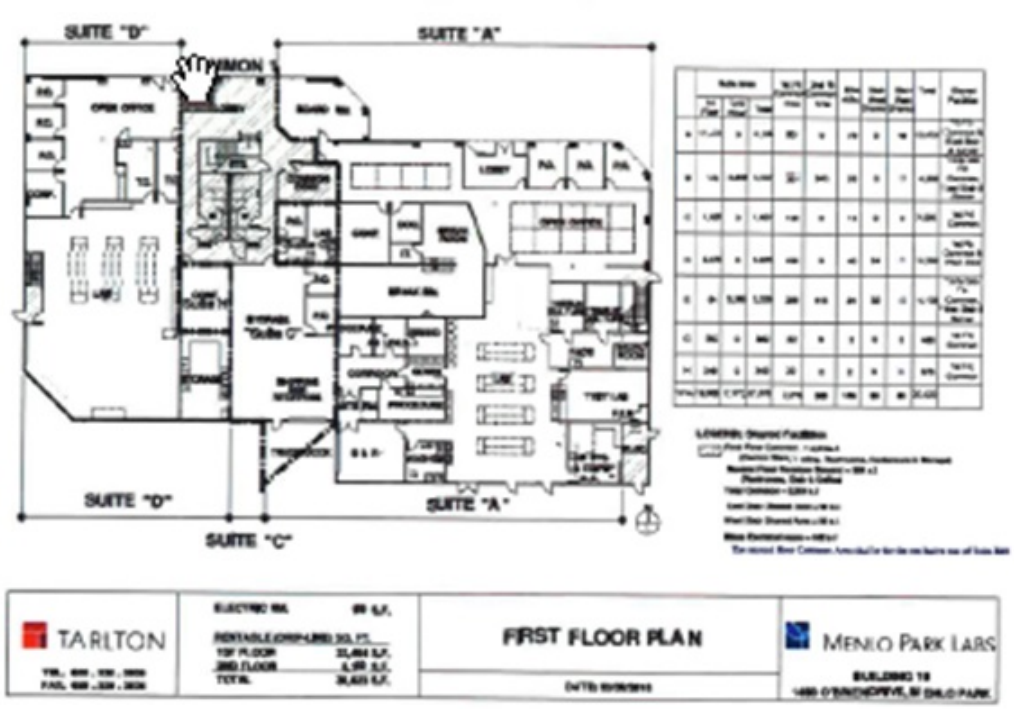

EXHIBIT “C”

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Floor Plan of Premises

(Continued)

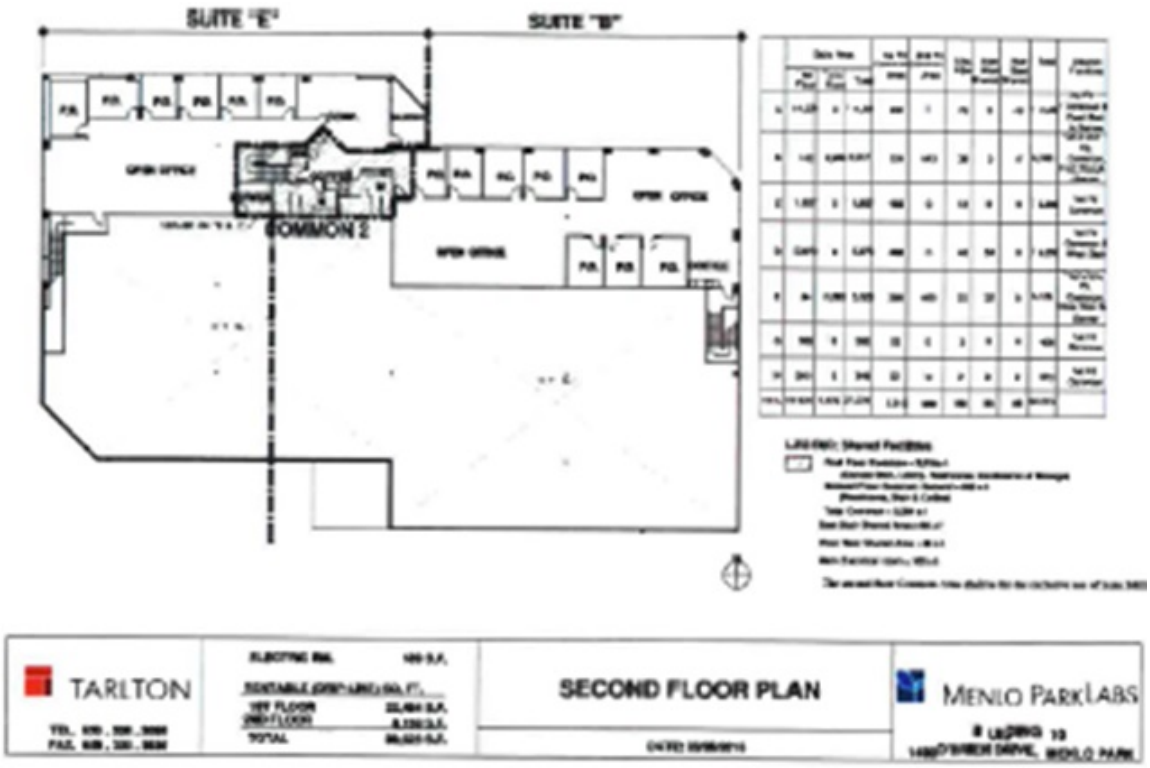

EXHIBIT “C”

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EXHIBIT “D”

Commencement Memorandum

To: _____ Date: _____20__

Re: Lease dated _____ ____, 20__ between MENLO PREHC I, LLC, a Delaware limited liability company, MENLO PREPI I, LLC, a Delaware limited liability company, and TPI Investors 9, LLC, a California limited liability company, hereafter collectively referred to as Lessor, and FORTY SEVEN, INC., a Delaware corporation, Lessee, concerning the Premises consisting of approximately twenty one thousand five hundred nineteen (21,519) rentable square feet in the building commonly known as 1490 O’Brien Menlo Park, California.

Gentlemen:

In accordance with the subject Lease, we hereby confirm the following:

1. That the Premises have been unconditionally accepted by Lessee, except as noted on the attached.

2. That Lessee has possession of the Premises and acknowledges that pursuant to the Lease, the initial term of the Lease commenced on _____ , 20__ (the “Commencement Date”), and shall expire on, 20__.

3. That in accordance with the provisions of the Lease, Monthly Base Rent and Additional Rent commenced to accrue on _____, 20__.

4. Thereafter, rent is due and payable in advance on the first day of each month during the term of the Lease. Rent checks should be made payable to Lessor, c/o Tarlton Properties, Inc., 1530 O’Brien Drive, Suite C Menlo Park, California 94025.

AGREED AND ACCEPTED

LESSEE: LESSOR:

EXHIBIT “D”

Table of Contents

EXHIBIT “E”

Lessee’s Hazardous Materials

GUIDE TO HAZARD QUANTITIES

	HAZARD	LBS	GALS	CUFT
3	Flammable liquid (main hazard)	0.00	11.69	
6.1	Toxic Solid or Liquid (main hazard)	0.17	0.01	0.00
8	Corrosive (main hazard)	0.01	1.97	0.00
9	Other miscellaneous hazard	4.01	12.28	0.00
10	Non-hazardous	0.69	0.00	0.00
12	Severely toxic	0.13	0.00	0.00
13	Moderately toxic	0.02	0.17	0.00
14	Slightly toxic	0.59	2.26	0.00
15	Flammable	0.00	3.89	0.00
16	Combustible	0.00	4.63	0.00
20	Water Reactive	0.01	0.00	0,00
21	Corrosive	0.01	0.30	0.00
22	Acid	0.56	1.69	0.00
23	Base	0.00	0.03	0.00
25	Carcinogen	0.01	3.26	0.00
27	Suspect carcinogen/mutagen	0.02	0.14	0.00
30	Unstable with age	0.00	1.06	0.00
32	Skin irritant	0.91	20.20	0.00
35	Stench	0.00	0.02	0.00
36	Sensitizer	0.63	1.67	0,00
37	Hepatotoxin	0.01	5.96	0.00
38	Nephrotoxin	0.01	6.98	0.00
39	Neurotoxin	0.07.	1.36	0.00
40	Blood and Hemapoietic toxin	0.06	0.03	0.00
41	Lung irritant	0.91	20.17	0.00
42	Eye irritant	0.91	20.15	0.00
43	Mucous membrane damage	0.02	2.00	0.00
44	Water Reactive corrosive	0.00	0.14	0.00
45	Skin-absorbable poison	0.12	3.18	0.00
56	Possible skin/eye/lung irritant	3.27	7.48	0,00
65	California Prop. 65 Carcinogen	0.02	1.14	0.00
66	California Prop. 65 Reproductive toxin	0.58	5.64	0.00
71	Peroxide Forming Material	0.00	1.06	0.00
72	Teratogen	0.02	0.15	0.00

EXHIBIT “E”

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HAZARDOUS MATERIAL INVENTORY

Qty	Unit	Chemical Name	Hazd	Other Hazards	Storage Grp
10	G	(+)-alpha-tocopherol acetate	Ø	not classified, look at MSDS	U
100	MG	(S)-( )-Camptothecin	6.1	13,27,56	G
500	ML	1-butanol	3	14,15,32,39,41,42	L
5	G	2,2’-azino-bis diammonium salt		not classified, look at MSDS	U
100	UNITS	2,2’-azino-bis diammonium salt	Ø	not classified, look at MSDS	U
25	ML	2-mercaptoethanol	3	13,16,21,35,43,45	L
500	ML	2-propanol	3	15,30,32,38,39,41,42,71	L
500	ML	2-propanol	3	15,30,32,38,39,41,42,71	L
500	G	20xSSC		not classified, look at MSDS	U
1	L	4% PFA		not classified, look at MSDS	u
5	MG	5-AZ.A-2’-DEOXYCYTIDINE	9	14,32,41,42	A
100	MG	5-Azacytidine	9	14,25,37,56,65	G
100	ML	accustain		not classified, look at MSDS	U
1	L	acetic acid	8	3,14,16,21,22,43	D
500	ML	acetone	3	15,32,37,38,41,42	L
500	ML	acetone	3	15,32,37,38,41,42	L
100	ML	acetonitrile	3	14,15,32,37,38,41,42	L
250	G	acetylsalicylic acid	9	14,22,32,36,41,42,66	D
100	G	Albumin	10		G
10	G	Albumin	10		G
100	G	albumin	10		G
1	MG	aprotinin bovine	9	56	G
5	G	Arsenic Trioxide	6.1	12,27,32,41,42,43,65,66 ,72	G
250	MG	beta-nicotinamide adenine dinucleotide 2’-phosphate reduced tetrasodium salt hydrate	9	56	G
16	MG	bis suberate	Ø	not classified, look at MSDS	U
1	GALLON	Bleach	9	32,41,42	E
1	GALLON	Bleach	9	32,41,42	E
1	GALLON	Bleach	9	32,41,42	E
1	GALLON	Bleach	9	32,41,42	E
1	GALLON	Bleach	9	32,41,42	E
1	GALLON	Bleach	9	32,41,42	E
2.83	L	Bleach	9	32,41,42	E
1	GAL	bouin’s fluid	8	14,22,25,36,43,65	D
5	G	caffeine	6.1	13,32,39,41,42	G
5	G	CIPROFLOXACIN	9	14,56	G
1	L	Clearity		not classified, look at MSDS	u
225	ML	column preparation solution		not classified, look at MSDS	U
1	L	Coomassie Brilliant Blue G-250	9	56	G
5	MG	cytochalasin D	6.1	12,27	G
100	MG	cytosine B-D-arabinofurandside free base	9	27,36,56,66	G
100	MG	cytosine B-D-Arabinofuranoside free base	9	27,36,56,66	G
25	G	D-( )-Trehalose, Dihydrate	9	56	G
100	G	D-( )-Trehalose , Dihydrate	9	56	G

EXHIBIT “E”

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HAZARDOUS MATERIAL INVENTORY

Qty	Unit	Chemical Name	Hazd	Other Hazards	Storage Grp
1	.QT	decalcifier	8	43	F
250	ML	Dimethyl Sulfoxide	3	16,36,56	L
100	ML	Dimethyl sulfoxide	3	16,36,56	L
100	ML	Dimethyl Sulfoxide Hybri-MaxSterile	3	16,36,56	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ethyl alcohol	3	15,25,32,37,38,41,42,66	L
1	PINT	ETHYL ALCOHOL 200 proof	3	15,25,32,37,38,41,42,66	L
1	MG	Fibronectin	10		G
100	ML	ficoll	9	56	G
100	ML	ficoll	9	56	G
100	ML	ficoll	9	56	G
200	ML	formaldehyde	3	14,16,27,32,36,37,38,41,42,6 5.66	L
100	ML	formamide	9	14,32,37,38,39,41,42,72	L
100	G	GELATIN	10		G
500	ML	Giemsa stain	3	14,15,32,41,42,66	L
500	ML	glycerol	9	56	L
500	ML	glycerol	9	56	L
4	L	HARLECO EMC Hemacolor Solution I	3	32,37,38,41,42,45,66	L
4	L	Harleco Hemacolor Solution 2	9	56	G
4	L	Harleco Hemacolor Solution 3	9	56	G
10	G	hexadimethrine bromide	6.1	56	G
1	GAL	histo-clear	3	16,32,41,42,56	L
1	GAL	histo-clear	3	16,32,41,42,56	L
1	GAL	histo-clear	3	16,32,41,42,56	L
1	GAL	histo-clear	3	16,32,41,42,56	L
100	ML	histopaque 1119-1	9	36,56	G
100	ML	histopaque 1119-1	9	36,56	G
100	ML	HISTOPAQUE-1077	9	36,56	G
100	ML	HISTOPAQUE-1077	9	36,56	G
100	ML	HISTOPAQUE-1077	9	36,56	G
100	ML	HISTOPAQUE-1077	9	36,56	G
100	ML	HISTOPAQUE-1077	9	36,56	G
100	ML	HISTOPAQUE-1077	9	36,56	G
100	ML	HISTOPAQUE-1077	9	36,56	G
100	ML	HISTOPAQUE-119	9	36,56	G
1	MG	human IgG1	10		G
1	MG	human IgG1 Kappa	10		G
1	MG	human IgG1 Kappa	10		G
1	MG	human IgG1 Kappa	10		G
500	ML	Hydrochloric Acid	8	12,22,43,44	F
500	ML	Hydrogen Peroxide, 3%	9	56	G
20	MG	IDH1	Ø	not classified, look at MSDS	U
1	MG	ionomycin	9	56	D

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HAZARDOUS MATERIAL INVENTORY

Qty	Unit	Chemical Name	Hazd	Other Hazards	Storage Grp
1	L	lsopropanol	3	15,30,32,38,39,41,42,71	L
1	L	Isopropanol	3	15,30,32,38,39,41,42,71	L
1	L	Isopropanol	3	15,30,32,38,39,41,42,71	L
500	G	Kaliphor EL, ph-range, 6.0-8.0	Ø	not classified, look at MSDS	U
100	MG	L-ascorbic acid	9	56	G
4	L	Methanol	3	32,37,38,41,42,45,66	L
4	L	Methanol	3	32,37,38,41,42,45,66	L
25	ML	Monothioglycerol	9	14,32,35,41,42	L
25	G	N,N’-dicyclohexylcarbodii mide	6.1	56	G
1	Unit	Neuraminidase	Ø	not classified, look at MSDS	U
375	ML	neutralization solution	Ø	not classified, look at MSDS	U
1	L	neutralizing solution		not classified, look at MSDS	U
100	UNIT	o-Phenylenediamine dihydrochloride	9	14,27,32,36,37,38,41,42,65	G
1	G	0-phenylenediami ne dihydrochloride	9	14,27,32,36,37,38,41,42,65	G
1	G	0-phenylenediamine tablets	6.1	13,27,32,36,37,40,41,42,45,6,5	A
250	ML	optiprep density gradient medium	9	56	G
1	GAL	overnight bone decalcifier		not classified, look at MSDS	U
100	MG	Oxypurinol	9	32,41,42	G
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36.41.42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
10	ML	paraformaldehyde	3	14,16,27,32,36,41,42,65	L
100	ML	paraformaldehye 40°/0	3	14,16,27,32,36,41,42,65	L
100	ML	pa raformaldehye 40’Y°	3	14,16,27,32,36,41,42,65	L
100	MG	pefabloc SC	8	43	G
1	G	PEG-SOD	Ø	not classified, look at MSDS	U
5	G	phenylephrine hydrochloride	Ø	not classified, look at MSDS	U
1	G	phenylmethanesulfonyl fluoride	6.1	13,20,21,43	B
1	MG	phorbol 12-myristate 13-acetate	9	32,41,42	G
1	MG	phorbol 12-myristate 13-acetate	9	32,41,42	‘ G
1	MG	phorbol 12-myristate 13-acetate	9	32,41,42	G
1	MG	Phorbol 12-myristate-13-acetate-	9	32,41,42	G
1	KG	phosal 50PG		not classified, look at MSDS	U
250	G	phosal 50Pg		not classified, look at MSDS	U
1	PINT	phosphate buffer	9	56	G
1	G	phosphate citrate buffer with sodium perborate capsules	6.1	32,41,42	G
50	UNITS	Phosphate-citrate buffer with sodium perborate	6.1	32,41,42	G
1262	MG	phosphate-citrate buffer with sodium perborate capsules	6.1	32,41,42	G
100	ML	phosphoric acid	8	14,22,37,40,43	F
100	ML	poly-l-lysine solution	9	56	G

EXHIBIT “E”

Table of Contents

HAZARDOUS MATERIAL INVENTORY

Qty	Unit	Chemical Name	Hazd	Other Hazards	Storage Grp
1	L	polyethylene glycol 400	9	14,56	G
1	L	ponceau s solution	9	32,41,42	G
100	ML	potassium chloride	9	32,42	G
25	G	potassium cyanide	6.1	12,39,40,45,56	c
100	ML	potassium hydroxide	8	14,23,43	c
1	ML	procrit 2000U		not classified, look at MSDS	U
1	ML	protease inhibitor cocktail	3	16,32,41,42	L
10	G	pyronin Y	9	56	G
50	MG	retinoic acid	9	14,56	D
50	MG	ribonuclease A	10		G
20	ML	rimadyl carprofen		not classified, look at MSDS	G
375	ML	RNASE solution	9	32,36,41	G
100	MG	sitagliptin phosphate monohydrate		not classified, look at MSDS	U
100	G	sodium succinate dibasic hexahydrate	9	32,41,42	G
1	L	Sulfuric acid, 2.5N	8	22,43	F
1	L	TAE	9	32,41,42	G
1	L	TAE	9	32,41,42	G
1	L	TAE	9	32,41,42	G
1	L	TAE	9	32,41,42	G
1	L	TAE	9	32,41,42	G
1	L	TAE	9	32,41,42	G
10	G	Tiron	9	32,41,42	G
100	ML	triton X-100	9	14,42,56	G
100	ML	triton X-100	9	14,42,56	G
100	ML	trizol	3	13,16,21,36,43	L
5	G	Trolox	9	14,32,41,42	D
100	ML	Tween 20	9	56	G
500	G	ultrapure formamide	9	14,32,37,38,39,41,42,72	L
1	G	verapami hydrochloride	6.1	13,56	G
375	ML	wash solution 1	9	32,41,42	G
75	ML	wash solution 2	3	14,15,32,37,39,41,42	L
1	PINT	wright giemsa stain	Ø	not classified, look at MSDS	U
5	MG	XAV939		not classified, look at MSDS	U
5	MG	Z-LEU-LEU-LEU-AL	9	56	G

GAS CYLINDERS

QTY	Size	Unit L	Gas	Molecular Formula	CAS	Physical State & Description	Description	Hazards	CGSL Hazard Class
4	K	244	Carbon Dioxide	CO2	124-38-9	Compressed gas	Colorless, odorless, tasteless	Simple asphyxiant	IV
2	K	244	Nitrogen	N2	7727-37-9	Compressed gas	Colorless, odorless, tasteless	Simple asphyxiant	IV
2	K	244	Oxygen	O2	7782-44-7	Compressed gas	Colorless, odorless, tasteless	Oxidizer	IV

12 cartridges Camping Gaz Cv360 Resealable Butane Gas Cartridge for benchtop bunsen burner

EXHIBIT “E”

EXHIBIT “F”

Description of Market Ready Improvements

In accordance with Paragraph 13(a), Lessor shall complete the Market Ready Improvements described herein. The costs of the Market Ready Improvements shall be shared by Lessor and Lessee as set forth in Paragraph 13(a) with Lessor to pay the costs to complete the Market Ready Improvements up to the amount of the Market Ready Improvement Allowance and Lessee to pay such Market Ready Improvement Shortfall as and when required pursuant to Paragraph 13(a).

Lessor shall complete the following Market Ready Improvements:

1. Demolition of certain interior walls to be agreed by Lessor and Lessee.
2. New flooring in lab and office area.
3. New paint for the office and labs.
4. Installation of Tbar ceiling in certain areas of the Premises with required sprinkler and firm alarm upgrades (Soffit excluded).
5. Installation of three windows on second floor of Premises

EXHIBIT “F”

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EXHIBIT “F-I”

Estimate of Market Ready Improvements and Tenant Improvements

(See Attached)

EXHIBIT “F-1”

Table of Contents

Tarlton Properties, Inc. Summary Sheet

Project:	47 Executives
Project Address:	1493 O'Brian Drive
Contractor:	CP Construction
Date:	3/29/2016
Budget Basis:	DES Sketch 1/18
Construction Area:	21,519 SF (approx)

Category	Sub-Total	Cost Per SF
Demo	$25,000	1.16
Walls	$50,000	2.32
Doors	$26,000	1.21
Glass	$20,000	0.93
Flooring	$94,000	4.37
Painting	$30,000	1.39
HVAC	$95,000	4.41
Electrical	$85,000	3.95
Plumbing	$50,000	2.32
T-Bar Ceiling	$30,000	1.39
Fire Sprinklers	$25,000	1.16
Fire Alarms	$20,000	0.93
Cabinets	$32,000	1.49
Saw-Cut	$15,000	0.70
Cold Box	$20,000	0.93
General Conditions	$20,000	0.93
Final Janitorial	$2,000	0.09
SUBTOTAL	$639,000	29.69
Overhead Profit & Insurance	$63,900	2.97
Base Costs****	$702,900	32.66
Confirmed Add/Alts	$66,000	3.07
SUB-TOTAL HARD COSTS***	$768,900	35.73
Contingency for Project Generated COs	$45,134	2.14
Architectural & Engineering **	$61,512	2.86
Permits/Fees	$26,912	1.25
Data Cabling (Allowance)	$19,500	0.91
Construction Management ***	$40,752	1.89
PROJECT TOTAL	$963,709	44.78
Market Ready Allowance (See Market Ready Budget for Detail)	$215,400	$10.01
Landlord TIA	$645,579	30.00
Tenant Contribution	$102,732	4.77
Add/Alts		
Double Front Lobby Doors	$25,000	
Second Layer of QuietRoc on Vivarium	$11,000	
Soffit at Rear Wall of Main Lab	$9,000	
Glass for 9 doors	$5,500	
Replace Ceiling Panels on Second Floor	$15,000	

** Estimate pending receipt of design proposal.
*** Calculated as a percentage of hard costs, per lease. This fee is for the coordination and oversight of the entire process, including entitlements, etc.
**** NIC any add for increased scope. Cubicles, office furniture, tenant process and other equipment NIC.

EXHIBIT "F-1"

EXHIBIT “G”

Description of Additional Tenant Improvements

In accordance with Paragraph 13(b), Lessor shall complete the Additional Tenant Improvements described herein. The costs of the Additional Tenant Improvements shall be shared by Lessor and Lessee as set forth in Paragraph 13(b) with Lessor to pay the costs to complete the Additional Tenant Improvements up to the amount of the Additional Tenant Improvement Allowance and Lessee to pay such Additional Tenant Improvement Shortfall as and when required pursuant to Paragraph 13(b).

1. Walls depicted on the following page of this Exhibit “G” (“Additional Tenant Improvement Walls”), which includes one layer of quiet rock on outer side of vivarium’s perimeter wall. The drawing on the following page is only intended to identify the Additional Tenant Improvement Walls and no other Market Ready Improvements or Additional Tenant Improvements.
2. Electrical adds, modifications and relocations.
3. Plumbing and sawcutting for additional sinks and gas piping as shown on drawing.
. (Excludes plumbing for restroom ADA upgrade)
4. Windows and glass at locations shown on drawing. (Excludes 3 windows upstairs)
5. Fire alarms
6. Fire sprinklers
7. Casework as shown on drawing(Fixed cabinets and fume hood relocation)
8. HVAC
9. Coldbox
10. Confirmed Add/Alts(See list below)
    Second layer of quiet to be installed on inner side of vivarium’s perimeter wall.
    Double front doors at the main front entrance.
    Glass installed in 9 office doors
    Replace ceiling panels on second floor
    Install soffit at rear window in the main lab

Depiction of Additional Tenant Improvement Walls

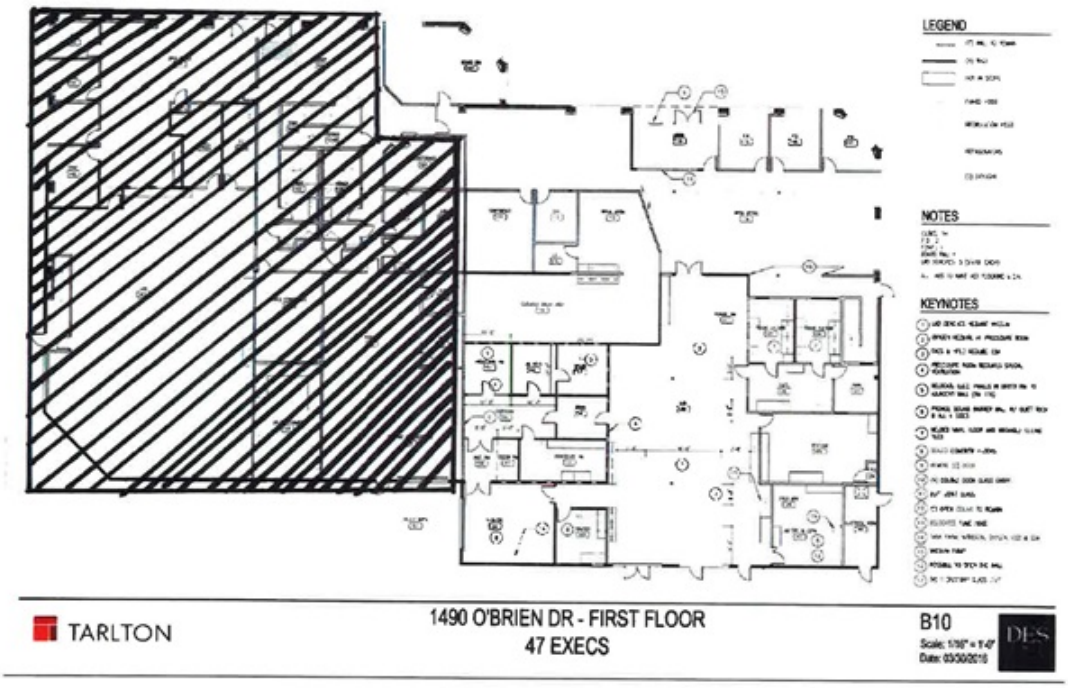

EXHIBIT "G"

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EXHIBIT "G"

Depiction of Additional Tenant Improvement Walls

(Continued)

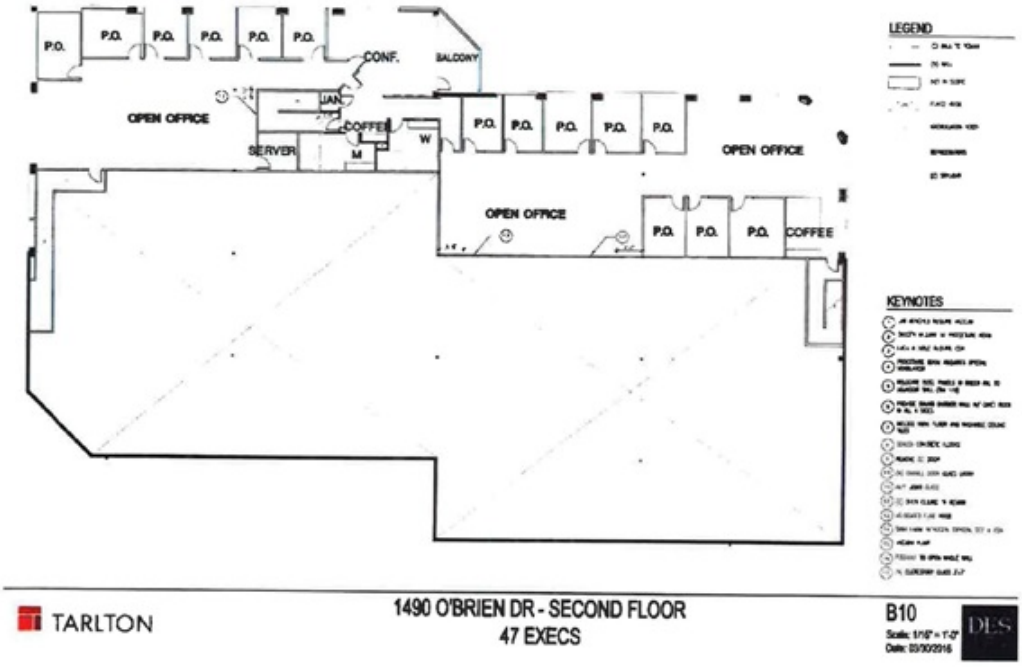

EXHIBIT "G"

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EXHIBIT "G"

Exhibit 16.1

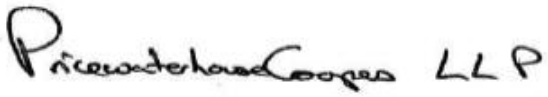
March 23, 2018

Securities and Exchange Commission
100 F Street, N.E.
Washington, DC 20549

Commissioners:

We have read the statements made by Forty Seven, Inc. pursuant to Item 304(a)(1) of Regulation S-K (copy attached), which we understand will be filed with the Securities and Exchange Commission as part of the Registration Statement on Form S-1 of Forty Seven, Inc. dated March 23, 2018. We agree with the statements concerning our Firm contained therein.

Very truly yours,



/s/ PricewaterhouseCoopers LLP

Attachment

PricewaterhouseCoopers LLP, 488 Almaden Boulevard, Suite 1800, San Jose, CA 95110
T: (408) 817 3700, F: (408) 817 5050, www.pwc.com/us

CHANGES IN INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Dismissal of Independent Registered Public Accounting Firm

We dismissed PricewaterhouseCoopers LLP, or PwC, as our independent registered public accounting firm on December 5, 2017. The decision to dismiss PwC was approved by our board of directors.

The report of PwC on the financial statements for 2016 contained no adverse opinion or a disclaimer of opinion, and was not qualified or modified as to uncertainty, audit scope or accounting principle. During 2016, and the subsequent period through December 5, 2017, (1) there were no disagreements (as that term is used in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) between us and PwC on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of PwC, would have caused PwC to make reference thereto in its report on our financial statements for the year ended December 31, 2016, and (2) there were no "reportable events" as such term is defined in Item 304(a)(1)(v) of Regulation S-K, except for the material weaknesses identified in our internal control over financial reporting related to our accounting for complex transactions and our timing of recognition of research and development expenses.

We have provided PwC with a copy of the disclosures set forth under the heading "Changes in Independent Registered Public Accounting Firm" included in this prospectus and have requested that PwC furnish a letter addressed to the SEC stating whether or not PwC agrees with statements related to them made by us under the heading "Change in Independent Registered Public Accounting Firm" in this prospectus. A copy of that letter is filed as Exhibit 16.1 to the registration statement of which this prospectus forms a part.