AGENUS INC
Form 10-K
March 16, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2016

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to

Commission File Number: 000-29089

Agenus Inc.

(exact name of registrant as specified in its charter)

Delaware	06-1562417
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

3 Forbes Road, Lexington, Massachusetts 02421

(Address of principal executive offices, including zip code)

Registrant’s telephone number, including area code:

(781) 674-4400

Securities registered pursuant to Section 12(b) of the Act:

Common Stock, $.01 Par Value	The NASDAQ Capital Market
(Title of each class)	(Name of each exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulations S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant’s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer,” and “smaller reporting 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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of voting stock held by non-affiliates of the registrant as of June 30, 2016 was: $287.3 million. There were 98,328,556 shares of the registrant’s Common Stock outstanding as of February 28, 2017.

DOCUMENTS INCORPORATED BY REFERENCE

None.

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Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K and other written and oral statements the Company makes from time to time contain forward-looking statements. You can identify these forward-looking statements by the fact they use words such as “could,” “expect,” “anticipate,” “estimate,” “target,” “may,” “project,” “guidance,” “intend,” “plan,” “believe,” “will,” “opportunity,” “future” and other words and terms of similar meaning. Forward-looking statements include discussion of future operating or financial performance. You also can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. Forward-looking statements involve risks and uncertainties that could delay, divert or change any of them, and could cause actual outcomes to differ materially. These statements relate to, among other things, our business strategy, our research and development, our product development efforts, our ability to commercialize our product candidates, the activities of our licensees, our prospects for initiating partnerships or collaborations, the timing of the introduction of products, the effect of new accounting pronouncements, our future operating results and our potential profitability, availability of additional capital as well as our plans, objectives, expectations, and intentions.

Although we believe we have been prudent in our plans and assumptions, no assurance can be given that any goal or plan set forth in forward-looking statements can be achieved, and readers are cautioned not to place undue reliance on such statements, which speak only as of the date of this report. We undertake no obligation to release publicly any revisions to forward-looking statements as a result of new information, future events or otherwise.

The risks identified in this Annual Report on Form 10-K, including, without limitation, the risks set forth in Part I-Item 1A. “Risk Factors,” could cause actual results to differ materially from forward-looking statements contained in this Annual Report on Form 10-K. We encourage you to read those descriptions carefully. Such statements should be evaluated in light of all the information contained in this document.

PART I

Item 1. Business

Our Business

We are a clinical-stage immuno-oncology ("I-O") company focused on the discovery and development of therapies that engage the body's immune system to fight cancer. Our approach to cancer immunotherapy involves a diverse portfolio consisting of antibody-based therapeutics, adjuvants and cancer vaccine platforms. We, in collaboration with our partners, have developed a number of immuno-modulatory antibodies against important nodes of immune regulation. These include antibodies targeting CTLA-4, GITR and OX40 that are in clinical development, and our anti-PD-1 antibody anticipated to enter the clinic in the first half of 2017. Our discovery pipeline includes a number of proprietary checkpoint modulating ("CPM") antibodies against innovative targets such as TIGIT and 4-1BB (also known as CD137). We believe that tailored combination therapies are essential to combat some of the most resistant cancers. Accordingly, our immune education strategy focuses on pursuing antibodies as well as vaccine candidates in conjunction with adjuvants. We believe we are uniquely positioned to treat cancers because we have a portfolio of product candidates and technologies that spans across these multiple therapeutic categories.

We are a vertically integrated biotechnology company equipped with a suite of technology platforms and a good manufacturing practice ("GMP") manufacturing facility with the capacity to support early phase clinical programs. In addition to our broad and synergistic pipeline, we have established a world-class I-O research and clinical development team, including experts that have contributed to the development, in-licensing and registrational trajectory of staple antibody therapeutics such as Yervoy®, Avelumab and Humira®, among others.

Our common stock is currently listed on The Nasdaq Capital Market under the symbol "AGEN."

Our Vision

We envision combination therapies as the cornerstone of future oncology treatment regimens. In addition, we believe that a balanced portfolio of product candidates should focus on both validated targets as well as more novel, innovative targets. CTLA-4 and PD-1 antagonists have recently been recognized as the first clinically validated immunotherapy combination. Based on this finding, we believe that these two antibodies acting in combination, as well as other more innovative immuno-modulatory antibodies or immune education approaches, could be a focal point of the next generation of I-O combinations. Thus, we plan to pursue our proprietary PD-1 and CTLA-4 antibody programs aggressively through the clinic, and follow on with future combination therapies that integrate our cancer vaccine platforms as well as our antibodies against novel targets. One of our core visions is to substantially expand the small patient populations that benefit from existing immune-based therapies.

Our Strategy

The breadth of our portfolio gives us the ability to combine our antibodies, vaccines, and adjuvants to explore and optimize cancer treatments. Our strategy is to develop these agents either alone or in combinations to yield best-in-class treatments. In addition, our clinical development strategy is tailored to achieve our goal of becoming a commercial organization in the next four years. We are pursuing a tiered risk profile and targeting compressed timelines for regulatory filing. We plan to adopt a rapid and de-risked path to registration by co-targeting PD-1 and CTLA-4 in indications where blockade of these checkpoints has been found efficacious. In addition, we plan to pursue novel breakthrough indications to further expedite market entry. Second line cervical cancer is one such indication where we believe there is a niche opportunity in certain markets. In addition, our programs are anticipated to pose moderate regulatory risk and will entail: 1) pursuit of optimal I-O antibody and vaccine combinations with CTLA-4 and/or PD-1 targeted antibodies as the backbone; 2) advancement of our antibody programs against innovative targets, such as 4-1BB and TIGIT, to the clinic alone or in combination with other products in our pipeline; and 3) continued advancement of vaccine candidate opportunities. Part of our strategy is to develop and commercialize some of our product candidates by continuing our existing arrangements with academic and corporate collaborators and licensees and by entering into new collaborations.

Our Assets

Our I-O assets include antibody-based therapeutics, adjuvants and cancer vaccine platforms. We believe that we are the third company, along with Bristol-Myers Squibb (“BMS”) and AstraZeneca, to have a CTLA-4 checkpoint inhibitor in the clinic. Once our PD-1 antagonist is in clinical development, we could be the only company, other than BMS, to feature both CTLA-4 and PD-1 assets in its clinical pipeline. To complement our portfolio of foundational CPMs, we have a number of antibody programs against more innovative targets involved in immune modulation. These include 4-1BB and TIGIT as well as a number of undisclosed targets with a potential to be best-in-class or first-in-class antibody-based therapeutics. We also have three proprietary cancer vaccine platforms: Prophage™ vaccine, AutoSynVax™ vaccine (“ASV”) and PhosphoSynVax™ vaccine (“PSV”). Additionally, our autologous

(Prophage) and synthetic (ASV™ and PSV)™ vaccine candidates are protein complexes that consist of heat shock proteins ("HSPs") and peptides that are either tumor-derived or tailor-made based on the unique genomic fingerprint of a patient's tumor, respectively. Highlighting our combination treatment approach, a Phase 2 clinical trial sponsored by the National Cancer Institute ("NCI") is currently in progress to evaluate the efficacy of Prophage in combination with Merck's PD-1 antagonist, Keytruda®, in patients with newly diagnosed glioblastoma ("ndGBM"). Our QS-21 Stimulon adjuvant is partnered with GlaxoSmithKline plc. ("GSK") and is a key component in multiple GSK vaccine programs that have a prophylactic or therapeutic impact in a variety of infectious diseases and cancer.

Our Antibody Discovery Platforms and CPM Programs

Checkpoint antibodies regulate immune response against pathogens that invade the body and are achieving positive outcomes in a number of cancers that were untreatable only a few years ago. Two classes of checkpoint targets include:

1. inhibitory checkpoints that help suppress an immune response in order to prevent excessive immune reaction resulting in undesired inflammation and/or auto-immunity, and
2. stimulatory checkpoints that can enhance or amplify an antigen-specific immune response.

We possess a suite of antibody discovery platforms that have enabled us to improve the speed, cost and quality of our product development efforts. In addition to the use of our antibody discovery platforms that are designed to drive the discovery of future CPM antibody candidates, we are planning to employ a variety of techniques to identify and optimize our antibody candidates. For example, while we have been primarily focused on monoclonal antibodies over the past two years, we are beginning to explore multispecific antibody technologies, collaborations, and product candidate opportunities.

In April 2016, we presented preclinical data at the American Association for Cancer Research ("AACR") conference for our anti-CTLA-4 programs, AGEN1884 and AGEN2041 (both partnered with Recepta Biopharma SA ("Recepta") for certain South American territories). The presentations covered preclinical pharmacology for each antibody, including detailed studies that demonstrate AGEN1884 and AGEN2041 bind to CTLA-4 expressed on T cells and potently block engagement of CD80 and CD86, leading to enhanced T cell responsiveness. We also reported data that AGEN1884 or AGEN2041 augmented vaccine response in primates. This finding demonstrates that both antibodies are functional and we believe exemplifies their utility in combination with therapeutic cancer vaccines. In 2017 at AACR, we plan to present evidence that our clinical-stage CTLA-4 antagonist (AGEN1884) combines effectively with our clinic-ready PD-1 antagonist antibody (AGEN2034) and other antibodies targeting the PD-1/PD-L1 axis to promote superior T cell immune responses compared to either monotherapy. Furthermore, in mice a surrogate CTLA-4 targeted antibody augments vaccine-induced immune responses when combined with our ASV vaccine candidate. In April 2016, we also announced that the first patient had been dosed in our Phase 1 clinical trial of AGEN1884. The open-label, multicenter trial in patients with advanced or refractory cancer is designed to evaluate the safety of AGEN1884 and determine the estimated maximum tolerated dose. In 2017, we plan to initiate combination trials with our clinical stage CTLA-4 and PD-1 antagonists and define the optimal dose of the combination for pivotal trials.

In the past year there has been third party validation of the clinical benefit of antibody combination approaches, most specifically the importance of targeting CTLA-4 as the backbone of these combination strategies. Regimens involving lower and less frequent dosing of CTLA-4 antibody in combination with PD-1 inhibitors have been shown to yield more pronounced clinical efficacy than either agent alone. Importantly, this was achieved without the added toxicity. Many experts believe that the combination of CTLA-4 antibodies with PD-1 blockade using a tolerable dosing regimen is a foundational I-O regimen. We expect our anti-PD-1 antibody candidate, AGEN2034, to enter the clinic in the first half of 2017.

We are planning to develop our anti-PD-1 antibody as a monotherapy as well as in combination with our anti CTLA-4 antibody in second line cervical cancer. Chemoradiation therapy is the current standard of care for earlier lines of treatment. In distant metastatic patients, platinum based chemotherapy, with or without bevacizumab, is the current standard of care. However, there are no established therapies for second line cervical cancer and the five-year survival rate of recurrent/metastatic cervical cancer is 16.8%. Cervical cancer is a malignancy that is driven by the persistent infection by certain types of human papilloma virus ("HPV"). Anti PD-1/PD-L1 have shown to be active in virally induced disease and, specifically, HPV induced squamous cell cancer of the head and neck. In these tumors, anti PD-1 blockade might induce objective responses as well as prolongation of survival.

In addition to pursuing validated targets, our discovery pipeline also includes a number of antibody programs against innovative immunomodulatory targets such as TIGIT and 4-1BB (also known as CD137). 4-1BB is a co-stimulatory molecule involved in mediating recruitment of immune infiltrates into the tumor microenvironment. We have selected a lead agonist that targets this molecule, which exhibits compelling pharmacologic properties and could confer clinical advantages and poise this molecule to be a best-in-class therapeutic. TIGIT is a co-inhibitory checkpoint expressed on innate and adaptive immune cell populations. Preclinical models indicate that antibody-mediated TIGIT blockade not only serves to stimulate lymphocyte activation and cytotoxic activity, but also synergizes with PD-1/PD-L1 inhibition to promote anti-tumor immunity. We have selected a lead molecule for this target that is advancing through preclinical development.

Partnered CPM Programs

In January 2015, we entered into a broad, global alliance with Incyte Corporation ("Incyte") to discover, develop and commercialize novel immuno-therapeutics using our antibody platforms. The collaboration was initially focused on four CPM programs targeting GITR, OX40, TIM-3 and LAG-3, and in November 2015, we expanded the alliance by adding three novel undisclosed CPM targets. Pursuant to the terms of the original agreement, Incyte made non-creditable, non-refundable upfront payments to us totaling $25.0 million. Targets under the collaboration were designated as either profit-share programs, where the parties shared all costs and profits equally, or royalty-bearing programs, where Incyte funded all costs, and we were eligible to receive milestones and royalties. Under the original collaboration agreement, programs targeting GITR, OX40 and two of the undisclosed targets were designated as profit-share programs, while the other targets were royalty-bearing programs. For each profit-share product, we were eligible to receive up to $20.0 million in future contingent development milestones. For each royalty-bearing product, we were eligible to receive (i) up to $155.0 million in future contingent development, regulatory, and commercialization milestones and (ii) tiered royalties on global net sales at rates generally ranging from 6%-12%. Concurrent with the execution of the original collaboration agreement, we and Incyte also entered into a stock purchase agreement pursuant to which Incyte purchased approximately 7.76 million shares of our common stock for an aggregate purchase price of $35.0 million, or approximately $4.51 per share. In February 2017, we and Incyte amended the terms of the original collaboration agreement to, among other things, convert the GITR and OX40 programs from profit-share to royalty-bearing programs with royalties on global net sales at a flat 15% rate for each. In addition, the profit-share programs relating to two undisclosed targets were removed from the collaboration, with one reverting to Incyte and one to Agenus (the latter being our TIGIT antibody program), each with royalties on global net sales at a flat 15% rate. The remaining three royalty-bearing programs in the collaboration targeting TIM-3, LAG-3 and one undisclosed target remain unchanged, and there are no more profit-share programs under the collaboration. Pursuant to the amended agreement, we received accelerated milestone payments of $20.0 million from Incyte related to the clinical development of INCAGN1876 (anti-GITR agonist) and INCAGN1949 (anti-OX40 agonist). Across all programs in the collaboration, we are now eligible to receive up to a total of $510.0 million in future potential development, regulatory and commercial milestones. Concurrent with the execution of the amendment agreement, we and Incyte entered into a separate stock purchase agreement whereby Incyte purchased an additional 10 million shares of Agenus common stock at $6.00 per share. Immediately following the transaction, Incyte owned approximately 18.1% of our outstanding common stock.

At the April 2016 AACR conference, we also presented data for two antibody candidates under the Incyte collaboration: INCAGN1949 (anti-OX40 agonist) and INCAGN1876 (anti-GITR agonist). The presentations covered preclinical pharmacology for each antibody, including optimized features. INCAGN1949 and INCAGN1876 have been optimized to mediate receptor forward signaling under suboptimal T-cell receptor ("TCR") stimulatory conditions, leading to enhanced agonistic properties and increased production of TNF and IFN by immune effector cells. At AACR 2017, we are presenting additional preclinical data for both INCAGN1949 (anti-OX40 agonist) and INCAGN1876 (anti-GITR agonist) which further characterize these antibody candidates. In June 2016, we announced that the first patient was dosed in a Phase 1/2 clinical trial of INCAGN1876. The open-label, dose-escalation portion of the trial is evaluating the safety and tolerability of INCAGN1876 in patients with advanced or metastatic solid tumors and will determine the pharmacologically active and/or maximum tolerated dose of INCAGN1876. Part 2 of the trial is planned to further evaluate the recommended dose of INCAGN1876 in selected tumor types, including advanced or metastatic endometrial adenocarcinoma, melanoma, non-small cell lung cancer and renal cell carcinoma. In addition, in November 2016 we announced the commencement of a Phase 1/2 clinical trial of INCAGN1949. The open-label, dose-escalation portion of the trial is evaluating the safety and tolerability of INCAGN1949 in patients with advanced or metastatic solid tumors and will determine its pharmacologically active and/or maximum tolerated dose. Part 2 of the trial is planned to evaluate the recommended dose of INCAGN1949 in multiple tumor types.

In addition, in April 2014, we entered into a collaboration and license agreement with Merck to discover and optimize fully-human antibodies against two undisclosed CPM targets for which Merck could elect whether or not to proceed into development. Merck selected a lead product candidate against one of the undisclosed Merck targets to advance

into preclinical studies, leading to a $2.0 million milestone payment that we received in May 2016. Under the terms of the agreement, Merck is responsible for all future product development expenses for the selected antibody candidate. We are eligible to receive up to an additional $99.0 million in milestone payments, in addition to royalties on any worldwide product sales.

Recently we also formalized a research collaboration with UCB Biopharma SPRL (“UCB”). The collaboration leverages the antibody engineering capabilities of UCB and Agenus in the area of novel bispecific antibody discovery. We also continue to collaborate with Recepta on the development of antibodies targeting CTLA-4 and PD-1, and we expect to continue exploring additional future collaborations.

Vaccine Platforms

Our current vaccine platforms for the treatment of cancer, and potentially other indications, include our HSP based Prophage vaccine candidates, and our synthetic vaccine candidates, ASV and PSV.

HSPs are a group of proteins present at high levels in most mammalian cells. Their expression is increased when cells are exposed to elevated temperatures or other stresses. A potential role for HSPs in regulating immune responses was revealed when it was first discovered that HSP complexes purified from cancer cells produced immunity to cancer, whereas HSP complexes purified from normal tissue did not. This discovery led to the understanding that HSPs bind to and carry a broad sampling of the protein environment within cells, including mutant proteins that might arise from genetic mutations within cancer cells. It was further shown that immunization with HSP complexes purified from tumors generate both CD4 and CD8 positive T-cell immune responses. These activated T-cells target the cancer cells of the tumor, from which the HSP complexes were derived, for destruction. Thus HSP complexes isolated from cancer cells are particularly effective in mediating successive immunization. Since HSPs are expressed in all tumor cells, the approach of immunizing with the HSP complexes isolated from a particular tumor is broadly applicable to a variety of cancer types. We believe that we pioneered the use of gp96, an HSP, purified from a patient's own tumor tissue, as a way to make vaccines tailored to eliciting immune recognition and potential immune control of an individual patient's cancer.

Because cancer is a highly variable disease from one patient to another, due to extensive mutation of cancer cells, we believe that a patient-specific vaccination approach is optimal to generate a more robust and targeted immune response against the disease.

Prophage Vaccine Candidates

Our Prophage cancer vaccine candidate, HSPPC-96, is an autologous cancer vaccine therapy derived from cancer tissues that are surgically removed from an individual patient. As a result, a Prophage vaccine contains a broad sampling of potentially antigenic mutant proteins from each patient's own tumor. Prophage vaccines are designed to program the body's immune system to target only the specific cells that express those mutant antigens, thereby reducing the risk that the body's immune response against the tumor after vaccination will also affect healthy tissue and cause debilitating side effects often associated with chemotherapy and radiation therapy.

Enhancing immune response using personalized vaccines, particularly in combination with CPMs, could be beneficial in cancers where a low number of mutant proteins leads to weakened immunogenicity. Glioblastoma ("GBM") represents one such example and is the most common primary malignant brain tumor, accounting for the majority of diagnoses of malignant cancers of the brain. GBM is a cancer affecting the central nervous system arising from glial cells that become malignant, and is at present a rapidly fatal disease.

To date, more than 1,000 patients have been treated with Prophage vaccines in clinical trials, covering a broad range of cancer types, and no serious immune-mediated side effects have been observed. The results of these trials have been published and/or presented at scientific conferences. These results indicate observable clinical and/or immunological activity across many types of cancer. Taken together, these trials show promising evidence of clinical benefit from Prophage vaccines and also establish that such vaccines can be effectively manufactured under current good manufacturing practices ("cGMP"), conditions and internationally distributed.

In January 2017, we announced a clinical trial collaboration with the NCI. The double-blind, randomized controlled Phase 2 trial will evaluate the effect of Prophage in combination with pembrolizumab (Keytruda®) in patients with ndGBM. The trial is being conducted by the Brain Tumor Trials Collaborative ("BTTC"), a consortium of top academic centers led by Dr. Mark Gilbert, Chief of the Neuro-Oncology Branch at the NCI Center for Cancer Research. The trial consists of two-arms with one arm receiving pembrolizumab as a monotherapy and a second arm receiving both Prophage and pembrolizumab in combination. Forty-five patients are being randomly assigned to each arm. Under this collaboration, we are suppling Prophage, Merck is providing pembrolizumab (Keytruda®) and NCI and BTTC member sites are recruiting patients and conducting the trial.

At the American Society of Clinical Oncology ("ASCO") conference in 2015, we announced final results from a single-arm, multicenter, open-label Phase 2 clinical trial in 46 patients with ndGBM treated with our Prophage

vaccine in combination with standard of care: surgical resection, radiation and temozolomide. These results showed that patients treated with Prophage vaccine had a median progression free survival ("PFS") of 18 months, with 33% of patients progression free at 24 months and indicate improvement compared to historical data for patients treated with the standard of care (PFS of six to nine months). Median overall survival ("OS"), the primary endpoint of the trial, was 23.8 months and remains durable in patients treated with Prophage. These data were published on February 13, 2017, in a manuscript in Clinical Cancer Research, a journal of the American Association for Cancer Research.

In addition to studies with ndGBM patients, we also previously reported data on recurrent GBM patients treated with Prophage. In December 2013, we published our Phase 2 results demonstrating that more than 90% of the patients treated with Prophage vaccine were alive at six months after surgery and 30% were alive at 12 months after surgery. Additionally, the median overall survival was approximately 11 months. This compared favorably to historical control data with expected median survival for recurrent GBM patients of three to nine months. The data were published in a manuscript in Neuro-Oncology, the official journal of the Society of Neuro-Oncology. In addition, the Alliance for Clinical Trials in Oncology, a cooperative group of the NCI, was conducting a randomized Phase 2 clinical trial of the Prophage vaccine in combination with bevacizumab in 222 patients with surgically resectable, recurrent GBM. This study was recently closed following an interim analysis that determined the study was unlikely to demonstrate that the vaccine in combination with bevacizumab would lead to a better survival than bevacizumab as a monotherapy.

ASV Vaccine Platform

In June 2014, we reported positive results from a Phase 2 clinical trial with our synthetic HerpV vaccine candidate for genital herpes. This candidate was the first potential recombinant, off-the-shelf application of our HSP technology. The study demonstrated that the HSP70-peptide-QS21 vaccine produced significant CD4 and CD8 positive T-cell responses to antigenic peptides, and that the side effects were mild to moderate and tolerable. We decided not to advance with this technology in herpes but, based on our findings, we launched our ASV synthetic cancer vaccine program in 2015. We remain on target to initiate a clinical trial for this program in the first half of 2017.

The objective of our ASV program is to develop a fully synthetic, yet individualized patient specific vaccine targeting the neo-epitope landscape of each patient's cancer. Mutation-based neo-epitopes, which will form the basis for the immunogens used in ASV, are almost always particular to a given patient. Therefore, ASV is a largely individualized vaccine product. With a small amount of a patient's tumor as a sample, our ASV program is designed to utilize next generation sequencing technologies coupled with complex bioinformatics algorithms to identify mutations in a tumor's DNA and RNA. Once these mutations have been identified, we will manufacture synthetic peptides encoding these neoepitopes, load these peptides on to our recombinant HSP70 and deliver a fully synthetic polyvalent vaccine to the patient. We believe that the HSP70 platform will shuttle the mutated peptides to sites where they are recognized by the immune system and elicit a cytotoxic and helper T cell response in patients with cancer. We expect that once identified, these tumor cells will be killed and cleared by the immune system.

PSV Vaccine Platform

PSV is a vaccine candidate designed to induce immunity against a novel class of tumor specific neoepitopes: those arising from dysregulated phosphorylation of various proteins in malignant cells, rather than from tumor-specific mutations producing abnormal protein sequences. In all cells, protein sequences can have post-translational modifications, such as becoming phosphorylated (a phosphate group is added to particular amino acid residues) that can be associated with cellular functions such as signaling. In cancer cells, this process can become dysregulated and proteins that are not normally phosphorylated can become phosphorylated and proteins that are phosphorylated can become phosphorylated at alternative sites. Some of these mis-phosphorylated peptides can be processed by the cellular machinery that leads to antigen presentation on the surface of cells, and there they can potentially be recognized by specific cytotoxic T cells. Such phosphoprotein neoepitopes have been associated with different forms of cancer, including but not limited to lung cancer, specific leukemias, ovarian cancer, colon cancer and others. PSV is intended to induce cellular immunity to abnormal phosphopeptide neoepitopes that are characteristic of these various forms of cancer. Phosphopeptides (or phosphopeptide analogues) can be synthesized and complexed with HSP70, using an approach analogous to that used in the generation of our previous HerpV vaccine candidate. HerpV demonstrated good cellular and humoral responses to synthetic peptide immunogens complexed with HSP70 in a placebo-controlled Phase 2 study. We believe that similar responses can be obtained to phosphopeptide or phosphopeptide analogues bound to HSP70 when used as vaccines. Phosphorylation-based neoepitopes can apparently be found on specific types of cancer in many patients, suggesting that the immunogens used in PSV, while tailored to a particular patient, will be useful in other patients with related forms of cancer. Studies to optimize the immunogens

to be used in PSV are ongoing.

QS-21 Stimulon Adjuvant

QS-21 Stimulon is an adjuvant, which is a substance added to a vaccine or other immunotherapy that is intended to enhance an immune response to the target antigens. QS-21 Stimulon is a natural product, a triterpene glycoside, or saponin, purified from the bark of the Chilean soapbark tree, Quillaja saponaria. QS-21 Stimulon has the ability to stimulate an antibody-mediated immune response and has also been shown to activate cellular immunity. It has become a key component in the development of investigational preventive vaccine formulations across a wide variety of diseases. These studies have been carried out by academic institutions and pharmaceutical companies in the United States and internationally. A number of these studies have shown QS-21 Stimulon to be significantly more effective in stimulating immune responses than aluminum hydroxide or aluminum phosphate, the adjuvants most commonly used in approved vaccines in the United States today.

Partnered QS-21 Stimulon Programs

In July 2006, we entered into a license agreement and a supply agreement with GSK for the use of QS-21 Stimulon (the "GSK License Agreement" and the "GSK Supply Agreement," respectively). In January 2009, we entered into an Amended and Restated Manufacturing Technology Transfer and Supply Agreement (the "Amended GSK Supply Agreement") under which GSK has the right to manufacture all of its requirements of commercial grade QS-21 Stimulon. GSK is obligated to supply us, or our affiliates, licensees, or customers, certain quantities of commercial grade QS-21 Stimulon for a stated period of time. In March 2012, we entered into a First Right to Negotiate and Amendment Agreement amending the GSK License Agreement and the Amended GSK Supply Agreement to clarify and include additional rights for the use of QS-21 Stimulon (the "GSK First Right to Negotiate Agreement"). In addition, we granted GSK the first right to negotiate for the purchase of Agenus or certain of our assets, which just recently expired in March 2017. As consideration for entering into the GSK First Right to Negotiate Agreement, GSK paid us an upfront, non-refundable payment of $9.0 million, $2.5 million of which is creditable toward future royalty payments. We refer to the GSK License Agreement, the Amended GSK Supply Agreement and the GSK First Right to Negotiate Agreement collectively as the GSK Agreements. As of December 31, 2016, we had received $23.3 million of a potential $24.3 million in upfront and milestone payments under the GSK Agreements. Under the terms of the Agreement, we are generally entitled to receive 2% royalties on net sales of prophylactic vaccines for a period of 10 years after the first commercial sale of a resulting GSK product, with some exceptions; however, we have already monetized part of this potential royalty stream as discussed in more detail below. The GSK License and Amended GSK Supply Agreements may be terminated by either party upon a material breach if the breach is not cured within the time specified in the respective agreement. The termination or expiration of the GSK License Agreement does not relieve either party from any obligation which accrued prior to the termination or expiration. Among other provisions, the milestone payment obligations survive termination or expiration of the GSK Agreements for any reason, and the license rights granted to GSK survive expiration of the GSK License Agreement. The license rights and payment obligations of GSK under the Amended GSK Supply Agreement survive termination or expiration, except that GSK's license rights and future royalty obligations do not survive if we terminate due to GSK's material breach unless we elect otherwise.

QS-21 Stimulon is a key component included in certain of GSK's proprietary adjuvant systems, and we believe that a number of GSK's vaccine candidates currently in development are formulated using adjuvant systems containing QS-21 Stimulon, including its shingles and malaria vaccine candidates which have successfully completed Phase 3 clinical trials. In 2016, GSK filed for approval of its shingles vaccine candidate in the United States, European Union and Canada, and is expected to file for approval in Japan in 2017. In December 2014, GSK reported that its ZOE-50 Phase 3 clinical trial evaluating the efficacy of its shingles vaccine candidate, HZ/su, met its primary endpoint. Analysis of the primary endpoint showed that HZ/su reduced the risk of shingles by 97.2% in adults aged 50 years and older compared to placebo. In addition, GSK has reported two positive Phase 3 clinical trials of its RTS,S malaria vaccine candidate containing QS-21 Stimulon, which was accepted by the EMA for regulatory review in July 2014. Assuming regulatory approval, the first products containing QS-21 Stimulon are anticipated to be launched by GSK in 2018. We do not incur clinical development costs for products partnered with GSK. Our other previous licensee, Janssen Science Ireland UC, terminated its license for use of QS-21 Stimulon in May 2016.

In September 2015, we monetized a portion of the royalties associated with the GSK License Agreement to an investor group led by Oberland Capital Management for up to $115.0 million in the form of a non-dilutive royalty transaction. Under the terms of a Note Purchase Agreement with the investor group (the "Note Purchase Agreement") we received $100.0 million at closing for which the investors will have the right to receive 100% of our worldwide royalties under the GSK License Agreement on sales of GSK's shingles (HZ/su) and malaria (RTS,S) prophylactic vaccine products that contain our QS-21 Stimulon adjuvant to pay down principle and interest. Once all principle and interest under the Note Purchase Agreement has been paid, any and all remaining royalties from the GSK License Agreement will accrue to us. The Note Purchase Agreement is designed to allow us to capture both the near and longer term benefit associated royalties from GSK's vaccine products containing our QS-21 Stimulon. At our option, we are entitled to receive an additional $15.0 million in cash from the investors after approval of HZ/su by the U.S.

Food and Drug Administration ("FDA"), provided such approval does not occur later than June 30, 2018. Also at our option, we have the right to buy back the loan at any time under pre-specified terms. The monetization of these royalty rights allows us to advance a significant portion of the future value of our royalty stream while still allowing us to retain any future monetary upside after the Note Purchase Agreement terms have been satisfied.

Manufacturing

Manufacturing CPM Antibodies

We rely on third party contract manufacturing organizations ("CMOs") to manufacture and supply us with the antibodies and drug substance for our antibody programs and anticipate doing so for the foreseeable future. In an effort to de-risk this reliance, we acquired XOMA Corporation's antibody manufacturing pilot plant in Berkeley, CA in December 2015. A team of former XOMA employees with valuable chemistry, manufacturing and controls experience joined us and continues to operate the facility. The pilot plant, referred to as "Agenus West," was acquired to enable us to manufacture antibodies for some of our own CPM programs and those of existing and potential third party collaborators. Since the acquisition, we have refurbished and improved the pilot plant,

increasing both scale and capacity, with the anticipation that it will be able to provide antibody production development expertise and antibody drug substance to support clinical proof-of-concept studies, and facilitate some of our future GMP antibody production requirements. We also expect to utilize our Agenus West pilot plant capabilities to accelerate antibody delivery speed, improve quality and increase product yield while providing us with greater manufacturing flexibility, all at reduced costs. We believe our Agenus West pilot plant manufacturing facility could accelerate the time to the clinic and into product commercialization. In addition, in February 2017, we amended our collaboration with Incyte, transferring manufacturing responsibilities for all antibodies under the collaboration to them. This includes antibodies targeting GITR, OX40, TIM-3, LAG-3 and one undisclosed target. We are in the process of transferring manufacturing know how to Incyte to support these endeavors.

Manufacturing Cancer Vaccines

We manufacture our cancer vaccine candidates from our different vaccine platforms in our Lexington, MA facility.

Each Prophage vaccine is manufactured using a patient's own tumor. After the patient undergoes surgery to remove cancerous tumor tissue, the tumor is shipped frozen in a specially designed kit provided by us to our Lexington, Massachusetts facility. Each Prophage vaccine is produced to a specific standard, in a process taking approximately ten hours, after which it undergoes extensive quality testing for approximately two weeks. The turnaround time from the date of surgery to delivery of vaccine is approximately three to four weeks, which generally fits well with the patient's recovery time from surgery. Once we release the vaccine, it is shipped frozen overnight to the hospital pharmacy or clinician. Prophage vaccines are given as a simple intradermal injection.

ASV and PSV vaccine candidates would be manufactured using HSP70 loaded with synthetic peptide synthesized by approved manufacturers. The sequence of the peptides is determined by sequencing and analysis of patient and tumor DNA and RNA and run through complex algorithms by our bioinformatics group who have specialized knowledge of the attributes required to elicit immune responsiveness. This process takes several weeks, after which the manufactured vaccine undergoes extensive quality testing, including sterility testing, for a further two weeks.

We have established, within a single facility, well-defined, cost efficient manufacturing under GMPs, including bioanalytical, quality control and quality assurance, logistics, distribution and supply chain management. After manufacturing, Prophage and ASV vaccine candidates are tested and released by our analytical and quality systems staff. The quality control organization performs a series of release assays designed to ensure that the product meets all applicable specifications. Our quality assurance staff also reviews manufacturing and quality control records prior to batch release in an effort to assure conformance with current GMP ("cGMP") as mandated by the FDA and foreign regulatory agencies.

Our manufacturing staff is trained and routinely evaluated for conformance to rigorous manufacturing procedures and quality standards. This oversight is intended to ensure compliance with FDA and foreign regulations and to provide consistent vaccine output. Our quality control and quality assurance staff is similarly trained and evaluated as part of our effort to ensure consistency in the testing and release of the product, as well as consistency in materials, equipment and facilities.

QS-21 Stimulon

Except in the case of GSK, we have retained worldwide manufacturing rights for QS-21 Stimulon, and we have the right to subcontract manufacturing for QS-21 Stimulon. In addition, under the terms of our agreement with GSK, upon request by us, GSK is committed to supply certain quantities of commercial grade QS-21 Stimulon to us and our licensees for a fixed period of time.

Intellectual Property Portfolio

We seek to protect our technologies through a combination of patents, trade secrets and know-how, and we currently own, co-own or have exclusive rights to approximately 40 issued United States patents and approximately 125 issued foreign patents. Our issued patents include those that cover uses of our core technologies in combination with other agents. Such core technologies include HSP-based vaccines for the treatment of cancers and treatment/prevention of infectious diseases, and saponin adjuvants. We also own, co-own or have exclusive rights to approximately 35 pending United States patent applications and approximately 80 pending foreign patent applications. We may not have rights in all territories where we may pursue regulatory approval for Prophage vaccine candidates.

Through various acquisitions, we own, co-own, or have exclusive rights to a number of patents and patent applications directed to various methods and compositions, including methods for identifying therapeutic antibodies and product candidates arising out of such entities' technology platforms. In particular, we own patents and patent applications relating to our Retrocyte Display technology platform, a high throughput antibody expression platform for the identification of fully-human and humanized monoclonal antibodies. This patent family is projected to expire between 2029 and 2031. We own, co-own, or have exclusive rights to patents and patent applications directed to various methods and compositions, including a patent directed to methods for identifying phosphorylated

proteins using mass spectrometry. This patent is projected to expire in 2023. We also own patents and patent applications relating to the SECANT® platform, a platform used for the generation of novel monoclonal antibodies. This patent family is projected to expire between 2028 and 2029. In addition, as we advance our research and development efforts with our institutional and corporate collaborators, we are seeking patent protection for certain newly identified therapeutic antibodies and product candidates. We can provide no assurance that any of our patents, including the patents that we acquired or in-licensed, will have commercial value, or that any of our existing or future patent applications, including the patent applications that were acquired or in-licensed, will result in the issuance of valid and enforceable patents. Our issued patents covering Prophage vaccine and methods of use thereof, alone or in combination with other agents, expired or will expire at various dates between 2015 and 2024. In particular, our issued U.S. patents covering Prophage composition of matter expired in 2015. In addition, our issued patents covering QS-21 Stimulon composition of matter expired in 2008. We continue to explore means of extending the life cycle of our patent portfolio.

Various patents and patent applications have been exclusively licensed to us by the following entities:

University of Virginia

In connection with our acquisition of PhosImmune in December 2015, we obtained exclusive rights to a portfolio of patent applications and one issued patent relating to PTTs under a patent license agreement with the University of Virginia (“UVA”). The UVA license gives us exclusive rights to develop and commercialize the PTT technology and an exclusive option to license any further PTT technology arising from ongoing research at UVA until December 2018. Under the license agreement, we will pay low to mid-single digit running royalties on net sales of PTT products, and a modest flat percentage of sublicensing income. In addition, we may be obligated to make milestone payments of up to $2.7 million for each indication of a licensed PTT product to complete clinical trials and achieve certain sales thresholds. The term of the UVA license agreement ends when the last of the licensed patents expires or becomes no longer valid. The UVA license agreement may be terminated as follows: (i) by UVA in connection with our bankruptcy or cessation of business relating to the licensed technology, (ii) by UVA if we commit a material, uncured breach or (iii) by us for our convenience on 180 days written notice.

Ludwig Institute for Cancer Research

On December 5, 2014, our wholly-owned subsidiary, Agenus Switzerland Inc. (formerly known as 4-Antibody AG)(“4-AB”), entered into a license agreement with the Ludwig Institute for Cancer Research Ltd. (“Ludwig”), which replaced and superseded a prior agreement entered into between the parties in May 2011. Pursuant to the terms of the license agreement, Ludwig granted 4-AB an exclusive, worldwide license under certain intellectual property rights of Ludwig and Memorial Sloan Kettering Cancer Center arising from the prior agreement to further develop and commercialize GITR, OX40 and TIM-3 antibodies. On January 25, 2016, we and 4-AB entered into a second license agreement with Ludwig, on substantially similar terms, to develop CTLA-4 and PD-1 antibodies. Pursuant to the December 2014 license agreement, 4-AB made an upfront payment of $1.0 million to Ludwig. The December 2014 license agreement also obligates 4-AB to make potential milestone payments of up to $20.0 million for events prior to regulatory approval of licensed GITR, OX40 and TIM-3 products, and potential milestone payments in excess of $80.0 million if such licensed products are approved in multiple jurisdictions, in more than one indication, and certain sales milestones are achieved. Under the January 2016 license agreement, we are obligated to make potential milestone payments of up to $12.0 million for events prior to regulatory approval of CTLA-4 and PD-1 licensed products, and potential milestone payments of up to $32.0 million if certain sales milestones are achieved. Under each of these license agreements, we and/or 4-AB will also be obligated to pay low to mid-single digit royalties on all net sales of licensed products during the royalty period, and to pay Ludwig a percentage of any sublicensing income, ranging from a low to mid-double digit percentage depending on various factors. The license agreements may each be terminated as follows: (i) by either party if the other party commits a material, uncured breach; (ii) by either party if the other party initiates bankruptcy, liquidation or similar proceedings; or (iii) by 4-AB or us (as applicable) for convenience upon 90 days’ prior written notice. The license agreements also contain customary representations and

warranties, mutual indemnification, confidentiality and arbitration provisions.

University of Connecticut Health Center

In May 2001, we entered into a license agreement with the University of Connecticut Health Center ("UConn") which was amended in March 2003 and June 2009. Through the license agreement, we obtained an exclusive, worldwide license to patent rights resulting from inventions discovered under a research agreement that was effective from February 1998 until December 2006. The term of the license agreement ends when the last of the licensed patents expires in 2028 or becomes no longer valid. UConn may terminate the agreement: (1) if, after 30 days written notice for breach, we continue to fail to make any payments due under the license agreement, or (2) we cease to carry on our business related to the patent rights or if we initiate or conduct actions in order to declare bankruptcy. We may terminate the agreement upon 90 days written notice. We are required to make royalty payments on any obligations created prior to the effective date of termination of the license agreement. Upon expiration or termination of the license agreement due to breach, we have the right to continue to manufacture and sell products covered under the license agreement which are considered to be works in progress for a period of six months. The license agreement contains aggregate milestone payments of

approximately for each product we develop covered by the licensed patent rights. These milestone payments are contingent upon regulatory filings, regulatory approvals, and commercial sales of products. We have also agreed to pay UConn a royalty on the net sales of products covered by the license agreement as well as annual license maintenance fees beginning in May 2006. Royalties otherwise due on the net sales of products covered by the license agreement may be credited against the annual license maintenance fee obligations. Under the March 2003 amendment, we agreed to pay UConn an upfront payment and to make future payments for each patent or patent application with respect to which we exercised our option under the research agreement. As of December 31, 2016, we had paid approximately $850,000 to UConn under the license agreement. The license agreement gives us complete discretion over the commercialization of products covered by the licensed patent rights but also requires us to use commercially reasonable diligent efforts to introduce commercial products within and outside the United States. If we fail to meet these diligence requirements, UConn may be able to terminate the license agreement.

Regulatory Compliance

Governmental authorities in the United States and other countries extensively regulate the preclinical and clinical testing, manufacturing, labeling, storage, record keeping, advertising, promotion, export, marketing and distribution, among other things, of our investigational product candidates. In the United States, the FDA under the Federal Food, Drug, and Cosmetic Act, the Public Health Service Act and other federal statutes and regulations, subject pharmaceutical products to rigorous review.

In order to obtain approval of a new product from the FDA, we must, among other requirements, submit proof of safety and efficacy as well as detailed information on the manufacture and composition of the product. In most cases, this proof entails extensive preclinical, clinical, and laboratory tests. Before approving a new drug or marketing application, the FDA may also conduct pre-licensing inspections of the company, its contract research organizations and/or its clinical trial sites to ensure that clinical, safety, quality control, and other regulated activities are compliant with Good Clinical Practices (“GCP”), or Good Laboratory Practices (“GLP”), for specific non-clinical toxicology studies. The FDA may also require confirmatory trials, post-marketing testing, and extra surveillance to monitor the effects of approved products, or place conditions on any approvals that could restrict the commercial applications of these products. Once approved, the labeling, advertising, promotion, marketing, and distribution of a drug or biologic product must be in compliance with FDA regulatory requirements.

In Phase 1 clinical trials, the sponsor tests the product in a small number of patients or healthy volunteers, primarily for safety at one or more doses. Phase 1 trials in cancer are often conducted with patients who have end-stage or metastatic cancer. In Phase 2, in addition to safety, the sponsor evaluates the efficacy of the product in a patient population somewhat larger than Phase 1 trials. Phase 3 trials typically involve additional testing for safety and clinical efficacy in an expanded population at geographically dispersed test sites. The FDA may order the temporary or permanent discontinuation of a clinical trial at any time.

The sponsor must submit to the FDA the results of preclinical and clinical testing, together with, among other things, detailed information on the manufacture and composition of the product, in the form of a new drug application (“NDA”), or in the case of biologics, like the Prophage vaccines, a biologics license application (“BLA”). In a process that can take a year or more, the FDA reviews this application and, when and if it decides that adequate data are available to show that the new compound is both safe and effective for a particular indication and that other applicable requirements have been met, approves the drug or biologic for marketing.

Whether or not we have obtained FDA approval, we must generally obtain approval of a product by comparable regulatory authorities of international jurisdictions prior to the commencement of marketing the product in those jurisdictions. We are also subject to cGMP, GCP, and GLP compliance obligations and are subject to inspection by international regulatory authorities. International requirements may in some circumstances be more rigorous than U.S. requirements and may require additional investment in manufacturing process development, non-clinical studies, clinical studies, and record keeping that are not required for U.S. regulatory compliance or approval. The time

required to obtain this approval may be longer or shorter than that required for FDA approval and can also require significant resources in time, money and labor.

Under the laws of the United States, the countries of the European Union and other nations, we and the institutions where we sponsor research are subject to obligations to ensure the protection of personal information of human subjects participating in our clinical trials. We have instituted procedures that we believe will enable us to comply with these requirements and the contractual requirements of our data sources. The laws and regulations in this area are evolving, and further regulation, if adopted, could affect the timing and the cost of future clinical development activities.

We are also subject to regulation under the Occupational Safety and Health Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, and other current and potential future federal, state, or local regulations. Our research and development activities involve the controlled use of hazardous materials, chemicals, biological materials, various radioactive compounds, and for some experiments we use recombinant DNA. We believe that our procedures comply with the standards prescribed by local, state, and federal regulations; however, the risk of injury or accidental contamination cannot be completely eliminated. We conduct our activities in compliance with the National Institutes of Health Guidelines for Recombinant DNA Research.

Additionally, the U.S. Foreign Corrupt Practices Act ("FCPA"), prohibits U.S. corporations and their representatives from offering, promising, authorizing or making payments to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business abroad. The scope of the FCPA includes interactions with certain healthcare professionals in many countries. Other countries have enacted similar anti-corruption laws and/or regulations.

Competition

Competition in the pharmaceutical and biotechnology industries is intense. Many pharmaceutical or biotechnology companies have products on the market and are actively engaged in the research and development of products for the treatment of cancer.

Many competitors have substantially greater financial, manufacturing, marketing, sales, distribution, and technical resources, and more experience in research and development, clinical trials, and regulatory matters, than we do. Competing companies developing or acquiring rights to more efficacious therapeutic products for the same diseases we are targeting, or which offer significantly lower costs of treatment, could render our products noncompetitive or obsolete. See Part I-Item 1A. "Risk Factors-Risks Related to our Business-Our competitors may have superior products, manufacturing capability, selling and marketing expertise and/or financial and other resources."

Academic institutions, governmental agencies, and other public and private research institutions conduct significant amounts of research in biotechnology, medicinal chemistry and pharmacology. These entities have become increasingly active in seeking patent protection and licensing revenues for their research results. They also compete with us in recruiting and retaining skilled scientific talent.

The CPM landscape is crowded with several competitors developing assets against a number of targets. Development plans are spread out across various indications and lines of therapy, either alone or in combination with other assets. Competitors range from small cap to large cap companies, with assets in preclinical or clinical stages of development. Therefore, the landscape is dynamic and constantly evolving. We and our partners have CPM antibody programs currently in clinical stage development targeting CTLA-4, GITR and OX40, with our PD-1 antagonist anticipated to enter into the clinic in the first half of this year. We are aware of many companies that have antibody-based products on the market or in clinical development that are directed to the same biological targets as these programs, including, without limitation, the following: (1) BMS markets ipilimumab, an anti-CTLA-4 antibody, and nivolumab, an anti-PD-1 antibody, and is developing agonists to GITR and OX-40, (2) Merck has an approved anti-PD-1 antibody in the United States, and is developing an anti-GITR agonist, (3) Ono Pharmaceuticals has an approved anti-PD-1 antibody in Japan, (4) AstraZeneca/Medimmune has anti-CTLA-4, PD-1, PD-L1, GITR and OX40 targeting antibodies in development, (5) Pfizer has anti-PD-L1 (with Merck KgA), anti-PD-1, and anti-OX40 antibodies in clinical development, (6) Novartis has anti-PD-1, anti-PD-L1 and anti-GITR antibodies in clinical trials, and (7) Roche/Genetech has an approved anti-PD-L1 and an anti-OX40 antibody in clinical development. We are also aware of other competitors with PD-1/PD-L1 antibodies in clinical development, including Tesaro, Beigene, Regeneron, CureTech, Eli Lilly, Jiangsu HengRui Medicine, Shanghai Junshi and Macrogenics. We are also aware of competitors with preclinical antibodies against these targets. In addition, we are also aware of competitors with clinical stage antibodies against targets in our earlier stage programs such as TIM-3, LAG-3, 4-1BB, TIGIT and other undisclosed targets. These include, but are not limited to, BMS, Pfizer, Novartis, Merck, Roche, Tesaro and Regeneron. Additionally, we are also aware of competitors with assets against these targets that are in preclinical development. There is no guarantee that our antibody product candidates will be able to compete with our competitors' antibody products and product candidates.

We are planning to develop our anti PD-1 as a monotherapy as well as in combination with our anti CTLA-4 antibody in second line cervical cancer. We are aware of exploratory, industry sponsored clinical trials that are underway in cervical cancer. Our competitors include, but are not restricted to, Merck (anti-PD-1), Ono Pharmaceuticals and BMS (anti-PD-1 alone or in combination with anti-CTLA-4 or anti-LAG-3), and Advaxis (HPV targeting vaccine alone or

in combination with AstraZeneca's anti-PD-L1 antibody). Additionally, we are also aware of cervical cancer clinical trials exploring other CPM targets including, but not restricted to, PD-L1 + IDO (Roche), VISTA (Janssen), OX40 +/- 4-1BB (Pfizer). However, given the stage, focus, expected efficacy and safety profile of our development programs versus those of our competitors, we believe that our approach provides a fast to market opportunity that will allow us to establish a favorable competitive position.

We have autologous vaccines programs in development including our Prophage vaccine in clinical development for GBM and our neo-antigen based AutoSynVax vaccine in preclinical development. We are aware of many companies pursuing personalized cancer vaccines in preclinical or clinical development, including, without limitation, the following: Neon Therapeutics, Gritstone Oncology, Advaxis, BioNTech, Moderna and Merck, Nouscom, Immatics and Green Peptides.

Several companies have products that utilize similar technologies and/or patient-specific medicine techniques that compete with our HSP based vaccines. For treatment of recurrent glioma, Roche markets bevacizumab and Eisai and Arbor Pharmaceuticals market carmustine. Schering Corporation, a subsidiary of Merck, markets temozolomide for treatment of patients with ndGBM and refractory astrocytoma. Other companies are developing vaccines for the treatment of patients with ndGBM, such as Green Cross Cell - formerly

Innocell Corp (Immuncell-LC), ImmunoCellular Therapeutics (ICT-107), Northwest Biotherapeutics (DC-Vax), Mimivax Inc. (SurVaxM), Annias Immunotherapeutics (CMV Vaccine) and Activartis Biotech (GBM-Vax). In addition, TVAX Biomedical, Stemline Therapeutics and Sumitomo Dainippon Pharma are developing immunotherapy candidates TVI-Brain-1, SL-701 and DSP-7888, respectively, for recurrent glioma. Other companies may begin development programs as well.

To the extent we develop our vaccines in other indications or in combination with other product candidates, such as available standard of care agents (Avastin®), or with CPMs, they could face additional competition in those indications or in those combinations. In addition, and prior to regulatory approval, if ever, our vaccines and our other product candidates may compete for access to patients with other products in clinical development, with products approved for use in the indications we are studying, or with off-label use of products in the indications we are studying. We anticipate that we will face increased competition in the future as new companies enter markets we seek to address and scientific developments surrounding immunotherapy and other traditional cancer and infectious disease therapies continue to accelerate.

We are aware of compounds that claim to be comparable to QS-21 Stimulon that are being used in clinical trials. Several other vaccine adjuvants are in development and could compete with QS-21 Stimulon for inclusion in vaccines in development. These adjuvants include, but are not limited to, (1) oligonucleotides, under development by Pfizer, Idera, Colby, and Dynavax, (2) MF59, under development by Novartis, (3) IC31, under development by Intercell (now part of Valneva), and (4) MPL, under development by GSK. In the past, we have provided QS-21 Stimulon to other entities under materials transfer arrangements. In at least one instance, it is possible that this material was used unlawfully to develop synthetic formulations and/or derivatives of QS-21. In addition, companies such as Adjuvance Technologies, Inc., CSL Limited, and Novavax, Inc., as well as academic institutions and manufacturers of saponin extracts, are developing saponin adjuvants, including derivatives and synthetic formulations. These sources may be competitive to our ability to execute future partnering and licensing arrangements involving QS-21 Stimulon. The existence of products developed by these and other competitors, or other products of which we are not aware or which other companies may develop in the future, may adversely affect the marketability of products developed or sold using QS-21 Stimulon.

We are also aware of a third party that manufactures pre-clinical material purporting to be comparable to QS-21 Stimulon. The claims being made by this third party may create marketplace confusion and have an adverse effect on the goodwill generated by us and our partners with respect to QS-21 Stimulon. Any diminution of this goodwill may have an adverse effect on our ability to commercialize future products, if any, incorporating this technology, either alone or with a third party.

Employees

As of February 28, 2017, we had 255 employees, of whom 81 were PhDs and six were MDs. None of our employees are subject to a collective bargaining agreement. We believe that we have good relations with our employees.

Corporate History

Antigenics L.L.C. was formed as a Delaware limited liability company in 1994 and was converted to Antigenics Inc., a Delaware corporation, in February 2000 in conjunction with our initial public offering of common stock. On January 6, 2011, we changed our name from Antigenics Inc. to Agenus Inc.

Availability of Periodic SEC Reports

Our Internet website address is www.agenusbio.com. We make available free of charge through our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended ("Exchange Act"), as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the Securities and Exchange Commission (the "SEC"). The contents of our website are not part of, or incorporated into, this document. In addition, we regularly use our website to post information regarding our business, product development programs and governance, and we encourage investors to use our website, particularly the information in the sections entitled "Financial" and "News," as sources of information about us.

The public may read and copy any materials filed by Agenus with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Room 1580, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at www.sec.gov.

The contents of the websites referred to above are not incorporated into this filing. Further, our references to the URLs for these websites are intended to be inactive textual references only.

Item 1A. Risk Factors

Our future operating results could differ materially from the results described in this Annual Report on Form 10-K due to the risks and uncertainties described below. You should consider carefully the following information about risks below in evaluating our business. If any of the following risks actually occur, our business, financial conditions, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock would likely decline.

We cannot assure investors that our assumptions and expectations will prove to be correct. Important factors could cause our actual results to differ materially from those indicated or implied by forward-looking statements. See "Note Regarding Forward-Looking Statements" in this Annual Report on Form 10-K. Factors that could cause or contribute to such differences include those factors discussed below.

Risks Related to our Business

If we incur operating losses for longer than we expect, or we are not able to raise additional capital, we may be unable to continue our operations, or we may become insolvent.

Our net losses for the years ended December 31, 2016, 2015, and 2014, were $127.0 million, $87.9 million, and $42.5 million, respectively. We expect to incur additional losses over the next several years as we continue to research and develop our technologies and pursue partnering opportunities, regulatory strategies, commercialization, and related activities. Furthermore, our ability to generate cash from operations is dependent on the success of our licensees and collaboration partners, as well as the likelihood and timing of new strategic licensing and partnering relationships and/or successful development and commercialization of product candidates, including through our antibody programs and platforms, our vaccine programs, and our saponin-based vaccine adjuvants.

On December 31, 2016, we had $76.4 million in cash and cash equivalents and short-term investments. We believe that, based on our current plans and activities, our working capital resources at December 31, 2016, along with the net proceeds of approximately $80 million from Incyte Corporation ("Incyte") in February 2017 in connection with amending our collaboration agreement and issuing additional shares pursuant to a share purchase agreement, will be sufficient to satisfy our liquidity requirements through the first half of 2018. We expect to attempt to secure additional funds before our current funds are depleted although additional funding may not be available on favorable terms, or at all.

To date, we have financed our operations primarily through the sale of equity and debt securities. In order to finance future operations, we will be required to raise additional funds in the capital markets, through arrangements with collaboration partners or from other sources. Additional financing may not be available on favorable terms, or at all. If we are unable to raise additional funds when we need them or if we incur operating losses for longer than we expect, we may not be able to continue some or all of our operations, or we may become insolvent. We also may be forced to license or sell technologies to others under agreements that are on unfavorable terms or allocate to third parties substantial portions of the potential value of these technologies.

There are a number of factors that will influence our future capital requirements, including, without limitation, the following:

- the number and characteristics of the product candidates we and our partners pursue;
    - our and our partners' ability to successfully develop, manufacture, and commercialize product candidates;
- the scope, progress, results and costs of researching and developing our future product candidates and conducting pre-clinical and clinical trials;
- the timing of, and the costs involved in, obtaining regulatory approvals for our and our licensees' product candidates;
- the cost of manufacturing;

- our ability to establish and maintain strategic partnerships, licensing or other arrangements and the financial terms of such arrangements;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing our intellectual property rights;
- the costs associated with any successful commercial operations; and
- the timing, receipt and amount of sales of, or royalties on, our future products and those of our partners, if any.

General economic conditions in the United States economy and abroad may have a material adverse effect on our liquidity and financial condition, particularly if our ability to raise additional funds is impaired. The ability of potential patients and/or health care payers to pay for our future products, if any, could also be adversely impacted, thereby limiting our potential revenue. In addition, any negative impacts from any deterioration in the credit markets on our collaboration partners could limit potential revenue from our product candidates.

Our and our subsidiaries' obligations related to our monetization of royalties payable to us by GlaxoSmithKline ("GSK"), in respect of its shingles vaccine, HZ/su, along with our 2015 Subordinated Notes, could materially and adversely affect our liquidity.

In September 2015, we and our wholly-owned subsidiary, Antigenics LLC ("Antigenics"), entered into an Note Purchase Agreement ("NPA") with Oberland Capital SA Zermatt LLC ("Oberland"), as collateral agent, an affiliate of Oberland as the lead purchaser and certain other purchasers, pursuant to which Antigenics issued $100.0 million aggregate principal amount of limited recourse notes (the "Notes") to the purchasers. Antigenics has the option to issue an additional $15.0 million aggregate principal amount of Notes (the "Additional Notes") to the purchasers within 15 days after approval of GSK's shingles vaccine, HZ/su, by the Food and Drug Administration ("FDA"), provided such approval occurs on or before June 30, 2018. The Notes accrue interest at a rate of 13.5% per annum, compounded quarterly, from and after September 8, 2015 (the "Closing Date"). Principal and interest payments are due on each of March 15, June 15, September 15 and December 15, and shall be made solely from the royalties paid from GSK to Antigenics on sales of GSK's shingles and malaria vaccines. GSK will send all royalty payments to a segregated bank account, and to the extent there are insufficient royalties deposited into the account to fund a quarterly interest payment, the interest will be capitalized and added to the aggregate principal balance of the loan. The final legal maturity date of the Notes is the earlier of (i) the 10th anniversary of the first commercial sale of GSK's shingles or malaria vaccines and (ii) September 8, 2030 (the "Maturity Date").

On September 8, 2018, each purchaser has the option to require Antigenics to repurchase up to 15% of the Notes issued to such purchaser on the Closing Date (the "Put Notes") at a purchase price equal to the principal amount thereof plus accrued and unpaid interest thereon (the "Put Payment"). On the earlier of (i) September 8, 2027 and (ii) the Maturity Date, Antigenics is required to pay the purchasers an amount equal to the following (the "Make-Whole Payment"): $100.0 million (or $115.0 million if the Additional Notes are sold) minus the aggregate amount of all payments made in respect of the Notes (regardless of whether characterized as principal or interest at the time of payment), including the original principal amount of any repaid Put Notes.

The NPA specifies a number of events of default (some of which are subject to applicable cure periods), including (i) failure to cause royalty payments to be deposited into the segregated bank account, (ii) payment defaults, (iii) breaches of representations and warranties made at the time the Notes were, or the Additional Notes are, issued, (iv) covenant defaults, (v) a final and unappealable judgment against Antigenics for the payment of money in excess of $1.0 million, (vi) bankruptcy or insolvency defaults, (vii) the failure to maintain a first-priority perfected security interest in the collateral in favor of the collateral agent and (viii) the occurrence of a change of control of Agenus. Upon the occurrence of an event of default, subject to cure periods in certain circumstances and some limited exceptions, the collateral agent may declare the Notes immediately due and payable, in which case Antigenics would owe a payment equal to the following (the "Accelerated Default Payment"): the outstanding principal amount of the Notes, plus all accrued and unpaid interest thereon, plus a premium payment that would yield an aggregate internal rate of return ("IRR") for the purchasers as follows: (i) an IRR of 20% if the event of default occurs within 24 months of the Closing Date, (ii) an IRR of 17.5% if the event of default occurs after 24 months but within 48 months of the Closing Date, and (iii) an IRR of 15% if the event of default occurs more than 48 months after the Closing Date. Upon the occurrence and during the continuance of any event of default, interest on the Notes also increases by 2.5% per annum.

We are a party to the NPA as a guarantor of Antigenics, and we generally guarantee the Put Payment, the Make-Whole Payment and the Accelerated Default Payment. If we are obligated to make the Put Payment or the Make-Whole Payment, our liquidity would be materially and adversely affected. If we or Antigenics default on the Notes and we are obligated to pay the Accelerated Default Payment, our liquidity would be materially and adversely affected. Satisfaction of the Notes will depend upon the future sales of GSK's shingles and malaria vaccines, if approved, and, if we are obligated to make the Put Payment, the Make-Whole Payment or the Accelerated Default Payment, our future performance, which is subject to many factors, including the factors identified in this "Risk Factors" section and other factors beyond our control.

In February 2015, we exchanged senior subordinated promissory notes that we issued in 2013 for new senior subordinated promissory notes in the aggregate principal amount of $5.0 million with annual interest at 8%, and we issued an additional $9.0 million principal amount of such notes (the “2015 Subordinated Notes”). The 2015 Subordinated Notes were originally due February 2018, and in March 2017 we amended the 2015 Subordinate Notes to extend the maturity date to February 2020. The 2015 Subordinated Notes include default provisions that allow for the acceleration of the principal payment of the 2015 Subordinated Notes in the event we become involved in certain bankruptcy proceedings, become insolvent, fail to make a payment of principal or (after a grace period) interest on the 2015 Subordinated Notes, default on other indebtedness with an aggregate principal balance of $13.5 million or more if such default has the effect of accelerating the maturity of such indebtedness, or become subject to a legal judgment or similar order for the payment of money in an amount greater than $13.5 million if such amount will not be covered by third-party insurance. If we default on the 2015 Subordinated Notes and the repayment of such indebtedness is accelerated, our liquidity could be materially and adversely affected.

If we do not have sufficient cash on hand to pay any of the Put Payment, the Make-Whole Payment or the Accelerated Default Payment when due, or to otherwise service our 2015 Subordinated Notes, we may be required, among other things, to:

- seek additional financing in the debt or equity markets;
- refinance or restructure all or a portion of our indebtedness;
- sell, out-license, or otherwise dispose of assets; and/or
- reduce or delay planned expenditures on research and development and/or commercialization activities.

Such measures might not be sufficient to enable us to make principal and interest payments. In addition, any such financing, refinancing, or sale of assets might not be available on favorable terms, if at all.

We are dependent upon our collaboration with Incyte to further develop, manufacture and commercialize antibodies against certain targets. If we or Incyte fail to perform as expected, the potential for us to generate future revenues under the collaboration would be significantly reduced, the development and/or commercialization of these antibodies may be terminated or substantially delayed, and our business could be severely harmed.

In February 2017, we amended the terms of our collaboration agreement with Incyte to, among other things, convert the GITR and OX40 programs from profit-share programs, where we and Incyte shared all costs and profits on a 50:50 basis, to royalty-bearing programs, where Incyte funds 100% of the costs and we are eligible for potential milestones and royalties. In addition, the profit-share programs relating to two undisclosed targets were removed from the collaboration, with one reverting to Incyte and one to Agenus, each with a potential 15% royalty to the other party on any global net sales. The remaining three royalty-bearing programs in the collaboration targeting TIM-3, LAG-3 and one undisclosed target remain unchanged, and there are no more profit-share programs under the collaboration. For each program in the collaboration, we serve as the lead for pre-clinical development activities through the filing of an investigational new drug application (“IND”), and Incyte has exclusive rights and all decision-making authority for manufacturing, clinical development and commercialization. Accordingly, the timely and successful completion by Incyte of clinical development and commercialization activities will significantly affect the timing and amount of any royalties or milestones we may receive under the collaboration agreement. In addition, we recently announced that we are transferring manufacturing responsibilities to Incyte for antibodies under that collaboration. Any delays or weaknesses in this transfer process or the ability of Incyte to successfully manufacture could have an adverse impact on those programs. Incyte’s activities will be influenced by, among other things, the efforts and allocation of resources by Incyte, which we cannot control. If Incyte does not perform in the manner we expect or fulfill its responsibilities in a timely manner, or at all, the clinical development, manufacturing, regulatory approval, and commercialization efforts related to antibodies under the collaboration could be delayed or terminated. There can be no assurance that any of the development, regulatory or sales milestones will be achieved, or that we will receive any future milestone or royalty payments under the collaboration agreement.

In addition, our collaboration with Incyte may be unsuccessful due to other factors, including, without limitation, the following:

- Incyte may terminate the agreement or any individual program for convenience upon 12 months’ notice;
- Incyte has control over the development of assets in the collaboration;
- Incyte may change the focus of its development and commercialization efforts or prioritize other programs more highly and, accordingly, reduce the efforts and resources allocated to our collaboration;
- Incyte may choose not to develop and commercialize antibody products, if any, in all relevant markets or for one or more indications, if at all; and
- If Incyte is acquired during the term of our collaboration, the acquirer may have competing programs or different strategic priorities that could cause it to reduce its commitment to our collaboration.

If Incyte terminates our collaboration agreement, we would need to raise additional capital and may need to identify and come to agreement with another collaboration partner to advance certain of our antibody programs. Even if we are able to find another partner, this effort could cause delays in our timelines and/or additional expenses, which could

adversely affect our business prospects and the future of any antibody product candidates under the collaboration.

Our antibody programs are in early stage development, and there is no guarantee that we will be successful in advancing antibody product candidates through clinical development.

Our antibody programs are currently in early stage development, and many of our antibody programs are pre-clinical. Even if our pre-clinical studies or our and/or our partners' Phase 1 trials produce positive results, they may not necessarily be predictive of the results of future clinical trials in humans. Many companies in the pharmaceutical, biopharmaceutical and biotechnology industries

have suffered significant setbacks in clinical trials after achieving positive results in pre-clinical development or Phase 1 trials, and we cannot be certain that we will not face similar setbacks. These setbacks have been caused by, among other things, pre-clinical findings made while clinical trials were underway or safety or efficacy observations made in clinical trials, including adverse events. Moreover, pre-clinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that believed their product candidates performed satisfactorily in pre-clinical studies and clinical trials nonetheless failed to obtain regulatory approval. If we fail to produce positive results in future clinical trials of antibodies, our business and financial prospects would be materially adversely affected.

We are undergoing significant growth across multiple locations, and we may encounter difficulties in managing this growth, which could disrupt our operations.

From January 1, 2014 to February 28, 2017, our headcount has increased from 70 to 255, in part through various acquisitions and the expansion of our research and development activities both nationally and internationally to California, Virginia, Switzerland and the United Kingdom. We previously conducted discovery research operations in Germany, but as part of our efforts to optimize efficiency across our organization, we closed our Jena office and consolidated these operations in the United Kingdom and Switzerland. We expect to continue increasing our headcount as we continue to build our research and development capabilities and integrate our acquired technology platforms. To manage this growth and expansion, we must continue to implement and improve our managerial, operational and financial systems and continue to recruit, train and retain qualified personnel. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate revenue could be reduced, and we may not be able to implement our business strategy.

We may not receive anticipated QS-21 Stimulon revenues from our licensees.

We currently rely upon and expect to continue to rely upon our third party licensee, GSK, to develop, test, market and manufacture vaccines that utilize our QS-21 Stimulon adjuvant. Our other previous licensee, Janssen Science Ireland UC, terminated its license for use of QS-21 Stimulon in May 2016.

GSK manages its product development process, and we cannot predict its requirements for QS-21 Stimulon in the future or to what extent, if any, it will develop and commercialize vaccines that use QS-21 Stimulon as an adjuvant. GSK may initiate or terminate programs containing QS-21 Stimulon at any time. In addition, even if GSK successfully completes clinical trials with vaccine candidates using QS-21 Stimulon or these vaccine candidates receive positive decisions from regulatory bodies, there is no guarantee that these products will ultimately obtain regulatory approval or, if so approved, will have a successful commercial launch or generate any future milestones or royalty payments. In September 2015, we entered into the NPA and monetized a portion of the potential royalties we are entitled to receive from GSK on future sales of its shingles and malaria vaccines, if any. All of the royalties that are payable to us from GSK on sales of these products candidates, if any, will be used entirely to satisfy our obligations to the purchasers of the Notes. However, there is no guarantee that GSK's shingles and malaria vaccines will be approved in any territories for which they seek regulatory approval. Even if GSK's shingles and/or malaria vaccines are approved, there is no guarantee that GSK will have a successful commercial launch of either product or generate any revenues from sales to help satisfy our obligations under the NPA. Any inability to receive anticipated revenues, or a reduction in revenues, generated from QS-21 Stimulon could have a material adverse effect on our business, financial condition and results of operations.

Our synthetic Heat Shock Protein ("HSP") peptide-based platform is in early stage development, and there is no guarantee that a product candidate will progress from this platform.

In June 2014, we reported positive results from a Phase 2 trial with HerpV™, a vaccine candidate for genital herpes from our synthetic HSP peptide-based platform. While the HerpV Phase 2 trial met its formal endpoints, subjects were not followed long enough to determine whether the magnitude of the effect on viral load would be sufficient to

significantly reduce the incidence, severity, or duration of herpetic lesions or reduce the risk of viral transmission. We do not expect to advance this program into a Phase 3 trial, but we have initiated our ASV synthetic cancer vaccine program based on our prior findings with this platform. Although we are targeting to initiate a clinical trial for our first AutoSynVax product candidate in the first half of 2017, there is no guarantee that we will be able to do so. There is no guarantee that a product candidate will progress from this platform at all or that results of any potential future clinical trials will be positive. Furthermore, it is possible that research and discoveries by others will render any product candidate from this platform as obsolete or noncompetitive.

We may not be able to advance clinical development or commercialize our cancer vaccine candidates or realize any benefits from these programs.

The probability of future clinical development efforts leading to marketing approval and commercialization of Prophage vaccines is highly uncertain. Prophage vaccines have been in clinical development for over 16 years, including multiple Phase 1 and 2 trials in eight different tumor types as well as randomized Phase 3 trials in metastatic melanoma and adjuvant renal cell

carcinoma. To date, none of our clinical trials with Prophage vaccines have resulted in a marketing approval, except in Russia where commercialization of the approved product was unsuccessful. All of our currently planned trials involving Prophage are intended to be sponsored by third parties, and there is no guarantee that they will occur at all. In addition, while we believe Prophage vaccines may provide clinical benefit to some patients as a monotherapy and in combination with other therapies, there is no guarantee that, if completed, subsequent Prophage trials would yield useful translational and/or efficacy data.

Our current clinical trial plans with Prophage vaccines entails one government sponsored IND in which we provide support and product supply. For third-party sponsored trials, we lack the ability to control trial design, timelines, tumor tissue procurement and data availability. For example, we recently announced a clinical trial collaboration with the National Cancer Institute ("NCI"), whereby the NCI is conducting a double-blind, randomized controlled Phase 2 trial to evaluate the effect of Prophage vaccine in conjunction with Merck's pembrolizumab on the overall survival rate of patients with newly diagnosed glioblastoma ("ndGBM"). In addition, the Phase 2 trial of Prophage vaccine in combination with bevacizumab in patients with surgically resectable recurrent glioma that was being conducted under the sponsorship of the Alliance for Clinical Trials in Oncology, a cooperative group of the NCI and has recently closed. In addition, our other cancer vaccine programs (ASV and PSV) are in preclinical development and there is no guarantee that they will successfully advance in and through the clinic. Current and future studies may eventually be terminated due to, among other things, slow enrollment, lack of probability that they will yield useful translational and/or efficacy data, lengthy timelines, or the unlikelihood that results will support timely or successful regulatory filings. Furthermore, potential changes in clinical practices trending away from the administration of bevacizumab for the treatment of recurrent glioma could exacerbate enrollment issues and/or render the trial design impractical.

Changes in our manufacturing strategies, manufacturing problems, or increased demand may cause delays, unanticipated costs, or loss of revenue streams within or across our programs.

Our antibody programs will require substantial manufacturing development and investment to progress. We are currently progressing a portfolio of antibody programs that are at different stages of development. If these efforts are delayed or do not produce the desired outcomes, this will cause delays in development timelines and increased costs, which may cause us to limit the size and scope of our efforts and studies. In December 2015, we secured our own antibody manufacturing capabilities with the purchase of a manufacturing pilot plant from XOMA Corporation ("XOMA"), and we expect this facility to supply us with antibody drug substance requirements through clinical proof-of-concept studies. We will also need to develop or secure later phase and/or commercial manufacturing capabilities for larger, registrational studies or any commercial supply requirements. For the programs for which we will produce our own drug substance, we will continue to rely on third parties for fill-finish services and other parts of the manufacturing process. These services include the storage and maintenance of our drug substance during all stages of the manufacturing process. While we maintain insurance to cover certain potential losses, there is no guarantee that our insurance coverage will be adequate. Furthermore, we currently rely on contract manufacturing organizations ("CMOs") and contract research organizations ("CROs") to support some of our existing antibody programs. Our dependence on external CMOs for the manufacture of certain antibodies results in intrinsic risks to our performance, timelines, and costs of our accelerated development plans, and which could divert resources away from our antibody programs and/or lead to delays in the development of our product candidates. In the event that our antibody programs require progressively larger production capabilities, our options for qualified CMOs may become more limited.

The long-term success of the antibody pilot plant manufacturing facility and capabilities that we acquired from XOMA will depend, in part, on our ability to realize the anticipated synergies, business opportunities and growth prospects from combining our manufacturing facilities in Lexington, MA with the antibody pilot plant manufacturing facility in Berkeley, CA. We may never realize these anticipated synergies, business opportunities and growth prospects. Assumptions underlying estimates of expected cost savings as a result of the acquisition of the antibody pilot plant manufacturing facility may be inaccurate. If any of these factors limit our ability to successfully manufacture antibodies to support our planned clinical trials, the expectations of future results of operations, including certain cost savings and synergies expected to result from the acquisition of XOMA's antibody pilot plant

manufacturing facility, might not be met. In addition, we recently announced that we are transferring manufacturing responsibilities to Incyte for antibodies under that collaboration. Any delays or weaknesses in this transfer process or the ability of Incyte to successfully manufacture could have an adverse impact on those programs.

We currently manufacture our Prophage vaccines in our Lexington, MA facility. Manufacturing of the Prophage vaccines is complex, and various factors could cause delays or an inability to supply the vaccine. Deviations in the processes controlling manufacture or deficiencies in size or quality of source material could result in production failures. Specific vulnerabilities in the process may exist in tumor types in which quality or quantity of tissue is limited, such as recurrent GBM. In addition, regulatory bodies may require us to make our manufacturing facility a single product facility. In such an instance, we would no longer have the ability to manufacture Prophage vaccines in addition to other product candidates in our current facility.

We have given our corporate QS-21 Stimulon licensee, GSK, manufacturing rights for QS-21 Stimulon for use in their product programs. If GSK or its third party CMO encounters problems with QS-21 Stimulon manufacturing, any of their programs containing

QS-21 Stimulon could be delayed or terminated, and this could have an adverse effect on our potential license fees, milestone payments and royalties that we may otherwise receive from these programs and use to satisfy our obligations under the NPA. We have retained the right to manufacture QS-21 for ourselves and third parties, although no other such programs are anticipated to bring us substantial revenues in the near future, if ever.

Our ability to efficiently manufacture our product candidates is contingent, in part, upon our own, and our CMOs', ability to ramp up production in a timely manner without the benefit of years of experience and familiarity with the processes, which we may not be able to adequately transfer. We currently rely upon and expect to continue to rely upon third parties, potentially including our collaborators or licensees, to produce materials required to support our product candidates, pre-clinical studies, clinical trials, and any future commercial efforts. A number of factors could cause production interruptions at either our manufacturing facility or the facilities of our CMOs or suppliers, including equipment malfunctions, labor or employment retention problems, natural disasters, power outages, terrorist activities, or disruptions in the operations of our suppliers. Alternatively, there is the possibility we may have excess manufacturing capacity if product candidates do not progress as planned.

As mentioned above, reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured all of our product candidates ourselves, including reliance on the third party for regulatory compliance, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control, and the possibility of termination or non-renewal of the agreement by the third party, based on its own business priorities, at a time that is costly or inconvenient for us.

Biopharmaceutical manufacturing is also subject to extensive government regulation. Components of a finished therapeutic product approved for commercial sale or used in late-stage clinical trials must be manufactured in accordance with current good manufacturing practices ("cGMP"). These regulations govern manufacturing processes and procedures (including record keeping) and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Our facilities and quality systems and the facilities and quality systems of some or all of our third party contractors must pass a pre-approval inspection for compliance with the applicable regulations as a condition of regulatory approval of a product candidate. In addition, facilities are subject to on-going inspections and routine audits, and minor changes in manufacturing processes may require additional regulatory approvals and audits, either of which could cause us to incur significant additional costs, set-backs or delays and eventual loss of revenue.

Risks associated with doing business internationally could negatively affect our business.

We have research and development operations in Switzerland and the United Kingdom. We expect to pursue pathways to develop and commercialize our product candidates in both U.S. and non-U.S. jurisdictions. Various risks associated with foreign operations may impact our success. Possible risks of foreign operations include fluctuations in the value of foreign and domestic currencies requirements to comply with various jurisdictional requirements such as data privacy regulations, disruptions in the import, export, and transportation of patient tumors and our products or product candidates, the product and service needs of foreign customers, difficulties in building and managing foreign relationships, the performance of our licensees or collaborators, geopolitical instability, unexpected regulatory, economic, or political changes in foreign and domestic markets, including without limitation any resulting from the United Kingdom's withdrawal from the European Union or our current political regime, and limitations on the flexibility of our operations and costs imposed by local labor laws. For example, in 2008 our Oncophage® vaccine was approved for sale in Russia, but we have never received, and do not expect to receive, any revenues from sales in Russia. See "Risk Factors—Even if we receive marketing approval for our product candidates, such product approvals could be subject to restrictions or withdrawals. Regulatory requirements are subject to change. Further, even if we receive marketing approval, we may not receive sufficient coverage and adequate reimbursement for our products."

Our competitors may have superior products, manufacturing capability, selling and marketing expertise and/or financial and other resources.

Our product candidates and the product candidates in development by our collaboration partners may fail because of competition from major pharmaceutical companies and specialized biotechnology companies that market products, or that are engaged in the development of product candidates and for the treatment of cancer. Many of our competitors, including large pharmaceutical companies, have greater financial and human resources and more experience than we do. Our competitors may:

- develop safer or more effective therapeutic drugs or therapeutic vaccines and other products;
- establish superior intellectual property positions;
- discover technologies that may result in medical insights or breakthroughs, which render our drugs or vaccines obsolete, possibly before they generate any revenue, if ever;
- adversely affect our ability to recruit patients for our clinical trials;

- solidify partnerships or strategic acquisitions that may increase the competitive landscape;
- develop or commercialize their product candidates sooner than we commercialize our own, if ever; or
- implement more effective approaches to sales and marketing and capture some of our potential market share.

There is no guarantee that our product candidates will be able to compete with potential future products being developed by our competitors.

The CPM landscape is crowded with several competitors developing assets against a number of targets. Development plans are spread out across various indications and lines of therapy, either alone or in combination with other assets. Competitors range from small cap to large cap companies, with assets in preclinical or clinical stages of development. Therefore, the landscape is dynamic and constantly evolving. We and our partners have CPM antibody programs currently in clinical stage development targeting CTLA-4, GITR and OX40, with our PD-1 antagonist anticipated to enter into the clinic in the first half of this year. We are aware of many companies that have antibody-based products on the market or in clinical development that are directed to the same biological targets as these programs, including, without limitation, the following: (1) BMS markets ipilimumab, an anti-CTLA-4 antibody, and nivolumab, an anti-PD-1 antibody, and is developing agonists to GITR and OX-40, (2) Merck has an approved anti-PD-1 antibody in the United States, and is developing an anti-GITR agonist, (3) Ono Pharmaceuticals has an approved anti-PD-1 antibody in Japan, (4) AstraZeneca/Medimmune has anti-CTLA-4, PD-1, PD-L1, GITR and OX40 targeting antibodies in development, (5) Pfizer has anti-PD-L1 (with Merck KgA), anti-PD-1, and anti-OX40 antibodies in clinical development, (6) Novartis has anti-PD-1, anti-PD-L1 and anti-GITR antibodies in clinical trials, and (7) Roche/Genetech has an approved anti-PD-L1 and an anti-OX40 antibody in clinical development. We are also aware of other competitors with PD-1/PD-L1 antibodies in clinical development, including Tesaro, Beigene, Regeneron, CureTech, Eli Lilly, Jiangsu HengRui Medicine, Shanghai Junshi and Macrogenics. We are also aware of competitors with preclinical antibodies against these targets. In addition, we are also aware of competitors with clinical stage antibodies against targets in our earlier stage programs such as TIM-3, LAG-3, 4-1BB, TIGIT and other undisclosed targets. These include, but are not limited to, BMS, Pfizer, Novartis, Merck, Roche, Tesaro and Regeneron. Additionally, we are also aware of competitors with assets against these targets that are in preclinical development. There is no guarantee that our antibody product candidates will be able to compete with our competitors' antibody products and product candidates.

We are planning to develop our anti PD-1 as a monotherapy as well as in combination with our anti CTLA-4 antibody in second line cervical cancer. We are aware of exploratory, industry sponsored clinical trials that are underway in cervical cancer. Our competitors include, but are not restricted to, Merck (anti-PD-1), Ono Pharmaceuticals and BMS (anti-PD-1 alone or in combination with anti-CTLA-4 or anti-LAG-3), and Advaxis (HPV targeting vaccine alone or in combination with AstraZeneca's anti-PD-L1 antibody). Additionally, we are also aware of cervical cancer clinical trials exploring other CPM targets including, but not restricted to, PD-L1 + IDO (Roche), VISTA (Janssen), OX40 +/- 4-1BB (Pfizer).

We have autologous vaccines programs in development including our Prophage vaccine in clinical development for GBM and our neo-antigen based AutoSynVax vaccine in preclinical development. We are aware of many companies pursuing personalized cancer vaccines in preclinical or clinical development, including, without limitation, the following: Neon Therapeutics, Gritstone Oncology, Advaxis, BioNTech, Moderna and Merck, Nouscom, Immatics and Green Peptides.

Several companies have products that utilize similar technologies and/or patient-specific medicine techniques that compete with our HSP based vaccines. For treatment of recurrent glioma, Roche markets bevacizumab and Eisai and Arbor Pharmaceuticals market carmustine. Schering Corporation, a subsidiary of Merck, markets temozolomide for treatment of patients with ndGBM and refractory astrocytoma. Other companies are developing vaccines for the treatment of patients with ndGBM, such as Green Cross Cell - formerly Innocell Corp (Immuncell-LC), ImmunoCellular Therapeutics (ICT-107), Northwest Biotherapeutics (DC-Vax), Mimivax Inc. (SurVaxM), Annias Immunotherapeutics (CMV Vaccine) and Activartis Biotech (GBM-Vax). In addition, TVAX Biomedical, Stemline

Therapeutics and Sumitomo Dainippon Pharma are developing immunotherapy candidates TVI-Brain-1, SL-701 and DSP-7888, respectively, for recurrent glioma. Other companies may begin development programs as well.

To the extent we develop our vaccines in other indications or in combination with other product candidates, such as available standard of care agents (Avastin®), or with CPMs, they could face additional competition in those indications or in those combinations. In addition, and prior to regulatory approval, if ever, our vaccines and our other product candidates may compete for access to patients with other products in clinical development, with products approved for use in the indications we are studying, or with off-label use of products in the indications we are studying. We anticipate that we will face increased competition in the future as new companies enter markets we seek to address and scientific developments surrounding immunotherapy and other traditional cancer and infectious disease therapies continue to accelerate.

We are aware of compounds that claim to be comparable to QS-21 Stimulon that are being used in clinical trials. Several other vaccine adjuvants are in development and could compete with QS-21 Stimulon for inclusion in vaccines in development. These adjuvants include, but are not limited to, (1) oligonucleotides, under development by Pfizer, Idera, Colby, and Dynavax, (2) MF59,

under development by Novartis, (3) IC31, under development by Intercell (now part of Valneva), and (4) MPL, under development by GSK. In the past, we have provided QS-21 Stimulon to other entities under materials transfer arrangements. In at least one instance, it is possible that this material was used unlawfully to develop synthetic formulations and/or derivatives of QS-21. In addition, companies such as Adjuvance Technologies, Inc., CSL Limited, and Novavax, Inc., as well as academic institutions and manufacturers of saponin extracts, are developing saponin adjuvants, including derivatives and synthetic formulations. These sources may be competitive to our ability to execute future partnering and licensing arrangements involving QS-21 Stimulon. The existence of products developed by these and other competitors, or other products of which we are not aware or which other companies may develop in the future, may adversely affect the marketability of products developed or sold using QS-21 Stimulon.

We are also aware of a third party that manufactures pre-clinical material purporting to be comparable to QS-21 Stimulon. The claims being made by this third party may create marketplace confusion and have an adverse effect on the goodwill generated by us and our partners with respect to QS-21 Stimulon. Any diminution of this goodwill may have an adverse effect on our ability to commercialize future products, if any, incorporating this technology, either alone or with a third party.

Failure to realize the anticipated benefits or our strategic acquisitions and licensing transactions could adversely affect our business, operations and financial condition.

An important part of our business strategy has been to identify and advance a pipeline of product candidates by acquiring and in-licensing product candidates, technologies and businesses that we believe are a strategic fit with our existing business. Since we acquired Agenus Switzerland Inc., formerly known as 4-Antibody AG (“4-AB”), in February 2014, we have completed numerous additional strategic acquisitions and licensing transactions. The ultimate success of these strategic transactions entails numerous operational and financial risks, including:

- higher than expected development and integration costs;
- difficulty in combining the technologies, operations and personnel of acquired businesses with our technologies, operations and personnel;
- exposure to unknown liabilities;
- difficulty or inability to form a unified corporate culture across multiple office sites both nationally and internationally;
- inability to retain key employees of acquired businesses;
- disruption of our business and diversion of our management’s time and attention; and
- difficulty or inability to secure financing to fund development activities for such acquired or in-licensed product candidates, technologies or businesses.

We have limited resources to integrate acquired and in-licensed product candidates, technologies and businesses into our current infrastructure, and we may fail to realize the anticipated benefits of our strategic transactions. Any such failure could have an adverse effect on our business, operations and financial condition.

Failure to enter into and/or maintain significant licensing, distribution and/or collaboration agreements on favorable terms to us may hinder or cause us to cease our efforts to develop and commercialize our product candidates, increase our development timelines, and/or increase our need to rely on partnering or financing mechanisms, such as sales of debt or equity securities, to fund our operations and continue our current and anticipated programs.

As previously noted, our ability to advance our antibody programs depends in part on collaboration agreements such as our collaboration with Incyte. See “Risk Factors—Risks Related to Our Business—We are dependent upon our collaboration with Incyte to further develop, manufacture and commercialize antibodies against certain targets. If we or Incyte fail to perform as expected, the potential for us to generate future revenues under the collaboration would be significantly reduced, the development and/or commercialization of these antibodies may be terminated or substantially delayed, and our business could be severely harmed.” In addition, from time to time we engage in efforts to enter into licensing, distribution and/or collaboration agreements with one or more pharmaceutical or biotechnology

companies to assist us with development and/or commercialization of our other product candidates. If we are successful in entering into such agreements, we may not be able to negotiate agreements with economic terms similar to those negotiated by other companies. We may not, for example, obtain significant upfront payments, substantial royalty rates or milestones. If we fail to enter into any such agreements, our efforts to develop and/or commercialize our product candidates may be undermined. In addition, if we do not raise funds through any such agreements, we will need to rely on other financing mechanisms, such as sales of debt or equity securities, to fund our operations. Such financing mechanisms, if available, may not be sufficient or timely enough to advance our programs forward in a meaningful way in the short-term.

Because we rely on collaborators and licensees for the development and commercialization of many of our product candidate programs, these programs may not prove successful, and/or we may not receive significant payments from such parties.

Part of our strategy is to develop and commercialize many of our product candidates by continuing or entering into arrangements with academic, government, or corporate collaborators and licensees. Our success depends on our ability to negotiate such agreements on favorable terms and on the success of the other parties in performing research, pre-clinical and clinical testing, completing regulatory applications, and commercializing product candidates. Our research, development, and commercialization efforts with respect to antibody candidates from our technology platforms are, in part, contingent upon the participation of institutional and corporate collaborators. For example, in February 2015, we began a broad collaboration with Incyte to pursue the discovery and development of antibodies. See "Risk Factors-Risks Related to our Business—We are dependent upon our collaboration with Incyte to further develop, manufacture and commercialize antibodies against certain targets. If we or Incyte fail to perform as expected, the potential for us to generate future revenues under the collaboration would be significantly reduced, the development and/or commercialization of these antibodies may be terminated or substantially delayed, and our business could be severely harmed." Furthermore, we have a collaboration arrangement with Recepta for CTLA-4 and PD-1, giving Recepta rights to certain South American countries and requiring us to agree upon development plans for these candidates. Disagreements or the failure of either party to perform satisfactorily could have an adverse impact on these programs.

In addition, substantially all product candidates containing QS-21 Stimulon depend on the success of our collaboration partners or licensees, and our relationships with these third parties. Such product candidates depend on our collaborators and licensees successfully enrolling patients and completing clinical trials, being committed to dedicating the resources necessary to advance these product candidates, obtaining regulatory approvals, and successfully manufacturing and commercializing product candidates.

The Brain Tumor Trials Collaborative is sponsoring a Phase 2 clinical trial of our Prophage vaccine candidate in combination with Merck's pembrolizumab in patients with glioma. When our licensees or third party collaborators sponsor clinical trials using our product candidates, we cannot control the timing of enrollment, data readout, or quality of such trials or related activities. In addition, substantially all product candidates containing QS-21 Stimulon depend on the success of our collaboration partner. Such product candidates depend on our collaborator successfully enrolling patients and completing clinical trials, being committed to dedicating the resources to advance these product candidates, obtaining regulatory approvals, and successfully manufacturing and commercializing product candidates.

Development activities for our collaboration programs may fail to produce marketable products due to unsuccessful results or abandonment of these programs, failure to enter into future collaborations or license agreements, or the inability to manufacture product supply requirements for our collaborators and licensees. Several of our agreements also require us to transfer important rights and regulatory compliance responsibilities to our collaborators and licensees. As a result of these collaboration agreements, we will not control the nature, timing, or cost of bringing these product candidates to market. Our collaborators and licensees could choose not to, or be unable to, devote resources to these arrangements or adhere to required timelines, or, under certain circumstances, may terminate these arrangements early. They may cease pursuing product candidates or elect to collaborate with different companies. In addition, these collaborators and licensees, outside of their arrangements with us, may develop technologies or products that are competitive with those that we are developing. From time to time, we may also become involved in disputes with our collaborators or licensees. Such disputes could result in the incurrence of significant expense, or the termination of collaborations. We may be unable to fulfill all of our obligations to our collaborators, which may result in the termination of collaborations. As a result of these factors, our strategic collaborations may not yield revenue. Furthermore, we may not be able to enter into new collaborations on favorable terms or at all. Failure to generate significant revenue from collaborations could increase our need to fund our operations through sales of debt or equity securities and would negatively affect our business prospects.

Our internal computer systems, or those of our third-party CROs, CMOs, licensees, collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption in our business and operations or could subject us to sanctions and penalties that could have a material adverse effect on our reputation or financial condition.

Despite the implementation of security measures, our internal computer systems and those of our current and future CROs, CMOs, licensees, collaborators and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we are not aware of any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed, on-going or future clinical trials could result in delays in our regulatory approval efforts and significant costs to recover or reproduce the data. Likewise, we rely on third parties to manufacture our drug candidates and conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development and commercialization of our product candidates could be delayed.

We use and store customer, vendor, employee and business partner and, in certain instances patient, personally identifiable information in the ordinary course of our business. We are subject to various domestic and international privacy and security regulations, including but not limited to the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), which mandates, among other things, the adoption of uniform standards for the electronic exchange of information in common healthcare transactions, as well as standards relating to the privacy and security of individually identifiable health information, which require the adoption of administrative, physical and technical safeguards to protect such information. In addition, many states have enacted comparable laws addressing the privacy and security of health information, some of which are more stringent than HIPAA. Failure to comply with these standards, or a computer security breach or cyber-attack that affects our systems or results in the unauthorized release of proprietary or personally identifiable information, could subject us to criminal penalties and civil sanctions, and our reputation could be materially damaged and our operations could be impaired. We may also be exposed to a risk of loss or litigation and potential liability, which could have a material adverse effect on our business, results of operations and financial condition.

We are highly reliant on certain members of our management team. In addition, we have limited internal resources and if we fail to recruit and/or retain the services of key employees and external consultants as needed, we may not be able to achieve our strategic and operational objectives.

Each of Garo H. Armen, Ph.D., the Chairman of our Board of Directors and our Chief Executive Officer who co-founded the Company in 1994, Dr. Robert Stein, our President of R&D who joined the Company in January 2014, and Dr. Jean-Marie Cuillerot, our Chief Medical Officer who joined the Company in July 2016, are integral to building our company and developing our technology. If any of Dr. Armen, Dr. Stein or Dr. Cuillerot is unable or unwilling to continue his relationship with Agenus, our business may be adversely impacted. We have employment agreements with each of Dr. Armen, Dr. Stein and Dr. Cuillerot. They each play important roles in our day-to-day activities. We do not carry key employee insurance policies for Dr. Armen, Dr. Stein, Dr. Cuillerot or any other employee.

Our future growth success depends to a significant extent on the skills, experience and efforts of our executive officers and key members of our clinical and scientific staff. We face intense competition for qualified individuals from other pharmaceutical, biopharmaceutical and biotechnology companies, as well as academic and other research institutions. We may be unable to retain our current personnel or attract or assimilate other highly qualified management and clinical personnel in the future on acceptable terms. The loss of any or all of these individuals could harm our business and could impair our ability to support our collaboration partners or our growth generally. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate revenue could be reduced and we may not be able to implement our business strategy.

We rely on a small staff of highly trained and experienced senior management and scientific, administrative and operations personnel and consultants to conduct our business in certain key areas of our organization. The competition for qualified personnel in the biotechnology field is intense, and if we are not able to continue to attract and retain qualified personnel and/or maintain positive relationships with our outside consultants, we may not be able to achieve our strategic and operational objectives.

Calamities, power shortages or power interruptions could disrupt our business and materially adversely affect our operations.

If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our facilities, that damaged critical infrastructure (such as our manufacturing facility) or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue certain activities, such as for example our manufacturing capabilities, for a substantial period of time. In December 2015, we acquired an antibody pilot plant manufacturing facility and leased additional office space in Berkeley, CA. This location is in an area of seismic activity near active earthquake faults. Any earthquake, terrorist attack, fire, power shortage or other calamity affecting

our facilities or those of third parties upon whom we depend may disrupt our business and could have a material adverse effect on our business, results of operations, financial condition and prospects. The disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses and delays as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business.

Risks Related to Regulation of the Biopharmaceutical Industry

The drug development and approval process is uncertain, time-consuming, and expensive.

Drug development, including non-clinical testing and clinical development, and the process of obtaining regulatory approvals for new therapeutic products, is lengthy, expensive, and uncertain. For example, as of December 31, 2016, we had spent approximately 21 years and $568.0 million on our research and development programs. The development and regulatory approval processes also can vary substantially based on the therapeutic area, type, complexity, and novelty of the product. We must provide regulatory authorities with manufacturing, product characterization, and pre-clinical and clinical data demonstrating that our product candidates are safe and effective before they can be approved for commercial sale. It may take us many years to complete our testing,

and failure can occur at any stage. Results of pre-clinical studies do not necessarily predict clinical results, and promising results in early clinical studies might not be confirmed in later studies. Any pre-clinical or clinical test may fail to produce results satisfactory to regulatory authorities for many reasons, including but not limited to emerging manufacturing or control issues, limitations of pre-clinical assessments, difficulties to enroll a sufficient number of patients, changing therapeutic landscape or failure to prospectively identify the benefit/risk profile of the new product. Pre-clinical and clinical data can be interpreted in different ways, which could delay, limit, or prevent regulatory approval. Negative or inconclusive results from a pre-clinical study or clinical trial, adverse medical events during a clinical trial, or safety issues emerging with products of the same class of drug could require additional studies or cause a program to be terminated, even if other studies or trials relating to the program are successful. We or the FDA, other regulatory agencies, or an institutional review board may suspend or terminate human clinical trials at any time on various grounds.

The timing and success of a clinical trial is dependent on obtaining and maintaining sufficient cash resources, successful production of clinical trial material, enrolling sufficient patients in a timely manner, avoiding or mitigating serious or significant adverse patient reactions, and demonstrating efficacy of the product candidate in order to support a favorable risk versus benefit profile, among other considerations. The timing and success of our clinical trials, in particular, are also dependent on clinical sites and regulatory authorities accepting each trial's protocol, statistical analysis plan, product characterization tests, and final clinical results. In addition, regulatory authorities may request additional information or data that is not readily available. Delays in our ability to respond to such requests would delay, and failure to adequately address concerns would prevent, our commercialization efforts. We have encountered in the past, and may encounter in the future, delays in initiating trial sites and enrolling patients into our clinical trials. Future enrollment delays will postpone the dates by which we expect to complete the impacted trials and the potential receipt of regulatory approval. There is no guarantee we will successfully initiate and/or complete our clinical trials.

Delays or difficulties in obtaining regulatory approvals or clearances for our product candidates may:

- adversely affect the marketing of any products we or our licensees or collaborators develop;
- impose significant additional costs on us or our licensees or collaborators;
- diminish any competitive advantages that we or our licensees or collaborators may attain;
- limit our ability to receive royalties and generate revenue and profits; and
- adversely affect our business prospects and ability to obtain financing.

Delays or failures in our receiving regulatory approval for our product candidates in a timely manner may result in us having to incur additional development expense and subject us to having to secure additional financing. As a result, we may not be able to commercialize them in the time frame anticipated, and our business will suffer.

Even if we or our partners receive marketing approval for our product candidates, such product approvals could be subject to restrictions or withdrawals. Regulatory requirements are subject to change. Further, even if we or our partners receive marketing approval, we may not receive sufficient coverage and adequate reimbursement for our products.

Regulatory authorities generally approve products for particular indications. If an approval is for a limited indication, this limitation reduces the size of the potential market for that product. Product approvals, once granted, are subject to continual review and periodic inspections by regulatory authorities. Our operations and practices are subject to regulation and scrutiny by the United States government, as well as governments of any other countries in which we do business or conduct activities. Later discovery of previously unknown problems or safety issues, and/or failure to comply with domestic or foreign laws, knowingly or unknowingly, can result in various adverse consequences, including, among other things, possible delay in approval or refusal to approve a product, warning letters, fines, injunctions, civil penalties, recalls or seizures of products, total or partial suspension of production, refusal of the government to renew marketing applications, complete withdrawal of a marketing application, corrective action requirements, and/or criminal prosecution, withdrawal of an approved product from the market, and/or exclusion from government health care programs. Such regulatory enforcement could have a direct and negative impact on the

product for which approval is granted and could have a negative impact on the approval of any pending applications for marketing approval of new drugs or supplements to approved applications.

Because we operate in a highly regulated industry, regulatory authorities could take enforcement action against us in connection with our licensees' or collaborators', and/or our business and marketing activities for various reasons. For example, the Foreign Corrupt Practices Act prohibits U.S. companies and their representatives from offering, promising, authorizing, or making payments to foreign governmental officials for the purpose of obtaining or retaining business abroad.

From time to time, new legislation is passed into law that could significantly change the statutory provisions governing the approval, manufacturing, and marketing of products regulated by the FDA and other foreign health authorities. Additionally, regulations and guidance are often revised or reinterpreted by health agencies in ways that may significantly affect our business and

our products. It is impossible to predict whether further legislative changes will be enacted, or whether regulations, guidance, or interpretations will change, and what the impact of such changes, if any, may be. For example, the Patient Protection and Affordable Care Act and the Health Care and Education Affordability Reconciliation Act of 2010 (collectively the "ACA"), enacted in March 2010, substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacted the pharmaceutical industry. With regard to pharmaceutical products, among other things, ACA is expected to expand, increase, and change the methodology regarding industry rebates for drugs covered under Medicaid programs; impose an annual, nondeductible fee on any entity that manufactures or imports specific branded prescription drugs and biologic agents, apportioned among those entities according to market share in certain government healthcare programs; expand eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level; expand the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; create a new Patient Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and make changes to the coverage requirements under the Medicare D program. Significant legislative changes to the ACA also appear likely in the 115th U.S. Congress under the Trump Administration.

We expect both government and private health plans to continue to require healthcare providers, including healthcare providers that may one day purchase our products, to contain costs and demonstrate the value of the therapies they provide. Even if our product candidates are approved, the commercial success of our products will depend substantially on the extent to which they are covered by third-party payors, including government health authorities and private health insurers. In the United States, no uniform policy of coverage and reimbursement for products exists among third-party payors, and coverage and reimbursement for products can differ significantly from payor to payor. If coverage and reimbursement are not available, or reimbursement is available only to limited levels, we or our collaborators may not be able to successfully commercialize our product candidates.

New data from our research and development activities, and/or resource considerations could modify our strategy and result in the need to adjust our projections of timelines and costs of programs.

Because we are focused on novel technologies, our research and development activities, including our nonclinical studies and clinical trials, involve the ongoing discovery of new facts and the generation of new data, based on which we determine next steps for a relevant program. These developments can occur with varying frequency and constitute the basis on which our business is conducted. We make determinations on an ongoing basis as to which of these facts or data will influence timelines and costs of programs. We may not always be able to make such judgments accurately, which may increase the costs we incur attempting to commercialize our product candidates. We monitor the likelihood of success of our initiatives and we may need to discontinue funding of such activities if they do not prove to be commercially feasible, due to our limited resources.

We may need to successfully address a number of technological challenges in order to complete development of our product candidates. Moreover, these product candidates may not be effective in treating any disease or may prove to have undesirable or unintended side effects, toxicities, or other characteristics that may preclude our obtaining regulatory approvals or prevent or limit commercial use.

Risks Related to Intellectual Property Rights

If we are unable to obtain and enforce patent protection for our product candidates and related technology, our business could be materially harmed.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our product candidates and technology. Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to duplicate or surpass our technological achievements, eroding our competitive position in the market. Our patent applications may not result in issued patents,

and, even if issued, the patents may be challenged and invalidated. Moreover, our patents and patent applications may not be sufficiently broad to prevent others from practicing our technologies or developing competing products. We also face the risk that others may independently develop similar or alternative technologies or may design around our proprietary property.

Issued patents may be challenged, narrowed, invalidated or circumvented. In addition, court decisions may introduce uncertainty in the enforceability or scope of patents owned by biotechnology companies. The legal systems of certain countries do not favor the aggressive enforcement of patents, and the laws of foreign countries may not allow us to protect our inventions with patents to the same extent as the laws of the United States. Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in scientific literature lag behind actual discoveries, we cannot be certain that we were the first to make the inventions claimed in our issued patents or pending patent applications, or that we were the first to file for protection of the inventions set forth in our patents or patent applications. As a result, we may not be able to obtain or maintain protection for certain inventions. Therefore, the enforceability and scope of our patents in the United States and in foreign countries cannot be predicted with certainty and, as a result, any patents that we own or license may not provide sufficient protection against competitors. We may not be able to obtain or maintain patent

protection from our pending patent applications, from those we may file in the future, or from those we may license from third parties. Moreover, even if we are able to obtain patent protection, such patent protection may be of insufficient scope to achieve our business objectives.

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, the natural expiration of a patent is generally 20 years after its effective filing date. Various extensions may be available; however the life of a patent, and the protection it affords, is limited. Without patent protection for our product candidates, we may be open to competition from biosimilar or generic versions of our product candidates. Furthermore, the product development timeline for biotechnology products is lengthy and it is possible that our issued patents covering our product candidates in the United States and other jurisdictions may expire prior to commercial launch. For example, if we encounter delays in our development efforts, including our clinical trials, the period of time during which we could market our product candidates under patent protection could be reduced.

Our strategy depends on our ability to identify and seek patent protection for our discoveries. This process is expensive and time consuming, and we and our current or future licensors or licensees may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner or in all jurisdictions where protection may be commercially advantageous. It is also possible that we or our current licensors or licensees, or any future licensors or licensees, may not identify patentable aspects of inventions made in the course of development and commercialization activities in time to obtain patent protection on them. Therefore, these and any of our patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. Defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future, for example with respect to proper priority claims, inventorship, etc. If we or our current licensors or licensees, or any future licensors or licensees, fail to establish, maintain or protect such patents and other intellectual property rights, such rights may be reduced or eliminated. If our current licensors or licensees, or any future licensors or licensees, 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. If there are material defects in the form or preparation of our patents or patent applications, such patents or applications may be invalid and unenforceable. Despite our efforts to protect our proprietary rights, unauthorized parties may be able to obtain and use information that we regard as proprietary. The issuance of a patent does not ensure that it is valid or enforceable, so even if we obtain patents, they may not be valid or enforceable against third parties. In addition, the issuance of a patent does not give us the right to practice the patented invention. Third parties may have blocking patents that could prevent us from marketing our own patented product and practicing our own patented technology. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

The patent landscape in the field of therapeutic antibody development, manufacture and commercialization is crowded. For example, we are aware of third party patents directed to methods for identifying and producing therapeutic antibodies. We are also aware of third party patents directed to antibodies to numerous targets for which we also seek to identify, develop, and commercialize antibodies. For example, some patents claim antibodies based on competitive binding with existing antibodies, some claim antibodies based on specifying sequence or other structural information, and some claim various methods of discovery, production, or use of such antibodies.

These or other third party patents could impact our freedom to operate in relation to our technology platforms, as well as in relation to development and commercialization of antibodies identified by us as therapeutic candidates. As we discover and develop our candidate antibodies, we will continue to conduct analyses of these third party patents to determine whether we believe we might infringe them, and if so, whether they would be likely to be deemed valid and enforceable if challenged. If we determine that a license for a given patent or family of patents is necessary or desirable, there can be no guarantee that a license would be available on favorable terms, or at all. Inability to obtain a license on favorable terms, should such a license be determined to be necessary or desirable, could, without limitation, result in increased costs to design around the third party patents, delay product launch, or result in cancellation of the affected program or cessation of use of the affected technology.

Third parties may also seek to market biosimilar versions of any approved products. Alternatively, third parties may seek approval to market their own products similar to or otherwise competitive with our products. In these circumstances, we may need to defend and/or assert our patents, including by filing lawsuits alleging patent infringement. In any of these types of proceedings, a court or agency with jurisdiction may find our patents invalid and/or unenforceable. Even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

We own, co-own or have exclusive rights to approximately 40 issued United States patents and approximately 125 issued foreign patents. We also own, co-own or have exclusive rights to approximately 35 pending United States patent applications and approximately 80 pending foreign patent applications. However, our patents may not protect us against our competitors. Our patent positions, and those of other biopharmaceutical, pharmaceutical and biotechnology companies, are generally uncertain and involve complex legal, scientific, and factual questions. The standards which the United States Patent and Trademark Office (“USPTO”) uses to grant patents, and the standards which courts use to interpret patents, are not always applied predictably or uniformly and can

change, particularly as new technologies develop. Consequently, the level of protection, if any, that will be provided by our patents if we attempt to enforce them and they are challenged, is uncertain. In addition, the type and extent of patent claims that will be issued to us in the future is uncertain. Any patents that are issued may not contain claims that permit us to stop competitors from using similar technology.

Through our acquisitions of 4-AB, PhosImmune and certain assets of Celexion, we own, co-own, or have exclusive rights to a number of patents and patent applications directed to various methods and compositions, including methods for identifying therapeutic antibodies and product candidates arising out of such entities' technology platforms. In particular, we own patents and patent applications relating to our Retrocyte Display™ technology platform, a high throughput antibody expression platform for the identification of fully-human and humanized monoclonal antibodies. This patent family is projected to expire between 2029 and 2031. Through our acquisition of PhosImmune, we own, co-own, or have exclusive rights to patents and patent applications directed to various methods and compositions, including a patent directed to methods for identifying phosphorylated proteins using mass spectrometry. This patent is projected to expire in 2023. We also own patents and patent applications relating to the SECANT® platform, a platform used for the generation of novel monoclonal antibodies. This patent family is projected to expire between 2028 and 2029. In addition, as we advance our research and development efforts with our institutional and corporate collaborators, we are seeking patent protection for newly identified therapeutic antibodies and product candidates. We can provide no assurance that any of our patents, including the patents that we acquired or in-licensed in connection with our acquisitions of 4-AB, PhosImmune and certain assets of Celexion, will have commercial value, or that any of our existing or future patent applications, including the patent applications that we acquired or in-licensed in connection with our acquisitions of 4-AB, PhosImmune and certain assets of Celexion, will result in the issuance of valid and enforceable patents

Our issued patents covering Prophage vaccine and methods of use thereof, alone or in combination with other agents, expired or will expire at various dates between 2015 and 2024. In particular, our issued U.S. patents covering Prophage composition of matter expired in 2015. In addition, our issued patents covering QS-21 Stimulon composition of matter expired in 2008. We continue to explore means of extending the life cycle of our patent portfolio.

The patent position of biopharmaceutical, pharmaceutical or biotechnology companies, including ours, is generally uncertain and involves complex legal and factual considerations. The standards which the USPTO and its foreign counterparts use to grant patents are not always applied predictably or uniformly and can change. There is also no uniform, worldwide policy regarding the subject matter and scope of claims granted or allowable in biopharmaceutical, pharmaceutical or biotechnology patents. The laws of some foreign countries do not protect proprietary information to the same extent as the laws of the United States, and many companies have encountered significant problems and costs in protecting their proprietary information in these foreign countries. Outside the United States, patent protection must be sought in individual jurisdictions, further adding to the cost and uncertainty of obtaining adequate patent protection outside of the United States. Accordingly, we cannot predict whether additional patents protecting our technology will issue in the United States or in foreign jurisdictions, or whether any patents that do issue will have claims of adequate scope to provide competitive advantage. Moreover, we cannot predict whether third parties will be able to successfully obtain claims or the breadth of such claims. The allowance of broader claims may increase the incidence and cost of patent interference proceedings, opposition proceedings, post-grant review, inter partes review, and/or reexamination proceedings, the risk of infringement litigation, and the vulnerability of the claims to challenge. On the other hand, the allowance of narrower claims does not eliminate the potential for adversarial proceedings, and may fail to provide a competitive advantage. Our issued patents may not contain claims sufficiently broad to protect us against third parties with similar technologies or products, or provide us with any competitive advantage.

We may become involved in lawsuits to protect or enforce our patents, which could be expensive, time consuming and unsuccessful.

Third parties may infringe or misappropriate our intellectual property, including our existing patents, patents that may issue to us in the future, or the patents of our licensors or licensees to which we have a license. As a result, we may be required to file infringement claims to stop third-party infringement or unauthorized use. Further, we may not be able to prevent, alone or with our licensors or licensees, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

If we or one of our licensors or licensees were to initiate legal proceedings against a third party to enforce a patent covering our product candidates, the defendant could counterclaim that the patent covering our product candidates is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent.

In addition, within and outside of the United States, there has been a substantial amount of litigation and administrative proceedings, including interference and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in various foreign jurisdictions, regarding patent and other intellectual property rights in the biopharmaceutical industry. Recently, the AIA introduced new procedures, including inter partes review and post grant review. These procedures may be used by

competitors to challenge the scope and/or validity of our patents, including those that patents perceived by our competitors as blocking entry into the market for their products, and the outcome of such challenges.

Even after they have been issued, our patents and any patents which we license may be challenged, narrowed, invalidated or circumvented. If our patents are invalidated or otherwise limited or will expire prior to the commercialization of our product candidates, other companies may be better able to develop products that compete with ours, which could adversely affect our competitive business position, business prospects and financial condition.

The following are non-exclusive examples of litigation and other adversarial proceedings or disputes that we could become a party to involving our patents or patents licensed to us:

- we or our collaborators may initiate litigation or other proceedings against third parties to enforce our patent rights;
- third parties may initiate litigation or other proceedings seeking to invalidate patents owned by or licensed to us or to obtain a declaratory judgment that their product or technology does not infringe our patents or patents licensed to us;
- third parties may initiate opposition proceedings, post-grant review, inter partes review, or reexamination proceedings challenging the validity or scope of our patent rights, requiring us or our collaborators and/or licensors or licensees to participate in such proceedings to defend the validity and scope of our patents;
- there may be a challenge or dispute regarding inventorship or ownership of patents currently identified as being owned by or licensed to us;
- the USPTO may initiate an interference or derivation proceeding between patents or patent applications owned by or licensed to us and those of our competitors, requiring us or our collaborators and/or licensors or licensees to participate in an interference or derivation proceeding to determine the priority of invention, which could jeopardize our patent rights; or
- third parties may seek approval to market biosimilar versions of our future approved products prior to expiration of relevant patents owned by or licensed to us, requiring us to defend our patents, including by filing lawsuits alleging patent infringement.

These lawsuits and proceedings would be costly and could affect our results of operations and divert the attention of our managerial and scientific personnel. There is a risk that a court or administrative body could decide that our patents are invalid or not infringed by a third party's activities, or that the scope of certain issued claims must be further limited. An adverse outcome in a litigation or proceeding involving our own patents could limit our ability to assert our patents against these or other competitors, affect our ability to receive royalties or other licensing consideration from our licensees, and may curtail or preclude our ability to exclude third parties from making, using and selling similar or competitive products. An adverse outcome may also put our pending patent applications at risk of not issuing, or issuing with limited and potentially inadequate scope to cover our product candidates. 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. Additionally, it is also possible that prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim, may, nonetheless, ultimately be found by a court of law or an administrative panel to affect the validity or enforceability of a claim, for example, if a priority claim is found to be improper. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we could lose at least part, and perhaps all, of the patent protection on our relevant product candidates. Such a loss of patent protection could have a material adverse impact on our business.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk that some of our confidential information could be compromised by disclosure. In addition, during the course of litigation or administrative proceedings, there could be public announcements of the results of hearings, motions or other interim proceedings or developments or public access to related documents. If investors perceive these results to be negative, the market price for our common stock could be significantly harmed. Any of these occurrences could adversely affect our competitive business position, business prospects, and financial condition.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage. The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to develop a platform that is similar to, or better than, ours in a way that is not covered by the claims of our patents;
- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of our patents;

- we might not have been the first to make the inventions covered by patents or pending patent applications;
- we might not have been the first to file patent applications for these inventions;
- any patents that we obtain may not provide us with any competitive advantages or may ultimately be found invalid or unenforceable; or
- we may not develop additional proprietary technologies that are patentable.

Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties.

Our success will depend in part on our ability to operate without infringing the proprietary rights of third parties. Other entities may have or obtain patents or proprietary rights that could limit our ability to make, use, sell, offer for sale or import our future approved products or impair our competitive position. In particular the patent landscape around the discovery, development, manufacture and commercial use of our pre-clinical CPM antibody programs and therapeutic antibodies is crowded.

Third parties may have or obtain valid and enforceable patents or proprietary rights that could block us from developing product candidates using our technology. Our failure to obtain a license to any technology that we require may materially harm our business, financial condition and results of operations. Moreover, our failure to maintain a license to any technology that we require may also materially harm our business, financial condition, and results of operations. Furthermore, we would be exposed to a threat of litigation.

In the biopharmaceutical industry, significant litigation and other proceedings regarding patents, patent applications, trademarks and other intellectual property rights have become commonplace. The types of situations in which we may become a party to such litigation or proceedings include:

- we or our collaborators may initiate litigation or other proceedings against third parties seeking to invalidate the patents held by those third parties or to obtain a judgment that our products or processes do not infringe those third parties' patents;
- if our competitors file patent applications that claim technology also claimed by us or our licensors or licensees, we or our licensors or licensees may be required to participate in interference, derivation or other proceedings to determine the priority of invention, which could jeopardize our patent rights and potentially provide a third party with a dominant patent position;
- if third parties initiate litigation claiming that our processes or products infringe their patent or other intellectual property rights, we and our collaborators will need to defend against such proceedings; and
- if a license to necessary technology is terminated, the licensor may initiate litigation claiming that our processes or products infringe or misappropriate their patent or other intellectual property rights and/or that we breached our obligations under the license agreement, and we and our collaborators would need to defend against such proceedings.

These lawsuits would be costly and could affect our results of operations and divert the attention of our management and scientific personnel. There is a risk that a court would decide that we or our collaborators are infringing the third party's patents and would order us or our collaborators to stop the activities covered by the patents. In that event, we or our collaborators may not have a viable alternative to the technology protected by the patent and may need to halt work on the affected product candidate or cease commercialization of an approved product. In addition, there is a risk that a court will order us or our collaborators to pay the other party damages. An adverse outcome in any litigation or other proceeding could subject us to significant liabilities to third parties and require us to cease using the technology that is at issue or to license the technology from third parties. We may not be able to obtain any required licenses on commercially acceptable terms or at all. Any of these outcomes could have a material adverse effect on our business.

The biopharmaceutical industry has produced a significant number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform or predictable. If we are sued for patent infringement, we would need to demonstrate that our products or methods either do not infringe the

patent claims of the relevant patent or that the patent claims are invalid, and we may not be able to do this. Proving invalidity is difficult. For example, in the United States, proving invalidity requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and divert management's time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, if we do not obtain a license, develop or obtain non-infringing technology, fail to defend an infringement action successfully or have

infringed patents declared invalid, we may incur substantial monetary damages, encounter significant delays in bringing our product candidates to market and be precluded from manufacturing or selling our product candidates.

The cost of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the cost of such litigation and proceedings more effectively than we can because of their substantially greater resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. Patent litigation and other proceedings may also absorb significant management time.

If we fail to comply with our obligations under our intellectual property licenses with third parties, we could lose license rights that are important to our business.

We are currently party to various intellectual property license agreements. These license agreements impose, and we expect that future license agreements may impose, various diligence, milestone payment, royalty, insurance and other obligations on us. These licenses typically include an obligation to pay an upfront payment, yearly maintenance payments and royalties on sales. If we fail to comply with our obligations under the licenses, the licensors may have the right to terminate their respective license agreements, in which event we might not be able to market any product that is covered by the agreements. Termination of the license agreements or reduction or elimination of our licensed rights may result in our having to negotiate new or reinstated licenses with less favorable terms, which could adversely affect our competitive business position and harm our business.

If we are unable to protect the confidentiality of our proprietary information, the value of our technology and products could be adversely affected.

In addition to patent protection, we also rely on other proprietary rights, including protection of trade secrets, and other proprietary information. To maintain the confidentiality of trade secrets and proprietary information, we enter into confidentiality agreements with our employees, consultants, collaborators and others upon the commencement of their relationships with us. These agreements require that all confidential information developed by the individual or made known to the individual by us during the course of the individual’s relationship with us be kept confidential and not disclosed to third parties. Our agreements with employees and our personnel policies also provide that any inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. However, we may not obtain these agreements in all circumstances, and individuals with whom we have these agreements may not comply with their terms. Thus, despite such agreement, such inventions may become assigned to third parties. In the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements, even if obtained, may not provide meaningful protection, particularly for our trade secrets or other confidential information. To the extent that our employees, consultants or contractors use technology or know-how owned by third parties in their work for us, disputes may arise between us and those third parties as to the rights in related inventions. To the extent that an individual who is not obligated to assign rights in intellectual property to us is rightfully an inventor of intellectual property, we may need to obtain an assignment or a license to that intellectual property from that individual, or a third party or from that individual’s assignee. Such assignment or license may not be available on commercially reasonable terms or at all.

Adequate remedies may not exist in the event of unauthorized use or disclosure of our proprietary information. The disclosure of our trade secrets would impair our competitive position and may materially harm our business, financial condition and results of operations. Costly and time consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to maintain trade secret protection could adversely affect our competitive business position. In addition, others may independently discover or develop our trade secrets and proprietary information, and the existence of our own trade secrets affords no protection against such independent discovery.

As is common in the biopharmaceutical industry, we employ individuals who were previously or concurrently employed at research institutions and/or other biopharmaceutical, biotechnology or pharmaceutical companies, including our competitors or potential competitors. We may be subject to claims that these employees, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers, or that patents and applications we have filed to protect inventions of these employees, even those related to one or more of our product candidates, are rightfully owned by their former or concurrent employer. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to the USPTO and various foreign patent offices at various points over the lifetime of our patents and/or applications. We have

systems in place to remind us to pay these fees, and we rely on our outside counsel or service providers to pay these fees when due. Additionally, the USPTO and various foreign patent offices require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with rules applicable to the particular jurisdiction. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If such an event were to occur, it could have a material adverse effect on our business. In addition, we are responsible for the payment of patent fees for patent rights that we have licensed from other parties.

If any licensor of these patents does not itself elect to make these payments, and we fail to do so, we may be liable to the licensor for any costs and consequences of any resulting loss of patent rights.

Changes in U.S. 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 biopharmaceutical industry involves both technological and legal complexity, and therefore, is costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Further, recent U.S. Supreme Court rulings have either narrowed the scope of patent protection available in certain circumstances or weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained.

For our U.S. patent applications containing a claim not entitled to priority before March 16, 2013, there is a greater level of uncertainty in the patent law. In September 2011, the Leahy-Smith America Invents Act, or the American Invents Act (“AIA”), was signed into law. The AIA includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. The USPTO is currently developing regulations and procedures to govern administration of the AIA, and many of the substantive changes to patent law associated with the AIA. It is not clear what other, if any, impact the AIA will have on the operation of our business. Moreover, the AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

An important change introduced by the AIA is that, as of March 16, 2013, the United States transitioned to a “first-inventor-to- file” system for deciding which party should be granted a patent when two or more patent applications are filed by different parties claiming the same invention. A third party that files a patent application in the USPTO after that date but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by the third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application. Furthermore, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our technology and the prior art allow our technology to be patentable over the prior art. Since patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we were the first to either (i) file any patent application related to our product candidates or (ii) invent any of the inventions claimed in our patents or patent applications.

Among some of the other changes introduced by the AIA are changes that limit where a patentee may file a patent infringement suit and providing opportunities for third parties to challenge any issued patent in the USPTO. This applies to all of our U.S. patents, even those issued before March 16, 2013. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal court necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent

claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We may have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at other biopharmaceutical, biotechnology or pharmaceutical companies. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise improperly used or disclosed confidential information of these third parties or our employees' former employers. Further, we may be subject to ownership disputes in the future arising, for example, from conflicting obligations of consultants or others who are involved in developing our product candidates. We may also be subject to claims that former employees, consultants, independent contractors, collaborators or other third parties have an ownership interest in our patents or other intellectual property. Litigation may be necessary to defend against these and other claims challenging our right to and use of confidential and proprietary information. If we fail in defending any such claims, in addition to

paying monetary damages, we may lose our rights therein. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management and employees.

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

Filing, prosecuting and defending patents on our product candidates in all countries throughout the world would be prohibitively expensive. The requirements for patentability may differ in certain countries, particularly developing countries. For example, China has a heightened requirement for patentability, and specifically requires a detailed description of medical uses of a claimed drug. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as 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. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection, but enforcement on infringing activities is inadequate. These products 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 certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights 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. In addition, certain countries in Europe and certain developing countries, including India and China, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we may have limited remedies if our patents are infringed or if we are compelled to grant a license to our patents 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 own or license. Finally, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws.

Risks Related to Litigation

We may face litigation or regulatory investigations that could result in substantial damages and may divert management’s time and attention from our business.

From time to time we may become a party to legal proceedings, claims and investigations that arise in the ordinary course of business such as, but not limited to, patent, employment, securities, commercial and environmental matters. While we currently believe that the ultimate outcome of any of these proceedings will not have a material adverse effect on our financial position, results of operations, or liquidity, litigation is subject to inherent uncertainty. Furthermore, litigation and regulatory investigations consume both cash and management attention.

We maintain property and general commercial insurance coverage as well as errors and omissions and directors and officers insurance policies. This insurance coverage may not be sufficient to cover us for future claims.

If we or our employees fail to comply with laws or regulations, it could adversely impact our reputation, business and stock price.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional and/or negligent failures to comply with FDA regulations, to provide accurate information to the FDA, to comply with manufacturing standards we have established, to comply with federal and state health care fraud and abuse, transparency, and/or data privacy and security laws and regulations, to report financial information or data accurately or to disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices; to promote transparency; and to protect the privacy and security of patient data. 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.

While we have adopted a corporate compliance program, we may not be able to protect against all potential issues of noncompliance. Efforts to ensure that our business complies with all applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or

future statutes, regulations, or case law involving applicable laws and regulations.

Employee misconduct could also involve the improper use or disclosure of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. In addition, during the course of our operations, our directors, executives and employees may have access to material, nonpublic information regarding our business, our results of operations or potential transactions we are considering. We may not be able to prevent a director, executive or employee from trading in our common stock on the basis of, or while having access to, material, nonpublic information. If a director, executive or employee was to be investigated, or an action was to be brought against a director, executive or employee for insider trading, it could have a negative impact on our reputation and our stock price. Such a claim, with or without merit, could also result in substantial expenditures of time and money, and divert attention of our management team.

Product liability and other claims against us may reduce demand for our products and/or result in substantial damages.

We face an inherent risk of product liability exposure related to testing our product candidates in human clinical trials and manufacturing antibodies in our Berkeley, CA facility and may face even greater risks if we ever sell products commercially. An individual may bring a product liability claim against us if one of our product candidates causes, or merely appears to have caused, an injury. Product liability claims may result in:

- regulatory investigations;
- injury to our reputation;
- withdrawal of clinical trial volunteers;
- costs of related litigation; and
- substantial monetary awards to plaintiffs; and
- decreased demand for any future products.

We manufacture the Prophage vaccines from a patient's cancer cells, and medical professionals must inject the vaccines into the same patient from which they were manufactured. A patient may sue us if a hospital, a shipping company, or we fail to receive the removed cancer tissue or deliver that patient's vaccine. We do not have any other insurance that covers loss of or damage to the Prophage vaccines or tumor material, and we do not know whether such insurance will be available to us at a reasonable price or at all. We have limited product liability coverage for use of our product candidates. Our product liability policy provides $10.0 million aggregate coverage and $10.0 million per occurrence coverage. This limited insurance coverage may be insufficient to fully cover us for future claims.

We are also subject to laws generally applicable to businesses, including but not limited to, federal, state and local wage and hour, employee classification, mandatory healthcare benefits, unlawful workplace discrimination and whistle-blowing. Any actual or alleged failure to comply with any regulation applicable to our business or any whistle-blowing claim, even if without merit, could result in costly litigation, regulatory action or otherwise harm our business, results of operations, financial condition, cash flow and future prospects.

If we do not comply with environmental laws and regulations, we may incur significant costs and potential disruption to our business.

We use or may use hazardous, infectious, and radioactive materials, and recombinant DNA in our operations, which have the potential of being harmful to human health and safety or the environment. We store these hazardous (flammable, corrosive, toxic), infectious, and radioactive materials, and various wastes resulting from their use, at our facilities pending use and ultimate disposal. We are subject to a variety of federal, state, and local laws and regulations governing use, generation, storage, handling, and disposal of these materials. We may incur significant costs complying with both current and future environmental health and safety laws and regulations. In particular, we are subject to regulation by the Occupational Safety and Health Administration, the Environmental Protection Agency, the Drug Enforcement Agency, the Department of Transportation, the Centers for Disease Control and Prevention, the National Institutes of Health, the International Air Transportation Association, and various state and local agencies. At

any time, one or more of the aforementioned agencies could adopt regulations that may affect our operations. We are also subject to regulation under the Toxic Substances Control Act and the Resource Conservation Development programs.

Although we believe that our current procedures and programs for handling, storage, and disposal of these materials comply with federal, state, and local laws and regulations, we cannot eliminate the risk of accidents involving contamination from these materials. Although we have a workers' compensation liability policy, we could be held liable for resulting damages in the event of an accident or accidental release, and such damages could be substantially in excess of any available insurance coverage and could substantially disrupt our business.

Risks Related to our Common Stock

Provisions in our organizational documents could prevent or frustrate attempts by stockholders to replace our current management.

Our certificate of incorporation and bylaws contain provisions that could make it more difficult for a third party to acquire us without the consent of our Board of Directors. Our certificate of incorporation provides for a staggered board and removal of directors only for cause. Accordingly, stockholders may elect only a minority of our Board at any annual meeting, which may have the effect of delaying or preventing changes in management. In addition, under our certificate of incorporation, our Board of Directors may issue additional shares of preferred stock and determine the terms of those shares of stock without any further action by our stockholders. Our issuance of additional preferred stock could make it more difficult for a third party to acquire a majority of our outstanding voting stock and thereby effect a change in the composition of our Board of Directors. Our certificate of incorporation also provides that our stockholders may not take action by written consent. Our bylaws require advance notice of stockholder proposals and director nominations and permit only our president or a majority of the Board of Directors to call a special stockholder meeting. These provisions may have the effect of preventing or hindering attempts by our stockholders to replace our current management. In addition, Delaware law prohibits a corporation from engaging in a business combination with any holder of 15% or more of its capital stock until the holder has held the stock for three years unless, among other possibilities, the board of directors approves the transaction. Our Board of Directors may use this provision to prevent changes in our management. Also, under applicable Delaware law, our Board of Directors may adopt additional anti-takeover measures in the future.

Our stock has historically had low trading volume, and its public trading price has been volatile.

During the period from our initial public offering on February 4, 2000 to December 31, 2016, and the year ended December 31, 2016, the closing price of our common stock has fluctuated between $1.80 (or $0.30 pre-reverse stock split) and $315.78 (or $52.63 pre-reverse stock split) per share and $2.72 and $7.36 per share, respectively. The average daily trading volume for the year ended December 31, 2016 was approximately 1,207,067 shares, while the average daily trading volume for the year ended December 31, 2015 was approximately 1,652,962. The market may experience significant price and volume fluctuations that are often unrelated to the operating performance of individual companies. In addition to general market volatility, many factors may have a significant adverse effect on the market price of our stock, including:

- continuing operating losses, which we expect over the next several years as we continue our development activities;
- announcements of decisions made by public officials or delays in any such announcements;
- results of our pre-clinical studies and clinical trials or delays in anticipated timing;
- delays in our regulatory filings or those of our partners;
- announcements of new collaboration agreements or amendments with strategic partners or developments by our existing collaboration partners;
- announcements of acquisitions;
- announcements of technological innovations, new commercial products, failures of products, or progress toward commercialization by our competitors or peers;
- failure to realize the anticipated benefits of acquisitions;
- developments concerning proprietary rights, including patent and litigation matters;
- publicity regarding actual or potential results with respect to product candidates under development;
- quarterly fluctuations in our financial results, including our average monthly cash used in operating activities;
- variations in the level of expenses related to any of our product candidates or clinical development programs;
- additions or departures of key management or scientific personnel;
- conditions or trends in the biopharmaceutical, biotechnology and pharmaceutical industries generally;
-

other events or factors, including those resulting from war, incidents of terrorism, natural disasters or responses to these events;

- changes in accounting principles;
- general economic and market conditions and other factors that may be unrelated to our operating performance or the operating performance of our competitors, including changes in market valuations of similar companies; and
- sales of common stock by us or our stockholders in the future, as well as the overall trading volume of our common stock.

In the past, securities class action litigation has often been brought against a company following a significant decline in the market price of its securities. This risk is especially relevant for us because many biopharmaceutical, biotechnology and pharmaceutical companies experience significant stock price volatility.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who covers us downgrades our stock, or publishes inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price and trading volume to decline.

The sale of a significant number of shares could cause the market price of our stock to decline.

The sale by us or the resale by stockholders of a significant number of shares of our common stock could cause the market price of our common stock to decline. As of December 31, 2016, we had 87,794,933 shares of common stock outstanding. All of these shares are eligible for sale on NASDAQ, although certain of the shares are subject to sales volume and other limitations. We have filed registration statements to permit the sale of approximately 22,200,000 shares of common stock under our equity incentive plans, to permit the sale of 1,500,000 shares of common stock under our 2015 Inducement Equity Plan, and to permit the sale of 150,000 shares of common stock under an inducement grant. We have also filed registration statements to permit the sale of approximately 167,000 shares of common stock under our Employee Stock Purchase Plan, to permit the sale of 325,000 shares of common stock under our Directors' Deferred Compensation Plan, to permit the sale of approximately 20,101,002 shares of common stock pursuant to various private placement agreements (including 1,400,000 shares of common stock issuable upon the exercise of certain warrants that we issued in February 2015) and to permit the sale of approximately 10,000,000 shares of our common stock pursuant to our At Market Issuance Sales Agreement. As of December 31, 2016, an aggregate of approximately 29 million of these shares remained available for sale. In connection with our acquisition of 4-AB in February 2014, we are obligated to make contingent milestone payments to the former shareholders of 4-AB, payable in cash or shares of our common stock at our option, as follows (i) $10.0 million upon our market capitalization exceeding $750.0 million for 30 consecutive trading days prior to the earliest of (a) the tenth anniversary of the Closing Date (b) the sale of 4-AB or (c) the sale of Agenus and (ii) $10.0 million upon our market capitalization exceeding $1.0 billion for 30 consecutive trading days prior to the earliest of (a) the tenth anniversary of the Closing Date, (b) the sale of 4-AB or (c) the sale of Agenus. In addition, as additional consideration for assets that we purchased from Celexion, we agreed to pay to Celexion $4.0 million on the 24-month anniversary of the Closing Date payable at our discretion in cash, shares of our common stock, or any combination thereof. In connection with our acquisition of PhosImmune in December 2015, we issued 1,631,521 shares of our common stock to the shareholders of PhosImmune and other third parties having a fair market value of approximately $7.4 million at closing. In addition, we may be obligated in the future to pay certain contingent milestones payments, payable at our election in cash or shares of our common stock of up to $35.0 million in the aggregate. Pursuant to a technology transfer and license agreement that we entered into with Iontas Limited ("Iontas") in September 2015, we agreed to pay up to an aggregate of $3,500,000 upon the completion of certain milestones, payable in cash or shares of our common stock at our election. In November 2016, we issued 157,513 shares of our common stock to Iontas as consideration for a $1.0 million milestone payment, and in January 2017 we filed a registration statement to provide for the resale of these shares. In March 2017, we issued an additional 373,351 shares of our common stock to Iontas as consideration for a $1.5 million milestone payment and amended the registration statement to incorporate these additional shares. We are also obligated to file registration statements covering any additional shares that may be issued to Celexion, XOMA, Iontas or the former shareholders of PhosImmune in the future pursuant to the terms of our agreements with Celexion, XOMA, Iontas and PhosImmune, respectively. The market price of our common stock may decrease based on the expectation of such sales. The market price of our common stock may decrease based on the expectation of such sales.

As of December 31, 2016, warrants to purchase approximately 4,351,450 shares of our common stock with a weighted average exercise price per share of $9.01 were outstanding.

As of December 31, 2016, options to purchase 11,693,400 shares of our common stock with a weighted average exercise price per share of $4.51 were outstanding. These options are subject to vesting that occurs over a period of up to four years following the date of grant. As of December 31, 2016, we had 5,835,130 vested options and 1,942,476 nonvested shares outstanding.

As of December 31, 2016, our outstanding shares of Series A-1 Convertible Preferred Stock were convertible into 333,333 shares of our common stock.

We may issue additional common stock, preferred stock, restricted stock units, or securities convertible into or exchangeable for our common stock. Furthermore, substantially all shares of common stock for which our outstanding stock options or warrants are exercisable are, once they have been purchased, eligible for immediate sale in the public market. The issuance of additional common stock, preferred stock, restricted stock units, or securities convertible into or exchangeable for our common stock or the exercise of stock options or warrants would dilute existing investors and could adversely affect the price of our securities. In addition, such securities may have rights senior to the rights of securities held by existing investors.

We do not intend to pay dividends on our common stock and, consequently your ability to obtain a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividend on our common stock and do not intend to do so in the foreseeable future. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business. Therefore, the success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or maintain their current value.

Failure to maintain effective internal controls in accordance with Section 404 of the Sarbanes-Oxley Act of 2002 and to comply with changing regulation of corporate governance and public disclosure could have a material adverse effect on our operating results and the price of our common stock.

The Sarbanes-Oxley Act of 2002 and rules adopted by the SEC and NASDAQ have resulted in significant costs to us. In particular, our efforts to comply with Section 404 of the Sarbanes-Oxley Act of 2002 and related regulations regarding the required assessment of our internal control over financial reporting, and our independent registered public accounting firm's audit of internal control over financial reporting, have required commitments of significant management time. We expect these commitments to continue.

Our internal control over financial reporting (as defined in Rules 13a-15 of the Exchange Act) is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our consolidated financial statements for external purposes in accordance with U.S. GAAP. Because of its inherent limitations, internal control over financial reporting may not prevent or detect all deficiencies or weaknesses in our financial reporting. While our management has concluded that there were no material weaknesses in our internal control over financial reporting as of December 31, 2015, our procedures are subject to the risk that our controls may become inadequate because of changes in conditions or as a result of a deterioration in compliance with such procedures. No assurance is given that our procedures and processes for detecting weaknesses in our internal control over financial reporting will be effective.

Changing laws, regulations and standards relating to corporate governance and public disclosure, are creating uncertainty for companies. Laws, regulations and standards are subject to varying interpretations in some cases due to their lack of specificity, and as a result, their application in practice may evolve over time as new guidance is provided, which could result in continuing uncertainty regarding compliance matters and higher costs caused by ongoing revisions to disclosure and governance practices. If we fail to comply with these laws, regulations and standards, our reputation may be harmed and we might be subject to sanctions or investigation by regulatory authorities, such as the SEC. Any such action could adversely affect our operating results and the market price of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We lease our manufacturing, research and development, and corporate offices in Lexington, Massachusetts occupying approximately 82,000 square feet. This lease agreement terminates in August 2023 with an option to renew for one additional ten-year period. We have sublet a portion of this facility under a sublease that expires in December 2017.

During December 2012 we entered into a commercial lease for approximately 5,600 square feet of office space in New York, New York for use as corporate offices that terminates in May 2020.

We also have research and office facilities in Cambridge, United Kingdom and Basel, Switzerland whose leases expire in December 2025 and June 2018, respectively. We previously had research and office facilities in Jena, Germany. In 2016, we closed our Jena office and consolidated these operations in the United Kingdom and Switzerland. However, we still have a commercial lease in Jena that expires in June 2017.

In December 2015, we acquired a manufacturing facility with approximately 24,000 square feet in Berkeley, California to be used in the production and manufacture of antibody product candidates. In December 2015, we also entered into a commercial lease in Berkeley, California for approximately 10,900 square feet to be used for corporate offices which expires in December 2020. We also have a sublease in Berkeley, California for parking that expires in May 2020.

We believe substantially all of our property and equipment is in good condition and that we have sufficient capacity to meet our current operational needs. We do not anticipate experiencing significant difficulty in retaining occupancy of any of our manufacturing or office facilities and will do so through lease renewals prior to expiration or through replacing them with equivalent facilities.

Item 3. Legal Proceedings

We are not party to any material legal proceedings.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock is currently listed on The Nasdaq Capital Market under the symbol "AGEN."

The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock.

	High	Low
2015		
First Quarter	$6.49	$3.80
Second Quarter	10.16	4.90
Third Quarter	9.64	4.33
Fourth Quarter	5.36	3.75
2016		
First Quarter	4.63	2.61
Second Quarter	4.82	2.97
Third Quarter	7.31	4.04
Fourth Quarter	7.49	3.71

As of February 28, 2017, there were 692 holders of record and 26,351 beneficial holders of our common stock.

We have never paid cash dividends on our common stock, and we do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain future earnings, if any, for the future operation and expansion of our business. Any future payment of dividends on our common stock will be at the discretion of our Board of Directors and will depend upon, among other things, our earnings, financial condition, capital requirements, level of indebtedness, and other factors that our Board of Directors deem relevant.

Stock Performance

The following graph shows the cumulative total stockholder return on our common stock over the period spanning December 31, 2011 to December 31, 2016, as compared with that of the Nasdaq Stock Market (U.S. Companies) Index and the Nasdaq Biotechnology Index, based on an initial investment of $100 in each on December 31, 2011. Total stockholder return is measured by dividing share price change plus dividends, if any, for each period by the share price at the beginning of the respective period, and assumes reinvestment of dividends.

This stock performance graph shall not be deemed "filed" with the SEC or subject to Section 18 of the Exchange Act, nor shall it be deemed incorporated by reference in any of our filings under the Securities Act of 1933, as amended (the "Securities Act").

COMPARISON OF CUMULATIVE TOTAL RETURN OF AGENUS INC.,

NASDAQ STOCK MARKET (U.S. COMPANIES) INDEX

AND NASDAQ BIOTECHNOLOGY INDEX

	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016
Agenus Inc.	100.00	205.00	132.00	198.50	227.00	206.00
NASDAQ Stock Market (U.S. Companies) Index	100.00	115.91	160.32	181.80	192.21	206.63
NASDAQ Biotechnology Index	100.00	131.91	218.45	287.40	326.39	255.62

Item 6. Selected Financial Data

We have derived the condensed consolidated balance sheet data set forth below as of December 31, 2016 and 2015, and the condensed consolidated statement of operations data for each of the years in the three-year period ended December 31, 2016, from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

You should read the selected condensed consolidated financial data in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations," our consolidated financial statements, and the notes to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Changes in cash, cash equivalents, and short-term investments, total current assets, total assets, total current liabilities, long-term debt and stockholders' (deficit) equity in the periods presented below include the effects of the receipt of net proceeds from our debt offerings, equity offerings, the exercise of stock options, and employee stock purchases that totaled approximately $3.4 million, $220.4 million, $57.0 million, $36.6 million, and $10.5 million in the years ended December 31, 2016, 2015, 2014, 2013, and 2012, respectively.

	For the Year Ended December 31,				
	2016	2015	2014	2013	2012
	(in thousands except per share data)				
Condensed Consolidated Statement of Operations Data:					
Revenue	$22,573	$24,817	$6,977	$3,045	$15,961
Operating expenses:					
Cost of goods sold	—	—	—	(536)	(672)
Research and development	(94,971)	(70,444)	(22,349)	(13,005)	(10,564)
General and administrative	(33,126)	(28,370)	(21,250)	(14,484)	(11,465)
Contingent purchase price consideration fair value adjustment	(1,953)	(6,704)	(6,699)	—	—
Operating loss	(107,477)	(80,701)	(43,321)	(24,980)	(6,740)
Non-operating (expense) income	(2,202)	(5,968)	2,096	(2,673)	110
Interest expense, net	(17,316)	(6,599)	(1,261)	(2,420)	(4,695)
Loss before taxes	(126,995)	(93,268)	(42,486)	(30,073)	(11,325)
Income tax benefit (1)	—	5,387	—	—	—
Net loss	(126,995)	(87,881)	(42,486)	(30,073)	(11,325)
Dividends on Series A-1 convertible preferred stock	(204)	(203)	(204)	(3,159)	(792)
Net loss attributable to common stockholders	$(127,199)	$(88,084)	$(42,690)	$(33,232)	$(12,117)
Net loss attributable to common stockholders per common share, basic and diluted	$(1.46)	$(1.13)	$(0.71)	$(1.12)	$(0.51)
Weighted average number of common shares outstanding, basic and diluted	87,070	78,212	59,754	29,766	23,629

	As of December 31,				
	2016	2015	2014	2013	2012
	(in thousands)				
Condensed Consolidated Balance Sheet Data:					
Cash, cash equivalents and short-term investments	$76,437	$171,668	$40,224	$27,352	$21,468
Total current assets	91,312	184,095	42,670	28,175	22,615
Total assets	156,986	242,228	74,527	34,835	29,093
Total current liabilities	40,851	28,934	9,229	10,296	4,813
Long-term debt, less current portion	130,542	114,326	4,769	5,384	35,714
Stockholders' (deficit) equity	(39,126)	70,728	23,018	(4,481)	(17,600)

(1) Given our history of incurring operating losses, no income tax benefit has been recognized in our consolidated statements of operations for the years ended December 31, 2016, 2014, 2013, and 2012 because of the loss before income taxes, and the need to recognize a valuation allowance on the portion of our deferred tax assets which will

not be offset by the reversal of deferred tax liabilities. For the year ended December 31, 2015, we recognized an income tax benefit as a result of the deferred tax liabilities recognized in connection with the PhosImmune and XOMA antibody manufacturing facility acquisitions.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview

We are a clinical-stage immuno-oncology ("I-O") company focused on the discovery and development of therapies that engage the body's immune system to fight cancer. Our approach to cancer immunotherapy involves a diverse portfolio consisting of antibody-based therapeutics, adjuvants and cancer vaccine platforms. We, in collaboration with our partners, have developed a number of immuno-modulatory antibodies against important nodes of immune regulation. These include antibodies targeting CTLA-4, GITR and OX40 that are in clinical development, and our anti-PD-1 antibody anticipated to enter the clinic in the first half of 2017. Our discovery pipeline includes a number of proprietary checkpoint modulating ("CPM") antibodies against innovative targets such as TIGIT and 4-1BB (also known as CD137). We believe that tailored combination therapies are essential to combat some of the most resistant cancers. Accordingly, our immune education strategy focuses on pursuing antibodies as well as vaccine candidates in conjunction with adjuvants.

We are developing a comprehensive I-O portfolio driven by the following platforms and programs, which we intend to utilize individually and in combination:

- our antibody discovery platforms, including our Retrocyte Display™, SECANT® yeast display, and phage display technologies designed to produce quality human antibodies;
- our antibody candidate programs, including our CPM programs;
- our vaccine programs, including Prophage™, AutoSynVax™ and PhosPhoSynVax™; and
- our saponin-based vaccine adjuvants, principally our QS-21 Stimulon® adjuvant, or QS-21 Stimulon.

We also have our own GMP manufacturing facility with the capacity to support early phase clinical programs. We originally acquired the facility from XOMA Corporation in December 2015 and have since upgraded and expanded our capabilities.

We assess development, commercialization and partnering strategies for each of our product candidates periodically based on several factors, including pre-clinical and clinical trial results, competitive positioning and funding requirements and resources. We are currently collaborating with companies such as Incyte Corporation ("Incyte"), Merck Sharpe & Dohme and Recepta Biopharma SA ("Recepta"). Through these alliances, as well as our own internal programs, we currently have over a dozen antibody programs, including our anti-CTLA-4 (partnered with Recepta for certain South America territories) and anti-GITR and anti-OX40 (both partnered with Incyte) antibody programs that each commenced clinical trials during 2016. We recently amended our collaboration agreement with Incyte to, among other things, convert the GITR and OX40 programs from profit-share to royalty-bearing programs. We are now eligible to receive royalties on global net sales at a flat 15% rate for each of these programs. There are now no more profit-share programs under the collaboration, and we are eligible to receive up to a total of $510.0 million in future potential development, regulatory and commercial milestones across all programs in the collaboration. Pursuant to the amended agreement, we received accelerated milestone payments of $20.0 million from Incyte related to the clinical development of INCAGN1876 (anti-GITR agonist) and INCAGN1949 (anti-OX40 agonist). Concurrent with the execution of the amendment, we and Incyte also entered into a separate stock purchase agreement whereby Incyte purchased an additional 10 million shares of our common stock at $6.00 per share, resulting in proceeds of $80.0 million to us.

In addition to our antibody platforms and CPM programs, we are also advancing a series of vaccine programs to treat cancer. In January 2017, we announced a clinical trial collaboration with the NCI, which is a double-blind, randomized controlled Phase 2 trial that will evaluate the effect of our autologous vaccine candidate, Prophage, in combination with pembrolizumab (Keytruda®, Merck & Co., Inc.) in patients with ndGBM. Under this collaboration, we are suppling Prophage, Merck is providing pembrolizumab and the NCI and Brain Tumor Trials Collaborative ("BTTC") member sites are recruiting patients and conducting the trial. We are also advancing our synthetic vaccine candidate, AutoSynVax, towards the clinic and plan to initiate our first clinical trial for this program in the first half of 2017.

Our QS-21 Stimulon adjuvant is partnered with GlaxoSmithKline ("GSK") and is a key component in multiple GSK vaccine programs that target prophylactic or therapeutic impact in a variety of infectious diseases and cancer. These programs are in various stages, with the most advanced being GSK's shingles and malaria programs, which GSK announced positive Phase 3 results for in December 2014 and October 2013, respectively. In September 2015, we monetized a portion of the future royalties we are contractually entitled to receive from GSK from sales of its shingles and malaria vaccines through a Note Purchase Agreement and received net proceeds of approximately $78.2 million. In 2016, GSK filed for approval of its shingles vaccine candidate in the United States, European Union and Canada, and is expected to file for approval in Japan in 2017. Assuming regulatory approval, the first products containing QS-21 Stimulon are anticipated to be launched by GSK in 2018. We do not incur clinical development costs for products partnered with GSK.

Our business activities include product research and development, intellectual property prosecution, manufacturing, regulatory and clinical affairs, corporate finance and development activities, and support of our collaborations. Our product candidates require clinical trials and approvals from regulatory agencies, as well as acceptance in the marketplace. Part of our strategy is to develop and commercialize some of our product candidates by continuing our existing arrangements with academic and corporate collaborators and licensees and by entering into new collaborations.

Our common stock is currently listed on The Nasdaq Capital Market under the symbol “AGEN.”

Our research and development expenses for the years ended December 31, 2016, 2015, and 2014, were $95.0 million, $70.4 million, and $22.3 million, respectively. We have incurred significant losses since our inception. As of December 31, 2016, we had an accumulated deficit of $905.3 million.

To date, we have financed our operations primarily through the sale of equity and debt securities. We believe that, based on our current plans and activities, our working capital resources at December 31, 2016, along with the net proceeds of approximately $80 million from Incyte in February 2017 in connection with amending our collaboration agreement, and issuing additional shares pursuant to a share purchase agreement, will be sufficient to satisfy our liquidity requirements through the first half of 2018. We may attempt to raise additional funds by: (1) pursuing collaboration, out-licensing and/or partnering opportunities for our portfolio programs and product candidates with one or more third parties, (2) renegotiating third party agreements, (3) selling assets, (4) securing additional debt financing and/or (5) selling equity securities. Satisfying long-term liquidity needs may require the successful commercialization and/or substantial out-licensing or partnering arrangements for our antibody discovery platforms, CPM antibody programs, HSP-based vaccines, and vaccines containing QS-21 Stimulon under development by our licensees. Our long-term success will also be dependent on the successful identification, development and commercialization of potential other product candidates, each of which will require additional capital with no certainty of timing or probability of success. If we incur operating losses for longer than we expect and/or we are unable to raise additional capital, we may become insolvent and be unable to continue our operations.

Historical Results of Operations

Year Ended December 31, 2016 Compared to the Year Ended December 31, 2015

Revenue: We generated revenue of $22.6 million and $24.8 million during the years ended December 31, 2016 and 2015, respectively. Revenue primarily includes fees earned under our license agreements, including approximately $16.2 million and $14.5 million, respectively for the years ended December 31, 2016, and 2015, respectively, related to reimbursement of development costs under our Collaboration Agreement with Incyte. The decrease in revenue for the year ended December 31, 2016 is primarily attributable to decreased amortization of deferred revenue, offset by increased reimbursement of development costs under our Collaboration Agreement with Incyte. During the years ended December 31, 2016 and 2015, we recorded revenue of $3.5 million and $9.2 million, respectively, from the amortization of deferred revenue.

Research and Development: Research and development expenses include the costs associated with our internal research and development activities, including compensation and benefits, occupancy costs, clinical manufacturing costs, costs of consultants, and administrative costs. Research and development expense increased 35% to $95.0 million for the year ended December 31, 2016 from $70.4 million for the year ended December 31, 2015. Increased expenses in 2016 primarily includes the $18.3 million increase in third-party services and other expenses relating largely to the advancement of our CPM antibody programs, a $17.0 million increase in payroll related costs and share-based compensation due to increased headcount, and $3.1 million increase in depreciation expense, offset by a $13.2 million decrease in in-process research and development related to a 2015 asset acquisition.

General and Administrative: General and administrative expenses consist primarily of personnel costs, facility expenses, and professional fees. General and administrative expenses increased 17% to $33.1 million for the year ended December 31, 2016 from $28.4 million for the year ended December 31, 2015. Increased general and administrative expenses in 2016 primarily relate to a $2.0 million increase in payroll related expenses due to increased headcount and a $1.9 million increase in share-based compensation.

Contingent purchase price consideration fair value adjustment: Contingent purchase price consideration fair value adjustment represents the change in the fair value of our contingent purchase price consideration during the year ended December 31, 2016, which resulted in expense of $2.0 million, primarily related to the changes in our market capitalization. The fair value of our contingent purchase price consideration is based on estimates from a Monte Carlo simulation of our market capitalization.

Non-operating (expense)income: Non-operating expense increased by $3.8 million for the year ended December 31, 2016, which primarily represents our increased foreign currency exchange loss of $1.7 million, offset by the absence of the prior year change in the fair value of our contingent royalty obligation of $6.9 million, loss on extinguishment of our senior subordinated promissory notes issued in April 2013 (the “2013 Notes”), and corresponding offset by the $1.5 million gain on the purchase related to the antibody manufacturing facility acquisition from XOMA Corporation in December 2015.

Interest Expense, net: Interest expense, net increased to $17.3 million for the year ended December 31, 2016 from $6.6 million for the year ended December 31, 2015 due to the outstanding 2015 Subordinated Notes, issued in February 2015 and the Notes under our NPA, executed in September 2015.

Income tax benefit: For the year ended December 31, 2015, an income tax benefit arose from deferred tax liabilities recognized in connection with our PhosImmune and XOMA acquisitions during the year and relates to the resulting release of our existing valuation allowance on our deferred tax assets. There was no similar benefit for the year ended December 31, 2016.

Year Ended December 31, 2015 Compared to the Year Ended December 31, 2014

Revenue: We generated revenue of $24.8 million and $7.0 million during the years ended December 31, 2015 and 2014, respectively. Revenue primarily includes fees earned under our license agreements, including approximately $14.4 million for the year ended December 31, 2015, related to reimbursement of development costs under our Collaboration Agreement with Incyte. In 2014, revenues included license fees earned and grant revenue. The increase in revenue for the year ended December 31, 2015 is primarily attributable to the amortization of deferred revenue and reimbursement of development costs under our Collaboration Agreement with Incyte. During the years ended December 31, 2015 and 2014, we recorded revenue of $9.3 million and $3.5million, respectively, from the amortization of deferred revenue.

Research and development: Research and development expense increased 215% to $70.4 million for the year ended December 31, 2015 from $22.3 million for the year ended December 31, 2014. Increased expenses in 2015 primarily includes the $19.1 million increase in third-party services and other expenses relating largely to the advancement of our CPM antibody programs, our $13.2 million asset acquisition which was expensed as in-process research and development, a $5.6 million increase in payroll related costs due to increased headcount, and $3.6 million in one-time license technology fees.

General and administrative: General and administrative expenses increased 34% to $28.4 million for the year ended December 31, 2015 from $21.2 million for the year ended December 31, 2014. Increased general and administrative expenses in 2015 primarily relate to a $4.1 million increase in professional fees related to our corporate activities, $1.3 million increase in payroll related expenses due to increased headcount and $1.4 million increase in share-based compensation.

Contingent purchase price consideration fair value adjustment: Contingent purchase price consideration fair value adjustment represents the increase in the fair value of our contingent purchase price consideration during the year ended December 31, 2015, which resulted in expense of $6.7 million related to the changes in our market capitalization, including the achievement of the first milestone under our Agenus Switzerland Share Exchange Agreement. The fair value of our contingent purchase price consideration is based on estimates from a Monte Carlo simulation of our market capitalization.

Non-operating (expense) income: Non-operating income for the year ended December 31, 2015 represents primarily the change in the fair value of our contingent royalty obligation of $6.9 million, our foreign currency exchange loss and our loss on extinguishment of our 2013 Notes offset by the $1.5 million gain on the purchase related to the antibody manufacturing facility acquisition from XOMA Corporation in December 2015 described in Note 4 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Non-operating expense for the year ended December 31, 2014, represents primarily the decrease in the fair value of our contingent royalty obligation due to the termination of GSK’s Phase 3 MAGE-A3 trial in non-small cell lung cancer, which occurred during the first quarter of 2014.

Interest expense, net: Interest expense net increased to $6.6 million for the year ended December 31, 2015 from $1.3 million for the year ended December 31, 2014 due to the issuance of our 2015 Subordinated Notes in February 2015 and the issuance of the Notes under our NPA which was executed in September 2015.

Income tax benefit: For the year ended December 31, 2015 an income tax benefit arose from deferred tax liabilities recognized in connection with our PhosImmune and XOMA acquisitions during the year and relates to the resulting release of our existing valuation allowance on our deferred tax assets

Inflation

We believe that inflation has not had a material adverse effect on our business, results of operations, or financial condition to date.

Research and Development Programs

For the year ended December 31, 2016, our research and development programs consisted largely of our CPM antibody programs as indicated in the following table (in thousands).

Research and Development Program	Product	For the Year Ended December 31, 2016	2015	2014	Prior to 2014	Total
Heat shock proteins for cancer	Prophage Vaccines	$8,202	$5,508	$6,153	$303,528	$323,391
Checkpoint modulator programs*		83,919	63,290	13,422	—	160,631
Heat shock proteins for infectious diseases	HerpV	11	293	2,443	30,309	33,056
Vaccine adjuvant	QS-21 Stimulon	77	142	321	13,336	13,876
Other research and development programs		2,761	1,211	10	33,556	37,538
Total research and development expenses		$94,970	$70,444	$22,349	$380,729	568,492

* Prior to 2014, costs were incurred by Agenus Switzerland Inc. (formerly known as 4-Antibody AG) (“4-AB”), which we acquired in February 2014.

Research and development program costs include compensation and other direct costs plus an allocation of indirect costs, based on certain assumptions and our review of the status of each program. Our product candidates are in various stages of development and significant additional expenditures will be required if we start new clinical trials, encounter delays in our programs, apply for regulatory approvals, continue development of our technologies, expand our operations, and/or bring our product candidates to market. The total cost of any particular clinical trial is dependent on a number of factors such as trial design, length of the trial, number of clinical sites, number of patients, and trial sponsorship. The process of obtaining and maintaining regulatory approvals for new therapeutic products is lengthy, expensive, and uncertain. Because our CPM antibody programs are pre-clinical and early stage, and because further development of HSP-based vaccines is dependent clinical trial results, among other factors, we are unable to reliably estimate the cost of completing our research and development programs or the timing for bringing such programs to various markets or substantial partnering or out-licensing arrangements, and, therefore, when, if ever, material cash inflows are likely to commence. Active programs involving QS-21 Stimulon depend on our collaboration partners or licensees successfully completing clinical trials, successfully manufacturing QS-21 Stimulon to meet demand, obtaining regulatory approvals and successfully commercializing product candidates containing QS-21 Stimulon.

Product Development Portfolio

Antibody Discovery Platforms and CPM Programs

Checkpoint antibodies regulate immune response against pathogens that invade the body and are achieving positive outcomes in a number of cancers that were untreatable only a few years ago. Two classes of checkpoint targets include: (i) inhibitory checkpoints that help suppress an immune response in order to prevent excessive immune reaction resulting in undesired inflammation and/or auto-immunity, and (ii) stimulatory checkpoints that can enhance or amplify an antigen-specific immune response.

We are equipped with a suite of antibody discovery platforms and we have integrated these capabilities to improve speed, cost and quality of product development efforts. In addition to the use of our antibody discovery platforms that are designed to drive the discovery of future CPM antibody candidates, we are planning to employ a variety of techniques to identify and optimize our antibody candidates. For example, while we have been primarily focused on monoclonal antibodies over the past two years, we are also beginning to explore multispecific antibody technologies, collaborations, and product candidate opportunities.

We and our partners currently have pre-clinical and clinical programs exploring fully human and humanized monoclonal antibodies against several important checkpoint targets. In 2016, we and our partners began clinical trials with three of these CPM candidates- CTLA-4, GITR and OX40. In addition, we have a product candidate targeting PD-1 for which we expect to initiate a Phase 1 clinical trial during the first half of 2017. For additional information regarding our antibody discovery platforms and checkpoint antibody program, please read Part I-Item 1. “Business” of this Annual Report on Form 10-K.

Prophage Vaccine Candidates

To date, more than 1,000 patients have been treated with Prophage vaccines in clinical trials, covering a broad range of cancer types, and no serious immune-mediated side effects have been observed. The results of these trials have been published and/or presented at scientific conferences. These results indicate observable clinical and/or immunological activity across many types of

cancer. Taken together, these trials show promising evidence of clinical benefit from Prophage vaccines and also establish that such vaccines can be effectively manufactured under current good manufacturing practices ("cGMP"), conditions and internationally distributed. Because Prophage vaccine are novel therapeutic vaccines that are patient-specific, meaning derived from the patient's own tumor, they are experiencing a long development process and high development costs, either of which could delay or prevent our commercialization efforts.

In January 2017, we announced a clinical trial collaboration with the NCI. The double-blind, randomized controlled Phase 2 trial is evaluating the effect of Prophage in combination with pembrolizumab (Keytruda®, Merck & Co., Inc.) in patients with ndGBM. The trial is being conducted by the Brain Tumor Trials Collaborative ("BTTC"), a consortium of top academic centers led by Dr. Mark Gilbert, Chief of the Neuro-Oncology Branch at the NCI Center for Cancer Research. The trial consists of two-arms with one arm receiving pembrolizumab as a monotherapy and a second arm receiving both Prophage and pembrolizumab in combination. Forty-five patients are being randomly assigned to each arm. Under this collaboration, Agenus is suppling Prophage, Merck is providing pembrolizumab (Keytruda®) and NCI and BTTC member sites are recruiting patients and conducting the trial.

At ASCO in 2015, we announced final results from a single-arm, multicenter, open-label Phase 2 clinical trial in 46 patients with ndGBM treated with our Prophage vaccine in combination with standard of care: surgical resection, radiation and temozolomide. These results showed that patients treated with Prophage vaccine had a median progression free survival, or PFS, of 18 months, with 33% of patients progression free at 24 months and indicate improvement compared to historical data for patients treated with the standard of care (PFS of six to nine months). Median overall survival, or OS, the primary endpoint of the trial, was 23.8 months and remains durable in patients treated with Prophage. These data were published on February 13, 2017, in a manuscript in Clinical Cancer Research, a journal of the American Association for Cancer Research.

In addition to studies with ndGBM patients, we also previously reported data on recurrent GBM patients treated with Prophage. In December 2013, we published our Phase 2 results demonstrating that more than 90% of the patients treated with Prophage vaccine were alive at six months after surgery and 30% were alive at 12 months after surgery. Additionally, the median overall survival was approximately 11 months. This compared favorably to historical control data with expected median survival for recurrent GBM patients of three to nine months. The data were published in a manuscript in Neuro-Oncology, the official journal of the Society of Neuro-Oncology. In addition, the Alliance for Clinical Trials in Oncology, a cooperative group of the NCI, was conducting a randomized Phase 2 clinical trial of the Prophage vaccine in combination with bevacizumab in 222 patients with surgically resectable, recurrent GBM. This study was recently closed following an interim analysis that determined the study was unlikely to demonstrate that the vaccine in combination with bevacizumab would lead to a better survival than bevacizumab as a monotherapy. For additional information regarding regulatory risks and uncertainties, please read the risks identified under Part I-Item 1A. "Risk Factors" of this Annual Report on Form 10-K.

ASV Vaccine Platform

In June 2014, we reported positive results from a Phase 2 clinical trial with our synthetic HerpV vaccine candidate for genital herpes. This candidate was the first potential recombinant, off-the-shelf application of our HSP technology. The study demonstrated that the HSP70-peptide-QS21 vaccine produced significant CD4 and CD8 positive T-cell responses to antigenic peptides, and that the side effects were mild to moderate and tolerable. We decided not to advance with this technology in herpes but, based on our findings, we launched our ASV synthetic cancer vaccine program in 2015. We remain on target to initiate a clinical trial for this program in the first half of 2017.

The objective of our ASV program is to develop a fully synthetic, yet individualized patient specific vaccine targeting the neo-epitope landscape of each patient's cancer. Mutation-based neo-epitopes, which will form the basis for the immunogens used in ASV, are almost always particular to a given patient. Therefore, ASV is a largely individualized vaccine product. With a small amount of a patient's tumor as a sample, our ASV program is designed to utilize next generation sequencing technologies coupled with highly complex bioinformatics algorithms to identify mutations in a

tumor’s DNA and RNA. Once these mutations have been identified, we will manufacture synthetic peptides encoding these neoepitopes, load these peptides on to our recombinant HSP70 and deliver a fully synthetic polyvalent vaccine to the patient. We believe that the HSP70 platform will shuttle the mutated peptides to sites where they are recognized by the immune system and elicit a cytotoxic and helper T cell response in patients with cancer. We expect that once identified, these tumor cells will be killed and cleared by the immune system. For additional information regarding HerpV and AutoSynVax, please read Part I-Item 1. “Business” of this Annual Report on Form 10-K.

PSV Vaccine Platform

PSV is a vaccine candidate designed to induce immunity against a novel class of tumor specific neoepitopes: those arising from dysregulated phosphorylation of various proteins in malignant cells, rather than from tumor-specific mutations producing abnormal protein sequences. In all cells, protein sequences can have post-translational modifications, such as becoming phosphorylated (a phosphate group is added to particular amino acid residues) that can be associated with cellular functions such as signaling. In cancer

cells this process can become dysregulated and proteins that are not normally phosphorylated can become phosphorylated and proteins that are phosphorylated can become phosphorylated at alternative sites. Some of these mis-phosphorylated peptides can be processed by the cellular machinery that leads to antigen presentation on the surface of cells, and there they can potentially be recognized by specific cytotoxic T cells. Such phosphoprotein neoepitopes have been associated with different forms of cancer, including but not limited to lung cancer, specific leukemias, ovarian cancer, colon cancer and others. PSV is intended to induce cellular immunity to abnormal phosphopeptide neoepitopes that are characteristic of these various forms of cancer. Phosphopeptides (or phosphopeptide analogues) can be synthesized and complexed with HSP70, using an approach analogous to that used in the generation of Agenus' previous HerpV vaccine candidate. HerpV demonstrated good cellular and humoral responses to synthetic peptide immunogens complexed with HSP70 in a placebo-controlled Phase 2 study. We believe that similar responses can be obtained to phosphopeptide or phosphopeptide analogues bound to HSP70 when used as vaccines. Phosphorylation-based neoepitopes can apparently be found on specific types of cancer in many patients, suggesting that the immunogens used in PSV, while tailored to a particular patient, will be useful in other patients with related forms of cancer. Studies to optimize the immunogens to be used in PSV are ongoing. For additional information regarding PhosphoSynVax, please read Part I-Item 1. "Business" of this Annual Report on Form 10-K.

QS-21 Stimulon Adjuvant

QS-21 Stimulon is an adjuvant, which is a substance added to a vaccine or other immunotherapy that is intended to enhance an immune response to the target antigens. QS-21 Stimulon is a natural product, a triterpene glycoside, or saponin, purified from the bark of the Chilean soapbark tree, Quillaja saponaria. QS-21 Stimulon has the ability to stimulate an antibody-mediated immune response and has also been shown to activate cellular immunity. It has become a key component in the development of investigational preventive vaccine formulations across a wide variety of diseases. These studies have been carried out by academic institutions and pharmaceutical companies in the United States and internationally. A number of these studies have shown QS-21 Stimulon to be significantly more effective in stimulating immune responses than aluminum hydroxide or aluminum phosphate, the adjuvants most commonly used in approved vaccines in the United States today. For additional information regarding QS-21 Stimulon, please read Part I-Item 1. "Business" of this Annual Report on Form 10-K.

Liquidity and Capital Resources

We have incurred annual operating losses since inception, and we had an accumulated deficit of $905.3 million as of December 31, 2016. We expect to incur significant losses over the next several years as we continue development of our technologies and product candidates, manage our regulatory processes, initiate and continue clinical trials, and prepare for potential commercialization of products. To date, we have financed our operations primarily through the sale of equity and debt securities, and interest income earned on cash, cash equivalents, and short-term investment balances. From our inception through December 31, 2016, we have raised aggregate net proceeds of approximately $842.3 million through the sale of common and preferred stock, the exercise of stock options and warrants, proceeds from our employee stock purchase plan, and the issuance of convertible and other notes.

We also maintain an effective registration statement (the "Shelf Registration Statement"), which originally covered the offering of up to $150.0 million of common stock, preferred stock, warrants, debt securities and units. The Shelf Registration was used to complete the May 2015 Public Offering, and as of December 31, 2016, $68.1 million remained available thereunder. The Shelf Registration Statement includes a prospectus covering the offering, issuance and sale of up to ten million shares of our common stock from time to time in "at the market offerings" pursuant to an At Market Sales Issuance Agreement (the "Sales Agreement") entered into with MLV & Co. LLC (the "Sales Agent"). Pursuant to the Sales Agreement, sales will be made only upon instructions by us to the Sales Agent, and we cannot provide any assurances that we will issue any shares pursuant to the Sales Agreement. During the quarter ended December 31, 2016, we sold 496,520 shares of our common stock pursuant to the Sales Agreement. As of December 31, 2016, we had 9.5 million shares available for sale under the Sales Agreement.

As of December 31, 2016, we had debt outstanding of $114.1 million in principal. We did not enter into any new debt arrangements during the year ended December 31, 2016.

Our cash, cash equivalents, and short-term investments at December 31, 2016 were $76.4 million, a decrease of $95.2 million from December 31, 2015, principally as a result cash used in operations. We believe that, based on our current plans and activities, our cash, cash equivalents, and short-term investments of $76.4 million as of December 31, 2016, along with the net proceeds of approximately $80 million from Incyte in February 2017 in connection with amending our collaboration agreement, and issuing additional shares pursuant to a share purchase agreement, will be sufficient to satisfy our liquidity requirements through the first half of 2018. We continue to monitor the likelihood of success of our key initiatives and are prepared to discontinue funding of such activities if they do not prove to be feasible, restrict capital expenditures and/or reduce the scale of our operations.

We expect to attempt to raise additional funds in advance of depleting our current funds. We may attempt to raise funds by: (1) pursuing collaboration, out-licensing and/or partnering opportunities for our portfolio programs and product candidates with one or more third parties, (2) renegotiating third party agreements, (3) selling assets, (4) securing additional debt financing and/or (5) selling equity securities. Satisfying long-term liquidity needs may require the successful commercialization and/or substantial out-licensing or

partnering arrangements for our antibody discovery platforms, CPM antibody programs, HSP-based vaccines, and vaccines containing QS-21 Stimulon under development by our licensees. Our long-term success will also be dependent on the successful identification, development and commercialization of potential other product candidates, each of which will require additional capital with no certainty of timing or probability of success. If we incur operating losses for longer than we expect and/or we are unable to raise additional capital, we may become insolvent and be unable to continue our operations.

Our future cash requirements include, but are not limited to, supporting clinical trial and regulatory efforts and continuing our other research and development programs. Since inception, we have entered into various agreements with contract manufacturers, institutions, and clinical research organizations (collectively "third party providers") to perform pre-clinical activities and to conduct and monitor our clinical studies. Under these agreements, subject to the enrollment of patients and performance by the applicable third party provider, we have estimated our total payments to be $128.7 million over the term of the related activities. Through December 31, 2016, we have expensed $94.4 million as research and development expenses and $82.1 million has been paid under these agreements. The timing of expense recognition and future payments related to these agreements is subject to the enrollment of patients and performance by the applicable third party provider. We have also entered into sponsored research agreements related to our product candidates that required payments of $8.5 million, $7.1 million of which have been paid as of December 31, 2016. We plan to enter into additional agreements with third party providers as well as sponsored research agreements, and we anticipate significant additional expenditures will be required to initiate and advance our various programs.

Part of our strategy is to develop and commercialize some of our product candidates by continuing our existing collaboration arrangements with academic and collaboration partners and licensees and by entering into new collaborations. As a result of our collaboration agreements, we will not completely control the efforts to attempt to bring those product candidates to market. For example, our collaboration with Incyte for the development, manufacture and commercialization of CPM antibodies against certain targets is managed by a joint steering committee with equal representation from Agenus and Incyte. We also have agreements with licensees that allow the use of our QS-21 Stimulon adjuvant in numerous vaccines, which grant exclusive worldwide rights in some fields of use and co-exclusive or non-exclusive rights in others. These agreements generally call for royalties to be paid to us on future sales of licensed products that result from these agreements, which may or may not be achieved. As noted above, in September 2015, we monetized the anticipated royalties related to GSK’s shingles and malaria vaccines through our NPA with Oberland and the other purchasers.

Net cash used in operating activities for the years ended December 31, 2016 and 2015 was $80.0 million and $47.2 million, respectively. We continue to support and develop our QS-21 Stimulon partnering collaborations. If applications for marketing approval of vaccines that are submitted by our licensees are approved, the first products containing QS-21 Stimulon are anticipated to be launched in 2018. We are generally entitled to royalties on sales by our licensees of vaccines using QS-21 Stimulon for at least ten years after commercial launch, with some exceptions. Our future ability to generate cash from operations will depend on achieving regulatory approval and market acceptance of our product candidates, achieving benchmarks as defined in existing collaboration agreements, and our ability to enter into new collaborations. Please see the “Note Regarding Forward-Looking Statements” of this Annual Report on Form 10-K and the risks highlighted under Part I-Item 1A. “Risk Factors” of this Annual Report on Form 10-K.

The table below summarizes our contractual obligations as of December 31, 2016 (in thousands).

	Payments by Period			
Total	Less than	1-3 Years	3-5 Years	More than

		1 Year			5 Years
Long-term debt (1)	$115,477	$1,322	$14,155	$100,000	$—
Operating leases (2)	16,923	3,452	5,711	3,895	3,864
Capital lease	1,008	288	576	144	—
Total (3)	$133,409	$5,062	$20,442	$104,039	$3,864

(1) Includes fixed interest payments. Under the terms of the NPA, interest accrues as 13.5%, compounded quarterly and may vary based on the timing of the royalty stream under our contract with GSK and therefore the table above excludes such interest which was approximately $19.4 million as of December 31, 2016.

(2) The leases and subleases for our properties expire at various times between 2017 and 2025.

(3) Excluded from our contractual obligations table is our required contributions of $162,000 in 2016 to our multiple employer benefit plan; our required contributions for the years beyond 2016 to our multiple employer benefit plan are unknown at this time and cannot be reasonably estimated.

Off-Balance Sheet Arrangements

At December 31, 2016, we had no off-balance sheet arrangements.

Critical Accounting Policies and Estimates

The SEC defines “critical accounting policies” as those that require the application of management’s most difficult, subjective, or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain and may change in subsequent periods.

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. We base those estimates on historical experience and on various assumptions that are believed to be reasonable under the circumstances. Actual results could differ from those estimates.

The following listing is not intended to be a comprehensive list of all of our accounting policies. Our significant accounting policies are described in Note 2 of the notes to our consolidated financial statements contained elsewhere in this Annual Report on Form 10-K. In many cases, the accounting treatment of a particular transaction is dictated by U.S. generally accepted accounting principles, with no need for our judgment in its application. There are also areas in which our judgment in selecting an available alternative would not produce a materially different result. We have identified the following as our critical accounting policies.

Share-Based Compensation

In accordance with the fair value recognition provisions of the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 718, Compensation—Stock Compensation, we recognize share-based compensation expense net of an estimated forfeiture rate and only recognize compensation expense for those share-based awards expected to vest. Compensation expense is recognized on a straight-line basis over the requisite service period of the award.

Share-based awards granted to certain non-employees have been accounted for based on the fair value method of accounting in accordance with ASC 505-50, Equity- Equity-Based Payments to Non-Employees. As a result, the non-cash charge to operations for non-employee awards with vesting or other performance criteria is affected each reporting period by changes in the fair value of our common stock. Under the provisions of ASC 505-50, the change in fair value of vested awards issued to non-employees is reflected in the statement of operations each reporting period, until the options are exercised or expire.

Determining the appropriate fair value model and calculating the fair value of share-based awards requires the use of highly subjective assumptions, including the expected life of the share-based awards and stock price volatility. The assumptions used in calculating the fair value of share-based awards represent management’s best estimates, but these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and we use different assumptions, our share-based compensation expense could be materially different in the future. For performance condition awards, we estimate the probability that the performance condition will be met. In addition, if our actual forfeiture rate is materially different from our estimate, the share-based compensation expense could be significantly different from what we have recorded in the current period. See Note 11 of the notes to our consolidated financial statements contained elsewhere in this Annual Report on Form 10-K for a further discussion on share-based compensation.

Revenue Recognition

Revenue recognized from collaborative agreements is based upon the provisions of ASC 605-25, Revenue Recognition—Multiple Element Arrangements, as amended by Accounting Standards Update 2009-13. License fees and royalties are recognized as they are earned. Non-refundable milestone payments that represent the completion of a separate earnings process are recognized as revenue when earned. Revenue for services under research and

development contracts are recognized as the services are performed, or as clinical trial materials are provided.

Fair Value Measurements

In accordance with ASC 820, Fair Value Measurements and Disclosures, we measure fair value based on a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that observable inputs be used when available. The fair value hierarchy is broken down into three levels based on the source of inputs.

We measure our contingent purchase price considerations at fair value in accordance with ASC 825, Financial Instruments. The fair value contingent purchase price considerations are based on significant inputs not observable in the market, which require them to be reported as a Level 3 liability within the fair value hierarchy. The fair values of our 4-AB and PhosImmune contingent purchase price considerations are based on estimates from a Monte Carlo simulation of our market capitalization and share price, respectively.

Market capitalization and share price were evolved using a geometric brownian motion, calculated daily for the life of the contingent purchase price consideration.

Business Combinations

In February 2014 and December 2015, we acquired all of the outstanding capital stock of 4-AB and PhosImmune, respectively in business combination transactions. In December 2015, we also acquired an antibody manufacturing pilot facility from XOMA Corporation which under the applicable accounting guidance is being accounted for as a business combination. The acquisition method of accounting requires that the assets acquired and liabilities assumed be recorded as of the date of the merger or acquisition at their respective fair values with limited exceptions. Assets acquired and liabilities assumed in a business combination that arise from contingencies are recognized at fair value if fair value can reasonably be estimated. If the acquisition date fair value of an asset acquired or liability assumed that arises from a contingency cannot be determined, the asset or liability is recognized if probable and reasonably estimable; if these criteria are not met, no asset or liability is recognized. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Accordingly, we may be required to value assets at fair value measures that do not reflect our intended use of those assets. Any excess of the purchase price (consideration transferred) over the estimated fair values of net assets acquired is recorded as goodwill. In the event the value of the net assets acquired exceeds the purchase price consideration, then a bargain purchase has occurred. The resulting bargain purchase on the transaction will be recognized as a gain in the period in which the acquisition was executed. The operating results of the acquired businesses are reflected in our consolidated financial statements after the date of the merger or acquisition. If we determine the assets acquired do not meet the definition of a business under the acquisition method of accounting, the transaction will be accounted for as an acquisition of assets rather than a business combination and, therefore, no goodwill will be recorded. The fair values of intangible assets, including acquired in-process research and development (“IPR&D”), are determined utilizing information available near the merger or acquisition date based on expectations and assumptions that are deemed reasonable by management. The judgments made in determining estimated fair values assigned to assets acquired and liabilities assumed in a business combination, as well as asset lives, can materially affect the Company’s results of operations.

Acquired Intangible Assets, including IPR&D

IPR&D acquired in a business combination represents the fair value assigned to research and development assets that have not reached technological feasibility. The value assigned to acquired IPR&D is determined by estimating the costs to develop the acquired technology into commercially viable products, estimating the resulting revenue from the projects, and discounting the net cash flows to present value. The revenue and costs projections used to value acquired IPR&D are, as applicable, reduced based on the probability of success of developing a new drug. Additionally, the projections consider the relevant market sizes and growth factors, expected trends in technology, and the nature and expected timing of new product introductions by us and our competitors. The rates utilized to discount the net cash flows to their present value are commensurate with the stage of development of the projects and uncertainties in the economic estimates used in the projections. Upon the acquisition of IPR&D, we complete an assessment of whether our acquisition constitutes the purchase of a single asset or a group of assets. We consider multiple factors in this assessment, including the nature of the technology acquired, the presence or absence of separate cash flows, the development process and stage of completion, quantitative significance and our rationale for entering into the transaction.

We review amounts capitalized as acquired IPR&D for impairment at least annually, as of October 31, and whenever events or changes in circumstances indicate that the carrying value of the assets might not be recoverable. When performing our impairment assessment, we have the option to first assess qualitative factors to determine whether it is necessary to recalculate the fair value of our acquired IPR&D. If we elect this option and believe, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of our acquired IPR&D is less than its

carrying amount, we calculate the fair value using the same methodology as described above. If the carrying value of our acquired IPR&D exceeds its fair value, then the intangible asset is written-down to its fair value. Alternatively, we may elect to bypass the qualitative assessment and immediately recalculate the fair value of our acquired IPR&D.

Finite-lived intangible asset are amortized over their useful life. We review finite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of the assets might not be recoverable.

Goodwill

Goodwill was $22.4 million at December 31, 2016. Goodwill is tested at least annually for impairment on a reporting unit basis. We have concluded that we consist of a single operating segment and one reporting unit. We assess goodwill for impairment by performing a quantitative analysis to determine whether the fair value of our single reporting unit exceeds its carrying value. We perform our annual impairment test as of October 31 of each year and the first step of our impairment analysis compares the fair value

to our net book value to determine if there is an indicator of impairment. Fair value is based on the quoted market price of our common stock to derive the market capitalization as of the date of the impairment test.

Recent Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers, ("ASU 2014-09"). ASU 2014-09 amends revenue recognition principles and provides a single set of criteria for revenue recognition among all industries. This new standard provides a five step framework whereby revenue is recognized when promised goods or services are transferred to a customer at an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The standard also requires enhanced disclosures pertaining to revenue recognition in both interim and annual periods. ASU 2014-09 is effective for interim and annual periods beginning after December 15, 2017. We are currently evaluating the potential impact that ASU 2014-09 may have on our financial position and results of operations.

In August 2014, the FASB issued ASU 2014-15, Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern (“ASU 2014-15”). ASU 2014-15 requires management to evaluate, at each annual or interim reporting period, whether there are conditions or events that exist that raise substantial doubt about the Company’s ability to continue as a going concern within one year after the date the financial statements are issued and provide related disclosures. ASU 2014-15 is effective for annual periods ending after December 15, 2016 and earlier application is permitted. The adoption of ASU 2014-15 did not have an effect on the Company’s consolidated financial statements or disclosures as the Company concluded there were no conditions or events that existed at the time these consolidated financial statements were issued that raise substantial doubt about the Company’s ability to continue as a going concern.

In April 2015, the FASB issued ASU No. 2015-03, Interest-Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, (“ASU 2015-03”). ASU 2015-03 simplifies the presentation of debt issuance costs, as this new standard requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. The recognition and measurement guidance for debt issuance costs are not affected by this update. This guidance is effective for annual reporting beginning after December 15, 2015, including interim periods within the year of adoption, and calls for retrospective application, with early application permitted. We adopted ASU 2015-03 with the interim period ended September 30, 2015. During the year ended December 31, 2015, in connection with the execution of the NPA as described in Note 16, the Company incurred approximately $1.5 million in debt issuance costs that are classified as a reduction to long-term debt in our consolidated balance sheet. No debt issuance costs required retrospective application as the result of the adoption of ASU 2015-03. The amortization of the debt issuance costs for the year ended December 31, 2015 was not material.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842) (“ASU 2016-2”) which supersedes Topic 840, Leases. ASU2016-02 requires lessees to recognize a right-of-use asset and a lease liability on their balance sheets for all leases with terms greater than twelve months. Based on certain criteria, leases will be classified as either financing or operating, with classification affecting the pattern of expense recognition in the income statement. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. If a lessee makes this election, it should recognize lease expense for such leases generally on a straight-line basis over the lease term. ASU 2016-2 is effective for fiscal years beginning after December 15, 2018, and interim periods within those years, with early adoption permitted. In transition, lessees and lessors are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. The modified retrospective approach includes a number of optional practical expedients

primarily focused on leases that commenced before the effective date of Topic 842, including continuing to account for leases that commence before the effective date in accordance with previous guidance, unless the lease is modified. We are evaluating the impact of the adoption of the standard on our consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, ("ASU 2016-09"). ASU 2016-09 provides for the simplification of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 applies to all entities and is effective for the annual effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. Early adoption is permitted for any entity in any interim or annual period. We do not expect the impact of ASU 2016-09 to be material to our financial position and results of operations.

In January 2017, the FASB issued ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business, which provides guidance regarding the definition of a business, with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. ASU 2017-01 is effective for the Company in the first quarter of 2018, with early adoption permitted, and prospective application required. We are currently evaluating the potential impact that ASU 2016-09 may have on our financial position and results of operations.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Our primary market risk exposure is foreign currency exchange rate risk. International revenues and expenses are generally transacted by our foreign subsidiary and are denominated in local currency. Approximately 4% and 32% of our cash used in operations for the years ended December 31, 2016 and 2015, respectively, was from a foreign subsidiary. Additionally, in the normal course of business, we are exposed to fluctuations in interest rates as we seek debt financing and invest excess cash. We are also exposed to foreign currency exchange rate fluctuation risk related to our transactions denominated in foreign currencies. We do not currently employ specific strategies, such as the use of derivative instruments or hedging, to manage these exposures. Our currency exposures vary, but are primarily concentrated in the Euro, pound sterling, and Swiss Franc, in large part due to our wholly-owned subsidiaries, Agenus Switzerland Inc. (formerly known as 4-Antibody AG), a company with operations in Switzerland, and Agenus UK Limited, a company with operations in the United Kingdom. During the year ended December 31, 2016, there has been no material change with respect to our approach toward those exposures.

We had cash, cash equivalents and short-term investments at December 31, 2016 of $76.4 million, which are exposed to the impact of interest and foreign currency exchange rate changes, and our interest income fluctuates as interest rates change. Due to the short-term nature of our investments in money market funds and US Treasury Securities, our carrying value approximates the fair value of these investments at December 31, 2016, however, we are subject to investment risk.

We invest our cash and cash equivalents in accordance with our investment policy. The primary objectives of our investment policy are to preserve principal, maintain proper liquidity to meet operating needs, and maximize yields. We review our investment policy annually and amend it as deemed necessary. Currently, the investment policy prohibits investing in any structured investment vehicles and asset-backed commercial paper. Although our investments are subject to credit risk, our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure from any single issue, issuer, or type of investment. We do not invest in derivative financial instruments. Accordingly, we do not believe that there is currently any material market risk exposure with respect to derivatives or other financial instruments that would require disclosure under this item.

Item 8. Financial Statements and Supplementary Data

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders

Agenus Inc.:

We have audited the accompanying consolidated balance sheets of Agenus Inc. and subsidiaries (the Company) as of December 31, 2016 and 2015, and the related consolidated statements of operations and comprehensive loss, stockholders' (deficit) equity, and cash flows for each of the years in the three-year period ended December 31, 2016. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Agenus Inc. and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Agenus Inc. and subsidiaries' internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 16, 2017 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Boston, Massachusetts

March 16, 2017

AGENUS INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	December 31, 2016	December 31, 2015
ASSETS		
Cash and cash equivalents	$71,448,016	$136,702,873
Short-term investments	4,988,751	34,964,730
Inventories	88,200	88,200
Accounts Receivable	11,352,022	9,800,342
Prepaid expenses	2,596,675	1,956,941
Other current assets	838,538	582,280
Total current assets	91,312,202	184,095,366
Property, plant and equipment, net of accumulated amortization and depreciation of $31,243,967 and $29,488,793 at December 31, 2016 and 2015, respectively	25,633,985	15,310,623
Goodwill	22,392,411	22,792,778
Acquired intangible assets, net of accumulated amortization of $3,193,092 and $987,394 at December 31, 2016 and 2015, respectively	16,364,726	18,759,662
Other long-term assets	1,282,662	1,270,055
Total assets	$156,985,986	$242,228,484
LIABILITIES AND STOCKHOLDERS' (DEFICIT) EQUITY		
Current portion, long-term debt	$146,061	$146,061
Current portion, deferred revenue	2,610,719	3,829,371
Accounts payable	5,428,452	4,488,561
Accrued liabilities	27,874,703	14,165,816
Other current liabilities	4,791,265	6,304,281
Total current liabilities	40,851,200	28,934,090
Long-term debt	130,542,424	114,326,489
Deferred revenue	12,344,782	15,065,754
Contingent purchase price consideration	7,561,000	5,608,000
Other long-term liabilities	4,812,846	7,566,601
Commitments and contingencies (Notes 15 and 18)		
STOCKHOLDERS' (DEFICIT) EQUITY		
Preferred stock, par value $0.01 per share; 5,000,000 shares authorized:		
Series A-1 convertible preferred stock; 31,620 shares designated, issued, and outstanding at December 31, 2016 and 2015; liquidation value of $32,419,678, and $32,215,432 at December 31, 2016, and 2015, respectively	316	316
Common stock, par value $0.01 per share; 240,000,000 shares authorized; 87,794,933 shares and 86,390,697 shares issued at December 31, 2016 and 2015, respectively	877,949	863,907
Additional paid-in capital	866,854,348	851,103,934
Accumulated other comprehensive loss	(1,529,559)	(2,053,143)
Accumulated deficit	(905,329,320)	(779,187,464)

Total stockholders' (deficit) equity	(39,126,266)	70,727,550
Total liabilities and stockholders' (deficit) equity	$156,985,986	$242,228,484

See accompanying notes to consolidated financial statements.

AGENUS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

For the Years Ended December 31, 2016, 2015, and 2014

	2016	2015	2014
Revenue:			
Grant revenue	$32,404	$24,118	$504,228
Service revenue	147,456	—	—
Research and development	22,393,443	24,792,907	6,473,227
Total revenues	22,573,303	24,817,025	6,977,455
Operating expenses:			
Research and development	(94,971,379)	(70,444,259)	(22,349,327)
General and administrative	(33,125,690)	(28,370,001)	(21,249,710)
Contingent purchase price consideration fair value adjustment	(1,953,000)	(6,703,700)	(6,699,300)
Operating loss	(107,476,766)	(80,700,936)	(43,320,882)
Other (expense) income:			
Non-operating (expense) income	(2,202,336)	(5,968,170)	2,096,334
Interest expense, net	(17,316,073)	(6,599,083)	(1,261,626)
Loss before taxes	(126,995,175)	(93,268,188)	(42,486,174)
Income tax benefit	—	5,387,067	—
Net loss	(126,995,175)	(87,881,121)	(42,486,174)
Dividends on Series A-1 convertible preferred stock	(204,246)	(202,960)	(203,832)
Net loss attributable to common stockholders	$(127,199,421)	$(88,084,081)	$(42,690,006)
Per common share data:			
Basic and diluted net loss attributable to common stockholders	$(1.46)	$(1.13)	$(0.71)
Weighted average number of common shares outstanding:			
Basic and diluted	87,070,189	78,212,094	59,753,552
Other comprehensive income (loss):			
Foreign currency translation gain (loss)	$677,536	$164,150	$(1,778,184)
Unrealized (loss) gain on investments	—	(1,690)	1,764
Pension liability	(153,952)	(245,183)	(194,000)
Other comprehensive income (loss)	523,584	(82,723)	(1,970,420)
Comprehensive loss	$(126,675,837)	$(88,166,804)	$(44,660,426)

See accompanying notes to consolidated financial statements.

AGENUS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' (DEFICIT) EQUITY

For the Years Ended December 31, 2016, 2015, and 2014

	Series A-1 Convertible Preferred Stock		Series B2 Convertible Preferred Stock		Common Stock			Treasury Stock				
	Number of Shares	Par Value	Number of Shares	Par Value	Number of Shares	Par Value	Additional Paid-In Capital	Number of Shares	Amount	Accumulated Other Comprehensive Loss	Accumulated Deficit	T
,	31,620	$316	3,105	$31	36,391,191	$363,912	$644,571,866	43,490	$(324,792)	$—	$(649,092,036)	$
	—	—	—	—	—	—	—	—	—	—	(42,486,174)	
ve	—	—	—	—	—	—	—	—	—	(1,970,420)	—	
t	—	—	—	—	215,489	2,155	598,504	—	—	—	—	
n	—	—	—	—	22,236,000	222,360	55,969,233	—	—	—	—	
n	—	—	—	—	—	—	4,604,713	—	—	—	—	
on	—	—	—	—	—	—	(487,227)	—	—	—	—	
	—	—	—	—	48,239	483	(483)	—	—	—	—	
B	—	—	—	—	3,334,079	33,341	10,068,918	—	—	—	—	
d u												
n	—	—	—	—	25,989	260	78,940	—	—	—	—	
	—	—	—	—	35,124	351	119,423	—	—	—	—	

l n												
f es	—	—	—	—	(43,490)	(435)	(596,224)	(43,490)	324,792	—	271,867	
f	—	—	(3,105)	(31)	—	—	31	—	—	—	—	
l	—	—	—	—	383,038	3,830	949,935	—	—	—	—	
	—	—	—	—	48,381	484	144,830	—	—	—	—	
ses	—	—	—	—	46,025	460	106,137	—	—	—	—	
	—	—	—	—	—	—	(460,963)	—	—	—	—	
,	31,620	$316	—	$—	62,720,065	$627,201	$715,667,633	—	$—	$(1,970,420)	$(691,306,343)	$

See accompanying notes to consolidated financial statements.

AGENUS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' (DEFICIT) EQUITY

(Continued)

For the Years Ended December 31, 2016, 2015, and 2014

	Series A-1 Convertible Preferred Stock		Series B2 Convertible Preferred Stock		Common Stock			Treasury Stock				
	Number of Shares	Par Value	Number of Shares	Par Value	Number of Shares	Par Value	Additional Paid-In Capital	Number of Shares	Amount	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total
Net loss											(87,881,121)	(87,881,121)
Other comprehensive loss	—	—	—	—	—	—	—	—	—	(82,723)	—	(82,723)
Shares sold in underwritten public offering	—	—	—	—	12,650,000	126,500	74,543,480	—	—	—	—	74,669,980
Share-based compensation	—	—	—	—	—	—	8,098,650	—	—	—	—	8,098,650
Reclassification of liability classified option grants	—	—	—	—	—	—	(495,742)	—	—	—	—	(495,742)
Vesting of nonvested shares	—	—	—	—	35,332	353	(353)	—	—	—	—	—
Issuance of stock for acquisition of SECANT yeast display technology	—	—	—	—	574,140	5,741	2,994,259	—	—	—	—	3,000,000
Shares sold under Stock	—	—	—	—	7,763,968	77,640	34,922,361	—	—	—	—	35,000,001

Purchase Agreement												
Issuance of shares related to milestone achievement	—	—	—	—	80,493	805	343,736	—	—	—	—	344,541
Issuance of warrants	—	—	—	—	—	—	3,038,438					3,038,438
Issuance of stock in connection with XOMA antibody manufacturing facility acquisition	—	—	—	—	109,211	1,092	498,908	—	—	—	—	500,000
Issuance of stock in connection with PhosImmune acquisition	—	—	—	—	1,631,521	16,315	7,383,685	—	—	—	—	7,400,000
Issuance of stock for settlement of contingent royalty obligation	—	—	—	—	300,000	3,000	2,139,000	—	—	—	—	2,142,000
Exercise of stock options	—	—	—	—	462,428	4,624	1,762,237	—	—	—	—	1,766,861
Employee share purchases	—	—	—	—	63,539	636	207,642	—	—	—	—	208,278
Balance at December 31, 2015	31,620	$316	—$	—	86,390,697	$863,907	$851,103,934	—$	—$	(2,053,143)	$(779,187,464)	$70,727,550

See accompanying notes to consolidated financial statements.

AGENUS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' (DEFICIT) EQUITY

(Continued)

For the Years Ended December 31, 2016, 2015, and 2014

	Series A-1 Convertible Preferred Stock		Series B2 Convertible Preferred Stock		Common Stock			Treasury Stock				
	Number of Shares	Par Value	Number of Shares	Par Value	Number of Shares	Par Value	Additional Paid-In Capital	Number of Shares	Amount	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total
											(126,995,175)	(126
nsive	—	—	—	—	—	—	—	—	—	523,584	—	523,
ed tion	—	—	—	—	—	—	13,323,616	—	—	—	—	13,3
cation / d nts	—	—	—	—	—	—	(318,677)	—	—	—	—	(318
f	—	—	—	—	570,037	5,701	(5,701)	(185,117)	(768,236)	—	—	(768
d at t	—	—	—	—	496,520	4,965	2,162,105	—	—	—	—	2,16
of nares tion	—	—	—	—	23,110	231	161,332	—	—	—	—	161,
t of nares	—	—	—	—	(188,184)	(1,882)	(1,632,554)	188,184	781,117		853,319	—
of s	—	—	—	—	157,513	1,575	885,223	—	—	—	—	886,
of ons	—	—	—	—	224,012	2,240	740,445	(3,067)	(12,881)	—	—	729,
	—	—	—	—	121,228	1,212	434,625	—	—	—	—	435,

chases t r 31,											
	31,620	$316	—$—	87,794,933	$877,949	$866,854,348	—	$—	$(1,529,559)	$(905,329,320)	$(39,1

See accompanying notes to consolidated financial statements.

AGENUS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

For the Years Ended December 31, 2016, 2015, and 2014

	2016	2015	2014
Cash flows from operating activities:			
Net loss	$(126,995,175)	$(87,881,121)	$(42,486,174)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	4,947,787	1,957,591	1,583,960
Share-based compensation	13,188,364	7,438,308	4,672,256
Non-cash interest expense	16,530,437	5,626,918	619,846
Loss on disposal of assets	14,733	—	4,583
Change in fair value of contingent obligations	1,953,000	13,567,000	3,579,159
In-process research and development purchase	—	12,245,231	—
Loss on extinguishment of debt	—	154,117	—
Bargain purchase	—	(1,522,377)	—
Deferred tax benefit	—	(5,387,067)	—
Change in fair value of assumed convertible notes	—	—	(201,092)
Changes in operating assets and liabilities:			
Accounts receivable	(1,549,798)	(9,331,622)	1,200
Inventories	—	7,500	(95,700)
Prepaid expenses	(650,824)	(703,424)	(254,045)
Accounts payable	419,708	2,668,064	(45,902)
Deferred revenue	(3,939,619)	15,957,820	(3,610,811)
Accrued liabilities and other current liabilities	18,275,940	9,565,639	(1,316,169)
Other operating assets and liabilities	(2,155,364)	(11,538,019)	(685,696)
Net cash used in operating activities	(79,960,811)	(47,175,441)	(38,234,585)
Cash flows from investing activities:			
Cash paid for acquisitions	—	(7,182,069)	—
Cash acquired in acquisition	—	—	514,470
Purchases of plant and equipment	(12,519,738)	(3,591,335)	(2,819,764)
Purchases of available-for-sale securities	(54,884,101)	(34,993,100)	(14,507,806)
Proceeds from sale of available-for-sale securities	85,000,000	14,534,486	—
Net cash provided by (used in) investing activities	17,596,161	(31,232,018)	(16,813,100)
Cash flows from financing activities:			
Net proceeds from sale of equity	2,167,070	109,669,980	56,792,252
Proceeds from employee stock purchases and option exercises	1,183,598	1,975,139	251,911
Purchase of treasury shares to satisfy tax withholdings	(667,050)	—	—
Financing of plant and equipment	—	—	(39,156)
Proceeds from issuance of long-term debt	—	109,000,000	—
Debt issuance costs	—	(1,774,323)	—
Payments of debt	—	(1,111,111)	(3,333,334)
Payment of contingent purchase price consideration	—	(8,180,000)	—
Payment under a purchase agreement for in-process research and development	(5,000,000)	—	—
Payment of preferred stock dividends	—	—	(460,963)

Payment of contingent royalty obligation	—	(20,000,000)	(400,000)
Payment of capital lease obligation	(144,658)	—	—
Net cash (used in) provided by financing activities	(2,461,040)	189,579,685	52,810,710
Effect of exchange rate changes on cash	(429,167)	(183,873)	599,525
Net (decrease) increase in cash and cash equivalents	(65,254,857)	110,988,354	(1,637,450)
Cash and cash equivalents, beginning of period	136,702,873	25,714,519	27,351,969
Cash and cash equivalents, end of period	$71,448,016	$136,702,873	$25,714,519
Supplemental cash flow information:			
Cash paid for interest	$1,120,000	$1,053,447	$675,391
Supplemental disclosures - non-cash activities:			

Purchases of plant and equipment in accounts payable and accrued liabilities	$695,466	$105,245	$—
Issuance of common stock, $0.01 par value, issued in connection with the settlement of milestone obligation	886,798	—	—
Issuance of common stock, $0.01 par value, issued to directors as compensation	161,332	—	—
Issuance of common stock, $0.01 par value, issued in connection with the settlement of the contingent royalty obligation	—	2,142,000	—
Issuance of common stock, $0.01 par value, in connection with acquisition of PhosImmune	—	7,400,000	—
Issuance of common stock, $0.01 par value, in connection with the acquisition the XOMA antibody manufacturing facility	—	500,000	—
Issuance of common stock, $0.01 par value, in connection with the acquisition of the SECANT yeast display technology	—	3,000,000	—
Issuance of common stock, $0.01 par value, in connection with the acquisition of 4-Antibody AG	—	—	10,102,259
Issuance of common stock, $.01 par value, in connection with payment of the contingent purchase price obligation	—	344,541	—
Contingent purchase price consideration in connection with the acquisition of PhosImmune	—	2,484,000	—
Contingent purchase price consideration in connection with the acquisition of 4-Antibody AG	—	—	9,721,000
Issuance of common stock, $0.01 par value, as payment of long-term debt including accrued and unpaid interest	—	—	953,765

See accompanying notes to consolidated financial statements.

AGENUS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Description of Business

Agenus Inc. (including its subsidiaries, collectively referred to as "Agenus," the "Company," "we," "us," and "our") is a clinica stage immuno-oncology company focused on the discovery and development of therapies that engage the body's immune system to fight cancer. Our approach to cancer immunotherapy involves a diverse portfolio of antibody-based therapeutics, adjuvants and cancer vaccine platforms. We, in collaboration with our partners, have developed a number of immuno-modulatory antibodies against important nodes of immune regulation. These include antibodies targeting CTLA-4, GITR and OX40 that are in clinical development, and our anti-PD-1 antibody anticipated to enter the clinic in the first half of 2017. Our discovery pipeline consists of a number of proprietary checkpoint modulating ("CPM") antibodies against innovative targets such as TIGIT and 4-1BB (also known as CD137). We believe that tailored combination therapies are essential to combat some of the most resistant cancers. Accordingly, our immune education strategy focuses on pursing antibodies as well as vaccine candidates in conjunction with adjuvants. We are developing a comprehensive immuno-oncology portfolio driven by the following platforms and programs, which we intend to utilize individually and in combination:

- our antibody discovery platforms, including our Retrocyte Display™, SECANT® yeast display, and phage display technologies designed to produce quality human antibodies;
- our antibody candidate programs, including our CPM programs;
- our vaccine programs, including Prophage™, AutoSynVax™ and PhosPhoSynVax™; and
- our saponin-based vaccine adjuvants, principally our QS-21 Stimulon® adjuvant, or QS-21 Stimulon.

Our business activities have included product research and development, intellectual property prosecution, manufacturing, regulatory and clinical affairs, corporate finance and development activities, and support of our collaborations. Our product candidates require clinical trials and approvals from regulatory agencies, as well as acceptance in the marketplace. Part of our strategy is to develop and commercialize some of our product candidates by continuing our existing arrangements with academic and corporate collaborators and licensees and by entering into new collaborations.

Our cash, cash equivalents, and short-term investments at December 31, 2016 were $76.4 million, a decrease of $95.3 million from December 31, 2015.

	Quarter Ended			
	March 31, 2016	June 30, 2016	September 30, 2016	December 31, 2016
Cash, cash equivalents and short-term investments	$148.2	$123.3	$ 95.4	$ 76.4
Decrease in cash, cash equivalents and short-term investments	$23.5	$24.9	$ 27.9	$ 19.0
Cash used in operating activities	$21.5	$18.5	$ 23.8	$ 16.0
Reported net loss	$31.8	$28.3	$ 40.8	$ 26.1

We have incurred significant losses since our inception. As of December 31, 2016 we had an accumulated deficit of $905.3 million. Since our inception, we have financed our operations primarily through the sale of equity and convertible and other notes, and interest income earned on cash, cash equivalents, and short-term investment balances. We believe that, based on our current plans and activities, our cash, cash equivalents and short-term investments balance of $76.4 million as of December 31, 2016, along with the $80.0 million received from Incyte Corporation ("Incyte") in February 2017 in connection with amending our collaboration agreement, and issuing additional shares pursuant to a share purchase agreement, will be sufficient to satisfy our liquidity requirements for more than one year from when these financial statements were issued. We continue to monitor the likelihood of success of our key initiatives and are prepared to discontinue funding of such activities if they do not prove to be feasible, restrict capital expenditures and/or reduce the scale of our operations.

Research and development program costs include compensation and other direct costs plus an allocation of indirect costs, based on certain assumptions, and our review of the status of each program. Our product candidates are in various stages of development and significant additional expenditures will be required if we start new trials, encounter delays in our programs, apply for regulatory approvals, continue development of our technologies, expand our operations, and/or bring our product candidates to market. The eventual total cost of each clinical trial is dependent on a number of factors such as trial design, length of the trial, number of clinical sites, and number of patients. The process of obtaining and maintaining regulatory approvals for new therapeutic products is lengthy, expensive, and uncertain. Because our CPM antibody programs are pre-clinical, we are unable to reliably estimate the cost of

completing research and development programs, the timing of bringing such programs to various markets, or substantial partnering or out-licensing arrangements, and, therefore, are unable to determine when, if ever, material cash inflows from operating activities are likely to commence. We will continue to adjust our spending as needed in order to preserve liquidity.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation and Principles of Consolidation

The consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles and include the accounts of Agenus and our wholly-owned subsidiaries. All significant intercompany transactions and accounts have been eliminated in consolidation. Certain reclassifications have been made to previously reported amounts to conform to the current presentation.

(b) Segment Information

We are managed and operated as one business segment. The entire business is managed by a single executive operating committee that reports to the chief executive officer. We do not operate separate lines of business with respect to any of our product candidates or geographic locations. Accordingly, we do not prepare discrete financial information with respect to separate product areas or by location and do not have separately reportable segments as defined by Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 280, Segment Reporting.

(c) Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. We base those estimates on historical experience and on various assumptions that are believed to be reasonable under the circumstances. Actual results could differ from those estimates.

(d) Cash and Cash Equivalents

We consider all highly liquid investments purchased with maturities at acquisition of three months or less to be cash equivalents. Cash equivalents consist primarily of money market funds and U.S. Treasury Bills.

(e) Investments

We classify investments in marketable securities at the time of purchase. At December 31, 2016 and 2015, all marketable securities are classified as available for sale and as such, the investments are recorded at fair value. Gains and losses on the sale of marketable securities are recognized in operations based on the specific identification method. At December 31, 2016 and 2015, our investments consisted of institutional money market funds and U.S. Treasury Bills.

(f) Concentrations of Credit Risk

Financial instruments that potentially subject us to concentrations of credit risk are primarily cash equivalents, investments, and accounts receivable. We invest our cash, cash equivalents and short-term investments in accordance with our investment policy, which specifies high credit quality standards and limits the amount of credit exposure from any single issue, issuer, or type of investment. We carry balances in excess of federally insured levels, however, we have not experienced any losses to date from this practice.

(g) Inventories

Inventories are stated at the lower of cost or market. Cost has been determined using standard costs that approximate the first-in, first-out method. Inventory as of December 31, 2016 and 2015 consisted solely of finished goods.

(h) Accounts Receivable

Accounts receivable are primarily amounts due from our collaboration partner as a result of research and development services provided and reimbursements under co-funded research and development programs. We considered the need for an allowance for doubtful accounts and have concluded that no allowance was needed as of December 31, 2016 and 2015, as the estimated risk of loss on our accounts receivable was determined to be minimal.

(i) Property, Plant and Equipment

Property, plant and equipment, including software developed for internal use, are carried at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Amortization of leasehold improvements is computed over the shorter of the lease term or estimated useful life of the asset. Additions and improvements are capitalized, while repairs and maintenance are charged to expense as incurred. Amortization and depreciation of plant and equipment was $2.7 million, $1.4 million, and $1.1 million, for the years ended December 31, 2016, 2015, and 2014, respectively.

(j) Fair Value of Financial Instruments

The estimated fair values of all of our financial instruments, excluding debt, approximate their carrying amounts in the consolidated balance sheets. The fair value of our outstanding debt is based on a present value methodology. The outstanding principal amount of our debt, including the current portion, was $114.1 million and $114.1 million at December 31, 2016 and 2015, respectively.

(k) Revenue Recognition

Revenue for services under research and development contracts are recognized as the services are performed, or as clinical trial materials are provided. Non-refundable milestone payments that represent the completion of a separate earnings process are recognized as revenue when earned. License fees and royalties are recognized as they are earned. Grant revenue is recognized when the related expense is recorded. Revenue recognized from collaborative agreements is based upon the provisions of ASC 605-25, Revenue Recognition – Multiple-Element Arrangements, as amended by Accounting Standards Update (“ASU”) 2009-13 (“Topic 605”). For the years ended December 31, 2016 and 2015, 87% and 95%, respectively, of our revenue was earned from one collaboration partner. For the year ended December 31, 2014, 48% of our revenue was earned from one research partner.

(l) Foreign Currency Transactions

Gains and losses from our foreign currency based accounts and transactions, such as those resulting from the translation and settlement of receivables and payables denominated in foreign currencies, are included in the consolidated statements of operations within other (expense) income. We do not currently use derivative financial instruments to manage the risks associated with foreign currency fluctuations. We recorded foreign currency losses of $2.1 million, $866,000, and $773,000, for the years ended December 31, 2016, 2015, and 2014, respectively.

(m) Research and Development

Research and development expenses include the costs associated with our internal research and development activities, including salaries and benefits, share-based compensation, occupancy costs, clinical manufacturing costs, related administrative costs, and research and development conducted for us by outside advisors, such as sponsored university-based research partners and clinical study partners. We account for our clinical study costs by estimating the total cost to treat a patient in each clinical trial and recognizing this cost based on estimates of when the patient receives treatment, beginning when the patient enrolls in the trial. Research and development expenses also include the cost of clinical trial materials shipped to our research partners. Research and development costs are expensed as incurred.

(n) Share-Based Compensation

We account for share-based compensation in accordance with the provisions of ASC 718, Compensation—Stock Compensation and ASC 505-50, Equity-Based Payments to Non-Employees. Share-based compensation expense is recognized based on the estimated grant date fair value, and is recognized net of an estimated forfeiture rate such that

we recognize compensation cost for those shares expected to vest. Compensation cost is recognized on a straight-line basis over the requisite service period of the award. The non-cash charge to operations for non-employee awards with vesting or other performance criteria is affected each reporting period by changes in the fair value of our common stock. Under the provisions of ASC 505-50, the change in fair value of vested options issued to non-employees is reflected in the statement of operations each reporting period, until the options are exercised or expire. See Note 11 for a further discussion on share-based compensation.

(o) Income Taxes

Income taxes are accounted for under the asset and liability method with deferred tax assets and liabilities recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis and net operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which such items are expected to be reversed or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the consolidated statement of operations in the period that includes the enactment date. Deferred tax assets are recognized when they are more likely than not expected to be realized.

(p) Net Loss Per Share

Basic income and loss per common share is calculated by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding (including common shares issuable under our Directors' Deferred Compensation Plan). Diluted income per common share is calculated by dividing net income attributable to common stockholders by the weighted average number of common shares outstanding (including common shares issuable under our Directors' Deferred Compensation Plan) plus the dilutive effect of outstanding instruments such as warrants, stock options, nonvested shares, convertible preferred stock, and convertible notes. Because we reported a net loss attributable to common stockholders for all periods presented, diluted loss per common share is the same as basic loss per common share, as the effect of utilizing the fully diluted share count would have reduced the net loss per common share. Therefore, the following potentially dilutive securities have been excluded from the computation of diluted weighted average shares outstanding as of December 31, 2016, 2015, and 2014, as they would be anti-dilutive:

	Year Ended		
	2016	2015	2014
Warrants	4,351,450	4,351,450	2,951,450
Stock options	11,693,400	8,345,835	6,525,724
Nonvested shares	1,942,476	1,730,604	78,828
Convertible preferred stock	333,333	333,333	333,333

(q) Goodwill

Goodwill represents the excess of cost over the fair value of net assets of businesses acquired. Goodwill is not amortized, but instead tested for impairment at least annually. Annually we assess whether there is an indication that goodwill is impaired, or more frequently if events and circumstances indicate that the asset might be impaired during the year. We perform our annual impairment test as of October 31 of each year. The first step of our impairment analysis compares our fair value to our net book value to determine if there is an indicator of impairment. We operate as a single operating segment and single reporting unit and our fair value is based on our quoted market price of our common stock to derive the market capitalization as of the date of the impairment test. ASC 350, Intangibles, Goodwill and Other states that if the carrying value of the reporting unit is negative, the second step of the impairment test shall be performed to measure the amount of impairment loss, if any, if qualitative factors indicate that it is more likely than not that a goodwill impairment exists. No goodwill impairment has been recognized for the periods presented.

(r) In-process Research and Development

Acquired in-process research and development ("IPR&D") represents the fair value assigned to research and development assets that have not reached technological feasibility. The value assigned to acquired IPR&D is determined by estimating the costs to develop the acquired technology into commercially viable products, estimating the resulting revenue from the projects, and discounting the net cash flows to present value. The revenue and costs projections used to value acquired IPR&D are, as applicable, reduced based on the probability of success of developing a new drug. Additionally, the projections consider the relevant market sizes and growth factors, expected trends in technology, and the nature and expected timing of new product introductions by us and our competitors. The rates utilized to discount the net cash flows to their present value are commensurate with the stage of development of the projects and uncertainties in the economic estimates used in the projections. Upon the acquisition of IPR&D, we complete an assessment of whether our acquisition constitutes the purchase of a single asset or a group of assets. We consider multiple factors in this assessment, including the nature of the technology acquired, the presence or absence of separate cash flows, the development process and stage of completion, quantitative significance and our rationale for entering into the transaction.

If we acquire an asset or group of assets that do not meet the definition of a business under applicable accounting standards, then the acquired IPR&D is expensed on its acquisition date. Future costs to develop these assets are recorded to research and development expense as they are incurred.

We review amounts capitalized as acquired IPR&D for impairment at least annually, as of October 31, and whenever events or changes in circumstances indicate that the carrying value of the assets might not be recoverable. When performing our impairment assessment, we have the option to first assess qualitative factors to determine whether it is necessary to recalculate the fair value of our acquired IPR&D. If we elect this option and believe, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of our acquired IPR&D is less than its carrying amount, we calculate the fair value using the same methodology as described above. If the carrying value of our acquired IPR&D exceeds its fair value, then the intangible asset is written-down to its fair value. Alternatively, we may elect to not first assess qualitative factors and immediately recalculate the fair value of our acquired IPR&D. No IPR&D impairments were recognized for the years presented.

(s) Accounting for Asset Retirement Obligations

We record the fair value of an asset retirement obligation as a liability in the period in which we incur a legal obligation associated with the retirement of tangible long-lived assets that result from the acquisition, construction, development, and/or normal use of the assets. A legal obligation is a liability that a party is required to settle as a result of an existing or enacted law, statute, ordinance, or contract. We are also required to record a corresponding asset that is depreciated over the life of the asset. Subsequent to the initial measurement of the asset retirement obligation, the obligation will be adjusted at the end of each period to reflect the passage of time (accretion) and changes in the estimated future cash flows underlying the obligation. Changes in the liability due to accretion are charged to the consolidated statement of operations, whereas changes due to the timing or amount of cash flows are an adjustment to the carrying amount of the related asset. Our asset retirement obligations primarily relate to the expiration of our facility lease and anticipated costs to be incurred based on our lease terms.

(t) Long-lived Assets

If required based on certain events and circumstances, recoverability of assets to be held and used, other than goodwill and intangible assets not being amortized, is measured by a comparison of the carrying amount of an asset to the undiscounted future net cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset exceeds its estimated future undiscounted cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset exceeds the fair value of the asset. Authoritative guidance requires companies to separately report discontinued operations and extends that reporting to a component of an entity that either has been disposed of (by sale, abandonment, or in a distribution to owners) or is classified as held for sale. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

(u) Recent Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers, ("ASU 2014-09"). ASU 2014-09 amends revenue recognition principles and provides a single set of criteria for revenue recognition among all industries. This new standard provides a five step framework whereby revenue is recognized when promised goods or services are transferred to a customer at an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The standard also requires enhanced disclosures pertaining to revenue recognition in both interim and annual periods. In March 2016, the FASB issued an amendment to the standard, ASU 2016-8, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net) (“ASU 2016-08”), which clarifies the implementation guidance on principal versus agent considerations. In April 2016, the FASB issued an additional amendment to the standard, ASU 2016-10, Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing (“ASU 2016-10”), which clarifies the guidance on identifying performance obligations and the implementation guidance on licensing. In August 2015, the FASB issued ASU No. 2015-14, which defers the effective date by one year to December 15, 2017 for annual reporting periods beginning after that date, including interim periods within those periods. The FASB also approved permitting early adoption of the standard, but not before the original effective date of December 15, 2016. ASU 2014-09 is effective for interim and annual periods beginning after December 15, 2017. Two adoption methods

are permitted: retrospectively to all prior reporting periods presented, with certain practical expedients permitted; or retrospectively with the cumulative effect of initially adopting the ASU recognized at the date of initial application. The Company has not yet determined which method will be used. We are currently evaluating the potential impact that ASU 2014-09 may have on our financial position and results of operations. To date, the Company's sources of collaboration and other revenue have primarily been collaboration agreements. The most significant differences between Topic 606 and previous guidance for license and collaboration revenue are: (i) allocating consideration to performance obligations; and (ii) estimating and determining the timing of recognition of variable consideration received from licensees, including up-front license payments, contingent milestones and royalties. Revenues from contingent milestone payments may be recognized earlier under Topic 606 than under Topic 605, based on an assessment of the probability of a significant reversal of such milestone revenue at each reporting date. This assessment may result in recognizing milestone revenue before the milestone event has been achieved. Under previous guidance, milestone revenue was typically recognized when the milestone event was achieved.

In August 2014, the FASB issued ASU 2014-15, Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern ("ASU 2014-15"). ASU 2014-15 requires management to evaluate, at each annual or interim reporting period, whether there

are conditions or events that exist that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date the financial statements are issued and provide related disclosures. ASU 2014-15 is effective for annual periods ending after December 15, 2016 and earlier application is permitted. The adoption of ASU 2014-15 did not have an effect on the Company's consolidated financial statements or disclosures as the Company concluded there were no conditions or events that existed at the time these consolidated financial statements were issued that raise substantial doubt about the Company's ability to continue as a going concern.

In April 2015, the FASB issued ASU No. 2015-03, Interest-Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, ("ASU 2015-03"). ASU 2015-03 simplifies the presentation of debt issuance costs, as this new standard requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. The recognition and measurement guidance for debt issuance costs are not affected by this update. This guidance is effective for annual reporting beginning after December 15, 2015, including interim periods within the year of adoption, and calls for retrospective application, with early application permitted. We adopted ASU 2015-03 with the interim period ended September 30, 2015. During the quarter ended September 30, 2015, in connection with the execution of the Note Purchase Agreement as described in Note 16, the Company incurred approximately $1.5 million in debt issuance costs that are classified as a reduction to long-term debt in our consolidated balance sheet. No debt issuance costs required retrospective application as the result of the adoption of ASU 2015-03. The amortization of the debt issuance costs for the year ended December 31, 2016 was $135,000. The amortization of debt issuance costs for the year ended December 31, 2015 was not material.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842) ("ASU 2016-2") which supersedes Topic 840, Leases. ASU 2016-02 requires lessees to recognize a right-of-use asset and a lease liability on their balance sheets for all leases with terms greater than twelve months. Based on certain criteria, leases will be classified as either financing or operating, with classification affecting the pattern of expense recognition in the income statement. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. If a lessee makes this election, it should recognize lease expense for such leases generally on a straight-line basis over the lease term. ASU 2016-2 is effective for fiscal years beginning after December 15, 2018, and interim periods within those years, with early adoption permitted. In transition, lessees and lessors are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. The modified retrospective approach includes a number of optional practical expedients primarily focused on leases that commenced before the effective date of Topic 842, including continuing to account for leases that commence before the effective date in accordance with previous guidance, unless the lease is modified. Footnote 15 provides details on our current lease arrangements. While we continue to evaluate the provisions of ASC 842 to determine how it will be affected, the primary effect of adopting the new standard will be to record assets and obligations for current operating leases. Upon adoption, based on leases in place as of December 31, 2016, the we expect to recognize assets and liabilities of approximately $13.8 million related to our operating leases. The adoption of ASC 842 is not expected to have a material impact on the Company's results of operations or cash flows.

In March 2016, the FASB issued ASU 2016-09, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, ("ASU 2016-09"). ASU 2016-09 provides for the simplification of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 applies to all entities and is effective for the annual effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. Early adoption is permitted for any entity in any interim or annual period. We do not expect the impact of ASU 2016-09 to be material to our financial position and results of operations.

In January 2017, the FASB issued ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business, which provides guidance regarding the definition of a business, with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. ASU 2017-01 is effective for the Company in the first quarter of 2018, with early adoption permitted, and prospective application required. We will apply the provisions of ASU 2016-09 to any relevant transactions no later than the first quarter of 2018 and may consider earlier adoption for relevant transactions which occur in 2017.

(3) Business Acquisitions

4-Antibody

On January 10, 2014, we entered into a Share Exchange Agreement (the "Share Exchange Agreement") providing for our acquisition of all of the outstanding capital stock of Agenus Switzerland Inc. (formerly known as 4-Antibody AG) ("4-AB"), from the shareholders of 4-AB (the "4-AB Shareholders"). The transaction closed on February 12, 2014 (the "Closing Date"). In exchange for their shares, the 4-AB Shareholders received an aggregate of 3,334,079 shares of our common stock paid upon closing and valued at $10.1 million. Contingent milestone payments of up to $40.0 million (the "contingent purchase price consideration"), payable in cash or shares of our common stock at our option, are due to the 4-AB Shareholders as follows: (i) $20.0 million upon our market capitalization exceeding $300.0 million for 10 consecutive trading days prior to the earliest of (a) the fifth anniversary of the Closing Date (b) the sale of the 4-AB or (c) the sale of Agenus; (ii) $10.0 million upon our market capitalization exceeding $750.0 million for 30 consecutive trading days prior to the earliest of (a) the tenth anniversary of the Closing Date (b) the sale of 4-AB, or (c) the sale of Agenus, and (iii) $10.0 million upon our market capitalization exceeding $1.0 billion for 30 consecutive trading days prior to the earliest of (a) the tenth anniversary of the Closing Date, (b) the sale of 4-AB, or (c) the sale of Agenus. We assigned an acquisition date fair value of $9.7 million to the contingent purchase price consideration. During January 2015, the first milestone noted above was achieved. This acquisition provided us with the Retrocyte Display technology platform for the rapid discovery and optimization of fully-human and humanized monoclonal antibodies against a wide array of molecular targets and a portfolio of CPM antibodies.

PhosImmune Inc.

On December 23, 2015 (the "PhosImmune Closing Date"), we entered into a Purchase Agreement with PhosImmune Inc., a privately-held Virginia corporation ("PhosImmune"), the securityholders of PhosImmune (the "PhosImmune Securityholders") and Fanelli Haag PLLC, as representative of the PhosImmune Securityholders providing for the acquisition of all outstanding securities of PhosImmune. On the PhosImmune Closing Date, in exchange for their shares, the PhosImmune Securityholders received $2.5 million in cash and an aggregate of 1,631,521 of our common stock paid upon closing and valued at $7.4 million. Contingent milestone payments up to $35.0 million payable in cash and/or stock at our option are due as follows: (i) $5.0 million upon the closing trading price of our common stock equals or exceeds $8.00 for 60 consecutive trading days prior to the earlier of (a) the fifth anniversary of the PhosImmune Closing Date or (b) the sale of Agenus; (ii) $15.0 million if the closing trading price of our common stock equals or exceeds $13.00 for 60 consecutive trading days prior to the earlier of (a) the tenth anniversary of the PhosImmune Closing Date or (b) the sale of Agenus; and (iii) $15.0 million if the closing trading price of our common stock equals or exceeds $19.00 for 60 consecutive trading days prior to the earlier of (a) the tenth anniversary of the PhosImmune Closing Date or (b) the sale of Agenus. We assigned an acquisition date fair value of $2.5 million to the contingent purchase price consideration. This acquisition expands our immuno-oncology pipeline and strengthens our neoantigen capabilities to enable the development of best-in-class cancer vaccines and other novel therapies.

Antibody Manufacturing Facility

On November 5, 2015, we entered into Asset Purchase Agreement (the "Asset Purchase Agreement") providing for our acquisition of an antibody manufacturing pilot plant and related capabilities from XOMA Corporation ("XOMA"). The transaction closed on December 31, 2015. As consideration for the purchased assets, we paid XOMA $4.7 million in cash and issued XOMA 109,211 shares of our common stock valued at $500,000. XOMA is entitled to receive an additional 109,211 shares of our common stock subject to the satisfaction of conditions set forth in the Asset Purchase Agreement. We do not believe it is probable that XOMA will satisfy these conditions and therefore have not ascribed a value to the contingent consideration. The transaction with XOMA provides us with an antibody pilot manufacturing facility enabling the production and manufacture of CPM antibodies under our programs and those of our collaborations.

In accordance with the guidance of ASC 805 Business Combinations, when the fair value of the assets acquired exceed the total purchase consideration, a bargain purchase has occurred and the resulting gain is to be recognized in earning as of the date of the transaction. In July 2015, XOMA experienced a set-back in a late-stage clinical trial and as a result of the setback, began the immediate divestiture of their antibody body production capabilities at values less than the prevailing market rates for the assets. For the year ended December 31, 2015, we recorded the gain of approximately $1.5 million on the acquisition of the antibody manufacturing pilot facility and related capabilities in non-operating (expense) income in our consolidated statements of operations and comprehensive loss.

(4) Asset Purchase Agreements

Celexion, LLC

On April 7, 2015 (the "Celexion Closing Date"), we entered into an Asset Purchase Agreement (the "Celexion Purchase Agreement") with Celexion, LLC ("Celexion") and each of the members of Celexion, pursuant to which, we acquired Celexion's SECANT yeast display antibody discovery platform, its full-length IgG antibody library, its technology for the discovery of molecules targeting cell membrane-associated antigens, and certain other related intellectual property assets (collectively, the "Purchased Assets"). As consideration for the Purchased Assets, on the Celexion Closing Date we paid Celexion $1.0 million in cash and issued Celexion 574,140 shares of our common stock valued at approximately $5.23 per share. As additional consideration for the Purchased Assets, we agreed under the Celexion Purchase Agreement to pay to Celexion (i) $1.0 million in cash payable on each of the 9-month and 18-month anniversaries of the Celexion Closing Date and (ii) $4.0 million on each of the 12-month and 24-month anniversaries of the Celexion Closing Date payable at our discretion in cash, shares of our common stock, or any combination thereof. If we elect to pay any of the additional consideration in shares of our common stock, such shares will be issued at a price per share equal to the simple average of the daily closing volume weighted average price over the 20 trading days preceding the date of issuance. We agreed to file one or more registration statements under the Securities Act to cover the resale of all shares issued as consideration under the Celexion Purchase Agreement. In May 2015, we filed a registration statement covering the resale of the 574,140 shares issued to Celexion on the Celexion Closing Date, and the SEC declared the registration statement effective in June 2015. This transaction was accounted for as an asset acquisition in accordance with ASC 805 Business Combinations. In accordance with ASC 730 Research and Development, the purchase price of approximately $13.2 million was recorded as research and development expense in our consolidated statement of operations and comprehensive loss for the year December 31, 2015 as the IPR&D was deemed to have no future alternative use.

(5) Goodwill and Acquired Intangible Assets

The following table sets forth the changes in the carrying amount of goodwill for year ended December 31, 2016 (in thousands):

Balance, December 31, 2015	$22,793
Effect of foreign currency	(401)
Balance, December 31, 2016	$22,392

Acquired intangible assets consisted of the following at December 31, 2016 and 2015 (in thousands):

	As of December 31, 2016		
Amortization period	Gross carrying amount	Accumulated amortization	Net carrying amount

	(years)			
Intellectual Property	7-15 years	$ 16,358	$ (2,384)	$ 13,973
Trademarks	4.5 years	791	(505)	286
Other	2-6 years	563	(303)	260
In-process research and development	Indefinite	1,846	—	1,846
Total		$ 19,558	$ (3,193)	$ 16,365

	As of December 31, 2015			
	Amortization period (years)	Gross carrying amount	Accumulated amortization	Net carrying amount
Intellectual Property	15 years	$ 16,472	$ (542)	$ 15,931
Trademarks	4.5 years	812	(339)	473
Other	3 years	567	(107)	460
In-process research and development	Indefinite	1,896	—	1,896
Total		$ 19,747	$ (987)	$ 18,760

The weighted average amortization period of our finite-lived intangible assets is approximately 9 years. Amortization expense for the years ended December 31, 2016, 2015, and 2014 was $2.2 million, $525,000, and $462,000, respectively. Amortization expense related to acquired intangibles is estimated at $2.2 million for 2017, $2.0 million for 2018, and $1.9 million for each of 2019, 2020, and 2021.

The acquired IPR&D asset relates to the six pre-clinical CPM antibody programs acquired in the Agenus Switzerland transaction. IPR&D acquired in a business combination is capitalized at fair value until the underlying project is completed and is subject to impairment testing. Once the project is completed, the carrying value of IPR&D is amortized over the estimated useful life of the asset. Post-acquisition research and development expenses related to the acquired IPR&D are expensed as incurred.

(6) Investments

Cash Equivalents and Short-term Investments

Cash equivalents and short-term investments consisted of the following as of December 31, 2016 and 2015 (in thousands):

	December 31, 2016		December 31, 2015	
	Cost	Estimated Fair Value	Cost	Estimated Fair Value
Institutional Money Market Funds	$38,913	$38,913	$106,370	$106,370
U.S. Treasury Bills	14,978	14,978	54,945	54,961
Total	$53,891	$53,891	$161,315	$161,331

We received proceeds of approximately $85.0 million, $14.5 million, and $0 from the maturity of U.S. Treasury Bills classified as short-term investments for the years ended December 31, 2016, 2015, and 2014, respectively. No securities were sold before their maturity in 2016. As a result of the short-term nature of our investments, there were minimal unrealized holding gains or losses as of December 31, 2016 and 2015, and 2014.

Of the investments listed above, $48.9 million and $126.4 million have been classified as cash equivalents on our consolidated balance sheet as of December 31, 2016 and 2015, respectively. Approximately $5.0 million and $35.0 million were classified as short-term investments as of December 31, 2016 and 2015, respectively.

(7) Property, Plant and Equipment

Property, plant and equipment, net as of December 31, 2016 and 2015 consist of the following (in thousands):

	2016	2015	Estimated Depreciable

			Lives
Land	$2,230	$2,230	Indefinite
Building and building improvements	4,605	2,900	35 years
Furniture, Fixtures, and other	3,993	2,168	3 to 10 years
Laboratory and manufacturing equipment	16,107	12,241	4 to 10 years
Leasehold improvements	23,154	18,938	2 to 12 years
Software and computer equipment	6,789	6,323	3 years
	56,878	44,800	
Less accumulated depreciation and amortization	(31,244)	(29,489)	
Total	$25,634	$15,311	

(8) Income Taxes

We are subject to taxation in the U.S. and in various state, local, and foreign jurisdictions. We remain subject to examination by U.S. Federal, state, local, and foreign tax authorities for tax years 2013 through 2016. With a few exceptions, we are no longer subject to U.S. Federal, state, local, and foreign examinations by tax authorities for the tax year 2012 and prior. However, net operating losses from the tax year 2012 and prior would be subject to examination if and when used in a future tax return to offset taxable income. Our policy is to recognize income tax related penalties and interest, if any, in our provision for income taxes and, to the extent applicable, in the corresponding income tax assets and liabilities, including any amounts for uncertain tax positions.

As of December 31, 2016, we had available net operating loss carryforwards of $682.2 million and $178.1 million for Federal and state income tax purposes, respectively, which are available to offset future Federal and state taxable income, if any, and expire between 2017 and 2036. At December 31, 2016, the Company had additional federal and state net operating loss carryforwards of $0.9 million related to excess stock based compensation tax benefits for which the benefit will be recorded to additional paid-in capital when recognized. Our ability to use these net operating losses is limited by change of control provisions under Internal Revenue Code Section 382 and may expire unused. In addition, we have $8.9 million and $13.4 million of Federal and state research and development credits, respectively, available to offset future taxable income. These Federal and state research and development credits expire between 2018 and 2033 and 2017 and 2029, respectively. We also have foreign income tax net operating loss carryforwards of approximately $58.7 million which are available to offset future foreign taxable income, if any, and expire between 2017 and 2023. The potential impacts of such provisions are among the items considered and reflected in management's assessment of our valuation allowance requirements.

The tax effect of temporary differences and net operating loss and tax credit carryforwards that give rise to significant portions of the deferred tax assets and deferred tax liabilities as of December 31, 2016 and 2015 are presented below (in thousands).

	2016	2015
Deferred tax assets:		
U.S. Federal and State net operating loss carryforwards	$241,572	$221,139
Foreign net operating loss carryforwards	13,075	8,412
Research and development tax credits	17,723	19,475
Share-based compensation	13,165	10,339
Other	15,513	7,123
Total deferred tax assets	301,048	266,488
Less: valuation allowance	(295,502)	(260,057)
Net deferred tax assets	5,546	6,431
Deferred tax liabilities	(6,197)	(7,093)
Net deferred tax liability	$(651)	$(662)

In assessing the realizablility of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which the net operating loss and tax credit carryforwards can be utilized or the temporary differences become deductible. We consider projected future taxable income and tax planning strategies in making this assessment. In order to fully realize the deferred tax asset, we will need to generate future taxable income sufficient to utilize net operating losses prior to their expiration. Based upon our history of not generating taxable income due to our business activities focused on product development, we believe that it is more likely than not that deferred tax assets will not be realized through future earnings. Accordingly, a valuation allowance has been established for deferred tax assets which will not be offset by the reversal of deferred tax liabilities. The valuation allowance on the deferred tax assets increased by $35.3 million and $25.9 million during the years ended December 31, 2016 and 2015, respectively. The net operating loss includes amounts pertaining to tax deductions relating to stock exercises for which any subsequently recognized tax benefit will be recorded as an increase to additional paid-in capital.

Income tax benefit was $5.4 million for the year ended December 31, 2015 and nil for each of the years ended December 31, 2016 and 2014, respectively. The income tax benefit of $5.4 million for the year ended December 31, 2015 was entirely related to a deferred tax benefit recognized as a result of deferred tax liabilities recorded in connection with our acquisitions of PhosImmune and certain assets from XOMA. Income taxes recorded differed

from the amounts computed by applying the U.S. Federal income tax rate of 34% to loss before income taxes as a result of the following (in thousands).

	2016	2015	2014
Computed “expected” Federal tax benefit	$(42,781)	$(31,669)	$(14,445)
(Increase) reduction in income taxes benefit resulting from:			
Change in valuation allowance	35,471	25,908	14,043
(Decrease) increase due to uncertain tax positions	(203)	203	117
State and local income benefit, net of Federal income tax benefit	(3,452)	(3,869)	(642)
Net operating loss expirations	—	—	996
Foreign rate differential	4,398	(314)	726
Other, net	6,567	4,354	(795)
Income tax benefit	$—	$(5,387)	$—

A reconciliation of the beginning and ending amount of gross unrecognized tax benefits is as follows (in thousands):

	2016	2015	2014
Balance, January 1	$5,481	$5,778	$5,649
Increase related to current year positions	—	203	90
(Decrease) increase related to previously recognized positions	(203)	(500)	39
Balance, December 31	$5,278	$5,481	$5,778

These unrecognized tax benefits would all impact the effective tax rate if recognized. There are no positions which we anticipate could change within the next twelve months.

(9) Accrued and Other Current Liabilities

Accrued liabilities consist of the following as of December 31, 2016 and 2015 (in thousands):

	December 31, 2016	December 31, 2015
Payroll	$ 6,504	$ 4,600
Professional fees	2,373	3,343
Contract manufacturing costs	10,492	3,886
Research services	5,639	1,698
Leasehold improvements	1,280	—
Other	1,587	638
Total	$ 27,875	$ 14,166

Other current liabilities consisted of the following as of December 31, 2016 and 2015 (in thousands):

	December 31, 2016	December 31, 2015
Current portion of deferred purchase price (Note 4)	$ 3,948	$ 5,906
Other	843	398
Total	$ 4,791	$ 6,304

(10) Equity

Effective June 14, 2016, our certificate of incorporation was amended to increase the number of authorized shares of common stock from 140,000,000 to 240,000,000.

Under the terms and conditions of the Certificate of Designation creating the Series A-1 Preferred Stock, this stock is convertible by the holder at any time into our common stock, is non-voting, has an initial conversion price of $94.86 per common share, subject to adjustment, and is redeemable by us at its face amount ($31.6 million), plus any accrued and unpaid dividends, on or after September 24, 2013. The Certificate of Designation does not contemplate a sinking fund. The Series A-1 Preferred Stock ranks senior to our common stock. In a liquidation, dissolution, or winding up of the Company, the Series A-1 Preferred Stock's liquidation preference must be fully satisfied before any distribution could be made to the holders of the common stock. Other than in such a liquidation, no terms of the Series A-1 Preferred Stock affect our ability to declare or pay dividends on our common stock as long as the Series A-1 Preferred Stock's dividends are accruing. The liquidation value of this Series A-1 Preferred stock is equal to $1,000 per share outstanding plus any accrued unpaid dividends. Dividends in arrears with respect to the Series A-1 Preferred Stock were approximately $800,000 or $25.29 per share, and $595,000, or $18.82 per share, at December 31, 2016 and 2015, respectively.

In September 2007, we issued 270,562 shares of our common stock at a price of $18.48 per share to a single institutional investor. In conjunction with this transaction, we also issued to the investor 10,000 shares of our new series B1 convertible preferred stock and 5,250 shares of our new series B2 convertible preferred stock. All shares of the series B1 convertible preferred stock have been converted. Shares of the series B2 convertible preferred stock permit the investor to purchase common shares for consideration of up to 35% of the total dollar amount previously invested pursuant to the agreement with the investor, including conversions of the series B1 convertible preferred stock, at a purchase price equal to the lesser of $24.96 per common share or a price calculated based on the then-prevailing price of our common stock, with such right expiring seven years from the date of issuance. In April 2009, we issued 988,202 shares of our common stock upon conversion of 2,145 shares of our series B2 convertible preferred stock via cashless

conversions. Upon completion of the conversions, 3,105 shares of our series B2 convertible preferred stock were still outstanding although no further shares could be converted into shares of common stock (other than in the event of a change of control) as the maximum number of shares (as defined in the agreement) had been issued. The total number of shares of common stock issued or issuable to the holder of the class B convertible preferred stock cannot exceed 19.9% of our outstanding common stock. No dividends are paid on the class B convertible preferred stock and there are no liquidation preferences. On September 7, 2014, all 3,105 shares of our issued and outstanding Series B2 Convertible Preferred Stock remained unconverted and were canceled and extinguished in accordance with the Certificate of Designation.

In January 2008, we entered into a private placement agreement (the "January 2008 private placement") pursuant to which we sold 1,451,450 shares of common stock for $18.00 for each share sold. Investors also received (i) 10-year warrants to purchase, at an exercise price of $18.00 per share, up to 1,451,450 shares of common stock and (ii) unit warrants to purchase, at an exercise price of $18.00 per unit, contingent upon a triggering event as defined in the January 2008 private placement documents, (a) up to 1,451,450 shares of common stock and (b) additional 10-year warrants to purchase, at an exercise price of $18.00 per share, up to 1,451,450 additional shares of common stock. In accordance with the terms of the January 2008 private placement, the 10-year warrants became exercisable for a period of 9.5 years as of July 9, 2008. Our private placement in April 2008 qualified as a triggering event, and therefore the unit warrants became exercisable for a period of eighteen months as of July 9, 2008. The unit warrants expired unexercised in January 2010. In February 2008, we filed a registration statement covering the resale of the 1,451,450 shares of common stock issued and the 1,451,450 shares issuable upon the exercise of the 10-year warrants issued in the January 2008 private placement. The Securities and Exchange Commission (the "SEC") declared the resale registration statement effective on February 14, 2008. In connection with the January 2008 private placement, of the 1,451,450 warrants issued, 284,785 of the warrants were issued to Garo Armen, our CEO.

In August 2009, we entered into a private placement agreement under which we issued and sold (i) 730,994 shares of our common stock, (ii) six-month warrants to purchase up to 365,495 additional shares of common stock at an exercise price of $13.86 per share, and (iii) four-year warrants to purchase up to 328,946 additional shares of common stock at an exercise price of $15.00 per share, for $13.68 for each share sold generating gross proceeds of $10.0 million. The warrants were not exercisable for the first six months following the closing, which occurred on August 4, 2009. Subsequently, we filed, and the SEC declared effective, a registration statement covering the resale of the 730,994 shares of our common stock issued and the 694,441 shares issuable upon the exercise of the related warrants issued in this private placement. The six-month and four-year warrants expired unexercised in July 2010 and February 2014, respectively.

As part of all private placement agreements, we agreed to register the shares of common stock and the shares of common stock underlying the warrants (with the exception of the unit warrants from the January 2008 private placement) issued to the investors with the SEC within contractually specified time periods. As noted above, we filed registration statements covering all required shares.

In December 2012, we entered into an Amended and Restated At Market Sales Issuance Agreement (the "2012 ATM Program") with MLV & Co. LLC, ("MLV") to increase the number of shares of common stock available for offer and sale under the 2012 ATM Program to an aggregate of ten million shares.

During the year ended December 31, 2014, we sold an aggregate of 215,000 shares of our common stock in at the market offerings under the 2012 ATM Program and received net proceeds of $601,000 after deducting offering costs of approximately $20,000. These offerings were made under effective shelf registration statements and proceeds from the offerings were used for general corporate purposes.

During September 2013, we sold approximately 3,333,000 shares of our common stock and warrants to purchase 1,000,000 shares of our common stock in a registered direct public offering raising net proceeds of approximately $9.5 million, after deducting offering expenses. The common stock and warrants were sold in units, with each unit

consisting of one share of common stock and a warrant to purchase 0.3 of a share of common stock. Subject to certain ownership limitations, the warrants became exercisable beginning 6 months following issuance and will expire five years from the date they become exercisable, at an exercise price of $3.75 per share. The number of shares issuable upon exercise of the warrants and the exercise price of the warrants are adjustable in the event of stock splits, stock dividends, combinations of shares and similar recapitalization transactions.

In February 2014, we issued and sold 22,236,000 shares of our common stock in a public underwritten offering. Net proceeds after deducting offering expenses were approximately $56.0 million. This offering was made under an effective shelf registration statement and proceeds from the offering are being used for general corporate purposes.

In February 2014, our Board of Directors retired 43,490 shares of our treasury stock then outstanding and returned those shares to authorized and unissued shares of our common stock.

In October 2014, we filed a Registration Statement on Form S-3, declared effective by the SEC on October 23, 2014 (the “2014 Registration Statement”), covering the offering of up to $150.0 million of common stock, preferred stock, warrants, debt securities and units. The 2014 Registration Statement included a prospectus covering the offering, issuance and sale of up to 10 million shares of our common stock from time to time in “at the market offerings” pursuant to an At Market Sales Issuance Agreement entered into with MLV on October 10, 2014 (the “2014 ATM Program”). On October 10, 2014, we exercised our right under 2012 ATM Program to terminate the 2012 ATM Program upon effectiveness of the 2014 Registration Statement. During the year ended December 31, 2016 we sold an aggregate of 497,000 shares of our common stock in at the market offerings under the 2014 ATM Program and received net proceeds of $2.2 million after deducting offering costs of approximately $67,000.

On January 9, 2015, in connection with the execution of the Collaboration Agreement, we also entered into the Stock Purchase Agreement (the “Stock Purchase Agreement”) with Incyte Corporation, pursuant to which Incyte purchased approximately 7.76 million shares of our common stock (the “Shares”) in February 2015 for an aggregate purchase price of $35.0 million, or approximately $4.51 per share. Under the Stock Purchase Agreement we agreed to register the Shares for resale under the Securities Act of 1933, as amended (the "Securities Act"). Subsequently, we filed, and the SEC declared effective, a registration statement covering the resale of the 7,760,000 shares of our common stock issued. On February 14, 2017, we entered into an additional Stock Purchase Agreement with Incyte, pursuant to which Incyte purchased 10 million shares of our common stock at a price of $6.00 per share. See Note 22 for further details.

In connection with the January 2015 achievement of the first contingent milestone, pursuant to the Agenus Switzerland Share Exchange Agreement, we issued a total of 80,493 shares of our common stock valued at approximately $345,000 as payment of a portion of our obligation.

In May 2015, we issued and sold 12,650,000 shares of our common stock in an underwritten public offering. Net proceeds after deducting offering expenses were approximately $75.0 million.

In September 2015, in accordance with the terms of the Assignment and Termination Agreement detailed in Note 16, we issued 300,000 shares of our common stock to Ingalls valued at $2.1 million.

In September 2016, in accordance with the terms of the Technology Transfer and License Agreement with Iontas Limited (“Iontas”), we issued 157,313 shares of our common stock to Iontas valued at approximately $887,000.

(11) Share-based Compensation Plans

Our 1999 Equity Incentive Plan, as amended (the “1999 EIP”) authorized awards of incentive stock options within the meaning of Section 422 of the Internal Revenue Code (the “Code”), non-qualified stock options, nonvested (restricted) stock, and unrestricted stock for up to 2.0 million shares of common stock (subject to adjustment for stock splits and similar capital changes and exclusive of options exchanged at the consummation of mergers) to employees and, in the case of non-qualified stock options, nonvested (restricted) stock, and unrestricted stock, to consultants and directors as defined in the 1999 EIP. The plan terminated on November 15, 2009. On March 12, 2009, our Board of Directors adopted, and on June 10, 2009, our stockholders approved, our 2009 Equity Incentive Plan (the “2009 EIP”). The 2009 EIP provides for the grant of incentive stock options intended to qualify under Section 422 of the Code, nonstatutory stock options, restricted stock, unrestricted stock and other equity-based awards, such as stock appreciation rights, phantom stock awards, and restricted stock units, which we refer to collectively as Awards, for up to 20.2 million shares of our common stock (subject to adjustment in the event of stock splits and other similar events). The Board of Directors appointed the Compensation Committee to administer the 1999 EIP and the 2009 EIP. No awards will be granted under the 2009 EIP after June 10, 2019.

On March 12, 2009, our Board of Directors adopted, and on June 10, 2009, our stockholders approved, the 2009 Employee Stock Purchase Plan (the “2009 ESPP”) to provide eligible employees the opportunity to acquire our common stock in a program designed to comply with Section 423 of the Code. There are currently 166,666 shares of common stock reserved for issuance under the 2009 ESPP. Rights to purchase common stock under the 2009 ESPP are granted at the discretion of the Compensation Committee, which determines the frequency and duration of individual offerings under the plan and the dates when stock may be purchased. Eligible employees participate voluntarily and may withdraw from any offering at any time before the stock is purchased. Participation terminates automatically upon termination of employment. The purchase price per share of common stock in an offering is 85% of the lesser of its fair value at the beginning of the offering period or on the applicable exercise date and may be paid through payroll deductions, periodic lump sum payments, the delivery of our common stock, or a combination thereof. Unless otherwise permitted by the Board of Directors, no participant may acquire more than 3,333 shares of stock in any offering period. No participant is allowed to purchase shares under the 2009 ESPP if such employee would own or would be deemed to own stock possessing 5% or more of the total combined voting power or value of the Company. No offerings will be made under the 2009 ESPP after June 10, 2019.

Our Director's Deferred Compensation Plan, as amended, permits each outside director to defer all, or a portion of, their cash compensation until their service as a director ends or until a specified date into a cash account or a stock account. There are 325,000 shares of our common stock reserved for issuance under this plan. As of December 31, 2016, 72,081 shares had been issued. Amounts deferred to a cash account will earn interest at the rate paid on one-year Treasury bills with interest added to the account annually. Amounts deferred to a stock account will be converted on a quarterly basis into a number of units representing shares of our common stock equal to the amount of compensation which the participant has elected to defer to the stock account divided by the applicable price for our common stock. The applicable price for our common stock has been defined as the average of the closing price of our common stock for all trading days during the calendar quarter preceding the conversion date as reported by The Nasdaq Capital Market. Pursuant to this plan, a total of 246,627 units, each representing a share of our common stock at a weighted average common stock price of $5.45, had been credited to participants' stock accounts as of December 31, 2016. The compensation charges for this plan were immaterial for all periods presented.

On November 4, 2015, our Board of Directors adopted and approved our 2015 Inducement Equity Plan (the "2015 IEP") in compliance with and in reliance on NASDAQ Listing Rule 5635(c)(4), which exempts inducement grants from the general requirement of the NASDAQ Listing Rules that equity-based compensation plans and arrangements be approved by stockholders. There are 1,500,000 shares of our common stock reserved for issuance under the 2015 IEP.

We use the Black-Scholes option pricing model to value options granted to employees and non-employees, as well as options granted to members of our Board of Directors. All stock option grants have 10-year terms and generally vest ratably over a 3 or 4-year period. The non-cash charge to operations for the non-employee options with vesting or other performance criteria is affected each reporting period, until the non-employee options vest, by changes in the fair value of our common stock.

The fair value of each option granted during the periods was estimated on the date of grant using the following weighted average assumptions:

	2016	2015	2014
Expected volatility	65 %	77 %	84 %
Expected term in years	4	6	6
Risk-free interest rate	1.0 %	1.6 %	1.7 %
Dividend yield	0 %	0 %	0 %

Expected volatility is based exclusively on historical volatility data of our common stock. The expected term of stock options granted is based on historical data and other factors and represents the period of time that stock options are expected to be outstanding prior to exercise. The risk-free interest rate is based on U.S. Treasury strips with maturities that match the expected term on the date of grant.

A summary of option activity for 2016 is presented below:

	Options	Weighted Average Exercise	Weighted Average Remaining	Aggregate Intrinsic Value

		Price	Contractual Term (in years)	
Outstanding at December 31, 2015	8,345,835	$ 4.40		
Granted	4,572,489	4.28		
Exercised	(224,012)	3.32		
Forfeited	(206,426)	5.99		
Expired	(794,486)	5.99		
Outstanding at December 31, 2016	11,693,400	$ 4.51	7.52	$3,750,615
Vested or expected to vest at December 31, 2016	10,837,540	$ 4.53	7.38	$3,637,128
Exercisable at December 31, 2016	5,835,130	$ 4.64	6.02	$2,950,330

The weighted average grant-date fair values of options granted during the years ended December 31, 2016, 2015, and 2014, was $4.65, $3.55, and $1.87, respectively.

The aggregate intrinsic value in the table above represents the difference between our closing stock price on the last trading day of fiscal 2016 and the exercise price, multiplied by the number of in-the-money options that would have been received by the option holders had all option holders exercised their options on December 31, 2016 (the intrinsic value is considered to be zero if the exercise price is greater than the closing stock price). This amount changes based on the fair market value of our stock. The total intrinsic value of options exercised during the years ended December 31, 2016, 2015, and 2014, determined on the dates of exercise, was $445,000, $1.2 million, and $45,000, respectively.

During 2016, 2015, and 2014, all options were granted with exercise prices equal to the market value of the underlying shares of common stock on the grant date other than awards dated February 14, 2014. In February 2014, our Board of Directors approved awards subject to forfeiture in the event shareholder approval was not obtained to increase the shares available under our 2009 EIP. This approval was obtained in April 2014. Accordingly, these awards have a grant date of April 2014 with an exercise price as of the date the Board of Director's approved the awards in February 2014.

As of December 31, 2016, there was $10.0 million of total unrecognized compensation cost related to stock options granted to employees and directors expected to be recognized over a weighted average period of 2.3 years.

As of December 31, 2016, unrecognized expense for options granted to outside advisors for which performance (vesting) has not yet been completed but the exercise price of the option was known was $243,000. Such amount is subject to change each reporting period based upon changes in the fair value of our common stock, expected volatility, and the risk-free interest rate, until the outside advisor completes his or her performance under the option agreement.

Certain employees and consultants have been granted nonvested stock. The fair value of nonvested stock is calculated based on the closing sale price of our common stock on the date of issuance.

A summary of nonvested stock activity for 2016 is presented below:

	Nonvested Shares	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2015	1,730,604	$ 8.55
Granted	996,938	3.14
Vested	(570,037)	8.52
Forfeited	(215,029)	8.15
Outstanding at December 31, 2016	1,942,476	$ 6.45

As of December 31, 2016, there was $3.8 million of unrecognized share-based compensation expense related to these nonvested shares which pertained primarily to performance based awards for which, if all milestones are achieved, will be recognized over a period of 1.7 years. The total intrinsic value of shares vested during the years ended December 31, 2016, 2015, and 2014, was $2.4 million, $140,000, and $205,000, respectively.

Cash received from option exercises and purchases under our 2009 ESPP for the years ended December 31, 2016, 2015, and 2014, was $1.2 million, $2.0 million, and $252,000, respectively. We issue new shares upon option

exercises, purchases under our 2009 ESPP, vesting of nonvested stock, and under the Director's Deferred Compensation Plan. During the years ended December 31, 2016, 2015, and 2014, 121,228 shares, 63,539 shares, and 46,025 shares, were issued under the 2009 ESPP, respectively. During the years ended December 31, 2016, 2015, and 2014, 570,037 shares, 35,332 shares, and 48,239 shares, respectively, were issued as a result of the vesting of nonvested stock.

The impact on our results of operations from share-based compensation for the years ended December 31, 2016, 2015, and 2014, was as follows (in thousands).

	Year Ended		
	2016	2015	2014
Research and development	$6,507	$2,654	$1,272
General and administrative	6,681	4,784	3,400
Total share-based compensation expense	$13,188	$7,438	$4,672

(12) License, Research, and Other Agreements

In May 2001, we entered into a license agreement with the University of Connecticut Health Center ("UConn") which was amended in March 2003 and June 2009. Through the license agreement, we obtained an exclusive license to patent rights resulting from inventions discovered under a research agreement that was effective from February 1998 until December 2006. The term of the license agreement ends when the last of the licensed patents expires (2024) or becomes no longer valid. UConn may terminate the agreement: (1) if, after 30 days written notice for breach, we continue to fail to make any payments due under the license agreement, or (2) we cease to carry on our business related to the patent rights or if we initiate or conduct actions in order to declare bankruptcy. We may terminate the agreement upon 90 days written notice. We are still required to make royalty payments on any obligations created prior to the effective date of termination of the license agreement. Upon expiration or termination of the license agreement due to breach, we have the right to continue to manufacture and sell products covered under the license agreement which are considered to be works in progress for a period of 6 months. The license agreement contains aggregate milestone payments of $1.2 million for each product we develop covered by the licensed patent rights. These milestone payments are contingent upon regulatory filings, regulatory approvals and commercial sales of products. We have also agreed to pay UConn a royalty on the net sales of products covered by the license agreement as well as annual license maintenance fees beginning in May 2006. Royalties otherwise due on the net sales of products covered by the license agreement may be credited against the annual license maintenance fee obligations. As of December 31, 2016, we had paid $850,000 to UConn under the license agreement. The license agreement gives us complete discretion over the commercialization of products covered by the licensed patent rights, but also requires us to use commercially reasonable diligent efforts to introduce commercial products within and outside the United States. If we fail to meet these diligence requirements, UConn may be able to terminate the license agreement.

In March 2003, we entered into an amendment agreement that amended certain provisions of the license agreement with UConn. The amendment agreement granted us a license to additional patent rights. In consideration for execution of the amendment agreement, we agreed to pay UConn an upfront payment and to make future payments for licensed patents or patent applications. Through December 31, 2016, we have paid approximately $100,000 to UConn under the license agreement, as amended.

On December 5, 2014, Agenus Switzerland, entered into a license agreement with the Ludwig Institute for Cancer Research Ltd., or Ludwig, which replaced and superseded a prior agreement entered into between the parties in May 2011. Pursuant to the terms of the license agreement, Ludwig granted Agenus Switzerland an exclusive, worldwide license under certain intellectual property rights of Ludwig and Memorial Sloan Kettering Cancer Center arising from the prior agreement to further develop and commercialize GITR, OX40 and TIM-3 antibodies. On January 25, 2016, we and Agenus Switzerland entered into a second license agreement with Ludwig, on substantially similar terms, to develop CTLA-4 and PD-1 antibodies. Pursuant to the December 2014 license agreement, Agenus Switzerland made an upfront payment of $1.0 million to Ludwig. The December 2014 license agreement also obligates Agenus Switzerland to make potential milestone payments of up to $20.0 million for events prior to regulatory approval of licensed GITR, OX40 and TIM-3 products, and potential milestone payments in excess of $80.0 million if such licensed products are approved in multiple jurisdictions, in more than one indication, and certain sales milestones are achieved. Under the January 2016 license agreement, we are obligated to make potential milestone payments of up to $12.0 million for events prior to regulatory approval of CTLA-4 and PD-1 licensed products, and potential milestone payments of up to $32.0 million if certain sales milestones are achieved. Under each of these license agreements, we and/or Agenus Switzerland will also be obligated to pay low to mid-single digit royalties on all net sales of licensed products during the royalty period, and to pay Ludwig a percentage of any sublicensing income, ranging from a low to mid-double digit percentage depending on various factors. The license agreements may each be terminated as follows: (i) by either party if the other party commits a material, uncured breach; (ii) by either party if the other party initiates bankruptcy, liquidation or similar proceedings; or (iii) by Agenus Switzerland or us (as applicable) for convenience upon 90 days' prior written notice. The license agreements also contain customary representations and warranties, mutual indemnification, confidentiality and arbitration provisions.

In connection with the December 2015 acquisition of PhosImmune, we obtained exclusive rights to a portfolio of patent applications and one issued patent relating to phosphopeptide tumor targets (PTTs) under a patent license agreement with the University of Virginia (UVA). The UVA license gives us exclusive rights to develop and commercialize the PTT technology and an exclusive option to license any further PTT technology arising from ongoing research at UVA until December 2018. Under the license agreement, we will pay low to mid-single digit running royalties on net sales of PTT products, and a modest flat percentage of sublicensing income. In addition, we may be obligated to make milestone payments of up to $2.7 million for each indication of a licensed PTT product to complete clinical trials and achieve certain sales thresholds. If we fail to meet certain diligence milestones, we may also be required to pay penalties in excess of $150,000. The term of the UVA license agreement ends when the last of the licensed patents expires or becomes no longer valid. The term of the UVA license agreement ends when the last of the licensed patents expires or becomes no longer valid. The UVA license agreement may be terminated as follows: (i) by UVA in connection with our bankruptcy or cessation of business relating to the licensed technology, (ii) by UVA if we commit a material, uncured breach or (iii) by us for our convenience on 180 days written notice.

We have entered into various agreements with contract manufacturers, institutions, and clinical research organizations (collectively "third party providers") to perform pre-clinical activities and to conduct and monitor our clinical studies. Under these agreements, subject to the enrollment of patients and performance by the applicable third party provider, we have estimated our total payments to be $128.7 million over the term of the studies. For the years ended December 31, 2016, 2015, and 2014, $23.1 million, $19.9 million, and $0.9 million, respectively, have been expensed in the accompanying consolidated statements of operations related to these third party providers. Through December 31, 2016, we have expensed $94.4 million as research and development expenses and $82.1 million of this estimate has been paid. The timing of expense recognition and future payments related to these agreements is subject to the enrollment of patients and performance by the applicable third party provider.

We have various comprehensive agreements with collaborative partners that allow for the use of QS-21 Stimulon, an investigational adjuvant used in numerous vaccines under development for a variety of diseases including, but not limited to, hepatitis, HIV, influenza, cancer, Alzheimer’s disease, malaria, and tuberculosis. These agreements grant exclusive worldwide rights in some fields of use, and co-exclusive or non-exclusive rights in others. The agreements call for royalties to be paid to us by the collaborative partner on the future sales of licensed vaccines that include QS-21 Stimulon.

In July 2006, we entered into a license agreement and a supply agreement with GlaxoSmithKline (“GSK”) for the use of QS-21 Stimulon (the “GSK License Agreement” and the “GSK Supply Agreement”, respectively). In January 2009, we entered into an Amended and Restated Manufacturing Technology Transfer and Supply Agreement (the “Amended GSK Supply Agreement”) under which GSK has the right to manufacture all of its requirements of commercial grade QS-21 Stimulon. GSK is obligated to supply us (or our affiliates, licensees, or customers) certain quantities of commercial grade QS-21 Stimulon for a stated period of time. In March 2012 we entered into a First Right to Negotiate and Amendment Agreement amending the GSK License Agreement and the Amended GSK Supply Agreement to clarify and include additional rights for the use of QS-21 Stimulon (the “GSK First Right to Negotiate Agreement”). In addition, we granted GSK the first right to negotiate for the purchase of the Company or certain of our assets. The first right to negotiate will expire after five years. As consideration for entering into the GSK First Right to Negotiate Agreement, GSK paid us an upfront, non-refundable payment of $9.0 million, $2.5 million of which is creditable toward future royalty payments. We sometimes refer to the GSK License Agreement, the Amended GSK Supply Agreement and the GSK First Right to Negotiate Agreement, the “GSK Agreements”. As of December 31, 2016, we had received $23.3 million of a potential $24.3 million in upfront and milestone payments related to the GSK Agreements. We are generally entitled to receive 2% royalties on net sales of prophylactic vaccines for a period of 10 years after the first commercial sale of a resulting GSK product, with some exceptions. The GSK License and Amended GSK Supply Agreements may be terminated by either party upon a material breach if the breach is not cured within the time specified in the respective agreement. The termination or expiration of the GSK License Agreement does not relieve either party from any obligation which accrued prior to the termination or expiration. Among other provisions, the milestone payment obligations survive termination or expiration of the GSK Agreements for any reason, and the license rights granted to GSK survive expiration of the GSK License Agreement. The license rights and payment obligations of GSK under the Amended GSK Supply Agreement survive termination or expiration, except that GSK's license rights and future royalty obligations do not survive if we terminate due to GSK's material breach unless we elect otherwise.

For the years ended December 31, 2016, and 2015, no revenue was recognized under our GSK License and Amended GSK Supply Agreements. For the year ended December 31, 2014, we recognized revenue of $3.3 million, respectively, related to payments received under our GSK License and Amended GSK Supply Agreements. Deferred revenue of $2.5 million related to the GSK Agreements is included in deferred revenue on our consolidated balance sheet as of December 31, 2016.

(13) Collaboration Agreement

Incyte Corporation

On January 9, 2015 and effective February 19, 2015, we entered into a global license, development and commercialization agreement (the “Collaboration Agreement”) with Incyte Corporation pursuant to which the parties plan to develop and commercialize novel immuno-therapeutics using our antibody discovery platforms. The Collaboration Agreement was initially focused on four checkpoint modulator programs directed at GITR, OX40, LAG-3 and TIM-3. In addition to the four identified antibody programs, the parties have an option to jointly nominate and pursue the development and commercialization of antibodies against additional targets during a five year discovery period which, upon mutual agreement of the parties for no additional consideration, can be extended for an additional three years. In November 2015, we and Incyte jointly nominated and agreed to pursue the development and commercialization of three additional undisclosed CPM targets.

On January 9, 2015, we also entered into the Stock Purchase Agreement with Incyte Corporation whereby, for an aggregate purchase price of $35.0 million, Incyte purchased approximately 7.76 million shares of our common stock; see Note 10 for more details.

Agreement Structure

Under the terms of the Collaboration Agreement, we received non-creditable, nonrefundable upfront payments totaling $25.0 million. In addition, the parties will share all costs and profits for the GITR, OX40 and two of the additional antibody programs on a 50:50 basis (profit-share products), and we are eligible to receive up to $20.0 million in future contingent development milestones under these programs. Incyte is obligated to reimburse us for all development costs that we incur in connection with the TIM-3, LAG-3 and one of the additional antibody programs (royalty-bearing products) and we are eligible to receive (i) up to $155.0 million in future contingent development, regulatory, and commercialization milestone payments and (ii) tiered royalties on global net sales at rates generally ranging from 6% to 12%. For each royalty-bearing product, we will also have the right to elect to co-fund 30% of development costs incurred following initiation of pivotal clinical trials in return for an increase in royalty rates. Additionally, we retain co-promotion participation rights in the United States on any profit-share product. Through the direction of a joint steering committee, the parties anticipate that, for each program, we will serve as the lead for pre-clinical development activities through investigational new drug application filing, and Incyte will serve as the lead for clinical development activities. The parties initiated the first clinical trials of antibodies arising from these programs in 2016. For each additional program beyond GITR, OX40, TIM-3 and LAG-3 that the parties elect to bring into the collaboration, we will have the option to designate it as a profit-share product or a royalty-bearing product.

The Collaboration Agreement will continue as long as (i) any product is being developed or commercialized or (ii) the discovery period remains in effect. After the first anniversary of the effective date of the Collaboration Agreement, Incyte may terminate the Collaboration Agreement or any individual program for convenience upon 12 months' notice. The Collaboration Agreement may also be terminated by either party upon the occurrence of an uncured material breach of the other party or by us if Incyte challenges patent rights controlled by us. In addition, either party may terminate the Collaboration Agreement as to any program if the other party is acquired and the acquiring party controls a competing program.

Collaboration Revenue

For the years ended December 31, 2016, and 2015, we recognized revenue of approximately $19.7 million, and $23.5 million, respectively, under the Collaboration Agreement, of which, $3.5 million and $9.1 million, respectively, was related to the amortization of the $25.0 million non-creditable, nonrefundable upfront payment. No revenue was recognized under the Collaboration Agreement for the year ended December 31, 2014. As of December 31, 2016, we had deferred revenue remaining under the Collaboration Agreement of approximately $12.4 million, of which approximately $2.6 million and $9.8 million are classified as current and long-term, respectively, on our consolidated balance sheet. As of December 31, 2015, we had deferred revenue remaining under the Collaboration Agreement of approximately $15.8 million, of which approximately $3.6 million and $12.2 million are classified as current and long-term, respectively, on our consolidated balance sheet.

On February 14, 2017, the parties amended the Collaboration Agreement by entering into a First Amendment to License, Development and Commercialization Agreement (the "Amendment"). On February 14, 2017, the parties also entered into an additional Stock Purchase Agreement pursuant to which Incyte purchased 10 million shares of our common stock at a price of $6.00 per share. See Note 22 for further details.

(14) Certain Related Party Transactions

Effective February 12, 2014, in connection with our acquisition of the capital stock of 4-Antibody and pursuant to the Share Exchange Agreement, our Board of Directors elected Shahzad Malik, M.D. as a director. Dr. Malik is a General Partner of Advent Venture Partners LLP ("Advent"). Advent, through its affiliated entities, was Agenus Switzerland's largest shareholder prior to the completion of the acquisition. Upon completion of the acquisition, Advent and its affiliates received 996,088 shares of our common stock, having a value of approximately $3.0 million. In connection with the achievement of the first milestone in January 2015 under the Share Exchange Agreement, Advent and its affiliates received consideration of approximately $6.2 million. The above listed consideration was received by Advent and its affiliated entities, not Dr. Malik in his individual capacity.

In May 2015, we issued and sold 12,650,000 shares of our common stock in an underwritten public offering for net proceeds of approximately $75.0 million. Of the 12,650,000 shares of our common stock issued and sold, 1,587,302 of these shares of common stock were issued and sold to Advent.

Our Audit and Finance Committee approved a charitable contribution to the Children of Armenia Fund ("COAF") totaling $100,000 for 2016. Dr. Garo H. Armen, our CEO, is the founder and chairman of COAF. The 2016 charitable contribution was comprised of a cash component and a non-cash component. The cash component was $50,000, which we paid in quarterly installments. The non-cash component was $50,000, which was the estimated value of a portion of office space made available to COAF employees.

We also consider our transactions with Incyte, as disclosed in Footnote 13 and Footnote 22, to be related party transactions.

(15) Leases

We lease manufacturing, research and development, and office facilities under various lease arrangements. Rent expense (before sublease income) was $3.3 million, $2.3 million, and $2.1 million, for the years ended December 31, 2016, 2015, and 2014, respectively.

We lease a facility in Lexington, Massachusetts for our manufacturing, research and development, and corporate offices. During December 2012 we entered into a commercial lease for approximately 5,600 square feet of office space in New York, New York for use as corporate offices. Through our acquisition of Agenus Switzerland, we lease facilities Basel, Switzerland for manufacturing, research and development and corporate offices.

In December 2015, in connection with the XOMA antibody manufacturing facility asset acquisition, we executed lease agreements in Berkeley, California for manufacturing and corporate offices. In December 2015, we additionally executed a lease for research and development, and corporate offices in Cambridge, United Kingdom.

In February 2016, we executed a lease agreement in Charlottesville, Virginia for research and development and corporate offices.

The future minimum rental payments under our facility lease agreements, which expire at various times between 2017 and 2025, are as follows (in thousands):

Year ending December 31,	
2017	$3,530
2018	3,226
2019	2,492
2020	2,133
2021	1,762
Thereafter	3,865
Total	$17,008

In connection with the Lexington facility, we maintain a fully collateralized letter of credit of $1.0 million. No amounts had been drawn on the letter of credit as of December 31, 2016. In addition, for our properties, we are required to have an aggregate deposit of $270,000 with the landlords as interest-bearing security deposits pursuant to our obligation under the leases.

We sublet a portion of our facilities and received rental payments of $733,000, $780,000, and $365,000 for the years ended December 31, 2016, 2015, and 2014, respectively. We are contractually entitled to receive rental payments of $529,000 in 2017.

During 2016, we entered into an agreement which is classified as a capital lease for a piece of laboratory equipment. No such agreement existed during 2015. It is included in our property and equipment as follows (in thousands):

	2016	Estimated Depreciable Lives
Laboratory and manufacturing equipment	$1,021	4 years
Less accumulated depreciation and amortization	(51)	
Total	$970	

Under the terms of the capital lease agreement, we will remit payments to the lessor of $288,000 for each of the years 2017 through 2019 and $144,000 for the year ending December 31, 2020.

(16) Debt

Debt obligations consisted of the following as of December 31, 2016 and 2015 (in thousands):

Debt instrument	Principal at December 31, 2016	Non-cash Interest	Unamortized Debt Issuance Costs	Unamortized Debt Discount	Balance at December 31, 2016
Current Portion:					
Debentures	$ 146	$ —	$ —	$ —	$ 146
Long-term Portion:					
2015 Subordinated Notes	14,000	—	—	(1,311)	12,689
Note Purchase Agreement	100,000	19,421	(1,345)	(222)	117,853
Total long-term	$ 114,000	$ 19,421	$ (1,345)	$ (1,533)	$ 130,542
Total	$ 114,146	$ 19,421	$ (1,345)	$ (1,533)	$ 130,688

Debt instrument	Principal at December 31, 2015	Non-cash Interest	Unamortized Debt Issuance Costs	Unamortized Debt Discount	Balance at December 31, 2015
Current Portion:					
Debentures	$ 146	$ —	$ —	$ —	$ 146
Long-term Portion:					
2015 Subordinated Notes	14,000	—	—	(2,292)	11,708
Note Purchase Agreement	100,000	4,342	(1,481)	(243)	102,619
Total long-term	$ 114,000	$ 4,342	$ (1,481)	$ (2,535)	$ 114,326
Total	$ 114,146	$ 4,342	$ (1,481)	$ (2,535)	$ 114,473

Subordinated Notes

On February 20, 2015, we, certain existing investors and certain additional investors entered into an Amended and Restated Note Purchase Agreement, pursuant to which we (i) canceled our senior subordinated promissory notes issued in April 2013 (the “2013 Notes”) in exchange for new senior subordinated promissory notes (the “2015 Subordinated Notes”) in the aggregate principal amount of $5.0 million, (ii) issued additional 2015 Subordinated Notes in the aggregate principal amount of $9.0 million and (iii) issued five year warrants (the “2013 Warrants”) to purchase 1,400,000 shares of our common stock at an exercise price of $5.10 per share.

The 2015 Subordinated Notes bear interest at a rate of 8% per annum, payable in cash on the first day of each month in arrears. Among other default and acceleration terms customary for indebtedness of this type, the 2015 Subordinated Notes include default provisions which allow for the noteholders to accelerate the principal payment of the 2015 Subordinated Notes in the event we become involved in certain bankruptcy proceedings, become insolvent, fail to make a payment of principal or (after a grace period) interest on the 2015 Subordinated Notes, default on other

indebtedness with an aggregate principal balance of $13.5 million or more if such default has the effect of accelerating the maturity of such indebtedness, or become subject to a legal judgment or similar order for the payment of money in an amount greater than $13.5 million if such amount will not be covered by third-party insurance. The 2015 Subordinated Notes are not convertible into shares of our common stock and will mature on February 20, 2018, at which point we must repay the outstanding balance in cash. The Company may prepay the 2015 Subordinated Notes at any time, in part or in full, without premium or penalty.

The exchange of the 2013 Notes for the 2015 Subordinated Notes was accounted for as a debt extinguishment under the guidance of ASC 470 Debt. For the year ended December 31, 2015, we recorded a loss on debt extinguishment of approximately $154,000 in non-operating (expense) income in our consolidated statements of operations and comprehensive loss. The debt discount of approximately $3.0 million, which relates to the warrants issued in connection with the 2015 Subordinated Notes, is being amortized using the effective interest method over three years, the expected life of the 2015 Subordinated Notes.

The warrants to purchase 500,000 shares of the Company’s common stock issued in connection with the 2013 Notes (the “2013 Warrants”) have an exercise price of $4.41 per share, and are scheduled to expire on April 15, 2017. In March 2017, we and the holders of the 2015 Subordinated Notes entered into an Amendment to Notes and Warrants, pursuant to which we (i) extended the term of the 2013 Warrants by two years from April 15, 2017 to April 15, 2019 and (ii) extended the maturity date of the 2015 Notes by two years from February 20, 2018 to February 20, 2020. The 2013 Warrants and 2015 Notes are otherwise unchanged. See Note 22 for further details.

Note Purchase Agreement Related to Future Royalties

On September 4, 2015, we and our wholly-owned subsidiaries, Antigenics LLC ("Antigenics") and Aronex Pharmaceuticals, Inc. ("Aronex"), entered into a Note Purchase Agreement (the "NPA") with Oberland Capital SA Zermatt LLC, as collateral agent ("Oberland"), an affiliate of Oberland as the lead purchaser and other purchasers. Pursuant to the terms of the NPA, on September 8, 2015 (the "Closing Date"), Antigenics issued $100.0 million aggregate principal amount of limited recourse notes (the "Notes") to the purchasers. Antigenics has the option to issue an additional $15.0 million aggregate principal amount of Notes (the "Additional Notes") to the purchasers within 15 days after approval of GSK's shingles vaccine, HZ/su, by the Food and Drug Administration, provided such approval occurs on or before June 30, 2018.

The Notes accrue interest at a rate of 13.5% per annum, compounded quarterly, from and after the Closing Date computed on the basis of a 360-day year and the actual number of days elapsed. Principal and interest payments are due on each of March 15, June 15, September 15 and December 15, and shall be made solely from the royalties paid from GSK to Antigenics on sales of GSK's shingles and malaria vaccines. The Notes are limited recourse and secured solely by a first priority security interest in the royalties and accounts and payment intangibles relating thereto plus various rights of Antigenics related to the royalties under its contracts with GSK (the "Collateral"). GSK will send all royalty payments to a segregated bank account, and to the extent there are insufficient royalties deposited into the account to fund a quarterly interest payment, the interest will be capitalized and added to the aggregate principal balance of the loan. As of December 31, 2016 we have capitalized interest of $19.4 million. The final legal maturity date of the Notes is the earlier of (i) the 10th anniversary of the first commercial sale of GSK's shingles or malaria vaccines and (ii) September 8, 2030 (the "Maturity Date"). Antigenics' obligation to repay all principal and accrued and unpaid interest by the Maturity Date is secured only by the Collateral.

At our option, we may redeem all, but not less than all, of the Notes at any time prior to the Maturity Date. The redemption price is equal to the outstanding principal amount of the Notes, plus all accrued and unpaid interest thereon, plus a premium payment that would yield an aggregate internal rate of return ("IRR") for the purchasers as follows: (i) an IRR of 20% if the redemption occurs within 24 months of the Closing Date, (ii) an IRR of 17.5% if the redemption occurs after 24 months but within 48 months of the Closing Date, and (iii) an IRR of 15% if the redemption occurs more than 48 months after the Closing Date (the "Redemption Payment").

On September 8, 2018, each purchaser has the option to require Antigenics to repurchase up to 15% of the Notes issued to such purchaser on the Closing Date (the "Put Notes") at a purchase price equal to the principal amount thereof plus accrued and unpaid interest thereon (the "Put Payment"). Antigenics is required to complete any such repurchase within 90 days after September 8, 2018.

On the earlier of (i) September 8, 2027 and (ii) the Maturity Date, Antigenics is required to pay the purchasers an amount equal to the following (the "Make-Whole Payment"): $100.0 million (or $115.0 million if the Additional Notes are sold) minus the aggregate amount of all payments made in respect of the Notes (regardless of whether characterized as principal or interest at the time of payment), including the original principal amount of any repaid Put Notes.

The NPA specifies a number of events of default (some of which are subject to applicable cure periods), including (i) failure to cause royalty payments to be deposited into the segregated bank account, (ii) payment defaults, (iii) breaches of representations and warranties made at the time the Notes were issued, (iv) covenant defaults, (v) a final and unappealable judgment against Antigenics for the payment of money in excess of $1.0 million, (vi) bankruptcy or insolvency defaults, (vii) the failure to maintain a first-priority perfected security interest in the Collateral in favor of the collateral agent and (viii) the occurrence of a change of control of Agenus. Upon the occurrence of an event of default, subject to cure periods in certain circumstance and some limited exceptions, Oberland may declare the Notes immediately due and payable, in which case Antigenics would owe a payment equal to the Redemption Payment (the "Accelerated Default Payment"). Upon the occurrence and during the continuance of

any event of default, interest on the Notes also increases by 2.5% per annum.

Agenus and Aronex (together, the “Guarantors”), are parties to the NPA as guarantors of certain of Antigenics’ obligations under the NPA. The Guarantors generally guarantee the Put Payment, the Make-Whole Payment, the Redemption Payment and the Accelerated Default Payment.

In accordance with the guidance of ASC 470 Debt, we determined the NPA represents a debt transaction and does not purport to be a sale; the balance of the outstanding notes and interest will be repaid over the estimated term of the NPA.

We will periodically assess the expected royalties using a combination of historical results, internal projections and forecasts from external sources. To the extent such payments are greater or less than our initial estimates or the timing of such payments is materially different than our original estimates, we will prospectively adjust the estimated time period over which the debt and interest will be repaid. There are a number of factors that could materially affect the amount and timing of royalty payments from GSK, all of which are not within our control. Such factors include, but are not limited to, changing standards of care, the introduction of competing products, manufacturing or other delays, biosimilar competition, patent protection, adverse events that result in governmental health authority imposed restrictions on the use of the drug products, significant changes in foreign exchange rates, and other events or circumstances that could result in reduced royalty payments from GSK, all of which would result in a reduction of royalty revenues and the interest expense over the life of the NPA.

As royalties are remitted to the purchasers, we will record non-cash royalty revenues and non-cash interest expense within our consolidated statements of operations and comprehensive loss over the term of the NPA as interest accrues and royalties are generated. We have not recognized any royalty revenue to date, and recorded $15.1 million and $4.3 million in non-cash interest expense for the years ended December 31, 2016 and 2015, respectively, within our consolidated statement of operations and comprehensive loss.

In connection with the execution of the NPA, we reimbursed the purchasers for legal fees of $250,000 and incurred debt issuance costs of approximately $1.5 million. Under the relevant accounting guidance, legal fees and debt issuance costs have been recorded as a reduction to the gross proceeds. These amounts are being amortized over 12 years, the expected term of the Notes, using the effective interest rate method.

Other

In June 2016, we executed a capital lease agreement that expires in June 2020 for equipment with a carrying value of approximately $1.0 million, which is included in property, plant and equipment, net on our consolidated balance sheets as of December 31, 2016. As of December 31, 2016, our remaining obligations under the capital lease agreement are approximately $0.9 million, of which $289,000 and $599,000 are classified as other current and other long-term liabilities, respectively, on our condensed consolidated balance sheets.

At December 31, 2016, approximately $146,000 of debentures we assumed in our merger with Aquila Biopharmaceuticals are outstanding. These debentures carry interest at 7% and are callable by the holders. Accordingly, they are classified as short-term debt.

Revenue Interest Assignment Termination

On April 15, 2013, we and Antigenics entered into a Revenue Interests Assignment Agreement (the “Original Agreement”) with Ingalls & Snyder Value Partners, L.P. and Arthur Koenig (together, “Ingalls”), pursuant to which we and Antigenics sold to Ingalls 20% of all the royalties Antigenics was entitled to receive from GSK and Janssen Sciences Ireland Uc on products associated with Agenus’s QS-21 Stimulon (collectively, the “Assigned Interests”).

On September 4, 2015, we and Antigenics entered into a Revenue Interest Assignment and Termination Agreement (the “Assignment and Termination Agreement”) with Ingalls, pursuant to which we terminated the Original Agreement and repurchased the Assigned Interests in exchange for (i) $20.0 million in cash and (ii) 300,000 shares of Agenus common stock for total consideration of approximately $22.1 million. The closing under the Assignment and Termination Agreement took place on September 8, 2015 immediately prior to the closing under the NPA. Effective September 8, 2015, we have no further obligations under the Original Agreement.

During the year ended December 31, 2015, we recorded a fair value adjustment of approximately $6.9 million recorded within non-operating (expense) income in our consolidated statement of operations and comprehensive loss.

(17) Fair Value Measurements

We measure our cash equivalents and short-term investments, contingent purchase price considerations and in the past, our contingent royalty obligation, at fair value. Our cash equivalents and short-term investments are comprised solely of U.S. Treasury Bills that are valued using quoted market prices with no valuation adjustments applied. Accordingly, these securities are categorized as Level 1 assets.

We measure our contingent purchase price consideration at fair value. The fair values of our Agenus Switzerland and PhosImmune contingent purchase price consideration, $3.9 million and $3.6 million, respectively, are based on significant inputs not observable in the market, which require them to be reported as Level 3 liabilities within the fair value hierarchy. The valuation of the liabilities uses assumptions we believe would be made by a market participant. The fair value of our Agenus Switzerland and PhosImmune contingent purchase price consideration is based on estimates from a Monte Carlo simulation of our market capitalization and share price, respectively, and other factors impacting the probability of triggering the milestone payments. Market capitalization and share price were evolved using a geometric brownian motion, calculated daily for the life of the contingent purchase price consideration.

Assets and liabilities measured at fair value are summarized below (in thousands):

Description	December 31, 2016	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents	$ 9,990	$ 9,990	$ —	$ —
Short-term investments	4,988	4,988	—	—
Total	$ 14,978	$ 14,978	$ —	$ —
Liabilities:				
Contingent purchase price consideration	7,561	—	—	7,561
Total	$ 7,561	$ —	$ —	$ 7,561

Description	December 31, 2015	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents	$ 19,996	$ 19,996		
Short-term investments	34,965	34,965	—	—
Total	$ 54,961	$ 54,961	$ —	$ —
Liabilities:				
Contingent purchase price consideration	5,608	—	—	5,608
Total	$ 5,608	$ —	$ —	$ 5,608

The following table presents our liabilities measured at fair value using significant unobservable inputs (Level 3), as of December 31, 2016 (amounts in thousands):

Balance, December 31, 2015	$5,608
Change in fair value of contingent purchase price consideration during the period	1,953
Balance, December 31, 2016	$7,561

There were no changes in the valuation techniques during the period and there were no transfers into or out of Levels 1 and 2.

The fair value of our outstanding debt balance at December 31, 2016 and 2015 was $129.2 million and $115.9 million, respectively, based on the Level 2 valuation hierarchy of the fair value measurements standard using a present value methodology which was derived by evaluating the nature and terms of each note and considering the prevailing economic and market conditions at the balance sheet date. The principal amount of our outstanding debt balance at both December 31, 2016 and 2015 was $114.1 million.

(18) Contingencies

We may currently be, or may become, a party to legal proceedings. While we currently believe that the ultimate outcome of any of these proceedings will not have a material adverse effect on our financial position, results of operations, or liquidity, litigation is subject to inherent uncertainty. Furthermore, litigation consumes both cash and management attention.

(19) Benefit Plans

We sponsor a defined contribution 401(k) savings plan for all eligible employees, as defined in the savings plan. Participants may contribute up to 60% of their compensation, as defined in the savings plan, with a maximum annual contribution of $18,000 for individuals under 50 years old and $24,000 for individuals 50 years old and older in 2016. Each participant is fully vested in his or her contributions and related earnings and losses. During the years ended December 31, 2016 and 2015, we made discretionary contributions of $302,000 and $307,000, respectively; no discretionary contributions or expense was recorded for the year ended December 31, 2014. For the years ended December 31, 2016, and 2015, we expensed $302,000 and $307,000, respectively, related to the discretionary contribution. No expense was recorded for the year ended December 31, 2014.

We also have a multiple employer benefit plan that covers certain international employees. The annual measurement date for this plan is December 31. Benefits are based upon years of service and compensation. We are required to recognize the funded status (the difference between the fair value of plan assets and the projected benefit obligations) of our multiple employer plan in our consolidated balance sheets which, for the years ended December 31, 2016, and 2015 amounted to a liability of approximately $1.2 million and $944,000, respectively, with a corresponding adjustment to accumulated other comprehensive loss of $154,000 and $245,000 for the years ended December 31, 2016 and 2015, respectively. During the years ended December 31, 2016, and 2015, we contributed approximately $153,000 and $119,000, respectively, to our international benefit plan and we expect to contribute approximately $162,000 to that plan during 2017. As of December 31, 2016, the benefits expected to be paid under this plan in the next five years and in the aggregate for the five years thereafter are as follows, $136,000 in 2017, $125,000 in 2018, $116,000 in 2019, $107,000 in 2020, $100,000 in 2021 and $452,000 for the years 2022-2026.

(20) Geographic Information

The following is geographical information regarding our revenues for the years ended December 31, 2016, 2015 and 2014 and our long-lived assets as of December 31, 2016 and 2015 (in thousands):

	2016	2015	2014
Revenue:			
United States	$20,332	$23,668	$3,664
Europe	2,242	1,149	3,313
	$22,573	$24,817	$6,977

Revenue by geographic region is allocated based on the domicile of our respective business operations.

	2016	2015
Long-lived Assets:		
United States	$22,360	$14,434
Europe	4,557	2,147

Total	$26,917	$16,581

Long-lived assets include “Property, plant and equipment, net” and “Other long-term assets” from the consolidated balance sheets, by the geographic location where the asset resides.

(21) Quarterly Financial Data (Unaudited)

	Quarter Ended			
	March 31,	June 30,	September 30,	December 31,
2016				
Revenue	$5,959	$6,592	$4,446	$5,576
Net loss	(31,779)	(28,320)	(40,774)	(26,122)
Net loss attributable to common shareholders	(31,829)	(28,371)	(40,825)	(26,174)
Per common share, basic and diluted:				
Basic and diluted net loss attributable to common stockholders	(0.37)	(0.33)	(0.47)	(0.30)
2015				
Revenue	$3,953	$6,377	$6,848	$7,639
Net loss	(18,741)	(40,410)	(13,122)	(15,607)
Net loss attributable to common shareholders	(18,792)	(40,461)	(13,173)	(15,658)
Per common share, basic and diluted:				
Basic and diluted net loss attributable to common stockholders	(0.28)	(0.53)	(0.16)	(0.18)

Net loss attributable to common stockholders per share is calculated independently for each of the quarters presented. Therefore, the sum of the quarterly net loss per share amounts will not necessarily equal the total for the full fiscal year.

(22) Subsequent Events

On February 14, 2017, the Agenus and Incyte amended the Collaboration Agreement by entering into a First Amendment to License, Development and Commercialization Agreement (the “Amendment”). Pursuant to the terms of the Amendment, the GITR and OX40 programs immediately converted from profit-share programs to royalty-bearing programs with Agenus now eligible to receive a flat 15% royalty on global net sales should any candidates from either of these two programs be approved. Incyte is now responsible for global development and commercialization and all associated costs for these programs. In addition, the profit-share programs relating to the two undisclosed targets were removed from the collaboration, with one reverting to Incyte and one to Agenus. Should any of those programs be successfully developed by a party, the other party will be eligible to receive the same milestone payments as the royalty-bearing programs and royalties at a 15% rate on global net sales. The terms for the remaining three royalty-bearing programs targeting TIM-3, LAG-3 and one undisclosed target remain unchanged, with Incyte being responsible for global development and commercialization and all associated costs. The Amendment gives Incyte exclusive rights and all decision-making authority for manufacturing, development, and commercialization with respect to all royalty-bearing programs.

In connection with the Amendment, Incyte paid Agenus $20.0 million in accelerated milestones related to the clinical development of the antibody candidates targeting GITR and OX40. Agenus is now eligible to receive up to an additional $510.0 million in future potential development, regulatory and commercial milestones across all programs in the collaboration.

On February 14, 2017, Agenus and Incyte also entered into a Stock Purchase Agreement (the “Stock Purchase Agreement” and together with the Amendment, the “Agreements”), pursuant to which Incyte purchased 10 million shares of Agenus’ common stock (the “Shares”) at a purchase price of $6.00 per share. Immediately following the transaction, Incyte owned approximately 18.1% of the outstanding shares of Agenus. Under the Stock Purchase Agreement, Incyte agreed not to dispose of any of the Shares for a period of 12 months and to vote the Shares in accordance with the recommendations of the Agenus board of directors in connection with certain equity incentive plan or compensation matters for a period of 18 months, and Agenus has agreed to certain registration rights with respect to the Shares. Under the Amendment, the parties also revised the existing standstill provision to permit Incyte’s acquisition of the Shares, but Incyte is precluded from acquiring any additional shares of Agenus’ voting stock until December 31, 2019.

In March 2017, Agenus and the holders of the 2015 Subordinated Notes entered into an Amendment to Notes and Warrants, pursuant to which the parties (i) extended the term of the 2013 Warrants by two years from April 15, 2017 to April 15, 2019 and (ii) extended the maturity date of the 2015 Notes by two years from February 20, 2018 to February 20, 2020. The 2013 Warrants and 2015 Notes are otherwise unchanged.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure
Not applicable.

Item 9A. Controls and Procedures
Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Principal Financial Officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Exchange Act. Based on this evaluation, our Chief Executive Officer and our Principal Financial Officer concluded that our disclosure controls and procedures were functioning effectively as of the end of the period covered by this Annual Report on Form 10-K to provide reasonable assurance that the Company can meet its disclosure obligations.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Principal Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2016.

KPMG LLP, our independent registered public accounting firm, has issued their report, included herein, on the effectiveness of our internal control over financial reporting.

Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fourth quarter 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders

Agenus Inc.:

We have audited Agenus Inc. and subsidiaries' internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Agenus Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Agenus Inc. and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Agenus Inc. and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of operations and comprehensive loss, stockholders' (deficit) equity, and cash flows for each of the years in the three-year period ended December 31, 2016, and our report dated March 16, 2017 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Boston, Massachusetts

March 16, 2017

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Item 9B. Other Information

Amendment to 2013 Warrants and 2015 Notes

As previously disclosed, the Company is party to a Note Purchase Agreement dated April 15, 2013, pursuant to which the Company issued to certain investors (the "Original Investors") (i) senior subordinated promissory notes in the aggregate principal amount of $5.0 million that were scheduled to mature on April 14, 2015 (the "2013 Notes") and (ii) warrants to purchase 500,000 shares of the Company's common stock that have an exercise price of $4.41 per share and are scheduled to expire on April 15, 2017 (the "2013 Warrants").

As previously disclosed, the Company is also party to an Amended and Restated Note Purchase Agreement, pursuant to which the Company (i) cancelled the 2013 Notes in exchange for new senior subordinated promissory notes (the "2015 Notes") in the aggregate principal amount of $5.0 million, (ii) issued additional 2015 Notes in the aggregate principal amount of $9.0 million to additional investors (the "Additional Investors") and (iii) issued warrants to purchase 1,400,000 shares of the Company's common stock. The 2015 Notes bear interest at a rate of 8% per annum, payable in cash on the first day of each month in arrears. Among other default and acceleration terms customary for indebtedness of this type, the 2015 Notes include default provisions which allow for the acceleration of the principal payment of the 2015 Notes in the event the Company becomes involved in certain bankruptcy proceedings, becomes insolvent, fails to make a payment of principal or (after a grace period) interest on the 2015 Notes, defaults on other indebtedness with an aggregate principal balance of $13.5 million or more if such default has the effect of accelerating the maturity of such indebtedness, or becomes subject to a legal judgment or similar order for the payment of money in an amount greater than $13.5 million if such amount will not be covered by third-party insurance. The 2015 Notes are not convertible, and the Company may prepay the 2015 Notes at any time, in part or in full, without premium or penalty.

On March 15, 2017, the Company, the Original Investors and the Additional Investors entered into an Amendment to Notes and Warrants, pursuant to which the Company (i) extended the term of the 2013 Warrants by two years from April 15, 2017 to April 15, 2019 and (ii) extended the maturity date of the 2015 Notes by two years from February 20, 2018 to February 20, 2020. The 2013 Warrants and 2015 Notes are otherwise unchanged. The Amendment to Notes and Warrants is filed as Exhibit 4.27 to this Annual Report on Form 10-K and is incorporated herein by reference.

Jean-Marie Cuillerot Employment Agreement

On March 10, 2017, the Company entered into an employment agreement with Dr. Jean-Marie Cuillerot, pursuant to which Dr. Cuillerot will continue to serve as the Company's Chief Medical Officer. Pursuant to his agreement, Dr. Cuillerot's annual base salary was increased to $400,000 and his annual performance bonus target remains unchanged at 40% of his annual base salary, with the actual amount of such bonus, if any, to be determined by the Board of Directors. Dr. Cuillerot will also be entitled to continue to participate in the benefits and insurance programs generally available to all Company employees.

The agreement with Dr. Cuillerot will remain in effect until either party terminates. In the event Dr. Cuillerot desires to terminate the agreement other than for a material reduction in his compensation, he must give the Company 120 days' prior notice. Dr. Cuillerot's agreement provides further that if he is terminated other than for cause or he quits as the result of a material reduction in compensation, he will be entitled to severance as follows: (i) continuation of base salary for 12 months; (ii) continuation of medical and dental benefits for 12 months; (iii) a lump sum bonus equal to the higher of (x) Dr. Cuillerot's target incentive bonus for that year and (y) the actual incentive bonus paid to Dr. Cuillerot in the last full fiscal year; and (iv) $15,000 for outplacement services.

Upon a change of control, 50% of any unvested stock options or shares of restricted stock of the Company previously granted to Dr. Cuillerot immediately vest and become exercisable.

Dr. Cuillerot's agreement provides further that if he is terminated other than for cause or he quits for good reason, in either case, within 18 months following a change of control, then he will be entitled to severance as follows: (i) a lump

sum payment equal to (x) 18 months of base salary plus (y) 150% of the higher of (A) Dr. Cuillerot's target incentive bonus for that year and (B) the actual incentive bonus paid to Dr. Cuillerot in the last full fiscal year; (ii) continuation of medical and dental benefits for 18 months; (iii) $15,000 for outplacement services; and (iv) 100% of any stock options or shares of restricted stock of the Company previously granted to Dr. Cuillerot immediately vest and become exercisable.

The agreement also includes non-compete and confidentiality provisions that will continue for at least 12 months following termination of employment.

The above description of Dr. Cuillerot's employment agreement is a summary and is qualified in its entirety by the employment agreement itself, which is filed as Exhibit 10.16 to this Annual Report on Form 10-K and is incorporated herein by reference.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Executive Officers of the Registrant

Set forth below is certain information regarding our current executive officers, including their age, as of March 1, 2017:

Name	Age	Title
Garo H. Armen, PhD	64	Chairman of the Board and Chief Executive Officer
Christine M. Klaskin	51	Vice President, Finance
Ozer Baysal	61	Chief Business Officer
Jean-Marie Cuillerot, MD	51	Chief Medical Officer
Robert Stein, MD PhD	66	President, Research and Development
Karen H. Valentine	45	Chief Legal Officer and General Counsel

Garo H. Armen, PhD—Garo Armen has been Chairman and CEO since the Company's founding in 1994. From mid-2002 through 2004, he was Chairman of the Board of Directors for the biopharmaceutical company Elan Corporation, plc, which he helped restructure. Dr. Armen is also the founder and Chairman of the Children of Armenia Fund, a philanthropic organization established in 2000 that is dedicated to the positive development of the children and youth of rural Armenia. He holds a PhD degree in physical organic chemistry from the City University of New York.

Christine M. Klaskin—Christine M. Klaskin has been Vice President, Finance since October 2006. Since joining Agenus Inc. in 1996 as finance manager, Ms. Klaskin has held various positions within the finance department and has been involved in all equity and debt offerings of the Company including its IPO. Ms. Klaskin is currently a member of the board of directors of American DG Energy Inc. Prior to joining Agenus, Ms. Klaskin was employed by Arthur Andersen as an audit manager. Ms. Klaskin received her Bachelor of Accountancy from The George Washington University.

Ozer Baysal —Ozer Baysal has been Chief Business Officer since January 2013. His principal role is to lead Agenus' efforts in establishing commercial capability and accelerating Agenus' transition to becoming a fully integrated biopharmaceutical company. Prior to joining Agenus Mr. Baysal spent more than 30 years with Pfizer in a broad number of functional and geographic areas, most recently serving as President of Europe, Emerging Markets Region. While at Pfizer, he held key leadership positions in Marketing, Sales, and Manufacturing, and was actively involved with numerous licensing and M&A activities. Mr. Baysal holds a bachelor's degree from Bosphorus University in Industrial Engineering and has completed the Programs for Leadership and Management Development at Harvard Business School.

Jean-Marie Cuillerot, MD— Jean-Marie Cuillerot joined the Company as Vice President and Global Head of Clinical Development in July 2016 and became Chief Medical Officer in January 2017. Dr. Cuillerot joined the Company with 16 years of experience in oncology clinical research and drug development. From July 2012 until joining the Company, he served as the Global Head of Clinical Development, Immuno-Oncology, and Vice President of Clinical Immunotherapy/Immuno-Oncology at EMD Serono Research and Development Institute, an affiliate of Merck Serono. At Merck Serono he oversaw the development of the company’s immuno-oncology portfolio, which included two checkpoint inhibitors and two immuno-cytokines. He also advanced the PD-L1 antibody avelumab from pre-IND

to filing and was responsible for delivering the dataset leading to the co-development deal with Pfizer. Dr. Cuillerot led the Global Clinical Research team in all interactions with health authorities, including the FDA and EMA. Prior to his time at EMD Serono Research and Development Institute, Dr. Cuillerot was the medical lead for ipilimumab life cycle management at Bristol-Myers Squibb from February 2010 to July 2012. Dr. Cuillerot received his B.S. in biochemistry, M.D., and M.Sc. in cellular and molecular biology at the University Louis Pasteur. He is board certified in hematology and immunology.

Robert Stein, MD, PhD—Bob Stein has been President, Research and Development since September 2015. Dr. Stein joined the Company as Chief Scientific Officer in February 2014. Dr. Stein leads our Research, Preclinical Development and Translational Medicine functions and leads our global research and development efforts. Dr. Stein brings over 30 years of experience and accomplishments in the pharmaceutical and biotech industry to the Agenus leadership team. Over the course of his career Dr. Stein has played a pivotal role in bringing eight drugs to the market including Sustiva®, Fablyn®, Viviant®, PanRetin®, TargRetin®, Promacta®, & Eliquis®. Prior to joining Agenus he held a number of senior management positions including Chief Scientific Officer & Senior Vice President of Research for Ligand Pharmaceuticals, Executive Vice President of Research & Preclinical Development for Dupont Merck, President and Chief Scientific Officer for Incyte Pharmaceuticals, President of Roche Palo Alto and CEO of KineMed. Dr. Stein spent the early part of his career at Merck, Sharp and Dohme Research Laboratories. He holds an MD and a PhD in Physiology & Pharmacology from Duke University. Dr. Stein filed a personal voluntary bankruptcy petition under Chapter 7 in August of 2012 and the bankruptcy was discharged in May 2013.

Karen H. Valentine—Karen Higgins Valentine has been Chief Legal Officer and General Counsel since September 2015. From January 2008 to September 2015, Ms. Valentine was Vice President and General Counsel and also has served as Secretary since 2007 and Chief Compliance Officer of the Company since 2008. Prior to joining Agenus Inc. in 2004, Ms. Valentine was an associate in the biotechnology practice of Palmer & Dodge LLP (now Locke Lorde). Ms. Valentine is currently a member of the board of directors of the Northeast Chapter of the Association of Corporate Counsel. Ms. Valentine graduated cum laude with a bachelor's degree in neuroscience from Colgate University, and received her law degree, magna cum laude, from Boston University School of Law.

The names, ages and biographies of our directors are as follows:

CLASS I DIRECTORS—TERMS TO EXPIRE IN 2019

Brian Corvese Age: 59 President and Founder of Vencor Capital Director since 2007 (a) Audit and Finance Committee (Chair) (b) Compensation Committee	Since 1999, Mr. Corvese has been the President and Founder of Vencor Capital, a private equity firm with telecommunications and technology investments in the Middle East and Mediterranean regions. Prior to working at Vencor, Mr. Corvese worked on investments in the U.S. and global equity markets as a Managing Director and partner at Soros Fund Management, the largest hedge fund in the world at the time. From 1988 to 1996, Mr. Corvese was a partner at Chancellor Capital Management ("Chancellor"), a $25 billion money management firm. While at Chancellor, Mr. Corvese was a Portfolio Manager with responsibility for investments made in basic industries, restructurings, and special situations, corporate governance investments, as well as founded and managed his own hedge fund. From 1981 to 1988, Mr. Corvese was with Drexel Burnham Lambert ("Drexel") as an equity analyst following the chemical and specialty chemical industries and participated in a significant number of merger and acquisition activities. While at Drexel, Mr. Corvese was a member of the top chemical and specialty chemical research team, as ranked by Institutional Investor. Mr. Corvese currently serves on the Board of Directors of the National Telecommunications Corporation, based in Cairo, Egypt. Mr. Corvese earned degrees in finance and political science from The University of Rhode Island and attended New York University Graduate School. With over 30 years of experience in the financial industry, Mr. Corvese brings substantial financial expertise to our Board.
Timothy R. Wright Age: 59 Executive Vice President, Business Development, Strategy and Innovation, Teva Pharmaceuticals Industries Ltd.	Mr. Wright is Executive Vice President, Business Development, Strategy and Innovation at Teva Pharmaceuticals Industries Ltd. Currently, Mr. Wright serves as chairman of The Ohio State University Comprehensive Cancer Center Drug Development Institute, and director of the Ohio State University Innovation Foundation. From July 2011 to July 2012, Mr. Wright served as Chairman, Interim CEO, and a member of the Board of Directors of Curaxis Pharmaceuticals Corporation, a research based company dedicated to finding cures for age-related diseases, including Alzheimer's disease and cancer. Prior to Mr. Wright's tenure at Curaxis, the company had been experiencing financial difficulties and, as a result, Curaxis filed for Chapter 11 bankruptcy in July 2012. Prior to that, Mr. Wright served as President of the Imaging Solutions and Pharmaceutical Products Sector of Covidien. Mr. Wright brings to our Board over 29 years of global pharmaceutical industry experience in general management, product development, and commercialization as well as business restructuring and transaction experience. Beginning in April 2004, Mr. Wright was interim CEO, President and a member of the Board of Directors of AAI Pharma, a hybrid pharmaceutical, drug delivery/manufacturing, and global clinical research organization. Upon the sale of AAI Pharma's pharmaceutical assets to Xanodyne Pharmaceuticals

Director since 2006, Lead Director since 2009 (a) Compensation Committee (b) Corporate Governance and Nominating Committee (Chair) (c) Audit and Finance Committee (d) Business & Development Advisory Committee	Inc., Mr. Wright transitioned to Chief Operating Officer at Xanodyne Pharmaceuticals Inc., a role he maintained until May 2006. Mr. Wright was also President of Elan Bio-Pharmaceuticals and has held several senior management positions with Cardinal Health Inc. and Dupont Merck Pharmaceutical Company. Over his career, Mr. Wright has served on nine Boards of Directors, five in North America and four in Europe and Asia. Mr. Wright earned his bachelor's degree from The Ohio State University.

NOMINEES FOR CLASS II DIRECTORS—TERMS TO EXPIRE IN 2017

Garo H. Armen, Ph.D. Age: 64 Founder, Chairman, and Chief Executive Officer of Agenus Inc.	Dr. Armen is Chairman and Chief Executive Officer of Agenus Inc., which he co-founded in 1994. Dr. Armen brings to our Board a deep historical and practical knowledge of the business of the Company and its technologies, as well as years of expertise in the financial and biopharmaceutical arenas. From mid-2002 through 2004, he was Chairman of the Board of Directors for the biopharmaceutical company Elan Corporation, plc which he helped restructure. Dr. Armen currently serves as non-executive Chairman of the Board of Directors of Protagenic Therapeutics, Inc., a publicly held biotechnology company. Dr. Armen is also the founder and Chairman of the Children of Armenia Fund, a philanthropic organization established in 2000 that is dedicated to the positive development of the children and youth of rural Armenia. He holds a Ph.D. degree in physical organic chemistry from the City University of New York.	Director since 1999 (a) Business & Development Advisory Committee (Chair) (b) Non-Executive Equity Award Committee (Sole Member)		
Shahzad Malik, M.D. Age: 50 General Partner at Advent Life Sciences Director since 2014	Dr. Malik is a General Partner at Advent Life Sciences and has been at Advent since 1999. Dr. Malik brings to our Board historical knowledge of the operations of 4-Antibody AG, our wholly-owned subsidiary (“4-Antibody”), as well as broad experiences in the life sciences and medical industries. During his time with Advent, he has been actively involved with numerous investments in Europe and the United States in the biopharmaceutical and medical device arenas in a variety of therapeutic areas. A number of these companies that Advent invested in are now publicly traded or have been acquired. Dr. Malik currently serves on the Board of Directors of Versartis, Inc., a life sciences company. Prior to joining Advent, Dr. Malik spent six years practicing medicine before joining the London office of McKinsey & Company, a management consulting firm. While there he served international clients in the Healthcare and Investment Banking sectors. Dr. Malik holds an M.A. from Oxford University and a M.D. from Cambridge University. He subsequently specialized in interventional cardiology while also pursuing research interests in heart muscle disorders both in the clinic and basic science laboratory.			

(a) Business & Development

Advisory Committee

(b) Audit and Finance

Committee

CLASS III DIRECTORS—TERMS TO EXPIRE IN 2018

Wadih Jordan Age: 82 Director since 2003 (a) Compensation Committee (Chair)	Mr. Jordan was the founder and President of NearEast Enterprise, L.L.C. from 2011 to April 2015, a company that marketed pharmaceuticals in Near East markets, including Lebanon, Turkey, Saudi Arabia, Egypt, and the Gulf countries. From 1995 to 2011, Mr. Jordan served as President of NearEast Pharma LLC, a company that provided pharmaceutical, biotechnology and equipment for pharmaceutical industries to the Near East and Middle East markets. From 1993 to 1995, Mr. Jordan served as a Vice President of Cyanamid International, a research-based life sciences company, and from 1976 to 1993, Mr. Jordan served as a Managing Director within Cyanamid International. Since December 2003, Mr. Jordan has been a trustee of the Board of Directors of the Lebanese American University, located in Beirut, Lebanon, and incorporated under the Board of Regents in New York State. Mr. Jordan received a bachelor's degree in agriculture at the American University of Beirut, Lebanon, and a certificate in international business from Columbia University. Mr. Jordan brings to our Board years of expertise in both the biotechnology/pharmaceutical and international arenas.
Shalini Sharp Age: 42 Chief Financial Officer and Executive Vice President, Ultragenyx Pharmaceutical Inc. Director since 2012 (a) Business & Development Advisory Committee	Ms. Sharp is Chief Financial Officer and Executive Vice President of Ultragenyx Pharmaceutical Inc. and a member of the Board of the TB Alliance. Ms. Sharp served as Chief Financial Officer of Agenus from 2006 to May 2012, and was appointed a member of the Board in May 2012. She joined Agenus in 2003 and held increasing roles of responsibility spanning strategic planning, corporate development, investor relations, corporate finance and business development activities. Prior to Agenus, Ms. Sharp held similar roles at Elan Pharmaceuticals from 1998 to 2003, including serving as chief of staff to the Chairman of the Board of Directors during that company's restructuring. Prior to Elan, Ms. Sharp was a management consultant at McKinsey & Company as well as an investment banker at Goldman Sachs, specializing in pharmaceuticals and medical devices. Ms. Sharp holds both a bachelor's degree and a master's degree in business administration from Harvard University. Ms. Sharp brings to our Board over a decade of institutional knowledge of Agenus as well as her expertise in biotechnology, corporate strategy, and finance.

(b) Corporate
Governance

and Nominating
Committee

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Ulf Wiinberg Age: 59 Director since 2016 (a) Business & Development Advisory Committee (b) Corporate Governance and Nominating Committee	Mr. Wiinberg has almost 20 years of senior leadership experience, most recently serving as Chief Executive Officer of H. Lundbeck A/S, a global pharmaceutical company developing and marketing treatments for psychiatric and neurological disorders. He previously served on the boards of several health care industry associations and held multiple executive roles at Wyeth, one of the world's largest research-driven pharmaceutical companies that was acquired by Pfizer in 2009. He served as President of Wyeth Europe, Africa and Middle East; President of Consumer Healthcare; Managing Director of Wyeth UK, and in various commercial positions. Mr. Wiinberg currently serves on the boards of UCB SA, a global biopharmaceutical company based in Belgium, Avillion LLP (Chairman), a London-based drug development company, Hansa Medical AB (Chairman), a Swedish biopharmaceutical company, and Alfa Laval AB, a Swedish industrial company.

Code of Business Conduct and Ethics

The Board originally adopted our Code of Business Conduct and Ethics (the "Code of Ethics") in 2003. The Board reviewed, revised, and updated the Code of Ethics most recently in December 2015. The Code of Ethics applies to all members of the Board and all employees of Agenus, including our Chief Executive Officer and Principal Financial and Accounting Officer. Among other matters, our Code of Ethics prohibits the members of the Board and all employees of Agenus from buying or selling our securities while in possession of material, non-public information about the Company. Our Code of Ethics is posted on the corporate governance section of our website at http://investor.agenusbio.com/corporate-governance. No material on our website is part of this Annual Report on Form 10-K. We intend to post on our website all disclosures that are required by law or NASDAQ listing rules concerning any amendments to, or waivers from, our Code of Ethics. Stockholders may request a free copy of our Code of Ethics by writing to Investor Relations, Agenus Inc., 3 Forbes Road, Lexington, MA 02421.

Section 16(a) Beneficial Ownership Reporting Compliance

Our executive officers, directors, and 10% stockholders are required under Section 16(a) of the 1934 Act, to file reports of ownership and changes in ownership of our securities with the SEC. Based solely on a review of the copies of reports furnished to us, we believe that during our 2016 fiscal year, our directors, executive officers, and 10% stockholders complied with all applicable Section 16(a) filing requirements.

Audit and Finance Committee

The Audit and Finance Committee consists entirely of independent directors within the meaning of the NASDAQ listing rules and the requirements contemplated by Rule 10A-3 of the Securities Exchange Act of 1934, as amended (the "1934 Act"). During 2016, the Audit and Finance Committee consisted of Mr. Corvese (Chair), Dr. Malik and Mr. Wright. The Board has determined that Mr. Corvese and Dr. Malik each qualify as audit committee financial experts. For a description of Mr. Corvese and Dr. Malik's relevant experiences that qualify them as audit committee financial experts, please see their biographies on page 91 and page 92, respectively. The Audit and Finance

Committee's primary function is to assist the Board in monitoring the integrity of our consolidated financial statements and our system of internal control. The Audit and Finance Committee has direct responsibility for the appointment, independence, and monitoring of the performance of our independent registered public accounting firm. The committee is responsible for pre-approving any engagements of our independent registered public accounting firm. The committee also reviews our risk management practices, strategic tax planning, preparation of quarterly and annual financial reports, and compliance processes.

The Audit and Finance Committee members meet regularly with our independent registered public accounting firm, without management present and with members of management in separate private sessions, to discuss any matters that the committee or these individuals believe should be discussed privately with the committee, including any significant issues or disagreements concerning our accounting practices or consolidated financial statements. The committee also reviews the Code of Ethics annually, and periodically meets with our Chief Compliance Officer. The committee conducts a meeting each quarter to review our consolidated financial statements prior to the public release of earnings. The committee has the authority to engage special legal, accounting or other consultants to advise the committee. The committee also has the authority to delegate to subcommittees any responsibilities of the full committee. The Audit and Finance Committee charter is posted on the corporate governance section of our website at http://investor.agenusbio.com/corporate-governance. No material on our website is part of this Annual Report on Form 10-K.

Item 11. Executive Compensation

COMPENSATION DISCUSSION AND ANALYSIS

This section discusses the principles underlying our policies and decisions with respect to the compensation of our executive officers who are named in the "Summary Compensation Table" below, who are referred to throughout this Annual Report on Form 10-K as our "named executive officers," and the material factors relevant to an analysis of these policies and decisions. Our named executive officers for 2016 are:

- Dr. Garo H. Armen—Chairman and Chief Executive Officer
- C. Evan Ballantyne—Former Chief Financial Officer[1]
- Christine M. Klaskin—Vice President, Finance[1]

- Ozer Baysal—Chief Business Officer
- Dr. Robert B. Stein—President, Research & Development
- Karen H. Valentine—Chief Legal Officer and General Counsel

(1) Mr. Ballantyne served as our Chief Financial Officer until resigning effective July 29, 2016. Since that time, Ms. Klaskin has served in the capacity of our principal financial officer.

Executive Summary

Our executive compensation program is designed to attract and retain the highest caliber talent, reward strong performance and align incentives with the creation of long-term stockholder value, taking into consideration the Company's resource constraints. The short-term compensation (base salary and target incentive bonuses) of our named executive officers is positioned at approximately the 50th percentile of our compensation peer group, and our long-term incentive programs are designed to preserve our cash resources, promote long-term decision-making and value creation and reward stock price appreciation.

Our performance in 2016 met our annual goals in the aggregate, despite challenging circumstances, including limited financial and human resources, aggressive timelines and third-party competition. As more specifically described below, during 2016 we:

- Initiated Phase 1 clinical trials for antibody candidates targeting CTLA-4, GITR (with Incyte) and OX40 (with Incyte);
- Advanced our autologous synthetic vaccine candidate, ASV, towards the clinic, which is expected to initiate Phase 1 in the first half of 2017;
- Advanced our partnership with Merck Sharpe & Dohme ("Merck") with the selection of a lead product candidate;
- Completed the integration of our antibody manufacturing pilot plant acquired from Xoma Corporation; and
- Continued to build our team and expand our internal capabilities by recruiting top-tier talent across the broad spectrum of our business.

We believe that our incentive compensation programs were administered in a manner consistent with our operating performance, long-term objectives, and compensation philosophy. Given the Company's overall performance in 2016, the annual cash bonuses awarded to our named executive officers (excluding Mr. Ballantyne) for 2016 performance ranged from 114% to 154% of their target bonus amounts, and the remaining 50% of the performance-vesting stock options granted to our named executive officers in 2015 vested during 2016 based on the achievement of the pre-established regulatory milestones discussed below.

Compensation Philosophy

Our executive compensation program is designed to attract and retain the highest caliber executive talent and reward and align incentives with the creation of long-term stockholder value, while effectively managing the risks and challenges inherent to a biotechnology company of our size and stage of development. We offer a compensation package that combines short- and long-term components, cash and equity, and fixed and variable payments, in the proportions we believe appropriately incentivize our executives to achieve the following goals:

- create long-term stockholder value;
- build a creative and high-performing team whose members understand and share our business objectives and ethical and cultural values and retain these key team members;
- demonstrate leadership and innovation in the identification, development, and commercialization of product candidates that fit our strategic objectives;
- effectively manage the multiple dimensions of our business, from research and development, through clinical trials, manufacturing, strategic alliances, and all aspects of our operations in order to maximize the value of each dollar

deployed; and

- identify and address our short- and long-term financing requirements in a highly strategic and creative manner, and deploy available funds for the maximum benefit to our stockholders.

Our general philosophy is to emphasize equity over cash compensation and long-term over short-term compensation. Our executive compensation program not only aims to be competitive in our industry, but also to be fair relative to other professionals within our organization. Our executives' base salary, target annual bonus levels, and target annual long-term incentive award values are set at levels that are competitive with those of our peer group. Executives have the opportunity to earn above-market pay for above-market performance as measured against our peer group. See "Competitive Market Review" below for further information on our peer group.

We continually review our executive compensation program in order to ensure that it rewards our executives for achieving our goals and objectives in a manner consistent with our philosophy and values and at levels that are competitive with our peer group. In designing our executive compensation program, we also seek to reward executive decisions that are consistent with the Company's goals and objectives and that deliver positive stockholder returns. We evaluate and reward our executives based on the Company's performance, their contribution to the achievement of short- and long-term goals and objectives, and their ability to take advantage of unique opportunities and overcome difficult challenges within our business. We believe that our mix of short-term and long-term incentives, and our process of evaluating performance results, assist us in managing any risk-taking that may result from our compensation program and aligning our employees' behavior with our overall business plan and the interests of our stockholders. Our Compensation Committee has concluded that our current compensation programs present no risk that is reasonably likely to have a material adverse effect on the Company.

At the Company's 2014 Annual Meeting of Stockholders, our stockholders had the opportunity to cast an advisory vote (a "say-on-pay" vote) on the compensation of our executive officers as disclosed in our proxy statement for that meeting. Our stockholders approved the say-on-pay proposal by an affirmative vote of 96.2% of the votes cast on that proposal. The Compensation Committee believes this affirms stockholders' support of the Company's approach to executive compensation, and this approach has not changed since the 2014 Annual Meeting of Stockholders. Our Compensation Committee will continue to consider the outcome of the Company's say-on-pay votes when making future compensation decisions for our named executive officers. At our 2011 Annual Meeting of Stockholders, our stockholders also had the opportunity to cast an advisory vote (a "say-on-frequency" vote) on how often the Company should include a say-on-pay proposal in its proxy statements for future annual meetings. Our stockholders approved a proposal to hold say-on-pay votes every three years. Accordingly, our Board adopted the policy to hold say-on-pay votes every three years until the next required "say-on-frequency" advisory vote, which is to be held at our 2017 Annual Meeting of Stockholders. As a result, our stockholders will have the opportunity to vote on both "say-on-pay" and "say-on-frequency" proposals later this year at our 2017 Annual Meeting of Stockholders.

Competitive Market Review

The market for top-tier executive talent in the biotechnology industry is highly competitive. In order to attract and retain a superior leadership team we need to draw upon a pool of talent that is highly sought-after by both large and established pharmaceutical and biotechnology companies in and outside our geographic area and by other life science companies.

We believe we have a competitive advantage in our ability to offer significant upside potential through stock options and other equity-based awards. In addition, we offer market-competitive cash compensation levels through base salaries and cash bonus opportunities. We also compete on the basis of our vision of future success, our culture and values, the cohesiveness and productivity of our teams, and the excellence of our scientists and management personnel.

In order to succeed in attracting highly-talented executives, we continuously monitor market trends and draw upon surveys prepared by Radford, our Compensation Committee's independent compensation consultant, custom research developed by Radford, and other nationally- recognized surveys. Our Compensation Committee reviews data that analyzes various cross-sections of our industry as well as relevant geographical areas.

Market References: How We Define Market and How We Use Market Compensation Data. Our Compensation Committee has engaged Radford since 2016 as its independent compensation consultant to evaluate our executive compensation program and compare it to levels in the market. Prior to 2016, our Compensation Committee engaged Independent Stock Plan Advisors, LLC ("ISP") as its independent compensation consultant.

Defining the Market. For 2016, we used two market references to evaluate our executive compensation program against those in the market:

1. Radford Global Life Sciences Survey conducted by Radford: A national survey of executive compensation levels and practices that covers approximately 1,900 positions in more than 700 life science organizations. We focused primarily on a pre-determined subset of companies with between 150 and 499 employees.

2. Proxy data derived from a peer group of biotechnology companies of a similar size, market capitalization, development stage and therapeutic focus. On an annual basis, our compensation consultant recommends, and our Compensation Committee approves, a group of comparable companies as our peer group. In switching from ISP to Radford in 2016, our Compensation Committee worked closely with Radford to review, evaluate and develop our peer group with an emphasis on biotechnology and pharmaceutical companies with a similar headcount and market capitalization. Based on discussions with, and the recommendation of, Radford, the Compensation Committee ultimately selected a peer group for 2016 that removed 11 companies from the prior year's peer group and added six new companies. The 11 companies removed from the 2015 peer group had a relatively low headcount and/or market capitalization. Our peer groups for 2015 and 2016 were as follows:

2015 Peer Group	2016 Peer Group
ArQule, Inc.	Aduro Biotech, Inc.
Array BioPharma Inc.	Celldex Therapeutics, Inc.
AVEO Pharmaceuticals, Inc.	Clovis Oncology, Inc.
BioCryst Pharmaceuticals, Inc.	Dynavax Technologies Corporation
Cell Therapeutics, Inc.	Five Prime Therapeutics, Inc.
Curis, Inc.	ImmunoGen, Inc.
Cytokinetics, Incorporated	Inovio Pharmaceuticals, Inc.
GTx, Inc.	MacroGenics, Inc.
Idera Pharmaceuticals, Inc.	NewLink Genetics Corporation
Immunomedics, Inc.	OncoMed Pharmaceuticals, Inc.
Infinity Pharmaceuticals, Inc.	Rigel Pharmaceuticals, Inc.
Omeros Incorporated	Zogenix, Inc.
Pain Therapeutics, Inc.	
Peregrine Pharmaceuticals, Inc.	
Sunesis Pharmaceuticals, Inc.	
Synta Pharmaceuticals Corp.	
Vical, Inc.	
ZIOPHARM Oncology, Inc.	

Determining Market Levels and Specific Comparisons. We compare our practices and amounts of compensation against our peer group by each compensation component (measured at target in the case of annual and long-term incentive opportunities) and by total annual compensation. The comparisons made in this process are used to determine our approximate position relative to the appropriate market reference by compensation component and in total.

Total Compensation

We intend to continue our strategy of compensating our named executive officers at competitive levels, with the opportunity to earn above-market pay for above-market performance. We will continue to emphasize long-term equity incentives and performance-based incentive compensation delivered in the form of equity-based awards to maintain our competitive pay philosophy.

For 2016, the total compensation for our named executive officers generally fell between the 50th and 60th percentile of total compensation paid to executives holding equivalent positions in our peer group. For this purpose, total compensation includes annual base salary, target annual incentive bonus and the grant date value of equity awards. We believe that the total compensation for our named executive officers was reasonable in the aggregate given our corporate performance and our financial circumstances.

The competitive posture of our actual annual compensation paid or earned versus the market references will vary year to year based on Company and individual performance, as well as the performance of our peer group and their

respective level of annual performance bonus awards made to their executives. We expect to continue targeting total compensation at approximately the 50th percentile of our peer group, with an emphasis on performance-based variable compensation. Further, in light of our compensation philosophy, we believe that the total compensation package for our executives should continue to consist of base salary, annual incentive bonuses, long-term equity-based incentive compensation, and certain other benefits.

Role of Our Compensation Committee

Our Compensation Committee approves, administers, and interprets our executive compensation and benefit programs, including awards that have been made to executives under our 1999 Equity Incentive Plan (as amended) and under our Amended and Restated 2009 Equity Incentive Plan (the "2009 Equity Incentive Plan"). Our Compensation Committee is appointed by our Board, and consists entirely of directors who are "outside directors" for purposes of Section 162(m) of the Internal Revenue Code of 1986, as amended (the "Code"), and "non-employee directors" for purposes of Rule 16b-3 under the 1934 Act. Our Compensation Committee is comprised of Mr. Jordan (Chair), Mr. Corvese and Mr. Wright.

Our Compensation Committee ensures that our executive compensation program is consistent with our compensation philosophy and our Governance Guidelines, and determines the executive compensation packages offered to our officers.

Executive Compensation Program

Components of our Compensation Program

Our compensation program consists of the following four components (each described in more detail below):

- Short-term compensation (including base salary and annual incentive bonuses);
- Long-term incentives;
- Benefits; and
- Severance compensation and termination protection.

To determine levels of overall executive compensation, the Compensation Committee balances individual, functional area, and company-wide goals and achievements. For purposes of setting the annual goals under our annual bonus program, each executive participates in establishing the objectives of our Company as a whole and offers his or her views as to the goals of each functional area, insofar as those goals impact the individual executive's own functional area. After the end of the relevant year, we also ask our executives to provide feedback not only on their own performance and that of their particular functional area, but also of other functional areas and our entire organization. We see this process both as the optimal way of assembling accurate information regarding the expectation and realization of performance, as well as an integral part of our culture of collaborative, team-oriented management. Final goals and objectives for our annual bonus program are approved by the Board.

In 2016, our Company goals included:

- Initiate randomized clinical trials with Prophage in ndGBM;
- Initiate Phase 1 clinical trials for antibody candidates targeting CTLA-4 and GITR (with Incyte);
- Initiate Phase 1 clinical trial with ASV;
- Advance certain discovery programs through nomination of lead candidates;
- Execute strategic partnerships;
- Raise funds required to aggressively advance our strategic initiatives and key programs;
- Complete the integration of our antibody manufacturing pilot plant acquired from Xoma Corporation;
- Close key capability gaps and continue to grow the organization with world class talent; and
- Sustain high levels of employee engagement, motivation, communication and retention.

At the end of each year, our executives and our Compensation Committee evaluate the achievement of the Company's goals and objectives and begin discussions regarding goals and objectives for the next year. Incentive compensation, based on the achievement of goals and objectives, may be awarded in the form of an annual incentive bonus and/or equity-based awards. Equity-based awards are used to align the interests of our executives with those of our stockholders and to promote a long-term performance perspective and progress toward achieving our long-term goals and objectives.

The general structure of our compensation programs for executive officers is consistent with that of non-executive members of the Agenus management team.

Short-Term Compensation.

Our short-term compensation program consists of base salary and annual incentive bonuses. Base salary will typically be used to recognize the experience, skills, knowledge, and responsibilities required of each officer, as well as competitive market conditions.

Base Salary: Base salaries for our executives are generally positioned at or around the 50th percentile of our peer group (see “Competitive Market Review” above for further information on our peer group). In establishing the base salaries of our executive officers, our Compensation Committee (with input from our Chief Executive Officer, other than with respect to his own base salary) takes into account a number of factors, including the executive’s seniority, position and functional role, and level of responsibility.

We also consider the following factors when determining base salary:

- For newly-hired personnel, we consider the base salary of the individual at his or her prior employer and any unique personal circumstances that motivated the executive to leave that prior position and join Agenus. In addition, we consider the competitive market for corresponding positions within our peer group.
- For individuals who are newly-promoted to a position, we consider the competitive market and their prior salary and experience. Where these individuals may not have the same level of experience at the time of promotion as a counterpart hired from outside the Company, we may implement a multi-step approach to bringing their base salaries in line with targeted levels. Base salary increases at each of these steps will be contingent on the continued strong performance of the individual.

The base salaries of our named executive officers are reviewed on an annual basis, and adjustments are made to reflect performance-based factors, as well as competitive market conditions. Increases are considered within the context of our overall annual financial position before more specific individual and market competitive factors are considered. We do not apply specific formulas to determine base salary increases. In June 2016, the Compensation Committee approved a base salary increase for Dr. Stein effective as of July 1, 2016, as described below under “Compensation Actions for our Named Executive Officers.” Base salaries for all of our other named executive officers were unchanged in 2016.

Annual Incentive Bonuses: Annual incentive bonuses for our named executive officers are based on achievement of the Company’s goals and objectives as well as individual performance as outlined in our Executive Incentive Plan. Each executive is eligible to receive an annual incentive bonus ranging from 0-200% of his or her target bonus based on the Compensation Committee’s evaluation of the achievement of Company goals and objectives and such individual’s performance. The Company’s annual goals and objectives are set at the beginning of each year and are reviewed and approved by the Compensation Committee and the Board. At the end of the year, our executive management prepares a report outlining the extent to which Company goals and objectives were achieved and presents that report to the Compensation Committee along with a recommendation on the named executive officers’ annual incentive bonus payout level, as a percentage of their target bonuses. The Compensation Committee evaluates the report, along with any relevant supporting documentation, and considers it in the context of any change in facts or circumstances that could have impacted goal attainment throughout the year. From time to time, the Compensation Committee may request supplemental information from management to support its evaluation. Based on this evaluation, as well as the Company’s available financial resources, the Compensation Committee determines the appropriate level for the named executive officers’ annual incentive bonus payouts. There is no quantifiable formula or weighting of goals. As a result, the Compensation Committee exercises discretion in establishing the level of the named executive officers’ bonus payout, taking into account the level of achievement of the Company goals as a whole. Once determined, the recommended bonus payout level is applied to each named executive officer’s target bonus percentage to establish his or her annual incentive bonus payout. The Compensation Committee may exercise further discretion to adjust the actual bonus paid to any individual named executive officer based on his or her individual performance and impact on the Company’s overall performance (with input from our Chief Executive Officer, other than with respect to his own bonus), which it did in 2016.

For the 2016 performance year, each of our named executive officers and other members of key management were eligible to receive a target annual incentive bonus, expressed as a percentage of his or her base salary. Target bonus amounts were set based on competitive benchmarks, the Committee’s assessment of overall Company performance and each such individual’s unique contribution to the Company’s overall performance. In March 2016, the Compensation Committee increased Dr. Armen’s annual incentive bonus target from 50% to 60% of his base salary, as described below under “Compensation Actions for our Named Executive Officers.” Annual incentive bonus targets for all other named executive officers were unchanged in 2016.

In determining the annual incentive bonus payouts for our named executive officers for the 2016 performance year, our Compensation Committee noted that the majority of the stated goals for 2016, as described above, were accomplished, as well as the following additional key company achievements:

- Initiated Phase 1 clinical trial for an antibody candidate targeting OX40 (with Incyte);
- Advanced our partnership with Merck, with the selection of a lead product candidate;
- GSK filed for regulatory approval of its shingles vaccine candidate containing our QS-21 Stimulon in the United States, Canada and Europe;
- Upgraded and expanded our capabilities at our antibody pilot plant manufacturing facility and recruited additional staff;
- Established a research center in Cambridge, UK and closed our Jena, Germany facility, consolidating costs and transferring its technology to Cambridge; and
- Recruited senior leadership in clinical development, including Jean-Marie Cuillerot, MD, our Chief Medical Officer.

Our Compensation Committee gave weight to the fact that these accomplishments were made in a challenging economic environment in which the management team was under substantial resource constraints, and that the accomplishments in 2016 were critical in advancing the development of our diverse portfolio, reducing our reliance on CMOs and effectively managing our cost structure. The range in individual annual incentive bonus payouts reflects each named executive officer's unique contribution to the Company's overall performance, as determined by the Compensation Committee. The table below shows the following for each of our named executive officers in 2016: target annual incentive bonus (as a percentage of base salary), actual annual incentive bonus received (as a percentage of base salary) and actual annual incentive bonus received (as a percentage of target). Mr. Ballantyne resigned effective July 29, 2016 and upon his resignation forfeited any entitlement to a 2016 annual incentive bonus.

Named Executive Officer	2016 Target Bonus (% of base salary)	2016 Actual Bonus (% of base salary)	2016 Actual Bonus (% of target)
Dr. Armen	60 %	84 %	141 %
Mr. Ballantyne	40 %	—	—
Mr. Baysal	40 %	45 %	114 %
Ms. Klaskin	30 %	41 %	136 %
Dr. Stein	40 %	47 %	118 %
Ms. Valentine	40 %	62 %	154 %

Long-Term Incentives.

Our long-term incentives consist of time-vesting and performance-vesting stock options, restricted stock grants and performance shares. During 2016, only stock options and performance shares were granted to our named executive officers. Performance shares reward performance and the achievement of key milestones that are important to our success. Stock options are performance-based because no value is created unless the value of our common stock appreciates after grant. We also grant stock options that are subject to performance-based vesting to further drive the achievement of key business objectives. Time-based restricted stock encourages employee retention by providing some level of value to executives who remain employed during the vesting period of the award. Equity-based awards also support an ownership culture and thereby encourage our executives to take actions that are best for the Company's long-term success. Our Compensation Committee grants equity incentives to our executives and employees generally to enable them to participate in the long-term appreciation of our stockholder value, as well as to share the impact of any business and market setbacks. Unlike many companies in our industry, we have a practice of granting equity-based awards deep in our organization, believing that we will succeed if our employees feel invested in us, our business and our future.

Initial and Promotional Long-Term Incentive Grants:

The size of the initial long-term incentive grant made to executive officers upon joining the Company or to current employees being promoted to executive officer positions is primarily based on competitive considerations applicable to the executive's specific position. In addition, the Compensation Committee considers the number of shares of common stock underlying equity-based awards held by other executives in comparable positions within our Company and has, with the assistance of its independent compensation consultant, established long-term incentive guidelines for specified categories of executives. We believe this strategy is consistent with the approach of other companies in our

peer group and, in our Compensation Committee's view, is appropriate for aligning the interests of our executives with those of our stockholders over the long-term.

Market Comparisons:

We use a number of methodologies to make external comparisons when we determine the number of options, restricted stock and/or performance shares to be granted to each executive. On an individual basis, we compare:

- the fair value of the grant, determined using methods that are consistent with the guidance in Accounting Standards Codification 718, Compensation—Stock Compensation ("ASC 718"),
- the face value (i.e., the number of shares multiplied by grant date stock price) of the grant by position,
- the face value of the grant as a multiple of base salary,
- the number of shares of common stock underlying all options, restricted stock and/or performance shares granted by position,
- the number of shares of common stock underlying all options, restricted stock and performance shares, in total, granted, and still held, by position as a percentage of total shares granted and of total common shares outstanding, and
- the proportion of exercisable to non-exercisable awards held in total.

On a total Company basis, we analyze:

- total annual equity burn rates,
- total number of shares remaining in the approved pool under the 2009 Equity Incentive Plan, and
- equity overhang.

We believe these comparisons provide important additional context for comparing the competitiveness of our equity-based compensation practices versus the market.

Ultimately, awards to named executive officers are driven by their and our Company's performance over time, their ability to impact our results that drive stockholder value, their level within the organization, their potential to take on roles of increasing responsibility in our Company, and competitive equity award levels for similar positions and organization levels in our peer group. Equity-based awards are not granted automatically to our executives on an annual basis.

Certain Outstanding Awards:

In February 2015, the Compensation Committee approved grants of stock options to the Company's named executive officers and the senior management team that vest according to the following schedule: (i) 70% of each grant vests quarterly over a three-year period from the date of grant and (ii) 30% of each grant vests on the achievement of performance milestones (the "Milestone Portion"), subject, in each case, to the recipient's continued employment with the Company. For each grant, 50% of the Milestone Portion will vest on the achievement of any one of the four performance milestones listed below, and the remaining 50% will vest on the achievement of any additional performance milestone listed below. The Milestone Portion of each grant is subject to a term of 30 months, such that any portion of the Milestone Portion of each grant that is not vested before the 30-month anniversary of the grant date will be forfeited. The performance milestones are as follows:

- Completion of IND filings with the FDA for antibodies against any two of the following CPM targets on or before March 31, 2016: GITR, OX40, or CTLA-4.
- Filing of a U.S. or European marketing application for GSK's shingles vaccine.
- Execution of a licensing, collaboration or special financing agreement advancing Prophage into a Phase 3 trial in newly diagnosed GBM.
- Achieving a market capitalization of $500 million or more for a period of 30 consecutive days.

On July 6, 2015, 50% of the Milestone Portion of the February 2015 grants vested when the Company's market capitalization remained above $500 million for the 30th consecutive day.

On January 27, 2016, the remaining 50% of the Milestone Portion of the February 2015 grants vested when the Company completed its IND filing with the FDA for its antibody candidate targeting CTLA-4.

In July 2015, the Compensation Committee approved a company-wide performance share grant to all employees at the time, including all of our named executive officers, which are eligible to vest in one-third increments over the three-year period beginning on July 1, 2015 based on the achievement of certain key Company milestones that are significant to the success of our business and the recipient's continued employment through the vesting date. The Compensation Committee chose as the milestones what it believed to be key drivers of our business that will help create long-term value for our stockholders. Any portion of each performance share award that does not vest during the applicable year will be forfeited automatically at the end of such year.

On April 26, 2016, one-third of the July 2015 grant vested when we dosed our first patient in our Phase 1 clinical trial for our antibody candidate targeting CTLA-4.

2016 Grants:

On March 31, 2016, as part of a Company-wide award, each of our named executive officers received a grant of stock options, with an exercise price equal to the closing price of our common stock on the date of grant. These options vest as to one-third of the options on the first anniversary of the grant date and thereafter in quarterly installments, subject to the recipient's continued employment. On this same date, the Compensation Committee approved an additional performance share grant to our named executive officers and the senior management team that are eligible to vest (if at all) in a single tranche on March 31, 2019 based upon the 90-day average closing price of our common stock on such date exceeding the thresholds described below, subject to the recipient's continued employment through that date (the "March 2016 Performance Share Grants"). As part of the March 2016 Performance Share Grants, each recipient was granted a target number of performance shares, with any ultimate vesting to be

achieved as follows: (i) if the 90-day average closing price is less than $10 per share, no portion of the award will vest and the performance share awards will be forfeited in their entirety; (ii) if the 90-day average closing price is equal to $10 per share, 50% of each individual's target award will vest immediately; (iii) if the 90-day average closing price is equal to $15 per share, 100% of each individual's target award will vest immediately; (iv) if the 90-day average closing price is $20 per share or greater, 150% of each individual's target award will vest immediately; and (v) if the 90-day average closing price is between $10 per share and $20 per share, a proportionate number of shares will vest immediately, determined on a straight-line basis. In the event of a change in control of the Company prior to March 31, 2019, the March 2016 Performance Share Grants are subject to vesting solely based upon the per share stock price in the change in control transaction and the above parameters; if the per share price is less than $10 per share, no portion of the awards will vest and the awards will be forfeited in their entirety. Finally, certain of our named executive officers received supplemental grants of stock options. The 2016 equity grants for each of our named executive officers are described in more detail below under "Compensation Actions for our Named Executive Officers." In connection with Mr. Ballantyne's resignation, he forfeited all of his 2016 grants.

Benefits.

We provide the following benefits to our named executive officers generally on the same basis as the benefits provided to all of our employees:

- Health, vision and dental insurance;
- Life insurance;
- Short- and long-term disability;
- Flexible spending accounts;
- 401(k) plan; and
- Employee Stock Purchase Plan.

We believe that these benefits are consistent with those offered by companies against which we compete for talent.

We have also provided personal health-related benefits to our named executive officers from time to time, including certain benefits to Dr. Stein as described in the Summary Compensation Table. We also provide Dr. Armen with an allowance to use a private aircraft for business and/or personal travel, and we provide Dr. Stein with a housing allowance, access to Company housing, a company automobile, financial planning and advisory services, and, in 2016, reimbursed him for relocation expenses, all as described below. We provided these benefits to Dr. Stein in order to allow him to focus on his duties as our President of R&D without the disruption associated with having to relocate his home, which we believe, in turn, will increase long-term stockholder value.

Severance Compensation and Termination Protection.

We have employment and change of control agreements with Dr. Armen, Dr. Stein and Ms. Valentine. Mr. Baysal and Ms. Klaskin participate in our executive change of control plan. These agreements provide for severance compensation to be paid if the executive's employment is terminated under certain conditions, such as in connection with a change of control of the Company or a termination without cause by us, each as is defined in the respective agreements or plan.

The employment and change of control agreements and the executive change of control plan, as applicable, between the Company and our named executive officers and the related severance compensation provisions are designed to meet the following objectives:

- Change of Control: As part of our normal course of business, we may engage in discussions with other biotechnology and pharmaceutical companies about possible collaborations, licensing and/or other ways in which the companies may work together to further our respective long-term objectives. In addition, many larger established pharmaceutical companies consider companies at similar stages of development to ours as potential acquisition

targets. In certain scenarios, a merger or sale of the Company may be in the best interests of our stockholders. We provide severance compensation if a named executive officer's employment is terminated following a change of control transaction in order to maintain management continuity in the event a potential transaction is announced and to promote the ability of our named executive officers to act in the best interests of our stockholders even though their employment could be terminated as a result of the transaction.

- Termination without Cause: If we terminate the employment of a named executive officer who is party to an employment and change of control agreement without cause, or the executive resigns due to a compensation reduction or, in the case of Dr. Armen, for other good reason as defined in the applicable agreement, we are obligated to continue to pay the executive's base salary, bonus, and medical and dental benefits for a defined period, as well as to provide outplacement services. We believe this is appropriate because the terminated executive would be bound by confidentiality, non-

solicitation and non-competition provisions following such termination. In addition, having a mutually agreed to severance package that is in place prior to any termination event provides us with more flexibility to make a change in senior management if we consider such a change to be in our and our stockholders' best interests.

Compensation Actions for our Named Executive Officers

Compensation actions for 2016 reflect our Compensation Committee's assessments of performance relative to Company goals and objectives and individual performance objectives, and comparisons against market references described above.

Dr. Armen, our Chief Executive Officer, makes recommendations to our Compensation Committee as to individual compensation actions for our executives, including our named executive officers, but excluding himself. Our Compensation Committee works with our Vice President of Human Resources and Administration and our independent compensation consultant to determine the specific compensation actions for our named executive officers. Our Compensation Committee makes all final determinations regarding the compensation of our executive officers, including our named executive officers.

Our compensation actions for our Chief Executive Officer and our other named executive officers are summarized as follows:

Dr. Garo H. Armen—Chairman and Chief Executive Officer

Compensation Actions in 2016:

- Base Salary: Our Compensation Committee made no change to Dr. Armen's base salary for 2016.
- Annual Incentive Bonus: In March 2016, our Compensation Committee approved an annual incentive bonus of $490,000 to reward Dr. Armen for his performance in 2015.
- Annual Incentive Bonus Target: In March 2016, our Compensation Committee increased Dr. Armen's annual incentive bonus target from 50% to 60% of his base salary.
- Long-Term Incentives: In conjunction with a Company-wide award in March 2016, Dr. Armen was granted an option to purchase 555,000 shares of our common stock at an exercise price per share of $4.16, representing the fair market value of a share of our common stock on the grant date. The option has a three-year vesting schedule where one-third of the options vest on the one-year anniversary of the grant date, with the remainder vesting in equal quarterly installments thereafter, subject to his continued employment with the Company. In March 2016, Dr. Armen was granted performance shares with a target of 132,500 shares, which are eligible to vest (if at all) in a single tranche on March 31, 2019, based on the achievement of certain performance milestones as described above under "Long-Term Incentives" and his continued employment through the vesting date. In September 2016, Dr. Armen was granted an option to purchase 53,037 shares of our common stock at an exercise price per share of $6.77, representing the fair market value of a share of our common stock on the grant date. The option vests in a single tranche on the one-year anniversary of the grant date, subject to Dr. Armen's continued employment through the vesting date. The September 2016 option grant was intended to replace an option that Dr. Armen previously held that expired by its terms without being exercised. After reviewing the Company's performance and our achievement of our annual goals in 2015 and 2016, as described in herein and in our 2015 proxy statement, the Compensation Committee believed this additional option grant was appropriate to reward Dr. Armen's performance and to keep his interests aligned with those of our stockholders.
- Other Compensation: In 2016, the Compensation Committee approved an allowance of up to $150,000 for Dr. Armen to use private aircraft for business and/or personal travel. All personal use was treated as a perquisite and taxed accordingly.

Certain Compensation Actions in 2017:

- Base Salary: Our Compensation Committee made no change to Dr. Armen's base salary for 2017.
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Annual Incentive Bonus: In March 2017, our Compensation Committee approved an annual incentive bonus of $485,000 to reward Dr. Armen for his performance in 2016.

C. Evan Ballantyne—Former Chief Financial Officer (resigned effective July 29, 2016)

Compensation Actions in 2016:

- Base Salary: Our Compensation Committee made no change to Mr. Ballantyne's base salary for 2016.
- Annual Incentive Bonus: In March 2016, our Compensation Committee approved an annual incentive bonus of $86,100 to reward Mr. Ballantyne for his performance in 2015.

- Long-Term Incentives: In conjunction with a Company-wide award in March 2016, Mr. Ballantyne was granted an option to purchase 75,000 shares of our common stock at an exercise price per share of $4.16, representing the fair market value of a share of our common stock on the grant date. The option had a three-year vesting schedule where one-third of the options vest on the one-year anniversary of the grant date, with the remainder vesting in equal quarterly installments thereafter, subject to his continued employment with the Company. In March 2016, Mr. Ballantyne was also granted performance shares with a target of 14,000 shares, which were eligible to vest (if at all) in a single tranche on March 31, 2019, based on the achievement of certain performance milestones, as described under "Long-Term Incentives" above, and his continued employment through the vesting date. These long-term incentive awards were forfeited in their entirety when Mr. Ballantyne resigned from the Company in July 2016.

Christine M. Klaskin—Vice President, Finance

Compensation Actions in 2016:

- Base Salary: Our Compensation Committee made no change to Ms. Klaskin's base salary for 2016.
- Annual Incentive Bonus: In March 2016, our Compensation Committee approved an annual incentive bonus of $108,750 to reward Ms. Klaskin for her performance in 2015.
- Long-Term Incentives: In conjunction with a Company-wide award in March 2016, Ms. Klaskin was granted an option to purchase 30,000 shares of our common stock at an exercise price per share of $4.16, representing the fair market value of a share of our common stock on the grant date. The option has a three-year vesting schedule where one-third of the options vest on the one-year anniversary of the grant date, with the remainder vesting in equal quarterly installments thereafter, subject to her continued employment with the Company. In March 2016, Ms. Klaskin was also granted performance shares with a target of 13,500 shares, which are eligible to vest (if at all) in a single tranche on March 31, 2019, based on the achievement of certain performance milestones, as described under "Long-Term Incentives" above, and her continued employment through the vesting date. In September 2016, Ms. Klaskin was granted an option to purchase 7,551 shares of our common stock at an exercise price per share of $6.77, representing the fair market value of a share of our common stock on the grant date. The option vests in a single tranche on the one-year anniversary of the grant date, subject to Ms. Klaskin's continued employment through the vesting date. The September 2016 option grant was intended to replace an option that Ms. Klaskin previously held that expired by its terms without being exercised. After reviewing the Company's performance and our achievement of our annual goals in 2015 and 2016, as described in herein and in our 2015 proxy statement, the Compensation Committee believed this additional option grant was appropriate to reward Ms. Klaskin's performance and to keep her interests aligned with those of our stockholders.

Certain Compensation Actions in 2017:

- Base Salary: Our Compensation Committee made no change to Ms. Klaskin's base salary for 2017.
- Annual Incentive Bonus: In March 2017, our Compensation Committee approved an annual incentive bonus of $102,000 to reward Ms. Klaskin for her performance in 2016.

Ozer Baysal—Chief Business Officer

Compensation Actions in 2016:

- Base Salary: Our Compensation Committee made no change to Mr. Baysal's base salary for 2016.
- Annual Incentive Bonus: In March 2016, our Compensation Committee approved an annual incentive bonus of $92,796 to reward Mr. Baysal for his performance in 2015.
- Long-Term Incentives: In conjunction with a Company-wide award in March 2016, Mr. Baysal was granted an option to purchase 40,000 shares of our common stock at an exercise price per share of $4.16, representing the fair market value of a share of our common stock on the grant date. The option has a three-year vesting schedule where one-third of the options vest on the one-year anniversary of the grant date, with the remainder vesting in equal quarterly installments thereafter, subject to his continued employment with the Company. In March 2016, Mr. Baysal was also granted performance shares with a target of 13,500 shares, which are eligible to vest (if at all) in a single tranche on March 31, 2019, based on the achievement of certain performance milestones, as described under

"Long-Term Incentives" above, and his continued employment through the vesting date.

Certain Compensation Actions in 2017:

- Base Salary: Our Compensation Committee made no change to Mr. Baysal's base salary for 2017.
- Annual Incentive Bonus: In March 2017, our Compensation Committee approved an annual incentive bonus of $95,000 to reward Mr. Baysal for his performance in 2016.

Dr. Robert B. Stein—President, Research & Development

Compensation Actions in 2016:

- Base Salary: Effective July 1, 2016, our Compensation Committee increased Dr. Stein's base salary by 6% from $400,000 to $425,000.
- Annual Incentive Bonus: In March 2016, our Compensation Committee approved an annual incentive bonus of $249,600 to reward Dr. Stein for his performance in 2015, less the $100,000 previously paid in July 2015 for his performance in the first half of 2015.
- Long-Term Incentives: In conjunction with a Company-wide award in March 2016, Dr. Stein was granted an option to purchase 250,000 shares of our common stock at an exercise price per share of $4.16, representing the fair market value of a share of our common stock on the grant date. The option has a three-year vesting schedule where one-third of the options vest on the one-year anniversary of the grant date, with the remainder vesting in equal quarterly installments thereafter, subject to his continued employment with the Company. In March 2016, Dr. Stein was also granted performance shares with a target of 34,000 shares, which are eligible to vest (if at all) in a single tranche on March 31, 2019, based on the achievement of certain performance milestones, as described under "Long-Term Incentives" above, and his continued employment through the vesting date.
- Other Compensation: In December 2015, the Compensation Committee approved allowances of up to $80,000 for Dr. Stein over a 12-month period, comprised of a housing allowance of up to $6,000 per month for his primary residence in New York and exclusive use of a company automobile at a lease rate of $1,250 per month. The Compensation Committee also approved the following for Dr. Stein in 2016: (i) payments to a third-party financial planning and advisor service, (ii) use of a corporate apartment near the Company's Lexington, MA office, (iii) payment of relocation expenses from Brooklyn, NY to New York, NY totaling approximately $20,000, (iv) use of a corporate apartment near the Company's New York office and (v) payment of certain non-routine medical costs.

Certain Compensation Actions in 2017:

- Base Salary: Our Compensation Committee made no change to Dr. Stein's base salary for 2017.
- Annual Incentive Bonus: In March 2017, our Compensation Committee approved an annual incentive bonus of $200,000 to reward Dr. Stein for his performance in 2016.

Karen H. Valentine—Chief Legal Officer and General Counsel

Compensation Actions in 2016:

- Base Salary: Our Compensation Committee made no change to Ms. Valentine's base salary for 2016.
- Annual Incentive Bonus: In March 2016, our Compensation Committee approved an annual incentive bonus of $220,320 to reward Ms. Valentine for her performance in 2015.

- Long-Term Incentives: In conjunction with a Company-wide award in March 2016, Ms. Valentine was granted an option to purchase 140,000 shares of our common stock at an exercise price per share of $4.16, representing the fair market value of a share of our common stock on the grant date. The option has a three-year vesting schedule where one-third of the options vest on the one-year anniversary of the grant date, with the remainder vesting in equal quarterly installments thereafter, subject to her continued employment with the Company. In March 2016, Ms. Valentine was also granted performance shares with a target of 27,500 shares, which are eligible to vest (if at all) in a single tranche on March 31, 2019, based on the achievement of certain performance milestones, as described under "Long-Term Incentives" above, and subject to her continued employment through the vesting date. In September 2016, Ms. Valentine was granted an option to purchase 2,083 shares of our common stock at an exercise price per share of $6.77, representing the fair market value of a share of our common stock on the grant date. The option vests in a single tranche on the one-year anniversary of the grant date, subject to Ms. Valentine's continued employment through the vesting date. The September 2016 option grant was intended to replace an option that Ms. Valentine previously held that expired by its terms without being exercised. After reviewing the Company's performance and our achievement of our annual goals in 2015 and 2016, as described in herein and in our 2015 proxy statement, the Compensation Committee believed this additional option grant was appropriate to reward Ms. Valentine's performance and to keep her interests aligned with those of our stockholders.

Certain Compensation Actions in 2017:

- Base Salary: Our Compensation Committee made no change to Ms. Valentine's base salary for 2017.
- Annual Incentive Bonus: In March 2017, our Compensation Committee approved an annual incentive bonus of $210,000 to reward Ms. Valentine for her performance in 2016.

Tax and Accounting Considerations

Section 162(m) of the Code ("Section 162(m)") generally disallows a tax deduction for any publicly-held corporation for individual compensation exceeding $1 million in any taxable year for a company's named executive officers, other than its chief financial officer, unless compensation qualifies as performance-based under such section. Last year, our stockholders approved the material terms of our 2009 Amended and Restated Equity Incentive Plan and our 2016 Executive Incentive Plan to permit us, if desired, to pay compensation under those plans that are intended to be exempt from the deductibility limits of Section 162(m). In making compensation decisions, including those described above, the Compensation Committee considers the tax and accounting implications of its decisions, including the deductibility limits of Section 162(m). However, the Compensation Committee believes that its primary responsibility is to provide a compensation program that attracts, retains and rewards the executives necessary for our success. Accordingly, the Compensation Committee may, in its judgment, authorize, and has authorized, compensation payments that do not comply with the exemptions, in whole or in part, under Section 162(m) or that may otherwise be limited as to tax deductibility. The Compensation Committee has not adopted a policy that compensation must be tax deductible or have the most favorable accounting treatment to the Company.

The Compensation Committee regularly considers the accounting implications of significant compensation decisions, especially in connection with decisions that relate to our equity incentive award plans and programs. If accounting standards change, we may revise certain programs to appropriately align accounting expenses of our equity awards with our overall executive compensation philosophy and objectives.

COMPENSATION OF EXECUTIVE OFFICERS

Summary Compensation Table

This table shows certain information about the compensation paid or awarded to, or earned by, our named executive officers for 2016, 2015 and 2014.

Name and Principal Position	Year	Salary ($)	Bonus(5) ($)	Stock Awards(6) ($)	Option Awards(9) ($)	All Other Compensation(13) ($)	Total ($)
Garo H. Armen, Ph.D.[1]	2016	575,000	485,000	480,975 (7)	1,699,334 (10)	3,981	3,244,290
Chief Executive Officer	2015	544,538	490,000	— (8)	833,099 (11)	8,271	1,875,908
	2014	502,360 (4)	420,000	—	1,336,213 (12)	—	2,258,573
C. Evan Ballantyne[2]	2016	235,981	—	— (7)	197,075 (10)	—	433,056
Former Chief Financial Officer	2015	179,038	86,100	— (8)	1,160,806	—	1,425,944
Christine M. Klaskin	2016	250,000	102,000	49,005 (7)	113,138 (10)	5,481	519,624
Vice President, Finance	2015	239,846	108,750	— (8)	155,542 (11)	11,486	515,624
	2014	222,855	103,500	—	271,007 (12)	—	597,362
Ozer Baysal	2016	209,000	95,000	49,005 (7)	105,107 (10)	3,617	461,729
Chief Business Officer	2015	209,000	92,796	— (8)	128,901 (11)	9,406	440,103
	2014	204,327	125,400	—	261,296 (12)	—	591,023
Robert Stein, Ph.D.[3]	2016	411,635	200,000	123,420 (7)	656,918 (10)	167,133	1,559,106
President, Research & Development	2015	373,654	249,600	— (8)	413,144 (11)	101,559	1,137,957
	2014	323,827	300,000	—	807,065 (12)	121,637	1,552,529
Karen H. Valentine	2016	340,000	210,000	99,825 (7)	337,338 (10)	6,058	993,221
Chief Legal Officer and	2015	319,692	220,320	— (8)	304,274 (11)	12,659	856,945
General Counsel	2014	289,214	200,000	—	354,192 (12)	—	843,406

(1) As an employee-director, Dr. Armen receives no additional compensation for his services to the Board.
(2) Mr. Ballantyne was hired on June 17, 2015 and resigned effective July 29, 2016. Mr. Ballantyne did not receive an annual incentive bonus for 2016.
(3) Dr. Stein was hired on January 10, 2014.
(4) Includes $79,200 in 2014 paid in shares of our common stock in lieu of salary at Dr. Armen's election, calculated based on the fair market value of the stock on the date of payment.
(5) Annual incentive bonuses paid under our annual incentive plan. Dr. Stein's 2014 bonus amount includes an additional $50,000 special bonus paid to Dr. Stein in 2014 for his performance in connection with our acquisition of 4-Antibody AG.
(6) Amounts shown reflect the grant date fair value of performance shares determined in accordance with ASC Topic 718, disregarding the effects of estimated forfeitures, using a Monte Carlo simulation model. Please see the notes to our consolidated financial statements on page 74 of this Form 10-K for the year ended December 31, 2016 for the assumptions used in valuing such awards. No stock awards were granted to our named executive officers during 2014.
(7) Stock awards for 2016 include the grant date fair value of performance shares which vest on March 31, 2019 based upon the 90-day average closing price of our common stock on such date, as described above in the section titled "Compensation Discussion and Analysis—Long-Term Incentives." Amounts in the table are valued based on the

probable outcome of the performance conditions associated with these awards on the grant date, which assumed that all applicable performance conditions would be achieved in full. Mr. Ballantyne forfeited his performance shares upon his resignation from employment.

(8) Stock awards for 2015 include the grant date fair values of performance shares, which vest based on the completion of certain milestones as described above in the section titled “Compensation Discussion and Analysis—Long-Term Incentives.” Amounts in the table are valued based on the probable outcome of the performance conditions associated with these awards on the grant date. Assuming the achievement of all applicable milestones, the grant date fair value of the 2015 awards would be $1,895,549 for Dr. Armen, $576,907 for Mr. Ballantyne, $274,717 for Ms. Klaskin, $344,492 for Mr. Baysal, $879,098 for Dr. Stein and $653,829 for Ms. Valentine, which represents the grant date fair values if the maximum number of performance shares were earned. Mr. Ballantyne forfeited his performance shares upon his resignation from employment.

(9) Amounts shown reflect the grant date fair value of options awarded during each of 2014, 2015 and 2016 determined in accordance with ASC Topic 718, disregarding the effects of estimated forfeitures. Please see the notes to our consolidated financial statements on page 74 of this Form 10-K for the year ended December 31, 2016 for the assumptions used in valuing such awards. Mr. Ballantyne forfeited all of his unvested options upon his resignation from employment.

(10) Option awards for 2016, which vest based on the named executive officer’s continued employment.

(11) Option awards for 2015 include the grant date fair values of performance-based options granted in 2015 which vest based on the completion of certain milestones as described above in the section titled "Compensation Discussion and Analysis—Long-Term Incentives." Amounts in the table with respect to performance-based options are valued based on the probable outcome of the performance conditions associated with these awards. Amounts in the table with respect to these performance-based options are $123,556 for Dr. Armen, $18,019 for Ms. Klaskin, $20,078 for Mr. Baysal, $64,352 for Dr. Stein and $41,185 for Ms. Valentine, which would be $266,983 for Dr. Armen, $38,935 for Ms. Klaskin, $43,385 for Mr. Baysal, $139,054 for Dr. Stein and $88,994 for Ms. Valentine if all milestones were achieved at maximum levels.

(12) Option awards for 2014 include the grant date fair values of performance-based options awarded in 2013 which vest based on the completion of certain milestones. Amounts in the table with respect to performance-based options are valued based on the probable outcome of the performance conditions associated with these awards. Amounts in the table with respect to these performance-based options are $263,513 for Dr. Armen, $56,467 for Ms. Klaskin, and $75,290 for Ms. Valentine.

(13) Please see the table below, which summarizes all other compensation for 2016.

Other Compensation

This table shows the components of the "All Other Compensation" received by our named executive officers in 2016.

Executive Officer	401(k) Match ($)	Housing and Car Allowances ($)	Other Benefits ($)	Total ($)
Garo H. Armen, Ph.D.	3,981	—	—	3,981
Christine M. Klaskin	5,481	—	—	5,481
Ozer Baysal	3,617	—	—	3,617
Robert Stein, Ph.D.	—	110,622 (1)	56,511 (2)	167,133
Karen H. Valentine	6,058	—	—	6,058

(1) Represents (i) use of a corporate apartment near the Company's headquarters in Lexington, MA, valued at the full rental cost of the apartment, including utilities, for the days it was used by Dr. Stein, (ii) a housing allowance for Dr. Stein's primary residence in Brooklyn, New York (prior to him moving), (iii) relocation expenses in moving from Brooklyn, NY to New York, NY that were reimbursed by the Company, (iv) use of a corporate apartment near the Company's New York, NY office, valued at the full rental cost of the apartment, including utilities, for the days it was used by Dr. Stein, and (v) personal use of a Company automobile valued at the full monthly lease rate paid by the Company.

(2) Includes (i) payments made by the Company on Dr. Stein's behalf in 2016 to a third party financial planning and advisory service (ii) certain supplemental medical costs paid by the Company for Dr. Stein in connection with non-routine medical care needed by Dr. Stein and (iii) expense reimbursements in excess of the Company's travel and expense policy for a first class airline ticket and meal reimbursements above the daily allowance.

Grants of Plan-Based Awards for 2016

This table shows our grants of plan-based awards to our named executive officers in 2016. The awards listed below were all granted under the 2009 Equity Incentive Plan. The exercise price of all stock options granted during 2016 was equal to the closing market price of the Company's common stock on the date of the grant.

		Estimated Future Payouts Under Equity Incentive Plan Awards		Estimated Future Payouts Under Equity Incentive Plan Awards	All Other Stock Awards: Number of Shares of Stock or	All Other Option Awards: Number of Securities	Exercise or Base Price of	Grant Date Fair Value of Stock and Option
	Grant	Threshold	Target	Maximum	Units	Options	Awards	Awards
Executive Officer	Date	(#)	(#)	(#)	(#)	(#)	($/Share)	($)(4)
Garo H. Armen, Ph.D. Chief Executive Officer	3/31/2016(1)					555,000	4.16	1,458,358
	3/31/2016(2)	66,250	132,500	198,750				480,975
	9/16/2016(3)					53,037	6.77	240,976
C. Evan Ballantyne Former Chief Financial Officer	3/31/2016(1)					75,000	4.16	197,075
	3/31/2016(2)	7,000	14,000	21,000				50,820
Christine M. Klaskin Vice President, Finance	3/31/2016(1)					30,000	4.16	78,830
	3/31/2016(2)	6,750	13,500	20,250				49,005
	9/16/2016(3)					7,551	6.77	34,308
	3/31/2016(1)					40,000	4.16	105,107
Ozer Baysal Chief Business Officer	3/31/2016(2)	6,750	13,500	20,250				49,005
	3/31/2016(1)					250,000	4.16	656,918
Robert Stein, Ph.D. President, Research & Development	3/31/2016(2)	17,000	34,000	51,000				123.420
Karen H. Valentine Chief Legal Officer and General Counsel	3/31/2016(1)					140,000	4.16	367,874
	3/31/2016(2)	13,750	27,500	41,250				99.825
	9/16/2016(3)					2,083	6.77	9,464

(1) Options have a three-year vesting schedule where one-third of the options vest on the one-year anniversary of the grant date, with the remainder vesting in equal quarterly installments thereafter, subject to the named executive officer's continued employment. Mr. Ballantyne forfeited his options upon his resignation from employment.

(2) Performance shares vest on March 31, 2019 based upon the 90-day average closing price of our common stock on such date, subject to the named executive officer's continued employment, as described above in the section titled "Compensation Discussion and Analysis—Long-Term Incentives." The number of shares listed in the "Threshold" column represents the number of shares that will vest if the $10 per share stock price milestone is achieved, the number of shares listed in the "Target" column represents the number of shares that will vest if the $15 per share stock price milestone is achieved, and the number of shares listed in the "Maximum" column represents the number of shares that will vest if the $20 per share stock price milestone is achieved. In the event that the stock price milestone is achieved at a price between $10 per share and $20 per share, the number of shares that will vest will be determined on a straight-line basis between the threshold and target or target and maximum amounts, as applicable. Mr. Ballantyne forfeited his performance shares upon his resignation from employment.

(3) Option vests on the one-year anniversary of the grant date, subject to the named executive officer's continued employment.

(4) Represents the grant date fair value of stock options and performance shares granted during 2016 determined in accordance with ASC Topic 718, disregarding the effects of estimated forfeitures. Amounts in the table are valued based on the probable outcome of the performance conditions associated with these awards on the grant date, which assumed that all applicable performance conditions would be achieved in full. See notes (7) and (10) to the Summary Compensation Table.

Outstanding Equity Awards at Fiscal Year-End 2016

The following table shows outstanding equity awards for the named executive officers as of December 31, 2016:

	Option Awards				Stock Awards		
Name	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested(1) ($)
Garo H. Armen, Ph.D.	87,500	—	9.48	7/16/19	—	—	—
	35,200	—	13.62	9/12/17	—	—	—
	42,500	—	9.42	9/10/18	—	—	—
	58,333	—	4.50	1/26/20	—	—	—
	81,654	—	6.30	1/4/21	—	—	—
	119,178	—	3.36	9/14/21	—	—	—
	250,000	—	5.34	6/14/22	—	—	—
	200,000	—	3.61	6/13/23	—	—	—

	140,000	—		2.72	9/12/23	—	—		—
	458,337	41,663	(5)	3.00	2/14/24	—	—		—
	108,000	70,000	(7)	5.04	2/12/25	—	—		—
	72,000	—		5.04	8/12/17	—	—		—
	—	—		—		—	143,930	(8)	592,992
	—	555,000	(11)	4.16	3/31/2026	—	—		—
	—	—		—	3/31/2019	—	198,750	(10)	818,850
	—	53,037	(9)	6.77	9/16/2026	—	—		—
		—		—		—	—		—
C. Evan Ballantyne	—	—		—	—	—	—		—
		—		—	—	—	—		—
	—	—		—	—	—	—		—
Christine M. Klaskin	4,537	—		9.48	7/16/19	—	—		—
	8,150	—		13.62	9/12/17	—	—		—
	8,333	—		9.42	9/10/18	—	—		—
	12,500	—		4.50	1/26/20	—	—		—
	6,666	—		6.30	1/4/21	—	—		—
	16,563	—		3.36	9/14/21	—	—		—
	56,250	—		5.34	6/14/22	—	—		—
	32,500	—		3.61	6/13/23	—	—		—
	30,000	—		2.72	9/12/23	—	—		—
	91,674	8.326	(5)	3.00	2/14/24	—	—		—
	24,294	10,206	(7)	5.04	2/12/25	—	—		—
	10,500	—		5.04	8/12/17	—	—		—
	—	—		—	—	—	20,860	(2)	85,943
	—	30,000	(11)	4.16	3/31/2026	—			—
	—	—		—	03/31/2019	—	20,250	(10)	83,430