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

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2015

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 001-35817

CANCER GENETICS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**04-3462475**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

201 Route 17 North 2nd Floor
Rutherford, NJ 07070
(201) 528-9200
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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

Title of each class	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	**NASDAQ Capital Market**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check 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 if 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 Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes: ☒ No: ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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 if the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act (check one):

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐ (do not check if a smaller reporting company)	Smaller reporting company	☐

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was $91 million on June 30, 2015, the last business day of the registrant's most recently completed second fiscal quarter, based on the closing price of $11.76 on that date.

Indicate the number of shares outstanding of each of the registrant's classes of common equity, as of March 1, 2016:

Class	Number of Shares
Common Stock, $.0001 par value	**13,652,274**

Documents incorporated by reference

Portions of the registrant's proxy statement for the 2016 annual meeting of stockholders to be filed pursuant to Regulation 14A within 120 days after the registrant's fiscal year ended December 31, 2015, are incorporated by reference in Part III of this Form 10-K.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include all statements that are not historical facts. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “would,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “projects,” “predicts,” “potential,” or the negative of those terms, and similar expressions and comparable terminology intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties including those set forth below under Part I, Item 1A, “Risk Factors” in this annual report on Form 10-K. Given these uncertainties, you should not place undue reliance on these forward-looking statements. These forward-looking statements represent our estimates and assumptions only as of the date of this annual report on Form 10-K and, except as required by law, we undertake no obligation to update or review publicly any forward-looking statements, whether as a result of new information, future events or otherwise after the date of this annual report on Form 10-K. You should read this annual report on Form 10-K and the documents referenced in this annual report on Form 10-K and filed as exhibits completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements. Such statements may include, but are not limited to, statements concerning the following:

- our ability to achieve profitability by increasing sales of our laboratory tests and services and to continually develop and commercialize novel and innovative diagnostic tests and services for cancer patients;
- our ability to raise additional capital to meet our liquidity needs;
- our ability to clinically validate our pipeline of genomic microarray tests currently in development;
- our ability to execute on our marketing and sales strategy for our genomic tests and gain acceptance of our tests in the market;
- our ability to keep pace with rapidly advancing market and scientific developments;
- our ability to satisfy U.S. (including FDA) and international regulatory requirements with respect to our tests and services, many of which are new and still evolving;
- our ability to obtain reimbursement from governmental and other third-party payors for our tests and services;
- competition from clinical laboratory services companies, diagnostic tests currently available or new tests that may emerge;
- our ability to maintain our clinical collaborations and enter into new collaboration agreements with highly regarded organizations in the cancer field so that, among other things, we have access to thought leaders in the field and to a robust number of samples to validate our genomic tests;
- our ability to maintain our present customer base and obtain new customers;
- potential product liability or intellectual property infringement claims;
- our dependency on third-party manufacturers to supply or manufacture our products;
- our ability to attract and retain a sufficient number of scientists, clinicians, sales personnel and other key personnel with extensive experience in oncology, who are in short supply;
- our ability to obtain or maintain patents or other appropriate protection for the intellectual property in our proprietary tests and services;
- our dependency on the intellectual property licensed to us or possessed by third parties;
- our ability to expand internationally and launch our tests in emerging markets, such as India and Brazil; and
- our ability to adequately support future growth.

PART I

Item 1. Business.

Overview

We are an emerging leader in the field of personalized medicine, enabling precision medicine in the field of oncology through our diagnostic products and services and molecular markers. We develop, commercialize and provide molecular- and biomarker-based tests and services that enable physicians to personalize the clinical management of each individual patient by providing genomic information to better diagnose, monitor and inform cancer treatment and that enable biopharmaceutical companies engaged in oncology trials to better select candidate populations and reduce adverse drug reactions by providing information regarding genomic factors influencing subject responses to therapeutics. We have a comprehensive, disease-focused oncology testing portfolio. Our tests and techniques target a wide range of cancers, covering eight of the top ten cancers in prevalence in the United States, with additional unique capabilities offered by our Tissue of Origin® test for identifying difficult to diagnose tumor types or poorly differentiated metastatic disease.

Our vision is to become the oncology diagnostics partner for biopharmaceutical companies and clinicians by participating in the entire care continuum from bench to bedside. We believe the diagnostics industry is undergoing a rapid evolution in its approach to oncology testing, embracing precision medicine and individualized testing as a means to drive higher standards of patient treatment and disease management. Similarly, biopharmaceutical companies are increasingly engaging companies such as ours to provide information on clinical trial participants' molecular profiles in order to identify biomarker and genomic variations that may be responsible for differing responses to pharmaceuticals, and particularly to oncology drugs, thereby increasing the efficiency of trials while lowering related costs. We believe tailored therapeutics can revolutionize oncology medicine through molecular- and biomarker-based testing services, enabling physicians and researchers to target the factors that make each patient and disease unique. We have created a unique position in the industry by providing targeted somatic analysis of tumor sample cells alongside germline analysis of an individual's non-cancerous cells' molecular profile as we attempt to reach the next milestone in personalized medicine. Individuals are born with germline mutations, and somatic mutations arise in tissues over the course of a lifetime.

Cancer is genetically-driven and constitutes a heterogeneous class of diseases characterized by uncontrollable cell growth. Many cancers are becoming increasingly understood at a molecular level and it is possible to attribute specific cancers to identifiable genetic changes in unhealthy cells. Cancer cells contain modified genetic material compared to normal human cells. Common genetic abnormalities correlated to cancer include gains or losses of genetic material on specific chromosomal regions (loci) or changes in specific genes (mutations) that ultimately result in detrimental cellular changes followed by cancerous or pre-cancerous conditions. Understanding the differences in these molecular changes helps clinicians to identify and stratify different forms of cancer in order to optimize patient treatment and patient management. Therefore, understanding and analysis of cancer at the molecular level is not only useful for diagnostic purposes, but we also believe it can play an important role in prognosis and disease management. We believe technology that can apply predictive information has the potential to dramatically improve treatment outcomes for patients living with cancer. Our molecular- and biomarker-based tests for cancer aim to remove subjectivity from the diagnostic phase, and add prognostic information, thus enabling personalized treatments based on cancer analysis at its most basic level.

Our business is based on demand for molecular- and biomarker-based diagnostic services from three main sectors, including cancer centers and hospitals, biotechnology and biopharmaceutical companies, and the research community. Clinicians and oncologists in cancer centers and hospitals seek testing since these methods often produce higher value and more accurate cancer diagnostic information than traditional analytical methods. Our proprietary and disease-focused tests aim to provide actionable information that can guide patient management decisions, potentially resulting in decreased costs for care providers and patients while streamlining therapy selection. Our services are also sought by biotechnology and biopharmaceutical companies engaged in designing and running clinical trials to determine the value and efficacy of oncology treatments and therapeutics. We believe trial participants' likelihood of experiencing either favorable or adverse responses to the trial treatment may be influenced or dependent on genomic factors. Our testing services may increase trial efficiency, subject safety and trial success rates. Our services are also sought by researchers and research groups seeking to identify biomarkers and develop methods for diagnostic technologies and tests for disease. We aggressively pursue the strategy of trying to demonstrate increased value and efficacy with payors who are trying to contain costs and academic collaborators seeking to develop new insights and cures.

Our market strategy is organized to align with the three aforementioned industry segments. We utilize relatively the same technologies across each of these businesses to deliver results-oriented information which we believe is or will become important to cancer treatment and patient management. Our tests address the limitations of traditional cancer diagnostic approaches, including reliance on human inspection of specimens and interpretation of clinical measurements, and inter-

institutional variability. Our suite of clinical and biopharma services aim to remove subjectivity from diagnoses and additionally provide information that may influence treatment selection that cannot be obtained from anatomic pathology and staining techniques alone. We believe the level of personalized treatment required to optimize a patient's treatment regimen and to maximize clinical trial success rates may be significantly improved through the use of molecular- and biomarker-based cancer characterization.

The following table lists our market strategy by customer category:

Customer Category	Types of Customers	Nature of Services
Clinical Services	• Hospitals • Cancer Centers • Clinics	Clinical services provide information on diagnosis, prognosis and predicting treatment outcomes (theranosis) of cancers to guide patient management.
Biopharma Services	• Biopharma and Biotech companies performing clinical trials	Biopharma services provide companies with customized solutions for patient stratification and treatment selection through an extensive suite of molecular- and biomarker-based testing services, customized assay development and trial design consultation.
Discovery Services	• Biopharma and Biotech companies • Researchers and Academic Institutions	Discovery services provide the tools and testing methods for companies and researchers seeking to identify new molecular-based biomarkers for disease.

In 2015, we generated approximately 64% of our revenue from Biopharma Services, approximately 31% from Clinical Services and approximately 5% from Discovery Services. In 2014, we generated approximately 43% of our revenue from Clinical Services, approximately 55% from Biopharma Services and approximately 2% from Discovery Services, a new line of service launched in 2014.

We utilize relatively the same proprietary and nonproprietary molecular diagnostic tests and technologies across all of our service offerings to deliver results-oriented information important to cancer treatment and patient management. Our portfolio primarily includes comparative genomic hybridization (CGH) microarrays, gene expression tests, next generation sequencing (NGS) panels, and DNA fluorescent *in situ* hybridization (FISH) probes. We provide our testing services from our CLIA-certified and CAP-accredited laboratories in Rutherford, NJ, Los Angeles, CA, and Raleigh, NC, as well as our laboratories in Hyderabad, India and Shanghai, China.

Market Overview

United States Clinical Oncology Market Overview

Despite many advances in the treatment of cancer, it remains one of the greatest areas of unmet medical need. In 2012, the World Health Organization attributed 8.2 million deaths worldwide to cancer-related causes. In 2014, the World Health Organization projected that over the next two decades this number will rise to 13 million deaths per year. Within the United States, cancer is the second most common cause of death, exceeded only by heart disease, accounting for nearly one out of every four deaths. The incidence and deaths caused by the major cancer categories are staggering. The following table published by The American Cancer Society shows estimated new cases and deaths in 2015 in the United States for the major cancers:

Cancer Type	Estimated New Cases For 2015	Estimated Deaths For 2015
Breast	234,190	40,290
Cervical	12,900	4,100
Colorectal	132,700	59,700
Endometrial	54,870	10,170
Kidney	61,560	14,080
Leukemia	54,270	24,450
Lung	221,200	158,040
Melanoma	73,870	9,940
Multiple Myeloma	26,850	11,240
Non-Hodgkin's Lymphomas	71,850	19,790
Ovarian	21,290	14,180
Pancreatic	48,960	40,560
Prostate	220,800	27,540

United States Clinical Trials Market Overview

The United States is currently the world leader in biopharmaceutical research and development and manufacturing. In 2013 it is estimated that over $50 billion dollars was spent in pharmaceutical research and development, increasing 20% from spending in 2005. The average cost to develop a drug can be as high as $1.2 billion and the approval process from development to market may be as long as 15 years. Since 1980, approximately 83% of life expectancy increases in cancer patients are due to new treatments and oncology medications.

While oncology drugs have the potential to be among the most personalized therapeutics, oncology clinical trials continue to have some of the poorest approval rates. The application of pharmacogenomics to oncology clinical trials enables researchers to better predict differences in drug response, efficacy and toxicity among trial participants, as well as to optimize treatment regimens based on these differences. According to IMS Health, it is estimated that by 2020, half of all pharmaceutical sales in the United States will be from specialty drugs, a category of drugs including oncology treatments tailored to patients' genomic profiles. A study by Grand Market Research places the oncology market at 34% of revenue for molecular diagnostics services in 2013, with the pharmacogenomics market following closely at 26.3%. Pharmacogenomics is the study of genetic analysis based on a patient's response to a particular therapy or drug. We believe a growing demand for personalized medicine as a diagnostic tool is a growth driver of this market.

India Clinical Oncology and Biopharma Market Overview

India has a growing market for molecular diagnostics and oncology services. According to a 2010 study published in the Asian Pacific Journal of Cancer Prevention, each year, approximately 1 million new cases of cancer are diagnosed in India. In those cancer types for which we provide diagnostic and prognostic proprietary tests and services, incidences are also predicted to rise steadily over the next decade even while the population is expected to experience a decrease in population growth rate. Gynecological cancers account for approximately 30% of the total cancer incidence among women in India. Furthermore, over 80% of cancers in India are first detected in advanced or terminal stages, indicating an important opportunity in this market for DNA-based oncology diagnostic tools that can provide early-stage information to guide treatment resulting in greater survival rates.

It is estimated by the India Brand Equity Foundation that the Indian biopharma and biotech markets are expected to experience over a 20% increase in compound annual growth rate by 2017 due to favorable business conditions and increasing government expenditures in these sectors. The biopharmaceutical services segment accounted for the largest share of sector growth in 2013 and 2014, accounting for approximately 64% of total revenues, and experienced the highest growth rate in this period, with an approximately 17% compound annual growth rate. Over the next decade, growth in this industry is anticipated to come largely from India's strong position in biosimilars and molecular diagnostics, as well as from personalized medicine. The Indian government has been increasing spending on the biotech and biopharma sectors through 5-year budget allocation plans aimed at research and development as well as health care.

In the fourth quarter of 2015 we entered into an agreement with a hospital network in India to validate FHACT® in the Indian

rural population, enabling our proprietary test to be used as an accurate screening tool for cervical cancer and HPV-associated cancer risk in the Indian population. In the first quarter of 2014 we launched FHACT® in collaboration with Kamineni Hospitals in Hyderabad, India for the detection and management of cervical cancer. This was the first broad-scale adoption of FHACT® in India. The launch culminates a collaboration that was begun in July 2013 to assess the value and clinical utility of FHACT® in India.

China Clinical Oncology and Biopharma Market Overview

Cancer is one of the leading public health problems in both urban and rural China. The disease is among the leading causes of death in the Chinese population, representing approximately 25% of all deaths in urban areas and 21% in rural areas. Over the past 30 years, the risk factors for cancer in China have been increasing, including an aging population, decreased environmental conditions and westernization of diet and lifestyle. The Chinese biopharma is currently the third largest pharma market globally, after the United States and Japan. With more than one fifth of the world's population, China is an important market for biopharma and biotech products and China's minister of health has pledged that the country will spend an additional $11.8 billion to advance biotech innovation from 2015 to 2020 in its 13thfive-year plan. Our Shanghai laboratory performs clinical trials services for biopharma companies in China, where governmental regulations prevent human samples from being exported from the country.

Our Strategy

Our strategy is to serve a diverse group of market participants - biotechnology and pharmaceutical companies, cancer centers and community hospitals, and research centers both public and private - that all require biomarker-based assessment of cancer and biomarker-based information to understand and manage the patient, their cancer and customized therapy choices. We believe that our integrated approach to testing combined with our ability to rapidly translate research insights about the genetics and molecular mechanisms of cancer into the clinical setting will improve patient treatment decision-making, and will become a key component in the standard of care for personalized cancer treatment. Our approach is to develop and commercialize proprietary genomic tests and services to enable us to provide a full service solution to improve the diagnosis, prognosis and treatment of targeted cancers and to better predict differences in drug response, efficacy and toxicity among clinical trial participants, as well as to optimize treatment regimens based on these differences. To achieve this, we intend to:

- *Leverage our specialized, disease-focused genomic knowledge, insights and proprietary portfolio to secure additional collaborations or partnerships with leading biopharmaceutical companies and clinical research organizations.* Oncology drugs have the potential to be among the most personalized of therapeutics, and yet oncology trials have one of the worst approval success rates. In an effort to improve the outcome of these trials, and more rapidly advance targeted therapeutics, the biotechnology and pharmaceutical community is increasingly looking to companies like us that have both proprietary disease insights and comprehensive testing services as they move toward biomarker-based therapeutics. We believe our comprehensive, disease-focused testing portfolio, which covers 8 of the 10 most prevalent solid and hematological cancers positions us to help the biopharmaceutical community with clinical trials and companion diagnostic development in areas of our core expertise.

- *Leverage our expanded clinical sales force and our relationship with ICON to expand our customer base.* Through our acquisition of Response Genetics in the fourth quarter of 2015, we increased the size of our sales force and our geographic presence, particularly in the Western and Southeastern United States. We believe that our joint clinical sales force is among the largest oncology-focused clinical sales groups in the molecular diagnostics field. Leveraging our expanded clinical sales group, we plan to continue to focus on partnering with community hospitals, where according to the National Cancer Database approximately 85% of cancer patients in the United States are initially diagnosed, by targeting our sales and marketing efforts on this important customer segment though our branded Expand Dx™ program. Furthermore in mid-2015, we entered into a strategic alliance with the laboratory services group of ICON plc, a global CRO, which we plan to leverage to expand our biopharma customer base.

- C*ontinue our focus on translational oncology and drive innovation and cost efficiency in diagnostics by continuing to develop next generation sequencing offerings independently and through our joint venture with Mayo Clinic.* Translational oncology refers to our focus on bringing novel research insights that characterize cancer at the genomic level directly and rapidly into the clinical setting with the overall goal of improving value to patients and providers in the treatment and management of disease. We believe that continuing to develop our existing platforms and next generation sequencing panels will enable significant growth and efficiencies within our business. We will continue to develop next generation sequencing panels independently as well as leverage our joint venture with Mayo to advance this diagnostic technology.

- *Continue to aggressively manage our cost structure.* We are focused on aggressively managing our operating costs while continuing to seek additional revenue growth opportunities. We are implementing measures to streamline costs across our laboratory facilities. We also continue to seek to identify cost efficiencies as we integrate our operations with those of Gentris and Response Genetics.

- *Work with health care providers and payors to demonstrate the value of our testing in providing cost efficient and accountable care.* We seek to increase market access by entering into contracts with key payors, cost management organizations and insurance providers and to secure additional coverage for FHACT, TOO and Focus::NGS panels.

Our Service Offerings

Our business is based on demand for molecular- and biomarker-based characterization of cancers from three main sectors: cancer centers and hospitals, biotechnology and biopharmaceutical companies, and the research community. Clinicians and oncologists in cancer centers and hospitals seek molecular-based testing since these methods often produce higher value and more accurate cancer diagnostic information than traditional analytical methods. Our proprietary and disease-focused tests aim to provide actionable information that can guide patient management decisions, potentially resulting in decreased costs for care providers and patients while streamlining therapy selection. Our services are also sought by biotechnology and biopharmaceutical companies engaged in designing and running clinical trials for their value and efficacy in oncology treatments and therapeutics. We believe trial participants' likelihood of experiencing either favorable or adverse responses to the trial treatment can be determined by biomarker testing, increasing trial efficiency, participant safety and trial success rates. Our services are also sought by researchers and research groups seeking to identify biomarkers and panels and develop methods for diagnostic technologies and tests for disease. We aggressively pursue the strategy of trying to demonstrate increased value and efficacy with payors who are trying to contain costs and academic collaborators seeking to develop new insights and cures.

Our market strategy is organized to align with the three aforementioned industry segments. We utilize relatively the same proprietary tests, non-proprietary test and technologies across each of these businesses to deliver results-oriented information important to cancer treatment and patient management.

Clinical Services

We provide our proprietary tests and services, along with a comprehensive range of non-proprietary oncology-focused tests and laboratory services, to oncologists and pathologists at hospitals, cancer centers, and physician offices. Our proprietary tests target cancers that are difficult to prognose and predict treatment outcomes through currently available mainstream techniques. We utilize an expansive range of non-proprietary test and technologies to provide a comprehensive profile for each patient we serve. Clinical testing is available through anatomic pathology, flow cytometry, karotype, FISH and molecular diagnostics (including next generation sequencing and gene expression panels).

Our comprehensive oncology-focused testing services for cancer are utilized in the diagnosis, prognosis and prediction of treatment outcomes (theranosis) of cancer patients and are growing rapidly as clinicians demand more precise and more comprehensive diagnostic evaluation of their patients. We believe our ability to rapidly translate research insights about the genetics and molecular mechanisms of cancer into the clinical setting will improve patient treatment and management and that this approach can become a key component in the standard of care for personalized cancer treatment. We utilize highly skilled scientists, pathologists and hematologists in our laboratories, with 32% of individuals holding advanced degrees. These individuals assist our customers in integrating and technically assessing the testing results for their patients.

We believe that our proprietary tests provide superior diagnostic and prognostic values than other currently available tests and services. For example, prior to the introduction of MatBA®, the assessment of the gain or loss on only four chromosomal regions and potentially one gene mutation was available to clinicians when testing for and stratifying a CLL patient. MatBA® improves on this by identifying information on five additional chromosomal regions, providing more valuable diagnostic data and critical information about the risk of progression and overall prognosis of the patient. For particular cases, patient results indicating a “favorable outcome” that would have been reported to the clinician was determined by MatBA® to be inaccurate, leading to a change in the prognosis and consequently decision-making by the clinician regarding the management of these patients.

Our clinical services strategy is focused on direct sales to oncologists and pathologists at hospitals, cancer centers, and physician offices in the United States, and expanding our relationships with leading distributors and medical facilities in emerging markets. As part of our market strategy for our clinical services, we offer the branded testing programs described below.

Complete™ Program. Our Complete™ program is our branded program offering a unique suite of common and proprietary tests that assist clinicians in determining the best treatment options to improve patient outcomes. Each Complete™ program integrates the latest diagnostic and prognostic biomarkers across multiple testing methodologies. We offer Complete testing for a number of hematological cancers and solid tumors, including AML, CLL/SLL, DLBCL, MCL, MDS, myeloproliferative neoplasms (MPN), colorectal, lung and breast cancers.

Expand DX®/Technical-Only Testing. According to the American Hospital Association, there are nearly 5,000 community hospitals in the United States. Community hospitals represent a large target market for our genomic tests and services because approximately 85% of cancer patients in the United States are initially diagnosed in such hospitals as reported to the National Cancer Database. Our Expand DX®/Technical-Only Testing program is a partnership initiative offered by us to help community-based hospitals expand their clinical services. By partnering with us community-based hospitals and pathology labs have cost-effective access to advanced testing technologies and specialized testing capabilities and deep experience in hematological and solid-tumor oncology diagnostics of our clinical reference laboratories in New Jersey and California. Through this program, clinicians can send patient specimens to our laboratories, where the technical component of the testing is performed, and then access the test results through an online portal in order to perform the professional component and provide a diagnosis. We believe our Expand DX®/Technical-Only Testing program will enable community hospitals and pathology laboratories to optimize and expand their oncology services to better serve their cancer patients and reduce costs associated with cancer care.

Tissue of Origin® Test. Our Tissue of Origin® test, or TOO®, is a gene expression test that is indicated when there is clinical uncertainty about a poorly differentiated or undifferentiated, or a metastatic tumor where the primary tissue of cancer development is unknown. The Tissue of Origin® test we believe is the only FDA-cleared test of its kind, and can determine the most likely tissue of origin of a patient tumor sample from the fifteen most common tumor types - including thyroid, breast, pancreas, colon, ovarian and prostate - which account for ninety percent of all incidences of solid tissue tumors, by measuring the expression levels of 2,000 individual genes. TOO® is supported by extensive analytical and clinical validation data from robust, multi-center clinical studies. We believe TOO® can reduce the need for repeated testing, examinations, imaging and biopsy procedures by providing clinicians with the primary tissue type with greater certainty than traditional diagnostic techniques. This in turn empowers physicians to select the correct type of treatment earlier in the course of the patient's therapy.

In addition, we have developed the Summation Report which, we believe, provides an integrated view of a patient's test results and diagnosis in a user-friendly, visually appealing format for clinicians. Our pathologists and laboratory directors prepare these Summation Reports based on the clinical information and diagnosis provided by our laboratory professionals. All of our testing technologies are integrated into a Summation Report to allow oncologists to efficiently arrive at a definitive diagnosis and drive complete and effective decisions.

Biopharma Services

Biopharma services include laboratory and testing services performed for biopharmaceutical companies engaged in clinical trials. Our biopharma services focus on providing pharmaceutical companies with oncology specific and non-oncology genetic testing services for phase I-III trials along with ancillary services including biorepository and trials logistics, design and customized assay development support. These services include DNA and RNA extraction and purification, genotyping, gene expression and biomarker analyses, custom assay design and biorepository sample storage solutions. We also seek to apply our expertise in LDTs to assist in developing and commercializing drug-specific companion diagnostics.

Industry research has shown many promising drugs have produced disappointing results in clinical trials. For example, a study by Princess Margaret Hospital in Toronto estimated that 85% of the phase III trials testing new therapies for solid tumors studied over a five-year period failed to meet their primary endpoint. Given such a high failure rate of oncology drugs, combined with constrained budgets for biopharmaceutical companies, there is a significant need for drug developers to utilize molecular diagnostics to decrease these failure rates. For specific molecular-targeted therapeutics, the identification of appropriate biomarkers indicative of disease type or prognosis may help to optimize clinical trial patient selection and increase trial success rates by helping clinicians identify patients that are most likely to benefit from a therapy based on their individual genomic profile.

Our Select One® offering was created specifically to help the biopharmaceutical community with clinical trials and companion diagnostic development in areas of our core expertise. We believe that oncology drugs have the potential to be among the most personalized of therapeutics, and yet oncology clinical trials continue to have some of the poorest approval rates. In an effort to improve the outcome of these trials, and more rapidly advanced targeted therapeutics, the biotechnology and pharmaceutical

community is increasingly looking to companies that have both proprietary disease insights and comprehensive testing services as they move toward biomarker-based therapeutics.

In June 2015, the United States National Institutes of Health reported over 74,000 clinical trials were currently being conducted in the United States, and over 14,000 of these trials were actively recruiting participants for studies with oncology pharmaceuticals or biologics. Molecular- and biomarker-based testing services have been altering the clinical trials landscape by providing biopharmaceutical companies with information about trial subjects' genetic profiles that may be able to inform researchers whether or not a subject will benefit from the trial drug or will experience adverse effects. Streamlined subject selection and stratification, and tailored therapies selected to maximally benefit each group of subjects may increase the number of trials that result in approved therapies and make conducting clinical trials more efficient and less costly for biopharmaceutical companies. In 2015, 51 new drugs were approved by the FDA. This is the highest number of FDA approvals since 1950, and nearly a third of these drugs were oncology-focused, highlighting the potential value of incorporating genomic information into oncology clinical trial design.

In addition to the tests and services provided to biopharmaceutical companies, we are developing NGS panels focused on pharmacogenomics and oncology that will inform researchers of trial subjects' drug sensitivities.

We provide the following services to biopharmaceutical companies and researchers conducting clinical trials:

Genotyping and Pharmacogenomics Testing Services

- Over 400 genotyping assays including drug metabolizing enzymes, transporters and receptors.
- Over 19 validated gene expression assays.
- Testing for the FDA's Pharmacogenomic (PGx) Biomarkers in Drug Labels recommended panel.
- Loss of heterozygosity and copy number detection assays.

We also utilize our laboratories to provide clinical trial services to biopharmaceutical companies and clinical research organizations to improve the efficiency and economic viability of clinical trials. Our clinical trials services leverage our knowledge of clinical oncology and molecular diagnostics and our laboratories' fully integrated capabilities. Our Select One® program integrates clinical information into the drug discovery process in order to provide customized solutions for patient stratification and treatment. By utilizing biomarkers, we intend to optimize the clinical trial patient selection. This may result in an improved success rate of the clinical trial and may eventually help biopharmaceutical companies to select patients that are most likely to benefit from a therapy based on their genetic profile. We believe we are one of only a few laboratories with the capability to combine somatic and germline mutational analyses in clinical trials.

Our Select One® clinical trial services are aimed at developing customizable tests and techniques utilizing our proprietary tests and laboratory services to provide enhanced genetic signature analysis and more comprehensive understanding of complex diseases at earlier stages. We leverage our knowledge of clinical oncology and molecular diagnostics and provide access to our genomic database and assay development capabilities for the development and validation of companion diagnostics. This potentially enables companies to reduce the costs associated with development by determining earlier in the development process if they should proceed with additional clinical studies. We have been chosen by Gilead Sciences Inc. to provide clinical trial services and molecular profiling of CLL patients, and we performed the biomarker-based testing for Gilead's FDA-approved Zydelig® (idelalisib) for relapsed CLL, FL and SLL. We believe our clinical trial services may allow Gilead and others to improve patient responder selection, thereby potentially increasing the likelihood our customer's product is approved by FDA. Additionally, through our services we gain further insights into disease progression and the latest drug development that we can incorporate into our proprietary tests and services.

We also provide genetic testing for drug metabolism to aid biopharmaceutical companies identify subjects' likely responses to treatment, allowing these companies to conduct more efficient and safer clinical trials. We believe pharmacogenomics drug metabolism testing helps deliver the promise of personalized medicine by enabling researchers to tailor therapies in development to differences in patients' genomic profiles.

Discovery Services

Our discovery services provide the tools and testing methods for companies and researchers seeking to identify new molecular- and biomarker-based indicators for disease. Discovery services we offer include validation of biomarkers for diseases including

cancers, from which tests for diagnosis or prognosis may be established. We also provide consulting, guidance and preparation of samples and clinical trial design. We believe the ability to analyze variations in biomarkers and interpret these changes into meaningful predictors of disease or indicators of diagnosis is essential to discovering new molecular markers for cancer and targets for therapies.

Our Disease-Focused Testing Portfolio

Our disease-focused testing portfolio includes our portfolio of proprietary tests, along with a comprehensive range of non-proprietary oncology-focused tests and laboratory services. We have a comprehensive oncology testing portfolio, spanning eight of the ten most prevalent solid and hematological cancers, including the FDA-cleared test for tumors of unknown origin, our Tissue of Origin®, or TOO® test. With the exception of the TOO® test, we offer our proprietary tests in the United States as laboratory-developed tests, or LDTs, and internationally as CE-marked in vitro diagnostic medical devices. The non-proprietary testing services we offer are focused in part on the specific oncology categories where we are developing our proprietary tests. We believe that there is significant synergy in developing and marketing a complete set of tests and services that are disease-focused and delivering those tests and services in a comprehensive manner to help guide and inform treatment decisions. The insights that we develop in delivering non-proprietary services are often leveraged in the development of our proprietary programs and in the validation of our proprietary programs.

Our proprietary tests are molecular- and biomarker-based genomic tests: microarrays, probes, gene expression panels and next generation sequencing. Each is directed at identifying specific genetic aberrations in cancer cells that serve as markers for diagnosis, prognosis and theranosis. We offer microarrays, next generation sequencing, gene expression and FISH probes because each serves a unique diagnostic or prognostic function. FISH- based tests, or probes, offer great sensitivity while microarrays provide a more comprehensive analysis of the cancer genome, and NGS panels offer a method of detecting mutations or chromosomal aberrations of lesser frequency while gene expression can identify which genes are affected when the cancer type is unknown.

Hematological Cancers

As a group, hematologic cancers (cancers of the blood, bone marrow or lymph nodes) display significant clinical, pathologic and genetic complexity. Traditionally, diagnosis relies mostly on pathologic examination, flow cytometry and detection of only a few genetic markers. Importantly, the clinical course of the six main subtypes of these neoplasms ranges from indolent (follicular lymphoma) to aggressive (diffuse large B-cell lymphoma, mantle cell lymphoma and multiple myeloma), or mixed (chronic lymphocytic leukemia/small lymphocytic lymphoma, or CLL/SLL). Most risk-stratification for treatment decisions were traditionally based on clinical features of the disease. Few molecular prognostic biomarkers were utilized in a clinical setting. There remains an unmet medical need for robust biomarkers for the diagnosis, prognosis, theranosis and overall patient management in B-cell cancers. Given the higher frequency of these malignancies in the United States than in other countries due to relatively long lifespans and an aging population, we expect significant clinical demand for our tests and services that are focused on hematological cancers.

Mature B-cell Neoplasm Array - MatBA®

MatBA® is the first targeted oligonucleotide-based microarray we developed for the analysis of genomic alterations to determine prognosis and theranosis in mature B-cell neoplasms. MatBA® incorporates a common architecture of specific genomic regions that can be applied across the seven major mature B-cell neoplasms. We currently offer the following applications of MatBA®: Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma (CLL/SLL), Diffuse Large B-Cell Lymphoma (DLBCL), Mantle Cell Lymphoma (MCL) and Follicular Lymphoma (FL).

MatBA® is designed to detect genomic copy number changes in mature B-cell neoplasms either solely or in a unique combination, thus assisting the clinician in the management of a patient's disease. The test relies on the comparative genomic hybridization of fluorescently differentially-labeled normal DNA and DNA extracted from the cancer specimen (array-CGH). We have optimized the utility of the MatBA® array-CGH so that it can be routinely applied to the study of a range of specimen types including blood and bone marrow and FFPE biopsy specimens, which are often the only specimen available for analysis of FL, DLBCL and MCL. MatBA® was custom-designed to represent 80 regions of the human genome which have diagnostic and/or prognostic value in one or more of the mature B-cell neoplasm subtypes as identified through our research and analysis efforts. Unlike other technologies such as FISH, array-CGH using MatBA® simultaneously permits the detection of genomic gains and losses at multiple locations on a chromosome (loci) that characterize the mature B-cell neoplasm subtypes. MatBA® is designed to improve prognostication by determining each patient's unique genetic profile, allowing doctors to more accurately select the best treatment options.

Focus::NGS™

Focus::NGS™ is our family of next generation sequencing tests developed for the analysis of genomic alterations to determine, guide and inform diagnosis, prognosis and theranosis of particular hematological cancers and solid tumors. Next generation sequencing performs massively parallel sequencing, which is able to detect biomarker mutations and aberrations that are present at very low levels and which may be missed by other, less sensitive methodologies. We currently offer Focus::CLL™ and Focus::Myeloid™ in the United States for the characterization of hematological cancers.

Our proprietary Focus::CLL™ panel is the only test that assesses 7 genes in a single test, providing clinically relevant data for prognosis, disease management and treatment selection. The panel is available both for routine clinical patient diagnosis and management, as well as for patient stratification in clinical trials for CLL or SLL. CLL is often a slow-moving cancer, and many patients can survive for years after a diagnosis; however, chronic leukemias are difficult to treat and some forms of CLL grow faster, requiring that the patient undergo treatment fairly immediately. The American Cancer Society predicts that in 2016 there will be nearly 19,000 new cases of CLL and approximately 4,600 deaths, mostly among individuals over 40 years of age.

Our proprietary Focus::Myeloid™ panel is designed to target 54 genes, and we believe it will provide important prognostic information for myelodysplastic syndromes (MDS) and acute myeloid leukemia (AML), as well as diagnostic and prognostic information for myeloproliferative neoplasms (MPN). MDS are a group of bone marrow disorders in which the bone marrow does not produce enough healthy blood cells. Approximately 30% of patients diagnosed with MDS will progress to AML, which is a cancer of the myeloid line of blood cells characterized by rapid growth of abnormal white blood cells which interferes with the normal production of other blood cells. MPNs consist of a group of diseases where there is an overproduction of different types of blood cells. The form of MPN is defined by the type of cell that is overproduced. MPNs also have a high possibility of progressing to AML depending on the mutations responsible for the MPN. AML is the most common acute leukemia in adults and its incidence increases with age. AML is expected to account for approximately 20,800 new leukemia cases in 2015, and its prevalence is expected to increase as the population ages.

Solid Tissue Cancers

Tissue of Origin® (TOO®)

Through our acquisition of substantially all the assets of Response Genetics, Inc. in the fourth quarter of 2015, we acquired the FDA-cleared and Medicare-approved Tissue of Origin® (TOO®) test. TOO® is a gene expression test that is used to identify the origin in cancer cases that are metastatic and/or poorly differentiated and unable to be typed by traditional testing methods. Metastatic tumors with an uncertain primary site can be a difficult clinical problem. In tens of thousands of oncology patients every year, no confident diagnosis is ever issued, making standard-of-care treatment impossible. TOO® assesses 2,000 genes, covering 15 of the most common tumor types and 90% of all solid tumors. These tumors include thyroid, breast, non-small cell lung, pancreas, gastric, colorectal, liver, bladder, kidney, non-Hodgkin's lymphoma, melanoma, ovarian, sarcoma, testicular germ cell and prostate. TOO® is FDA-cleared, Medicare-approved, and provides extensive analytical and clinical validation for statistically significant improvement in accuracy over other methods. Our TOO® test increases diagnostic accuracy and confidence in site-specific treatment decisions. Our TOO® test leads to a change in patient treatment based on results 65% of the time it is used.

Other

Through our acquisition of substantially all the assets of Response Genetics, Inc. in the fourth quarter of 2015, we also acquired a clinically actionable and validated portfolio of tests for solid tumors. The tests include a variety of methodologies--from IHC and FISH to gene-expression, microarrays as well as next-generation sequencing (NGS). This portfolio includes proprietary tests for non-small cell lung cancer, colorectal cancer, gastric and gastroesophageal cancer, melanoma, thyroid cancer, breast cancer and glioma.

HPV-Associated Cancers

FHACT® HPV-Associated Cancer Test

We have developed a proprietary, 4-color FISH-based DNA probe designed to identify aberrations in four important chromosomal regions that have been implicated in cancers associated with infection by the human papilloma virus (HPV): cervical, anal and oropharyngeal. We have obtained CE marking for FHACT®, which allows us to market the test in the European Economic Area (which includes the 27 Member States of the EU plus Norway, Liechtenstein and Iceland). We anticipate that we will need to conduct additional developmental activities for this test and to submit it for regulatory clearance or approval by FDA or other

regulatory agencies prior to commercialization outside of our reference laboratories in each of the markets where we plan to introduce it.

We currently offer an application of FHACT® as an LDT for cervical cancer. According to the National Cancer Institute, about 50 million PAP smear tests to detect HPV are performed in the United States each year. It is estimated that approximately 2 million patients have abnormal PAP smear test results and are referred for biopsy/colposcopy as a result of such tests. However, only approximately 12,000 of these patients will develop cervical cancer. It is believed that early detection of HPV-associated cancers and lesions most likely to progress to cancer could eliminate unnecessary biopsies/colposcopies and thereby reduce health care costs.

FHACT® is designed to determine copy number changes of four particular genomic regions by FISH. These regions of DNA give specific information about the progression from HPV infection to cervical cancer, in particular the stage and subtype of disease. FHACT® is designed to enable earlier detection of abnormal cells and can identify the additional genomic biomarkers that allow for the prediction of cancer progression. FHACT® is designed to leverage the same PAP smear sample taken from the patient during routine screening, thus reducing the burden on the patient while delivering greater information to the clinician.

Sales and Marketing

Our sales and marketing efforts consist of both direct and indirect efforts, with the majority of efforts focused on direct sales in both the United States and India. The table below summarizes our sales approach by geography and customer segment:

United States	Clinical Sales	- Collaborate with leading research universities and institutions that enable the validation of our new tests. Work with community-based cancer centers that need a reliable and collaborative partner for cancer testing. - Build relationships with individual thought leaders in oncology, hematology and pathology to deliver services that provide value to their patients.
	Biopharma Sales	- Collaborate with scientific development teams at pharmaceutical companies on studies involving translational medicine and genotyping. - Build relationships in the research and development segment to identify partners with a need for biomarker discovery studies.
India	Clinical Sales	- Develop relationships with oncologists, corporate hospitals and reference labs, as well as with physicians in local clinics. - Engage the population of oncology patients in India, where a majority of oncology drugs are paid for out-of-pocket.
	Biopharma & Discovery Sales	- Work with academic and research institutions for validation of our tests in the Indian population. - Collaborate with scientific development teams at biopharma companies and government agencies on studies involving tests and services.
China	Biopharma Sales	- Leverage US-based companies conducting clinical trials with a component of those trials occurring in China.

Our sales force professionals have backgrounds in hematology, pathology, and laboratory services, and many years of experience in clinical oncology sales, esoteric laboratory sales from leading biopharmaceutical, pharmaceutical or specialty reference laboratory companies. We currently have a team of 12 sales professionals in the United States and 6 in India. We support our sales force with clinical specialists who bring deep domain knowledge in the design and use of our tests and services.

In addition to our direct sales force, we entered into an agreement with the Laboratory Services group of ICON plc, the global CRO (Nasdaq:ICLR) to work together to offer biotech and pharmaceutical customers a comprehensive, integrated and efficient solution for laboratory testing for global oncology trials from Phase I through Phase IV. Through our joint service offering, we and ICON can provide biotech and pharmaceutical customers access to combined expertise ranging from complex, oncology-focused molecular and biomarker-based testing to core central laboratory analysis, project and data management and sample logistics on a global basis.

We also promote our tests and services through marketing channels commonly used by the biopharma and pharmaceutical industries, such as internet, medical meetings and broad-based publication of our scientific and economic data. In addition, we provide easy-to-access information to our customers over the internet through dedicated websites. Our customers value easily accessible information in order to quickly review patient or study information.

Our Laboratory Facilities

Rutherford, New Jersey, United States

Our Rutherford location is a 17,900 square foot facility and also serves as our corporate headquarters. We offer our clinical services, biopharma services and discovery services out of our Rutherford location. This location has been accredited by the College of American Pathologists, or CAP, which is an approved accreditation entity under CLIA, to perform high complexity testing. CLIA certification and accreditation are required before any laboratory may perform clinical testing on human samples for the purpose of diagnosis, prevention, treatment of disease or assessment of health.

Our Rutherford location is licensed by the appropriate state departments of health and able to receive and test patient samples from all 50 states, as well as from oversees locations. Additionally, our Rutherford laboratory is self-certified under the US-EU and US-Swiss Safe Harbor Frameworks governing use of personal information received on patients or clinical trial participants from the European Union. Our Rutherford laboratory also holds the requisite licenses from the New Jersey State Department of Health to operate and perform clinical testing on patient samples. In addition, certain states, such as New York, require out-of-state laboratories to obtain licenses in order to accept patient specimens from such states. Our Rutherford location holds clinical laboratory licenses from the New York Department of Health, Florida Department of Health, Maryland Department of Health, Pennsylvania Department of Health, and California Department of Health for all of our clinical departments.

Los Angeles, California, United States

Our Los Angeles location is an approximately 27,000 square foot facility. We offer clinical services and biopharma services out of our Los Angeles location. We provide proprietary tests and panels for lung, colon, gastric, and melanoma cancers, as well as our FDA-cleared Tissue of Origin® Test, or TOO®, from our Los Angeles location. This location is CLIA-certified, GLP-compliant and CAP accredited. Our Los Angeles laboratory also holds the requisite licenses from the California State Department of Health to operate and perform clinical testing on patient samples. Our Los Angeles location holds clinical laboratory licenses from the New York Department of Health, Florida Department of Health, Maryland Department of Health, Pennsylvania Department of Health, and Rhode Island Department of Health for all of our clinical departments.

Morrisville, North Carolina, United States

We offer our biopharma services, including biopharmaceutical trials testing services, pharmacogenomics testing, and sample storage and biorepository services from our 25,000 square foot facility located in Research Triangle Park, Morrisville, North Carolina. Our facility in Morrisville is CLIA-certified and subject to Good Laboratory Practices ("GLP") requirements, and has received accreditation by CAP for its industry-leading biorepository capabilities. We do not believe that our Morrisville laboratory requires individual state licensure since it is not performing clinical testing on patient samples and is only involved in clinical trials testing. Our Morrisville laboratory is also self-certified under US-European and US-Swiss Safe Harbor frameworks.

Hyderabad, India and Shanghai, China

We also have two laboratories operating outside of the United States: one in Hyderabad, India and one in Shanghai, China. Our 10,000 square foot Hyderabad facility services government entities, academic institutions, and health and cancer centers. It is a Department of Scientific and Industrial Research ("DSIR") recognized laboratory and is ISO9001-2008 and National Accreditation Board for Testing and Calibration Laboratories ("NABL") certified. Our 2,700 square foot Shanghai facility is both CLIA-certified and subject to GLPs, and provides biopharma services to companies performing clinical trials in China.

Research and Development Expenses

We incurred research and development expenses of $5.5 million, which represented 30% of our net revenue, for the year ended December 31, 2015; $4.6 million, which represented 45% of our net revenue for the year ended December 31, 2014; and $2.2 million, which represented 33% of our net revenue, for the year ended December 31, 2013. Research and development expenses represented 22% of our total operating expenses for the year ended December 31, 2015, 22% of our total operating expenses for the year ended December 31, 2014, and 22% of our total operating expenses for the year ended December 31, 2013. Major components of the research and development expenses included direct personnel costs, laboratory equipment and consumables and overhead expenses.

Research and Development Collaborations

We formally and informally collaborate with leading oncology centers and community-based hospitals to develop our proprietary diagnostic tests, and we work closely with leading cancer researchers at these institutions to develop proprietary tests tailored to their needs and specifications. Additionally, many of these centers have obtained Specialized Programs of Research Excellence status, as designated by the National Cancer Institute. Our collaborations with these centers give us access to large datasets of information that we use to develop our proprietary tests.

Below is a summary of our active key collaborations. In certain cases we have formal written agreements with collaborators and in other cases we have no written agreement with our collaborators or only informal written arrangements.

Collaborating Institution	Principle Investigator(s)	Focus of Collaboration
North Shore-Long Island Jewish Health System, *New York*	Dr. Kanti Rai Dr. Nicholas Chiorazzi	Clinical validation of MatBA®-CLL and search for additional DNA-based biomarkers of CLL
Memorial Sloan-Kettering Cancer Center, *New York*	Dr. Julie Teruya-Feldstein	Clinical validation of MatBA®
	Dr. Raju S.K. Chaganti	Validation of a CGH microarray-based assay
	Dr. Jonathan Coleman	Evaluation of FISH-based CGH-array tests
	Dr. Jeremy Durack	Evaluation of FISH-based and CHG-array tests
National Cancer Institute, *Maryland*	Dr. Nicolas Wentzensen	Evaluation of FISH-based tests
Kamineni Hospital, *Hyderabad, India*	Dr. Annie Hassan	Evaluation of FHACT®
University of Iowa Cancer Center, *Iowa*	Dr. Sergei Syrbu	Evaluation methods to improve the diagnosis, prognosis and management of DLBCL
Columbia University, *New York*	Dr. Azra Raza Dr. Siddhartha Mukherjee	Identification of genomic biomarkers
Beth Israel Deaconess Medical Center, *New York*	Dr. Rajan Dewar	Analysis of genomic biomarkers
Keck Medicine of University of Southern California, *California*	Dr. Imran Siddiqi	Identification and evaluation of genomic biomarkers
University of Southern California, *California*, & HTG Molecular, *Arizona*	Dr. Pamela Ward	MicroRNA whole transcription assay validation
University of Southern California, *California*, & HTG Molecular, *Arizona*	Dr. Heinz-Josef Lenz and Dr. Yu Sunakawa	Gene expression analysis for immuno-oncology panel
Groupe Hospitalier Pitié Salpétriere, *Paris*		Analyze the variability of genomic alterations
Huntsman Cancer Center Institute, University of Utah, *Utah*		Examine and validate genomic biomarkers
Moffitt Cancer Center, *Florida*		Examine a number of genetic variants
University of Alabama, *Alabama*		Investigate biomarkers
University of Virginia School of Medicine, Virginia, & HTG Molecular, *Arizona*		Evaluation of genomic signatures of immuno-oncology biomarkers

Scientific and Clinical Advisory Boards

We have two advisory boards to counsel our scientific and clinical direction. Our Scientific Advisory Board is comprised of preeminent scientists and physicians from the fields of cancer biology, cancer pathology, cancer medicine and molecular genetics. We have scientists and clinicians from leading cancer centers, including Memorial Sloan-Kettering Cancer Center, Mt. Sinai and the Institute for Cancer Genetics at Columbia University. These distinguished scientists and clinicians help oversee and review the scientific innovation, integrity and clinical relevancy of our program. The board of directors appoints members to the Scientific Advisory Board. Our Clinical Advisory Board is comprised of preeminent clinicians and scientists focused on clinical implementation of our proprietary tests and services and mapping those tests and services to patient needs.

Competition

With respect to our clinical services, our principal competition comes from existing mainstream diagnostic methods and laboratories that pathologists and oncologists use and have used for many years or decades. It may be difficult to change the methods or behavior of the referring pathologists and oncologists to incorporate our molecular diagnostic testing in their practices. In addition, companies offering capital equipment and kits or reagents to local pathology laboratories represent another source of potential competition. These kits are used directly by the pathologist, which can facilitate adoption.

With respect to our clinical services and our biopharma services, we also face competition from companies that offer products or have conducted research to profile genes, gene expression or protein biomarkers in various cancers. In particular, Quest Diagnostics market arrays which are competitive to our MatBA®-CLL and MatBA®-SLL arrays, and both Foundation Medicine and LabCorp offer NGS based tests and panels for oncology. Personalized genetic diagnostics is a new area of science, and we cannot predict what tests others will develop that may compete with or provide results superior to the results we are able to achieve with the tests we develop. Our competitors include public companies such as: NeoGenomics, Inc., Quest Diagnostics, Abbott Laboratories, Inc., Johnson & Johnson, Roche Molecular Systems, Inc., bioTheranostics, Inc. (part of the bioMérieux S.A.), Genomic Health, Inc., LabCorp, Inc., Clarient, Inc. (acquired by GE), Myriad Genetics, Inc., Qiagen N.V., Genoptics Inc. (acquired by Novartis Pharmaceuticals), Caris Life Sciences (acquired by Miraca), Rosetta Genomics Ltd., and Foundation Medicine, Inc., and many private companies. We expect that pharmaceutical and biopharmaceutical companies will increasingly focus attention and resources on the personalized diagnostic sector as the potential and prevalence increases of molecularly targeted oncology therapies approved by FDA along with companion diagnostics. For example, FDA has recently approved two such agents- Xalkori crizotinib from Pfizer Inc. along with its companion anaplastic lymphoma kinase FISH test from Abbott Laboratories, Inc. and Zelboraf vemurafenib from Genentech USA Incorporated and Daiichi-Sankyo Inc. along with its companion B-RAF kinase V600 mutation test from Roche Molecular Systems, Inc. These two recent FDA approvals are only the second and third instances ever of simultaneous approvals of a drug and companion diagnostic, the first being the 1998 approval of Genentech, Inc.'s Herceptin trastuzumab for HER2 positive breast cancer along with the HercepTest from partner Dako A/S. Our competitors may invent and commercialize technology platforms or tests that compete with ours.

Additionally, projects related to the molecular mechanisms driving cancer development have received increased government funding, both in the United States and internationally. As more information regarding cancer genomics and biomarkers becomes available to the public, we anticipate that more products aimed at identifying targeted treatment options will be developed and that these products may compete with ours. In addition, competitors may develop their own versions of our tests in countries where we did not apply for patents or where our patents have not issued and compete with us in those countries, including encouraging the use of their test by physicians or patients in other countries.

Third-Party Suppliers and Manufacturers

We maintain control, validation and quality assurance over our NGS panels, DNA microarrays and probes. Our microarrays are designed in our facility by our scientists and technicians using state of the art genomic mapping and analysis software. The specifications are sent to Agilent for final manufacturing. Agilent manufactures our microarrays under strict quality control and compliance with ISO 9001 and ISO 13485 at its Santa Clara, California facility. Agilent also has another manufacturing facility in Europe that can be made available for microarray printing. Upon manufacturing our custom, proprietary microarrays, Agilent ships them back to our Rutherford facility for testing and acceptance.

The DNA component of our DNA FISH probes is produced under strict adherence to regulatory procedures in our Rutherford facility and also at a third party facility depending on demand and workflow. The DNA is shipped for final manufacture to our partner in India. In February 2012 we entered in to an agreement with Kamineni Life Sciences to supply outsourced manufacturing for the production of our DNA FISH probes. The manufacturing operations became fully operational in India in the fourth quarter of 2012 and several batches of DNA FISH probes have been successfully manufactured. We control overall quality and process management and the final quality assurance in a manner that is CE compliant and adheres to our Quality Management System.

We also currently rely on contracted manufacturers and collaborative partners to produce materials necessary for our Tissue of Origin® test. We plan to continue to rely on these manufacturers and collaborative partners to manufacture these materials, including those materials required for use in our FDA-cleared TOO® test.

Patents and Proprietary Technology

Our business develops proprietary tests that enable oncologists and pathologists at hospitals, cancer centers, and physician offices to properly diagnose and inform cancer treatment. We rely on a combination of patents, patent applications, trademarks, trademark applications, trade secrets, industry know-how, as well as various contractual arrangements, in order to protect the proprietary aspects of our technology.

Our patent portfolio consists of 49 issued U.S. patents, several pending U.S. applications, and 175 foreign patents. We have a disease-focused portfolio of patents. Our key patents include:

- Hematological cancers. We have two U.S. patents (U.S. Patent Nos. 8,580,713 and 8,557,747), as well as patents in the EU, India and Canada directed to MatBA®, a microarray for detecting (and distinguishing) particular types of mature B cell neoplasms present in typical non-Hodgkin's lymphoma, Hodgkin's lymphoma and chronic lymphocytic leukemia. These patents and foreign application cover our trademarked MatBA® microarray and are directed to both the microarray itself as well as associated methodologies designed to detect the particular type of mature B cell neoplasm present in a patient. These patents and foreign application also cover the use of computer-assisted means to facilitate and expedite that detection process. The MatBA® microarray patents issued from the first of our family of applications in the microarray space. The term of these patents runs through 2030.

- Solid Tumors. We have 13 U.S. patents, including (U.S. Patent Nos. 7,049,059, 7,560,543, 7,732,144, 8,586,311, 8,026,062, 6,956,111, 6,905,821, 7,005,278, 6,686,155, 7,138,507, as well as numerous foreign patents, including patents in Australia, Canada, China and Japan. These patents relate to certain aspects of the gene expression technology used in our solid tumor tests. The solid tumor markers covered by these patents include thymidylate synthase (TS), dihydropyrimidine dehydrogenase (DPD), excision repair gene CC1 (ERCC1), glutathione-s transferase pi (GST-p), epidermal growth factor receptor (EGFR) and HER2/neu gene, though our patents are not directed to all aspects of expression of such markers. The term of these patents runs through 2023.

- We have four U.S. patents (U.S. Patent Nos. 8,977,506, 8,321,137, 7,747,547 and 8,473,217) covering our Tissue of Origin® Test. These patents are directed at systems and methods for detecting biological features in solid tumors. The term of these patents run through 2030.

- Urogenital cancers. We have two U.S. patents (U.S. Patent Nos. 8,603,948 and 8,716,193) and one EU patent. These patents directed to a novel, highly sensitive and specific probe panel which detects the type of renal cortical neoplasm present in a biopsy sample. These patents cover a probe that permits diagnosis of the predominant subtypes of renal cortical neoplasms without the use of invasive methods and provides a molecular cytogenetic method for detecting and analyzing the type of renal cortical neoplasm present in a renal biopsy sample. The term of these patents runs through 2027. We also have two patent applications for methods and tools for the diagnosis of female gynecological cancers and precancers (US Patent Application No. 61/581,350) and methods and tools for the diagnosis and prognosis of urogenital cancers (US Patent Application No. 61/765,678).

- HPV-Associated Cancers. We have three U.S. patents (U.S. Patent Nos. 9,157,129, 8,865,882 and 8,883,414) and an EU patent. These patents cover methods for detecting HPV-associated cancers used in our FHACT® test. The term of these patents run through 2031.

- FISH Probes. We have two patents covering our FISH probes. These patents cover probes and methodologies designed to detect and analyze particular chromosomal translocations (genetic lesions) associated with a wide range of cancers using a technique known as FISH and serve as the backbone for several of our other pending patent applications, which are more specifically geared towards other probes (and methodologies). The term of these patents run through 2022.

In addition to patents, we hold twenty U.S. registered trademarks, including a federal registration for "CGI" as well as four U.S. trademark applications and one foreign trademark registration for certain of our proprietary tests and services. Our strategic use of distinctive trademarks has garnered increased name recognition and brand awareness for our tests and services within the industry.

Through our clinical laboratories, we provide several clinical services that utilize our proprietary trade secrets. In particular, we maintain trade secrets with respect to specimen accessioning, sample preparation, and certain aspects of cytogenetic analysis. All of our trade secrets are kept under strict confidence, and we take all reasonable steps, including the use of non-disclosure agreements and confidentiality agreements, to ensure that our confidential information is not unlawfully disseminated. We also conduct training sessions on the importance of maintaining and protecting trade secrets with our scientific staff and laboratory directors and supervisors.

In addition to our proprietary intellectual property, we exclusively license from University of Southern California, or USC, the use of extraction methodologies and related technologies used in our solid tumor tests, which have been patented in the United States and a number of other jurisdictions, including Australia, Austria, Belgium, Canada, China, Denmark, France, Germany,

Hong Kong, Ireland, Israel, Italy, Luxembourg, Mexico, The Netherlands, Norway, Russia, South Korea, Spain, Sweden, Switzerland and the United Kingdom. Currently, this exclusive license includes seven United States patents claiming methods related to this technology. Our USC licensed patents are scheduled to expire between December 2019 and December 2020.

We also entered into nonexclusive licenses with the National Cancer Institute for the use of its intellectual property relating to a 3q marker and with Stanford University for use and development of a diagnostic assay and predictive model that has been granted two patents for the stratification and risk prediction for DLBCL patients. Under the terms of the license, we are permitted to use the National Cancer Institute's proprietary intellectual property for use in our patent pending FHACT® DNA probe, which is directed to the diagnosis and prognosis of certain HPV-associated cancers.

Operations and Production Facilities

We work with electronic medical records providers to facilitate seamless communication between our clinical laboratories and the oncologist or pathologist at the test ordering site. Currently, we have the ability to integrate with electronic medical record systems, as we have already done with MDL, an electronic medical record provider. We do this integration through utilizing HL7 interfaces, which are standard in health care information technology systems. We currently employ HL7 for its integration with a revenue cycle management company, XiFin, as well as with its electronic medical records partners such as MDL. The use of the HL7 interface allows systems written in different languages and running on different platforms to be able to talk to each other through the use of an abstracted data layer. This means that we do not have to spend significant extra time designing and developing common communications protocols when integrating with other electronic health records systems or billing systems providers.

When a customer obtains a specimen from a patient for oncology testing, he or she will complete a requisition form (either by hand or electronically, or via electronic medical records technology), and package the specimen for shipment to us. Once we receive the specimen at our laboratory and we enter all pertinent information about the specimen into our clinical laboratory information system, one of our laboratory professionals prepares the specimen for diagnosis. The prepared specimen is sent to one of our pathologists or medical directors who is experienced in making the diagnosis requested by the referring oncologist or pathologist.

After diagnosis, our pathologist uses our laboratory information systems to prepare a comprehensive report, which includes any relevant images associated with the specimen. Our clinical reporting portal, cgireports.com, allows a referring oncologist or pathologist to access his/her test results in real time in a secure HIPAA compliant manner. The reports are generated in industry standard PDF formats which allows for high definition color images to be reproduced clearly. This portal has been fully operational at our facilities since 2011.

In most cases we provide both the technical analysis and professional diagnosis, although we also fulfill requests from oncologists and pathologists for only one service or the other. If an oncologist or pathologist at the hospital, cancer center, reference laboratory or physician office requires only the analysis, we prepare the data and then return it to the referring oncologist or pathologist for assessment and diagnosis.

Quality Assurance

We are committed to providing reliable and accurate diagnostic services to our customers. Accurate specimen identification, timely communication of diagnoses, and prompt correction of errors, is critical. We monitor and improve our performance through a variety of methods, including performance improvement indicators, proficiency testing (CAP and New York State), external audits and satisfaction surveys. All quality concerns and incidents are subject to root cause analysis and our procedures are put through annual evaluation to ensure that we are providing the best services possible to our patients and customers. Protection of patient results from misuse and improper access is imperative and thus electronic and paper results are guarded via password- protection and identification cards.

We have established a comprehensive Quality Assurance and Management Program for our laboratories designed to drive accurate and timely test results and to ensure the consistent high quality of our testing services. The Quality Assurance and Management Program documents the quality assurance/performance improvement plans and policies and the laboratory quality assurance and quality control procedures that are necessary to ensure that we offer the highest quality of diagnostic testing services. This program is designed to satisfy all the requirements necessary for local and state licensures applicable to our business, including requirements from the New Jersey Health Department, the California Department of Health and the New York Department of Health Clinical Laboratory Evaluation Program, and accreditation for clinical diagnostic laboratories by CAP. We follow the policies and procedures for patient and employee safety, hazardous waste disposal and fire codes stated in the general laboratory procedure manual. We believe that all pertinent regulations of CLIA, Occupational Safety and Health Administration ("OSHA"), Environmental Protection Agency and FDA are satisfied by following the established guidelines

and procedures of our Quality Assurance and Management Program.

In addition to the compulsory proficiency programs and external inspections required by CMS and other regulatory agencies, we have developed a variety of internal systems and procedures to emphasize, monitor and continuously improve the quality of our operations. We maintain internal quality controls by routinely processing specimens with known diagnoses in parallel with patient specimens. We also have an extensive, internally administered program of specimen proficiency testing, in which our laboratory staff are blinded to the results.

We participate in numerous externally administered quality surveillance programs and our laboratories are accredited by CAP. The CAP accreditation program involves both unannounced on-site inspections of our laboratories and our participation in CAP's ongoing proficiency testing program. CAP is an independent, non- governmental organization of board-certified pathologists that accredits laboratories nationwide on a voluntary basis and that has been recognized by CMS as an accreditation organization to inspect laboratories to determine adherence to the CLIA standards. Successful participation in CAP's proficiency testing program satisfies the CLIA requirement for participation in proficiency testing programs administered by an external source.

Each of our facilities maintains its own quality assurance processes, which are coordinated across sites to maintain consistency in standard operating procedures, employee training and safety manuals.

Third-Party Payor Reimbursement

Depending on the billing arrangement and applicable law, we are reimbursed for clinical services by: third-party payors that provide coverage to the patient, such as an insurance company, managed care organization or a governmental payor program; physicians or other authorized parties (such as hospitals or independent laboratories) that order testing service or otherwise refer the services to us; or the patient. For the year ended December 31, 2015, we derived approximately 12% of our total revenue from private insurance, including managed care organizations and other health care insurance providers, 10% from Medicare, and 9% from other health care facilities, including hospitals.

Where there is a coverage policy, contract or agreement in place, we bill the third-party payor, the hospital or referring laboratory as well as the patient (for deductibles and coinsurance or copayments, where applicable) in accordance with the policy or contractual terms. Where there is no coverage policy, contract or agreement in place, we pursue reimbursement on behalf of each patient on a case-by-case basis and rely on applicable billing standards to guide our claims. In addition, we have implemented a new patient financial assistance program (CGI MAP Program) that complies with Federal guidelines.

We are reimbursed for three categories of tests: (1) genetic and molecular testing; (2) anatomic pathology and IHC and (3) general immunology and flow cytometry. Reimbursement under the Medicare program for the diagnostic services that we offer is based on either the Medicare Physician Fee Schedule or Medicare Clinical Laboratory Fee Schedule (CLFS), each of which in turn is subject to geographic adjustments and is updated annually. Medical services provided to Medicare beneficiaries that require a degree of physician supervision or other involvement, such as pathology tests, are generally reimbursed under the Medicare Physician Fee Schedule, whereas clinical diagnostic laboratory tests are generally reimbursed under the Clinical Laboratory Fee Schedule. Most of the services that we provide are for genetic and molecular testing, which are reimbursed as clinical diagnostic laboratory tests.

Medicare fee schedule amounts for clinical diagnostic laboratory tests are established for each billing code, or CPT code. In addition, for its laboratory fee schedule, Medicare also sets a cap on the amount that it will pay for any individual test. This cap, usually referred to as the National Limitation Amount, is set at a percentage of the median of all the contractor fee schedule amounts for each billing code. In the past, Congress has lowered the percentage of the median used to calculate the National Limitation Amount in order to achieve budget savings. Currently, the National Limitation Amount ceiling is set at 74% of the median for established tests and 100% of the median for certain new tests that were not previously reimbursed. In billing Medicare for clinical laboratory services, we are required to accept, as payment in full, the lowest of our actual charge, the fee schedule amount for the state or local geographical area or the National Limitation Amount. There is currently no copayment or deductible required for tests paid under the CLFS, although Congress periodically has considered implementing such a requirement.

In addition, Congress routinely lowers or eliminates the update factor that would otherwise apply to the applicable clinical laboratory fee schedule (CLFS) payment. For example, under the health care reform legislation, passed in 2010, payments under the CLFS are reduced by 1.75% through 2015 and, in addition, a productivity adjustment, further reducing payment rates is also imposed. In addition, in February 2012, Congress passed the Middle Class Tax Relief and Job Creation Act of 2012, which required that the CLFS be "rebased" by -2%. As a result of these changes, for 2015 the CLFS was reduced by -.25%.

Further, in 2014, Congress passed the Protecting Access to Medicare Act or PAMA which also makes significant changes in the way the Medicare will pay for laboratory services. Under PAMA, laboratories were required to report the amount that they are paid by third party payors for each test beginning in January 2016. CMS will use this data to calculate a weighted median for each test. That new price is supposed to become effective on January 1, 2017, although any resulting reductions will be phased in over time. This data reporting process will be repeated every three years for most tests, although Advanced Diagnostic Laboratory Tests (ADLTs) will have to be reported every year. It is possible that some of our tests could be considered ADLTs, which will require us to report prices annually. In addition, we may also be required to obtain a code from CMS or an entity that it designates for our tests that have not previously had a code. Although CMS was also required to issue a Final Rule implementing PAMA by June 30, 2015, it failed to do so. It did issue a Proposed Rule, however, on October 1, 2015. As a result of this delay, many of the statutory deadlines will likely not be met. It is not known at this time how the implementation of PAMA will affect our reimbursement.

Certain of our tests are paid under the Physician Fee Schedule, rather than the CLFS. Tests paid for under the PFS are based on "relative value units" established for each service. These RVUs are then multiplied by a conversion factor to arrive at a monetary amount. Each year, CMS calculates an update to this conversion factor based on a formula included in the Medicare law, referred to as the Sustainable Growth Rate (SGR) Formula. When it is applied, this SGR formula often would require a decrease in reimbursement unless Congress acts to overturn this result. As a result, Congress consistently passes legislation to prevent implementation of significant cuts that would otherwise be effective. For 2014, CMS had projected the reimbursement cut resulting from the SGR formula would be approximately 20 percent, unless Congress acted to prevent the reduction. On December 18, 2013, Congress passed legislation that enacted a 0.5 percent increase in the conversion factor, which was effective until March 31, 2014. On April 1, 2014, President Obama signed the Protecting Access to Medicare Act of 2014, or PAMA. PAMA extended the 0.5 percent increase through March 31, 2015 and made other changes to laboratory reimbursement discussed below.

On April 16, 2015, President Obama signed the Medicare and CHIP Reauthorization Act (MACRA), which had previously been passed by both houses of Congress. MACRA repealed the provisions related to the Medicare SGR formula and implements a new physician payment system that is designed to reward the quality of care. In addition, it extends the current Medicare Physician Fee Schedule rates through June 2015, and then increases them by 0.5 percent for the remainder of 2015. Beginning on January 1, 2016, the rates will be increased annually by 0.5 percent, through 2019. For 2020 through 2025 payments will be frozen, although payment will be adjusted to account for performance on certain quality metrics under the Merit-Based Incentive Payment Systems (MIPS) or to reflect physician participation in alternative payment models (APMs). For 2026 and subsequent years, qualified APM participants receive an annual 0.75% update on Medicare physician payment rates, while those not participating receive a 0.25% annual payment update, plus any applicable MIPS-based payment adjustments. At this time, it is too early to determine how these changes may impact our business beyond 2015.

Medicare also has policies that may limit when we can bill directly for our services and when we must instead bill another provider, such as a hospital. When the testing that we perform is done on a specimen that was collected while the patient was in the hospital, as either an inpatient or outpatient, we may be required to bill the hospital for some of our services, rather than the Medicare program, depending on whether or not the service was ordered more than 14 days after the patient's discharge from the hospital. These requirements are complex and time- consuming and, depending on what they require, may affect our ability to collect for our services.

Our reimbursement rates from private third-party payors can vary based on whether we are considered to be an "in-network" provider, a participating provider, a covered provider or an "out-of-network" provider. These definitions can vary from insurance company to insurance company, but we are generally considered an "out of network" or non- participating provider in the vast majority of our cases. It is not unusual for a company that offers highly specialized or unique testing to be an "out of network" provider. An "in-network" provider usually has a contracted arrangement with the insurance company or benefits provider. This contract governs, among other things, service-level agreements and reimbursement rates. In certain instances an insurance company may negotiate an "in-network" rate for our testing rather than pay the typical "out-of-network" rate. An "in-network" provider usually has rates that are lower per test than those that are "out-of-network", and that rate is based on the laboratory fee schedule. The discount rate varies based on the insurance company, the testing type and the often times the specifics of the patient's insurance plan.

We have contracts with commercial insurance carriers that provide access to certain out our tests to approximately 35 million lives. When a test is covered as part of these contracts it is paid at the rate stated in the contract. The Company also has agreements with preferred provider agreements that cover approximately 130 million lives. When a claim is processed through one of these organizations reimbursement is based on usual and customary fees in the specific geography with a discount applied.

In addition, as part of the Middle Class Tax Relief and Job Creation Act of 2012 ("MCTRJCA"), signed into law by the President on February 22, 2012, Congress eliminated the special billing rule that had allowed laboratories to bill Medicare for the technical component of certain pathology services furnished to patients of qualifying hospitals. Effective July 1, 2012, independent laboratories, like our laboratories, are required to bill the hospital, rather than the Medicare Program, for the technical component of these services in most instances.

Billing Codes for Third-Party Payor Reimbursement

CPT codes are the main data code set used by physicians, hospitals, laboratories and other health care professionals to report separately-payable clinical laboratory tests for reimbursement purposes. The CPT coding system is maintained and updated on an annual basis by the American Medical Association. Although there is no specific code to report microarrays for oncology, such as our MatBA®-CLL, there are existing codes that describe all of the steps in our MatBA®-CLL testing process. We currently use a combination of different codes to describe the various steps in our testing process. Many of the CPT codes used to bill for molecular pathology tests such as ours have been significantly revised by the CPT Code Editorial Panel. These new codes replace the more general "stacking" codes that were previously used to bill for these services with more test-specific codes, which became effective January 2013. In the Final Physician Fee Schedule Rule, which was issued in November 2012, CMS stated that it had determined it would pay for the new codes as clinical laboratory tests, which are payable on the Clinical Laboratory Fee Schedule (CLFS). CMS also stated that it planned to "gapfill" the new codes; that is, it will ask the contractors to determine a reasonable price for the new codes. This process was completed in 2013, and these tests are now paid for under the new "gapfilled" rates.

Among the new codes that were created by CPT were a specific subset of codes called Multi-analyte Assays with Algorithmic Analysis (MAAAs). These tests typically use an algorithm applied to certain specific components to arrive at a score that is used to predict a particular clinical outcome. CMS recently stated that it will not issue a categorical determination for all MAAA tests, but will consider each individual test that is classified by the CPT as a MAAA on its own merits. On September 25, 2015, CMS released its Preliminary Determinations for new CPT codes effective in 2016, including several new MAAA CPT codes. CMS had proposed "crosswalking" these codes to an unrelated test, resulting in a significant cut in their reimbursement. However, on November 17, 2015, CMS reversed its policy and directed that the tests be gapfilled by the local contractors. It is expected that when PAMA is fully implemented, many of these MAAA codes will be considered and reimbursed as ADLTs. For 2015, less than 5% of our revenue is derived from tests that may be considered MAAAs.

As of January 1, 2014 we are utilizing the "Not Otherwise Classified" (NOC) codes when billing for some of our MAAA tests. The reimbursement policies for the NOC codes vary from payor to payor with regard to specific tests and many of the payors have followed suit. This extends our revenue cycle for these particular tests, where the normal timeframe for reimbursement of a claim is approximately 45-90 days. These tests can take upwards of a year to be reimbursed. There can be no guarantees that Medicare and other payors will establish positive or adequate coverage policies or reimbursement rates in the future. We are moving forward with plans to obtain billing codes for our tests. A specific code for our tests, however, does not assure an adequate coverage policy or reimbursement rate. Please see the section entitled "Legislative and Regulatory Changes Impacting Clinical Laboratory Tests" for further discussion of certain legislative and regulatory changes to these billing codes and the impact on our business.

On October 30, 2015, CMS issued its Final Physician Fee Schedule Rule for 2016, which set out policies that were effective January 2016. Among those policy changes are reductions in the payments for flow cytometry and immunohistochemistry, two types of tests that we frequently perform. CMS has also stated that certain of these same tests may be considered "misvalued" which means they could be subject to additional scrutiny in the future. At this time, we are still assessing the potential impact of these changes.

Coverage and Reimbursement for Our Proprietary Tests

We have been able to receive reimbursement for our tests from some payors based on their established policies, including major commercial third-party payors.

The current landscape with payors is generally as follows:

Commercial Third-party Payors and Patient Pay. Where there is a coverage policy in place, we bill the payor and the patient in accordance with the established policy. Where there is no coverage policy in place, we pursue reimbursement on behalf of each patient on a case-by-case basis. Our efforts in obtaining reimbursement based on individual claims, including pursuing appeals or reconsiderations of claims denials, take a substantial amount of time, and bills may not be paid for many months, if at all. Furthermore, if a third-party payor denies coverage after final appeal, payment may not be received at all. We are working to decrease risks of nonpayment by implementing a revenue cycle management system. Third party payors are still establishing payment policies for panel-based tests.

Medicare and Medicaid. We believe that as much as 30% to 40% of our future market for our tests may be derived from patients covered by Medicare and Medicaid.

We cannot predict whether, or under what circumstances, payors will reimburse our proprietary tests. Payment amounts can also vary across individual policies. Denial of coverage by payors, or reimbursement at inadequate levels, would have a material adverse impact on market acceptance of our tests.

Legislative and Regulatory Changes Impacting Clinical Laboratory Tests

From time to time, Congress has revised the Medicare statute and the formulas it establishes for both the Medicare Clinical Laboratory Fee Schedule and the Physician Fee Schedule. The payment amounts under the Medicare fee schedules are important not only for our reimbursement under Medicare, but also because the schedule often is used as a basis for establishing the payment amounts set by other third party payors. For example, state Medicaid programs are prohibited from paying more than the Medicare fee schedule limit for clinical laboratory services furnished to Medicaid recipients.

Under the statutory formula for clinical laboratory fee schedule amounts, increases are made annually based on the Consumer Price Index for All Urban Consumers as of June 30 for the previous twelve-month period. From 2004 through 2008, Congress eliminated the Consumer Price Index for All Urban Consumers update in the Medicare Prescription Drug, Improvement and Modernization Act of 2003. In addition, for years 2009 through 2013, the Medicare Improvements for Patients and Providers Act of 2008 ("MIPPA") mandated a 0.5% cut to the Consumer Price Index for All Urban Consumers. Accordingly, the update for 2009 was reduced to 4.5% and negative 1.9% for 2010. In March 2010, the President signed into law the Affordable Care Act (ACA), which, among other things, imposed additional cuts to the Medicare reimbursement for clinical laboratories. The ACA replaced the 0.5% cut enacted by MIPPA with a "productivity adjustment" that reduced the Consumer Price Index update in payments for clinical laboratory tests. In 2011, the productivity adjustment was -1.2%. In addition, the ACA includes a separate 1.75% reduction in the CPI update for clinical laboratories for the years 2011 through 2015. On February 22, 2012, President Obama signed the MCTRJCA, which mandated an additional change in reimbursement for clinical laboratory services payments. This legislation requires CMS to reduce the Medicare clinical laboratory fee schedule by 2% in 2013, which in turn will serve as a base for 2014 and subsequent years. Based on the changes required by ACA and MCTRJCA, payment for clinical laboratory services will be reduced by approximately 0.25% for 2015.

With respect to our diagnostic services for which we are reimbursed under the Medicare Physician Fee Schedule, because of the statutory formula, the "Sustainable Growth Rate" (SGR), the rates would have decreased for the past several years if Congress failed to intervene. In the past, when the application of the statutory formula resulted in lower payment, Congress has passed interim legislation to prevent the reductions. On November 1, 2012, the Centers for Medicare & Medicaid Services (CMS) issued its 2013 Physician Fee Schedule Final Rule (the "Final Rule"). In the Final Rule, CMS called for a reduction of approximately 26.5% in the 2013 conversion factor that is used to calculate physician reimbursement. However, the American Taxpayer Relief Act of 2012, which was signed into law on January 2, 2013, prevented this proposed reduction and kept the existing reimbursement rate in effect until December 31, 2013.

For 2014, CMS projected the cut would be about 24%, unless Congress acted. However, on December 18, 2013, Congress passed legislation that enacted a 0.5% update in the conversion factor, which will be effective until March 31, 2014. On April 1, 2014, President Obama signed the Protecting Access to Medicare Act of 2014, or PAMA. PAMA extended the 0.5 percent increase through March 31, 2015 and made other changes to laboratory reimbursement discussed below. As discussed above, on April 16, 2015, President Obama signed MACRA, which will replace the SGR process with an alternative payment system.

In addition to the reductions described above, our Medicare payments under both the CLFS and the PFS are also subject to an additional 2% reduction, as a result of "sequestration." This automatic cut results because the Joint Select Committee on Deficit Reduction, which was created by congress in 2011, was unable to agree on a set of deficit reduction recommendations for Congress to vote on. The reduction is scheduled to continue until 2024.

For the years ended December 31, 2015 and December 31, 2014, approximately 10% and 11%, respectively, of our total revenues are derived from Medicare generally and any changes to the physician fee schedule that result in a decrease in payment could adversely impact our revenues and results of operations.

In addition, periodically CMS also changes its payment policies related to laboratory reimbursement in ways that could have an impact on the revenues of the Company. For example, in 2013 Final Rule, CMS included a reduction of certain relative value units and geographic adjustment factors used to determine reimbursement for a number of commonly used pathology codes, including CPTs 88300, 88302, 88304, and 88305. In particular, the 2013 Final Rule implemented a cut of approximately 33% in the global

billing code for 88305 and a 52% cut in the Technical Component of that code. These codes describe services that we must perform in connection with our tests and we bill for these codes in connection with the services that we provide. In the 2013 Final Rule, CMS also announced how it intended to set prices for the new molecular diagnostic tests, for which the American Medical Association had adopted over 100 new codes. In that Rule, CMS announced it intended to continue to pay for the new molecular codes on the CLFS rather than move them to the Physician Fee Schedule, as some stakeholders had urged. It would then request that the Medicare Administrative Contractors "gapfill" the new codes and set an appropriate price for them. That "gapfilling" process took place over 2013 and CMS announced the new prices for these codes in September, 2013. The median of the prices set by the contractors became the new prices for these codes, effective January 1, 2014. We do not yet know what impact, if any, these changes will have on the Company's operations.

In the Proposed Physician Fee Schedule Rule for 2014, issued on July 8, 2013, CMS made two proposals that could affect laboratory reimbursement. First, CMS made a proposal to change how it calculates the RVUs used to calculate payments under the PFS. Under this proposal, where a service was paid at a lower rate in the hospital based on the hospital Outpatient Prospective Payment System (OPPS) than it is under the PFS, CMS proposed to reduce the RVUs for that service in order to equalize the payment between the two systems. This change, if implemented, would have resulted in approximately a 25% cut in aggregate payments to independent laboratories. In the Final Physician Rule for 2014, however, CMS chose not to implement this proposal, although it stated that it would develop a revised proposal in the future. At this point, it is impossible to know what the impact of such a proposal might be on the Company.

In addition, in the 2014 Proposed Rule, CMS also noted that payments for many codes paid under the Clinical Laboratory Fee Schedule have not been revised to reflect technological advances that have occurred since the CLFS was first developed in 1984. CMS therefore proposed that it would begin to review all codes on the CLFS and adjust them to reflect technological changes, a process that it expected would take about five years. However, in April of 2014, Congress passed the Protecting Access to Medicare Act (PAMA), which eliminated CMS's authority to implement its plan to adjust payments based on technological advances. CMS has since stated it will not implement this proposal.

In PAMA, Congress also changed the way the Medicare will pay for clinical laboratory services. Under PAMA, laboratories will be required to report the amount that they are paid by third party payors for each test beginning in January 2016. CMS will use this data to calculate a weighted median for each test. That new price will become effective on January 1, 2017, although any resulting reductions will be phased in over time. This data reporting process will be repeated every three years for most tests, although Advanced Diagnostic Laboratory Tests ("ADLTs") will have to report every year. It is possible that some of our tests could be considered ADLTs, which will require us to report prices annually. In addition, we may also be required to obtain a code from CMS or an entity that it designates for our tests that have not previously had a code. It is not known at this time how these changes will affect our reimbursement. As noted above, because of CMS's delay in issuing a Final Rule implementing these requirements, it is unlikely that all of the statutory deadlines will be met.

In addition, CMS made several other changes in the 2014 Final Rule that could impact our business. First, CMS implemented a policy that will bundle payment for the examination of 10 or more prostate biopsies for an individual patient, rather than paying separately for each individual procedure as had been done previously. This will result in a significant reduction in reimbursement on each of these procedures. In addition, CMS also has developed new codes applicable to billing for Immunohistochemistry procedures, which are a common staining procedure used in pathology. Those codes will reduce the reimbursement that we will receive when we provide these services. Finally, CMS has also implemented a set of edits under its National Correct Coding Initiative, which will only pay for a single unit of service when we perform a FISH (Fluorescent In Situ Hybridization) test. As many FISH tests require two or more probes, this change will also reduce the reimbursement received by the Company.

Further, with respect to the Medicare Program, Congress has proposed on several occasions to impose a 20% coinsurance on patients for clinical laboratory tests reimbursed under the clinical laboratory fee schedule, which would require us to bill patients for these amounts. Because of the relatively low reimbursement for many clinical laboratory tests, in the event that Congress were to ever enact such legislation, the cost of billing and collecting for these services would often exceed the amount actually received from the patient and effectively increase our costs of billing and collecting.

Finally, some of our Medicare claims may be subject to policies issued by Palmetto GBA, the current Medicare Administrative Contractor for North Carolina, South Carolina, Virginia and West Virginia. The Medicare contractor has recently issued a Local Coverage Decision that affects coverage, coding and billing of many molecular diagnostic tests. Under this Local Coverage Determination, Palmetto will not cover any molecular diagnostic tests, including our tests, unless the test is expressly included in a National Coverage Determination issued by CMS or a Local Coverage Determination or coverage article issued by Palmetto. Currently, laboratory providers may submit coverage determination requests to Palmetto for consideration and apply for a unique billing code for each test (which is a separate process from the coverage determination). In the event that a non-coverage determination is issued, the laboratory must wait six months following the determination to submit a new request. In addition,

effective May 1, 2012, Palmetto implemented its new Molecular Diagnostic Services Program, under which, among other things, laboratories must use newly-assigned billing codes specific to the test. These new billing codes enable Palmetto to measure utilization and apply coverage determinations. Denial of coverage by Palmetto, or reimbursement at inadequate levels, would have a material adverse impact on market acceptance of our tests. Other Medicare contractors are also following the policies adopted by Palmetto.

Governmental Regulations

Clinical Laboratory Improvement Amendments of 1988 and State Regulation

As a diagnostic service provider, we are required to hold certain federal, state and local licenses, certifications and permits to conduct our business. As to federal certifications, in 1988, Congress passed the Clinical Laboratory Improvement Amendments ("CLIA") establishing quality standards for all laboratories testing to ensure the accuracy, reliability and timeliness of patient test results regardless of where the test was performed. Our U.S.-based laboratories are CLIA accredited. Under CLIA, a laboratory is defined as any facility which performs laboratory testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease, or the impairment of, or assessment of health. CLIA also requires that we hold a certificate applicable to the type of work we perform and comply with certain standards. CLIA further regulates virtually all clinical laboratories by requiring they be accredited by the federal government and comply with various operational, personnel, facilities administration, quality and proficiency requirements intended to ensure that their clinical laboratory testing services are accurate, reliable and timely. CLIA compliance and accreditation is also a prerequisite to be eligible to bill for services provided to governmental payor program beneficiaries. CLIA is user-fee funded. Therefore, all costs of administering the program must be covered by the regulated facilities, including certification and survey costs.

We are subject to survey and inspection every two years to assess compliance with program standards, and may be subject to additional unannounced inspections. Laboratories performing high complexity testing are required to meet more stringent requirements than laboratories performing less complex tests. In addition, a laboratory like ours that is certified as "high complexity" under CLIA may obtain analyte specific reagents, which are used as the basis for diagnostic tests that are developed and validated for use in examinations the laboratory performs itself known as laboratory-developed tests ("LDTs").

In addition to CLIA requirements, we participate in the oversight program of the College of American Pathologists ("CAP"). Under CMS requirements, accreditation by CAP is sufficient to satisfy the requirements of CLIA. Therefore, because we are accredited by CAP, we are deemed to also comply with CLIA. CLIA also provides that a state may adopt laboratory regulations that are more stringent than those under federal law, and a number of states have implemented their own more stringent laboratory regulatory schemes. State laws may require that laboratory personnel meet certain qualifications, specify certain quality controls, or prescribe record maintenance requirements.

As to state laws, our clinical operations at our Rutherford and Los Angeles laboratories are required to meet certain state laboratory licensing and other requirements, which in some areas are more stringent than CLIA. Our laboratories are required hold the required licenses and accreditations obtained from the applicable state agencies in which we operate. State clinical laboratory laws generally require that laboratories and/or laboratory personnel meet certain qualifications. State clinical laboratory laws also generally require laboratories to specify certain quality assurance metrics and to maintain certain records. Several states, including Rhode Island, Florida, Maryland, New York and Pennsylvania, require that clinical laboratories hold licenses to test specimens from patients residing in those states, even though the laboratory is not located in such state. From time to time, other states may require out of state laboratories to obtain licensure in order to accept specimens from the state. If we identify any other state with such requirements or if we are contacted by any other state advising us of such requirements, we intend to follow instructions from the state regulators as to how we should comply with such requirements. In addition, the New York Department of Health separately approves certain LDTs offered in New York State. The Company has obtained the requisite approvals for its LDTs.

Our Rutherford laboratory is licensed and in good standing under the State Departments of Health standards for New Jersey, New York, Pennsylvania, California, Florida and Maryland . Our Los Angeles laboratory is licensed and in good standing in California, New York, Pennsylvania, Rhode Island, Florida and Maryland. If we are found to be out of compliance with applicable state statutory or regulatory standards we may be subject to suspension, restriction or revocation of our laboratory license or assessed civil money penalties. A noncompliant laboratory may also be found guilty of a misdemeanor under applicable state laws. A finding of noncompliance, therefore, may result in harm to our business.

FDA

The U.S. Food and Drug Administration ("FDA") regulates the sale or distribution, in interstate commerce, of medical devices under the Federal Food, Drug, and Cosmetic Act ("FDCA"), including in vitro diagnostic test kits, reagents and instruments used

to perform diagnostic testing. Such devices must undergo pre-market review by FDA prior to commercialization unless the device is of a type exempted from such review by statute or pursuant to FDA's exercise of enforcement discretion. FDA, to date, has not exercised its authority to actively regulate the development and use of LDTs such as ours as medical devices and therefore we do not believe that our LDTs currently require pre-market clearance or approval.

Section 1143 of the Food and Drug Administration Safety and Innovation Act, signed by the President on July 9, 2012, requires FDA to notify Congress at least 60 days prior to issuing a draft or final guidance regulating LDTS and provide details of the anticipated action. On July 31, 2014, FDA notified Congress pursuant to the FDASIA that it intended to issue draft Guidances that would regulate LDTs. On October 3, 2014, the FDA issued two separate draft guidances: "Framework for Regulatory Oversight of Laboratory Developed Tests (LDTs)" ("The Framework Draft Guidance") and "FDA Notification and Medical Device Reporting for Laboratory Developed Tests" (the "Notification Draft Guidance."). In the Framework Draft Guidance, FDA states that after the Guidances are finalized, it will no longer exercise enforcement discretion with respect to most LDTs and will, instead, regulate them in a risk-based manner consistent with the existing classification of medical devices. Thus, the FDA plans to begin to enforce its medical device requirements, including premarket submission requirements, on LDTs that have historically been marketed without FDA premarket review and oversight. Comments on the Draft Guidances were due on February 2 and those comments are now being considered by the FDA. It is not known when the FDA may issue final Guidances or what form those Guidances may take.

The Framework Draft Guidance states that within six months after the Guidances are finalized, all laboratories will be required to give notice to the FDA and provide basic information concerning the nature of the LDTs offered. The FDA will then begin a phased review of the LDTs available, based on the risk associated with the test. For the highest risk LDTs, which the FDA classifies as Class III devices, the Framework Draft Guidance states that the FDA will begin to require premarket review within 12 months after the Guidance is finalized. Other high risk LDTs will be reviewed over the next four years and then lower risk tests, which will be classified as Class II, will be reviewed in the following four to nine years. The Framework Draft Guidance states that FDA expects to issue a separate Guidance describing the criteria for its risk-based classification 18-24 months after the Guidances are finalized.

If the FDA regulates LDTs as proposed, then it would classify LDTs according to the current system used to regulate medical devices. Under that system, there are three different classes of medical devices, with the requirements becoming more stringent depending on the Class. Class I devices are those for which reasonable assurance of the safety and effectiveness can be provided by adherence to FDA's general regulatory controls for medical devices, which include compliance with the applicable portions of FDA's Quality System Regulations, facility registration and product listing, reporting of adverse medical events and appropriate, truthful and non-misleading labeling, advertising and promotional materials, or general controls. Many Class I devices are exempt from pre-market regulation, however, some Class I devices require pre-market clearance by FDA through the 510(k) pre-market notification process described below.

Class II devices are subject to FDA's general controls, and any other special controls as deemed necessary by FDA to provide reasonable assurance of the safety and effectiveness of the devices. Pre-market review and clearance by FDA for Class II devices are generally accomplished through the 510(k) pre-market notification procedure. Pre- market notification submissions are subject to user fees, unless a specific exemption applies. To obtain 510(k) clearance for a medical device (or for certain modifications to devices that have received 510(k) clearance), a manufacturer must submit a pre-market notification demonstrating that the proposed device is substantially equivalent to a previously cleared 510(k) device or to a pre-amendment device that was in commercial distribution before May 28, 1976 (a "predicate device") for which FDA has not yet called for the submission of a pre-market approval ("PMA") application. In making a determination that the device is substantially equivalent to a predicate device, FDA compares the proposed device to the predicate device or predicate devices and assesses whether the subject device is comparable to the predicate device or predicate devices with respect to intended use, technology, design and other features which could affect the safety and effectiveness. If FDA determines that the subject device is substantially equivalent to the predicate device or predicate devices, the subject device may be cleared for marketing. FDA's 510(k) clearance pathway generally takes from three to twelve months from the date the application is completed, but can take significantly longer. Moreover, in January 2011, FDA announced twenty-five specific action items it intended to take to improve transparency and predictability of the 510(k) program. We anticipate that the changes may also result in additional requirements with which manufacturers will need to comply in order to obtain or maintain 510(k) clearance for their devices. These additional requirements could increase the costs or time for manufacturers' seeking marketing clearances through the 510(k) process. Moreover, the 510(k) process could result in a not-substantially equivalent determination, in which case the device would be regulated as a Class III device, discussed below, or could be eligible for *de novo* classification available for novel low and moderate risk devices. In the *de novo* process, FDA can classify a device into Class I or Class II based on a risk- based determination without the submission of a 510(k) or within 30 days after receipt of a not-substantially equivalent determination. In 2013, several assays and diagnostic tests received pre-market approval through the *de novo* process.

Class III devices are those devices which are deemed by FDA to pose the greatest risk, such as life-sustaining, life-supporting or implantable devices, have a new intended use, or use advanced technology that is not substantially equivalent to that of a legally marketed device. Reasonable assurance of the safety and effectiveness of Class III devices cannot be assured solely by the general controls and the other requirements described above. These devices are required to undergo the pre-market approval ("PMA") process in which the manufacturer must demonstrate reasonable assurance of the safety and effectiveness of the device to FDA's satisfaction. A PMA application must provide extensive preclinical and clinical trial data and also information about the device and its components regarding, among other things, device design, manufacturing and labeling. Premarket approval applications (and supplemental pre-market approval applications) are subject to significantly higher user fees than are 510(k) pre-market notifications. After approval of a PMA, a new PMA or PMA supplement is required in the event of a modification to the device, its labeling or its manufacturing process. The PMA process, including the gathering of clinical and nonclinical data and the submission to and review by FDA, can take several years.

A clinical trial may be required in support of a 510(k) submission and generally is required for a PMA application. These trials generally require an effective Investigational Device Exemption from FDA for a specified number of patients, unless the product is exempt from Investigational Device Exemption requirements or deemed a non-significant risk device eligible for more abbreviated Investigational Device Exemption requirements. The Investigational Device Exemption application must be supported by appropriate data, such as animal and laboratory testing results. Clinical trials may begin 30 days after the submission of the Investigational Device Exemption application unless FDA or the appropriate institutional review boards at the clinical trial sites place the trial on clinical hold.

Under the Guidances, LDTs would also be subject to significant post-market requirements as well. After a device is placed on the market, regardless of the classification or pre-market pathway, it remains subject to significant regulatory requirements. Even if regulatory approval or clearance of a medical device is granted, FDA may impose limitations or restrictions on the uses and indications for which the device may be labeled and promoted. Medical devices may be marketed only for the uses and indications for which they are cleared or approved.

Device manufacturers must also establish registration and device listings with FDA. A medical device manufacturer's manufacturing processes and those of its suppliers are required to comply with the applicable portions of the Quality Systems Regulations, which cover the methods and documentation of the design, testing, production, processes, controls, quality assurance, labeling, packaging and shipping of medical devices. Domestic facility records and manufacturing processes are subject to periodic unscheduled inspections by FDA. FDA also may inspect foreign facilities that export products to the United States.

Failure to comply with applicable regulatory requirements can result in enforcement action by FDA, which may include any of the following sanctions: warning letters, fines, injunctions, civil or criminal penalties, recall or seizure of current or future products, operating restrictions, partial suspension or total shutdown of production, denial of 510(k) clearance or PMA applications for new products, or challenges to existing 510(k) clearances or PMA applications.

We are monitoring developments and anticipate that our products (CGH-Microarrays and FISH Probes) will be able to comply with requirements that are ultimately imposed by the FDA. In the meantime, we maintain our CLIA accreditation, which permits the use of LDTs for diagnostics purposes.

We believe that our LDTs and, should we reach that point, our in vitro diagnostic test kits, would likely be regulated as either Class II or Class III devices should FDA decide to proceed in the way that it has outlined in the Guidances. It is also possible under those circumstances that some may fall into one Class and some into the other. Accordingly, some level of premarket review-either a 510(k), PMA or *de novo* approval-would likely be required for each test. While the data requirements are typically greater for Class III devices, the data required for Class II devices has increased, and it is likely that some amount of clinical data (retrospective or prospective or both) would be required for either type of submission. FDA continues to review the adequacy of its 510(k) process. It is difficult to predict what changes may result, but it should be assumed that any changes will increase, not decrease, the regulatory requirements.

In addition to the Draft Guidances discussed above, the FDA has taken other actions that could have an impact on our business. In 2013, FDA issued Final Guidance for industry regarding appropriate labeling and distribution practices for in vitro diagnostic products intended for research or investigational use only. FDA's guidance cautions that labeling or distribution practices that conflict with research or investigational use (e.g., use in clinical diagnostic applications) could subject products shipped with research or investigational use labeling to all applicable requirements of the FDCA as well as enforcement action. As a result of FDA's recent guidance, component suppliers for our LDTs may no longer be willing to distribute components to our clinical laboratory. If this were to occur, we could not produce our LDTs.

On August 6, 2014, the FDA also issued its Final Guidance on In Vitro Companion Diagnostic Devices. According to the Guidance, companion diagnostic devices are in vitro diagnostic devices that provide information that is essential for the safe and effective use of a corresponding therapeutic product. The Guidance notes that in most circumstances, FDA expects to approve or clear a companion diagnostic device and its corresponding therapeutic product contemporaneously, based on the label of the therapeutic product. If it were determined that our tests qualified as Diagnostic Devices then we might be required to file for either a 510(k) or a PMA, depending on the nature of the particular test.

Post-market Regulation

Our Tissue of Origin® test obtained clearance under section 510(k) of the FDC Act. After a device, such as our Tissue of Origin® test, is cleared or approved for marketing, numerous and pervasive regulatory requirements continue to apply.

The FDA has broad regulatory compliance and enforcement powers. If the FDA determines that a company has failed to comply with applicable regulatory requirements, it can take a variety of compliance or enforcement actions, which may result in any of the following sanctions:

- warning letters, untitled letters, fines, injunctions, consent decrees and civil penalties;
- recalls, withdrawals, or administrative detention or seizure of products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying requests for 510(k) marketing clearance or PMA approvals of new products or modified products;
- withdrawing 510(k) clearances or PMA approvals that have already been granted;
- refusal to grant export approvals for products; or
- criminal prosecution.

In addition, FDA could publicly issue a safety notice related to our test or request updates to our product labeling, including the addition of warnings, precautions, or contraindications.

Health Insurance Portability and Accountability Act, as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH")

Under the administrative simplification provisions of HIPAA, as amended by HITECH, the United States Department of Health and Human Services has issued regulations which establish uniform standards governing the conduct of certain electronic health care transactions and protecting the privacy and security of Protected Health Information used or disclosed by health care providers and other covered entities. For further discussion of HIPAA and the impact on our business, see the section entitled *"Risk Factors-Risks Related to Our Business-We are required to comply with laws governing the transmission, security and privacy of health information that require significant compliance costs, and any failure to comply with these laws could result in material criminal and civil penalties."*

Federal, State and Foreign Fraud and Abuse Laws

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for the purchase, lease or order of any health care item or service reimbursable under a governmental payor program. The definition of "remuneration" has been broadly interpreted to include anything of value, including gifts, discounts, credit arrangements, payments of cash, waivers of co-payments, ownership interests and providing anything at less than its fair market value. Recognizing that the Anti-Kickback Statute is broad and may technically prohibit many innocuous or beneficial arrangements within the health care industry, the Department of Health and Human Services has issued a series of regulatory "safe harbors." These safe harbor regulations set forth certain provisions, which, if met, will assure health care providers and other parties that they will not be prosecuted under the federal Anti-Kickback Statute. Although full compliance with these provisions ensures against prosecution under the federal Anti-Kickback Statute, the failure of a transaction or arrangement to fit within a specific safe harbor does not necessarily mean that the transaction or arrangement is illegal or that prosecution under the federal Anti-Kickback Statute will be pursued. For further discussion of the impact of federal and state health care fraud and abuse laws and regulations on our business, see the section entitled *"Risk Factors-*

Risks Related to Our Business-We are subject to federal and state health care fraud and abuse laws and regulations and could face substantial penalties if we are unable to fully comply with such laws."

In addition to the administrative simplification regulations discussed above, HIPAA also created two new federal crimes: health care fraud and false statements relating to health care matters. The health care fraud statute prohibits knowingly and willfully executing a scheme to defraud any health care benefit program, including private payors. A violation of this statute is a felony and may result in fines, imprisonment or exclusion from governmental payor programs such as the Medicare and Medicaid programs. The false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for health care benefits, items or services. A violation of this statute is a felony and may result in fines, imprisonment or exclusion from governmental payor programs.

Finally, another development affecting the health care industry is the increased enforcement of the federal False Claims Act and, in particular, actions brought pursuant to the False Claims Act's "whistleblower" or "qui tam" provisions. The False Claims Act imposes liability on any person or entity that, among other things, knowingly presents, or causes to be presented, a false or fraudulent claim for payment by a federal governmental payor program. The qui tam provisions of the False Claims Act allow a private individual to bring actions on behalf of the federal government alleging that the defendant has defrauded the federal government by submitting a false claim to the federal government and permit such individuals to share in any amounts paid by the entity to the government in fines or settlement. In addition, various states have enacted false claim laws analogous to the federal False Claims Act, although many of these state laws apply where a claim is submitted to any third-party payor and not merely a governmental payor program. When an entity is determined to have violated the False Claims Act, it may be required to pay up to three times the actual damages sustained by the government, plus civil penalties ranging from $5,500 to $11,000 for each false claim.

Additionally, in Europe various countries have adopted anti-bribery laws providing for severe consequences, in the form of criminal penalties and/or significant fines, for individuals and/or companies committing a bribery offence. Violations of these anti-bribery laws, or allegations of such violations, could have a negative impact on our business, results of operations and reputation. For instance, in the United Kingdom, under the new Bribery Act 2010, which went into effect in July 2011, a bribery occurs when a person offers, gives or promises to give a financial or other advantage to induce or reward another individual to improperly perform certain functions or activities, including any function of a public nature. Bribery of foreign public officials also falls within the scope of the Bribery Act 2010. Under the new regime, an individual found in violation of the Bribery Act of 2010, faces imprisonment of up to 10 years. In addition, the individual can be subject to an unlimited fine, as can commercial organizations for failure to prevent bribery.

Physician Referral Prohibitions

Under a federal law directed at "self-referral," commonly known as the "Stark Law," there are prohibitions, with certain exceptions, on Medicare and Medicaid payments for laboratory tests referred by physicians who personally, or through a family member, have an investment or ownership interest in, or a compensation arrangement with, the clinical laboratory performing the tests. A person who engages in a scheme to circumvent the Stark Law's referral prohibition may be fined up to $100,000 for each such arrangement or scheme. In addition, any person who presents or causes to be presented a claim to the Medicare or Medicaid programs in violation of the Stark Law is subject to civil monetary penalties of up to $15,000 per bill submission, an assessment of up to three times the amount claimed and possible exclusion from participation in federal governmental payor programs. Bills submitted in violation of the Stark Law may not be paid by Medicare or Medicaid, and any person collecting any amounts with respect to any such prohibited bill is obligated to refund such amounts. Many states have comparable laws that are not limited to Medicare and Medicaid referrals.

We are also subject to California's Physician Ownership and Referral Act, or PORA as well as other state laws with self-referral restrictions.

Both the Stark Law and PORA contain an exception for referrals made by physicians who hold investment interests in a publicly traded company that has stockholders' equity exceeding $75 million at the end of its most recent fiscal year or on average during the previous three fiscal years, and which satisfies certain other requirements. In addition, both the Stark Law and PORA contain an exception for compensation paid to a physician for personal services rendered by the physician. Following our acquisition of Response Genetics in the fourth quarter of 2015, we have compensation arrangements with a number of physicians for personal services, such as speaking engagements and specimen tissue preparation. These arrangements were structured with terms intended to comply with the requirements of the personal services exception to Stark Law and PORA.

However, we cannot be certain that regulators would find these arrangements to be in compliance with Stark Law, PORA or similar state laws. If we are deemed to not be in compliance by the applicable regulators, we would be required to refund any payments we receive pursuant to a referral prohibited by these laws to the patient, the payor or the Medicare program, as applicable.

Corporate Practice of Medicine

Numerous states have enacted laws prohibiting business corporations, such as us, from practicing medicine and employing or engaging physicians to practice medicine, generally referred to as the prohibition against the corporate practice of medicine. These laws are designed to prevent interference in the medical decision-making process by anyone who is not a licensed physician. Violation of these laws may result in civil or criminal fines, as well as sanctions imposed against us and/or the professional through licensure proceedings.

Other Regulatory Requirements

Our laboratory is subject to federal, state and local regulations relating to the handling and disposal of regulated medical waste, hazardous waste and biohazardous waste, including chemical, biological agents and compounds, blood and bone marrow samples and other human tissue. Typically, we use outside vendors who are contractually obligated to comply with applicable laws and regulations to dispose of such waste. These vendors are licensed or otherwise qualified to handle and dispose of such waste.

OSHA has established extensive requirements relating to workplace safety for health care employers, including requirements to develop and implement programs to protect workers from exposure to blood-borne pathogens by preventing or minimizing any exposure through needle stick or similar penetrating injuries.

Segment and Geographical Information

We operate in one reportable business segment and derive revenue from multiple countries, with 95%, 97%, and 97% coming from the United States in fiscal year 2015, 2014 and 2013, respectively.

Employees

As of December 31, 2015, we had a total of 223 full-time and 14 part-time employees, with 33 employees in sales and marketing, 156 employees in research and development and laboratory operations and 48 employees in general and administrative. None of our employees are represented by a labor union, and we consider our employee relations to be good.

Corporate and Available Information

We were incorporated in the State of Delaware on April 8, 1999. On July 16, 2014 we purchased substantially all of the assets of Gentris Corporation ("Gentris"), a laboratory specializing in pharmacogenomics profiling for therapeutic development, companion diagnostics and clinical trials. On August 18, 2014 we entered into two agreements by which we acquired BioServe Biotechnologies (India) Pvt. Ltd. (“BioServe”), a premier genomics services provider serving both the research and clinical markets in India, and as a result of the acquisition, BioServe became a subsidiary of ours. On October 9, 2015, Cancer Genetics acquired substantially all the assets and assumed certain liabilities of Response Genetics, Inc. ("Response Genetics") in connection with Response Genetics' filing of a chapter 11 petition for bankruptcy in the Delaware Bankruptcy Court for approximately $12.9 million, comprised of $7.5 million, in cash, and 788,584 shares of the Company's common stock, with the common stock being valued at $5.4 million.

Our principal executive offices are located at 201 Route 17 North, 2nd Floor, Rutherford, New Jersey 07070. Our telephone number is (201) 528-9200 and our corporate website address is *www.cancergenetics.com*. We include our website address in this annual report on Form 10-K only as an inactive textual reference and do not intend it to be an active link to our website. The information on our website is not incorporated by reference in this annual report on Form 10-K.

This annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports, as well as other documents we file with the U.S. Securities and Exchange Commission (“SEC”), are available free of charge through the Investors section of our website as soon as reasonably practicable after such material is electronically filed with or furnished to the SEC. The public can obtain documents that we file with the SEC at *www.sec.gov*.

This report includes the following trademarks, service marks and trade names owned by us: MatBA®, UroGenRA®, FHACT®, FReCaD™, Expand Dx™, Summation™, Select One®, DLBCL Complete™, Cervixcyte™, Leuka™, CGI®, CLL Complete®,

Focus::NGS™, Focus::Myeloid™, Focus::CLL™, Tissue of Origin®, TOO®, Powered by CGI™ and Empowering Personal Cancer Treatment®. These trademarks, service marks and trade names are the property of Cancer Genetics, Inc. and its affiliates.

Item 1A. Risk Factors.

Risks Relating to Our Financial Condition and Capital Requirements

We are an early stage company with a history of net losses; we expect to incur net losses in the future, and we may never achieve sustained profitability.

We have historically incurred substantial net losses. We incurred losses of $20.2 million, $16.6 million and $12.4 million for fiscal years ended December 31, 2015, 2014 and 2013, respectively. From our inception in April 1999 through December 31, 2015, we had an accumulated deficit of $98.2 million. Response Genetics incurred losses of $8.9 million, $13.7 million, and $8.0 million for the first six months of fiscal 2015, and for the fiscal years ended December 31, 2014 and 2013, respectively. From its inception in September 1999 through October 9, 2015, Response Genetics had an accumulated deficit of $93.7 million. We expect losses for the combined company to continue principally as a result of ongoing research and development expenses and increased sales and marketing costs. These losses have had, and will continue to have, an adverse effect on our working capital, total assets and stockholders' equity. Because of the numerous risks and uncertainties associated with our research, development and commercialization efforts, we are unable to predict when we will become profitable, and we may never become profitable. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our inability to achieve and then maintain profitability would negatively affect our business, financial condition, results of operations and cash flows.

We may need to raise additional capital to fund our existing operations, to develop, validate and commercialize new tests and technologies, to expand our operations and repay indebtedness.

We may need to raise additional financing to fund our operations, to develop, validate and commercialize new tests and technologies, to expand our operations and repay indebtedness. At December 31, 2015, we had cash and cash equivalents of $19.5 million. Net cash used in operating activities was $13.6 million and $12.3 million for the years ended December 31, 2015 and 2014, respectively. We also need capital to fund our capital contributions of up to $4 million to our joint venture with Mayo, which payments are subject to achievement of operational milestones, and to satisfy indebtedness to our New Credit Facility with Silicon Valley Bank. Our New Credit Facility with Silicon Valley Bank consists of the Term Note and Line of Credit. As of December 31, 2015, the aggregate principal amount due under our New Credit Facility was approximately $6.0 million. The Term Note requires interest only payments through April 30, 2016 and beginning May 1, 2016, monthly principal payments of approximately $167,000 will be required plus interest through maturity on April 1, 2019. Pursuant to the amendment dated January 28, 2016, we are restricted from using the Line of Credit until $13 million of additional equity is raised.

We believe that our current cash will support operations for the next 15 to 24 months. We can provide no assurances that any additional sources of financing will be available to us on favorable terms, if at all, when needed. Our forecast of the period of time through which our current financial resources will be adequate to support our operations and the costs to support our general and administrative, sales and marketing and research and development activities are forward-looking statements and involve risks and uncertainties.

Additional financing, which is not in place at this time, may be from the sale of equity or convertible or other debt securities in a public or private offering, from an additional or new credit facility or from strategic partnership coupled with an investment in us or a combination of forms. We may be unable to raise sufficient additional financing on terms that are acceptable to us, if at all. Our failure to raise additional capital and in sufficient amounts when needed may significantly impact our ability to expand our business. For further discussion of our liquidity requirements, see the section titled “Liquidity and Capital Resources-Capital Resources and Expenditure Requirements.”

We also may need to raise capital to expand our business to meet our long-term business objectives, including to:

- increase our sales and marketing efforts to drive market adoption and address competitive developments;
- fund development, validation and marketing efforts of current and future tests;
- comply with current and evolving regulatory requirements;
- further expand our clinical laboratory operations;
- expand our technologies into other types of cancer;

- acquire, license or invest in technologies;
- acquire or invest in complementary businesses or assets; and
- finance capital expenditures and general and administrative expenses.

Our present and future funding requirements and our forecast of the period of time through which our current financial resources will be adequate to support our operations will depend on many factors, including:

- our ability to achieve revenue growth;
- the costs for funding the operations of Response Genetics, which we recently acquired, and our ability to successfully integrate those operations with and into our own;
- our ability to obtain approvals for our new diagnostic tests;
- our ability to execute on our marketing and sales strategy for our tests and gain acceptance of our tests in the market;
- our ability to obtain adequate reimbursement from governmental and other third-party payors for our tests and services;
- the costs, scope, progress, results, timing and outcomes of the clinical trials of our diagnostic tests;
- the costs of operating and enhancing our laboratory facilities;
- the costs of additional general and administrative personnel;
- the timing of and the costs involved in regulatory compliance, particularly if the regulations relating to laboratory developed tests ("LDTs") change;
- the costs of maintaining, expanding and protecting our intellectual property portfolio, including potential litigation costs and liabilities;
- our ability to manage the costs of manufacturing our NGS panels, microarrays and FHACT probe;
- our rate of progress in, and cost of research and development activities associated with, products in research and early development;
- the effect of competing technological and market developments;
- costs related to international expansion; and
- our ability to secure financing and the amount thereof.

The various ways we could raise additional capital carry potential risks. If we raise funds by issuing equity securities, dilution to our stockholders could result. Any equity securities issued also could provide for rights, preferences or privileges senior to those of holders of our common stock. If we raise funds by issuing debt securities, those debt securities would have rights, preferences and privileges senior to those of holders of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations and increase our interest expense. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to our technologies or tests, or grant licenses on terms that are not favorable to us.

Additional equity or debt financing might not be available on reasonable terms, if at all. If we cannot secure additional funding when needed, we may have to delay, reduce the scope of or eliminate one or more research and development programs or sales and marketing initiatives. In addition, we may have to work with a partner on one or more of our development programs, which could lower the economic value of those programs to us.

Risks Relating to Our Business and Strategy

If we are unable to increase sales of our laboratory tests and services or to successfully develop and commercialize other proprietary tests, our revenues will be insufficient for us to achieve profitability.

We currently derive substantially all of our revenues from our laboratory testing services. We have only recently begun offering our proprietary NGS panels and microarrays through our CLIA-certified, CAP-accredited and state licensed laboratory. We also only recently launched FHACT for use as a diagnostic tool for cervical cancer in non-U.S. markets. We are in varying stages of research and development for other diagnostic tests that we may offer.

We also have only recently begun to provide our Biopharma Services. Biopharma Services are services and tests provided to biopharmaceutical companies and clinical research organizations in connection with phase I, phase II or phase III studies for development of therapeutic drugs. The nature of these services is that they tend to come in relatively large projects but episodically, rather than providing steady sources of revenues. It is unclear at this stage of our development whether we will be able to maintain and grow the number of biopharmaceutical companies and clinical research organizations who will avail themselves of our services, or how regular a flow of drug development projects we will be able to obtain from existing customers.

If we are unable to increase sales of our laboratory tests and services or to successfully develop, validate and commercialize other diagnostic tests, we will not produce sufficient revenues to become profitable.

Our quarterly operating results may be subject to significant fluctuations and may be difficult to forecast.

In recent years, we have been expanding our Biopharma Services business. The nature of these services is that they tend to come in relatively large projects but episodically, rather than providing steady sources of revenues. The timing, size and duration of our contracts with biopharmaceutical companies and clinical research organizations depend on the size, pace and duration of such customer's clinical trial, over which we have no control and sometimes limited visibility. In addition, our expense levels are based, in part, on expectation of future revenue levels. A shortfall in expected revenue could, therefore, result in a disproportionate decrease in our net income. As a result, our quarterly operating results may be subject to significant fluctuations and may be difficult to forecast.

If pathologists and oncologists decide not to order our diagnostic tests and/or biopharmaceutical companies and clinical research organizations decide not to use our diagnostic tests and services in connection with their clinical trials, we may be unable to generate sufficient revenue to sustain our business.

To generate demand for our Clinical Services, we will need to educate oncologists and pathologists on the clinical utility, benefits and value of each type of test we provide through published papers, presentations at scientific conferences and one-on-one education sessions by members of our sales force. In addition, we will need to assure oncologists and pathologists of our ability to obtain and maintain coverage and adequate reimbursement from third-party payors. To generate demand for our Biopharma Services and Discovery Services, we need to educate biopharmaceutical companies and clinical research organizations on the utility of our tests and services to improve the outcomes of clinical trials for new oncology drugs and more rapidly advance targeted therapies through the clinical development process through published papers, presentations at scientific conferences and one-on-one education sessions by members of our sales force. We may need to hire additional commercial, scientific, technical and other personnel to support this process. If we cannot convince medical practitioners, biopharmaceutical companies or clinical research organizations to order our diagnostic tests or other future tests we develop, we will likely be unable to create demand for our tests in sufficient volume for us to achieve sustained profitability.

If we are unable to successfully validate our laboratory tests and services, we will not be able to increase revenues.

Pathologists and oncologists may not order our proprietary tests unless we are able to provide compelling evidence that the tests are useful to patient treatment and produce actionable information with respect to the diagnosis, prognosis and theranosis of the various cancers on which our work is focused. In addition, biopharmaceutical companies and clinical research organizations may not order our proprietary tests unless we are able to provide compelling evidence that such tests improve the outcomes of clinical trials for new oncology drugs and allow biopharmaceutical companies to more rapidly advance targeted therapeutics. While we have validated all of the tests that we currently offer, we believe that we will need to finance and successfully complete additional and more powerful studies, and then effectively disseminate the results of those studies, to drive widespread adoption of our tests and thereby increase our revenues.

The commercial success of our Clinical Services business could be compromised if third-party payors, including managed care organizations and Medicare, do not provide coverage and reimbursement, breach, rescind or modify their contracts or reimbursement policies or delay payments for our molecular diagnostic tests.

Pathologists and oncologists may not order our molecular diagnostic tests unless third-party payors, such as managed care organizations and government payors, such as Medicare and Medicaid, pay a substantial portion of the test price. Coverage and reimbursement by a third-party payor may depend on a number of factors, including a payor's determination that tests using our technologies are:

- not experimental or investigational;
- medically necessary;
- appropriate for the specific patient;
- cost-effective;
- supported by peer-reviewed publications; and
- included in clinical practice guidelines.

Uncertainty surrounds third-party payor coverage and reimbursement of any test incorporating new technology, including tests developed using our microarrays and NGS panels. Technology assessments of new medical tests and devices conducted by

research centers and other entities may be disseminated to interested parties for informational purposes. Third-party payors and health care providers may use such technology assessments as grounds to deny coverage for a test or procedure.

Because each payor generally determines for its own enrollees or insured patients whether to cover or otherwise establish a policy to reimburse our diagnostic tests, seeking payor approvals is a time-consuming and costly process. We cannot be certain that coverage for our tests will be provided in the future by additional third-party payors or that existing contracts, agreements or policy decisions or reimbursement levels will remain in place or be fulfilled under existing terms and provisions. If we cannot obtain coverage and reimbursement from private and governmental payors such as Medicare and Medicaid for our current tests, or new tests or test enhancements that we may develop in the future, our ability to generate revenues from our clinical services could be limited, which may have a material adverse effect on our financial condition, results of operations and cash flow. Further, we have experienced in the past, and will likely experience in the future, delays and temporary interruptions in the receipt of payments from third-party payors due to missing documentation and other issues, which could cause delay in collecting our revenue.

Our business depends on our ability to successfully commercialize novel cancer diagnostic tests and services, which is time consuming and complex, and our development efforts may fail.

Our current business strategy focuses on discovering, developing and commercializing molecular diagnostic tests and services. We believe the success of our business depends on our ability to fully validate and commercialize our existing diagnostic tests and services and to develop and commercialize new diagnostic tests. We have multiple tests we are currently offering and in development, but research, development and commercialization of diagnostic tests is time-consuming, uncertain and complex.

Tests we currently offer in our laboratory, or any additional technologies that we may develop, may not succeed in reliably diagnosing or predicting the recurrence of cancers with the sensitivity and specificity necessary to be clinically useful, and thus may not succeed commercially. In addition, prior to or an in continuing in conjunction with commercializing our diagnostic tests, we must undertake time-consuming and costly development activities, including clinical studies, and obtain regulatory clearance or approval, which may be denied. This development process involves a high degree of risk, substantial expenditures and will occur over several years. Our development efforts may fail for many reasons, including:

- failure of the tests at the research or development stage;
- difficulty in accessing archival tissue samples, especially tissue samples with known clinical results; or
- lack of sufficient clinical validation data to support the effectiveness of the test.

Tests that appear promising in early development may fail to be validated in subsequent studies, and even if we achieve positive results, we may ultimately fail to obtain the necessary regulatory clearances or approvals. There is substantial risk that our research and development projects will not result in commercial tests, and that success in early clinical trials will not be replicated in later studies. At any point, we may abandon development of a test or be required to expend considerable resources repeating clinical trials, which would adversely impact the timing for generating potential revenues from that test. In addition, as we develop tests, we will have to make significant investments in research, development and marketing resources. If a clinical validation study of a particular test then fails to demonstrate the outlined goals of the study, we might choose to abandon the development of that test. Further, our ability to develop and launch diagnostic tests will likely depend on our receipt of additional funding. If our discovery and development programs yield fewer commercial tests than we expect, we may be unable to execute our business plan, which may adversely affect our business, financial condition and results of operations.

Failure of the Response Genetics acquisition to achieve anticipated revenue levels and other potential benefits could harm the business and operating results of the combined company.

We expect that the acquisition of the Response Genetics business will result in increased revenue and other potential benefits for the combined company, including the expansion of the number and geographic coverage or our marketing team, the expansion of our menu of tests offered to cover 8 of the 10 most common solid tumor types, the expansion of the geographic coverage of our laboratories and introductions to additional potential biopharmaceutical partners for our testing services. No assurance can be given that we will achieve any or all of these potential benefits. Even if we are able to achieve any of these potential benefits, we cannot predict with certainty when the benefits will occur, or to the extent to which they actually will be achieved. For example, the benefits from the acquisition may be offset by costs incurred in integrating the businesses or in obtaining or attempting to obtain regulatory or court approvals for the acquisition. The failure to achieve anticipated benefits could harm the business, financial condition and operating results of the combined company.

Any acquisition exposes a company to additional risks.

Acquisitions may entail numerous risks for us, including:

- competing claims for capital resources;
- ability to retain and grow relationships with the acquired company's key customers;
- difficulties in assimilating acquired operations, technologies or products; and
- diversion of management's attention from our core business.

Our management has limited experience in purchasing and integrating new businesses. Our failure to successfully complete the integration of Response Genetics or any other new acquisition could have a material adverse effect on our business, financial condition and operating results.

If the market for our tests and services does not experience significant growth or if our tests and services do not achieve broad acceptance, our operations will suffer.

We cannot accurately predict the future growth rate or the size of the market for our tests and services. The expansion of this market depends on a number of factors, such as:

- the results of clinical trials;
- the cost, performance and reliability of our tests and services, and the tests and services offered by competitors;
- customers' perceptions regarding the benefits of our tests and services;
- customers' satisfaction with our tests and services; and
- marketing efforts and publicity regarding our tests and services.

If we are unable to manage growth in our business, our prospects may be limited and our future results of operations may be adversely affected.

We intend to expand our research and development activities, our sales and marketing programs and other activities as needed to meet future demand. Any significant expansion may strain our managerial, financial and other resources. If we are unable to manage such growth, our business, operating results and financial condition could be adversely affected. We will need to improve continually our operations, financial and other internal systems to manage its growth effectively, and any failure to do so may lead to inefficiencies and redundancies, and result in reduced growth prospects and diminished operational results.

We may acquire other businesses or form joint ventures or make investments in other companies or technologies that could harm our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.

As part of our business strategy, we may pursue other acquisitions of businesses and assets. We also may pursue strategic alliances and joint ventures that leverage our core technology and industry experience to expand our offerings or distribution. For example, we entered into a joint venture in May 2013 with Mayo Foundation for Education and Research. We have limited experience with acquiring other companies and forming strategic alliances and joint ventures. We may not be able to find suitable partners or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Any future acquisitions also could result in significant write-offs or the incurrence of debt and contingent liabilities, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. Integration of an acquired company also may disrupt ongoing operations and require management resources that would otherwise focus on developing our existing business. We may experience losses related to investments in other companies, which could have a material negative effect on our results of operations. We may not identify or complete these transactions in a timely manner, on a cost-effective basis, or at all, and we may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

To finance any acquisitions or joint ventures, we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration. Alternatively, it may be necessary for us to raise additional funds for acquisitions through public or private financings. Additional funds may not be available on terms that are favorable to us, or at all.

Our agreement with Mayo may not proceed successfully.

In November 2011, we entered into an affiliation agreement with the Mayo Foundation for Medical Education and Research, subsequently amended. Under the agreement, we formed a joint venture in May 2013 to focus on developing oncology

diagnostic services and tests utilizing next generation sequencing. We have made $2.0 million in capital contributions to that joint venture through December 31, 2015. The agreement requires additional capital contributions by us of up to $4.0 million, subject to the joint venture achieving certain operational milestones. The operation of the joint venture may also divert management time from operating our business. No assurances can be given that we will be able to fully fund our obligations under the joint venture agreement, or that, even if funded, the joint venture will ever achieve the research, development and commercial objectives currently contemplated by the parties, such as the discovery and commercialization of new diagnostic tests utilizing next-generation sequencing. If the development efforts of the joint venture do not result in commercially successful tests or services, it will have an adverse effect on our business, financial condition and results of operations.

We conduct business in a heavily regulated industry, and if we are unable to obtain regulatory clearance or approvals in the United States, if we experience delays in receiving clearance or approvals, or if we do not gain acceptance from other laboratories of any cleared or approved diagnostic tests at their facilities, our growth strategy may not be successful.

We currently offer our proprietary tests in conjunction with our comprehensive panel of laboratory services in our CLIA-certified and CAP-accredited laboratory. Because we currently offer these tests and services solely for use within our laboratory, we believe we may market the tests as laboratory developed tests (LDTs), which are tests designed, manufactured and used within a single laboratory. Although the Food and Drug Administration ("FDA") has statutory authority to assure that medical devices, including LDTs, are safe and effective for their intended uses, the FDA has generally exercised its enforcement discretion and not enforced applicable regulations with respect to LDTs. Specifically, under current FDA enforcement policies and guidance, LDTs generally do not require FDA premarket clearance or approval before commercialization, and we have marketed our LDTs on that basis (although, the FDA has recently announced that such policy may be changing). While we believe that we are currently in material compliance with applicable laws and regulations as historically enforced by the FDA, we cannot assure you that the FDA will agree with our determination, and a determination that we have violated these laws and regulations, or a public announcement that we are being investigated for possible violations, could adversely affect our business, prospects, results of operations or financial condition.

In addition, an element of our long-term strategy is to place molecular diagnostic tests on-site with other laboratories to broaden access to our technology and increase demand for our tests and any future diagnostic tests that we may develop. If we were to offer our tests through third-party laboratories, these tests would most likely not be subject to the FDA's current exercise of enforcement discretion over LDTs, and would be subject to the applicable medical device regulations. For example, these tests could become subject to the FDA's requirements for premarket review. Unless an exemption applies, generally, before a new medical device or a new use for a medical device may be sold or distributed in the United States, the medical device must receive either FDA clearance of a 510(k) pre-market notification or pre-market approval. As a result, before we can market or distribute our tests in the United States for use by other clinical testing laboratories, we must first obtain pre-market clearance or pre-market approval from FDA. We have not yet applied for clearance or approval from FDA, and would need to complete additional validations before we are ready to apply. We believe it would likely take two years or more to conduct the studies and trials necessary to obtain approval from FDA to commercially launch any of our proprietary products outside of our clinical laboratory. Once we do apply, we may not receive FDA clearance or approval for the commercial use of our tests on a timely basis, or at all. If we are unable to obtain clearance or approval or if clinical diagnostic laboratories do not accept our tests, our ability to grow our business by deploying our tests could be compromised.

Recent announcements from the Federal Food and Drug Administration may impose additional regulatory obligations and costs upon our business.

On October 3, 2014 the FDA issued two draft guidance documents regarding its intent to modify its policy of enforcement discretion and increase oversight over LDTs. The two draft guidance documents are entitled "Framework for Regulatory Oversight of Laboratory Developed Tests (LDTs)" (the "Framework Guidance") and "FDA Notification and Medical Device Reporting for Laboratory Developed Test (LDTs)" (the "Notification Guidance"). According to the Framework Guidance, FDA plans to modify its policy of enforcement discretion with respect to LDTs using a phased-in, risk-based approach consistent with the existing classification of medical devices. Thus, the FDA plans to begin to enforce its medical device requirements, including premarket submission requirements, to many LDTs that have historically been marketed without FDA premarket review and oversight. The FDA states its intention in the Framework Guidance to publish general LDT classification guidance within 18 months of the date on which the Framework Guidance is finalized. According to the Framework Guidance, devices that are already in use at the time FDA initiates enforcement of the premarket review requirements will be permitted to remain in use-pending FDA's review and consideration of the premarket submission-so long as a premarket submission is timely made. For the highest risk LDTs, the Framework Guidance provides that enforcement of the premarket submission requirements will begin 12 months after the guidance is finalized. For lower risk LDTs, enforcement will be phased in over the following four to nine years. Under this new risk based approach, it is possible that some level of pre-market review may be required for our LDTs-either a 510(k) or PMA-which may require us to generate additional clinical data. While the FDA has proposed that

devices that are already in use at the time FDA initiates enforcement of the premarket review requirements will be permitted to remain in use-pending FDA's review and consideration of the premarket submission-so long as a premarket submission is timely made, we may nevertheless be required to cease commercial sales of our products and conduct additional clinical testing prior to making submissions to the FDA to obtain premarket clearance or approval.

The draft guidance documents are subject to public comment. The final date for comments was February 2, 2015. We cannot tell at this time what additional costs and regulatory burdens, any final FDA guidance or FDA enforcement of its regulations may have on our business or operations.

If we and our tests become subject to FDA's enforcement of its medical device regulations pursuant to the FDA's plans to modify its policy of enforcement discretion with respect to LDTs, we may be subject to significant and onerous regulatory obligations. See section entitled “Risk Factors-Regulatory Risks Relating to Our Business-If the FDA regulates LDTs as proposed, then it would classify LDTs according to the current system used to regulate medical devices. Under that system, there are three different classes of medical devices, with the requirements becoming more stringent depending on the Class.”

If we are unable to execute our marketing strategy for our tests and our tests are unable to gain acceptance in the market, we may be unable to generate sufficient revenue to sustain our business.

Although we believe that our tests represent promising commercial opportunities, our tests may never gain significant acceptance in the marketplace and therefore may never generate substantial revenue or profits for us. We need to continue to develop a market for our tests through physician education and awareness programs. Gaining acceptance in medical communities requires that we perform additional studies after validating the efficacy of our tests and services for the diagnosis, prognosis and treatment of cancer, and that we obtain acceptance of the results of those studies using our tests for publication in leading peer-reviewed medical journals. The results of any studies are always uncertain and even if we believe such studies demonstrate the value of our tests, they process of publication in leading medical journals is subject to a peer review process and peer reviewers may not consider the results of our studies sufficiently novel or worthy of publication. Failure to have our studies published in peer-reviewed journals would limit the adoption of our tests. Our ability to successfully market the tests that we may develop will depend on numerous factors, including:

- whether health care providers believe our diagnostic tests provide clinical utility;
- whether the medical community accepts that our diagnostic tests are sufficiently sensitive and specific to be meaningful in patient care and treatment decisions; and
- whether health insurers, government health programs and other third-party payors will cover and pay for our diagnostic tests and, if so, whether they will adequately reimburse us.

Failure to achieve widespread market acceptance of our diagnostic tests would materially harm our business, financial condition and results of operations.

If we cannot develop tests to keep pace with rapid advances in technology, medicine and science, our operating results and competitive position could be harmed.

In recent years, there have been numerous advances in technologies relating to the diagnosis and treatment of cancer. There are several new cancer drugs under development that may increase patient survival time. There have also been advances in methods used to analyze very large amounts of genomic information. We must continuously develop new tests and enhance our existing tests to keep pace with evolving standards of care. Our existing tests could become obsolete unless we continually innovate and expand them to demonstrate benefit in patients treated with new therapies. New cancer therapies typically have only a few years of clinical data associated with them, which limits our ability to perform clinical studies and correlate sets of genes to a new treatment's effectiveness. If we cannot adequately demonstrate the applicability of our tests to new treatments, sales of our tests and services could decline, which would have a material adverse effect on our business, financial condition and results of operations.

If our tests do not continue to perform as expected, our operating results, reputation and business will suffer.

Our success depends on the market's confidence that we can continue to provide reliable, high-quality diagnostic tests. We believe that our customers are likely to be particularly sensitive to test defects and errors. As a result, the failure of our tests or services to perform as expected would significantly impair our reputation and the public image of our tests and services, and we may be subject to legal claims arising from any defects or errors.

There is a scarcity of experienced professionals in our industry. If we are not able to retain and recruit personnel with the requisite technical skills, we may be unable to successfully execute our business strategy.

The specialized nature of our industry results in an inherent scarcity of experienced personnel in the field. Our future success depends upon our ability to attract and retain highly skilled personnel (including medical, scientific, technical, commercial, business, regulatory and administrative personnel) necessary to support our anticipated growth, develop our business and perform certain contractual obligations. Given the scarcity of professionals with the scientific knowledge that we require and the competition for qualified personnel among life science businesses, we may not succeed in attracting or retaining the personnel we require to continue and grow our operations. The loss of a key employee, the failure of a key employee to perform in his or her current position or our inability to attract and retain skilled employees could result in our inability to continue to grow our business or to implement our business strategy.

Our inability to attract, hire and retain a sufficient number of qualified sales professionals would hamper our ability to increase demand for our tests, to expand geographically and to successfully commercialize any other diagnostic tests or products we may develop.

Our success in selling our clinical laboratory services, biopharma services, discovery services, diagnostic tests and any other tests or products that we are able to develop will require us to expand our sales force in the United States and internationally by recruiting additional sales representatives with extensive experience in oncology and close relationships with medical oncologists, surgeons, pathologists and other hospital personnel, as well as biopharmaceutical companies and clinical research organizations. To achieve our marketing and sales goals, we will need to substantially expand our sales and commercial infrastructure, with which to date we have had little experience. Sales professionals with the necessary technical and business qualifications are in high demand, and there is a risk that we may be unable to attract, hire and retain the number of sales professionals with the right qualifications, scientific backgrounds and relationships with decision-makers at potential customers needed to achieve our sales goals. We may face competition from other companies in our industry, some of whom are much larger than us and who can pay greater compensation and benefits than we can, in seeking to attract and retain qualified sales and marketing employees. If we are unable to hire and retain qualified sales and marketing personnel, our business will suffer.

We have indebtedness with restrictive covenants that limit our ability to obtain additional debt financing and that requires us to comply with certain financial covenants, which could have a material adverse effect on our financial condition, our ability to fund operations, and react to changes in our business.

As of December 31, 2015, we had indebtedness for borrowed money due on April 1, 2019 in the aggregate principal amount of $6.0 million under our New Credit Facility with Silicon Valley Bank. We are required to comply with certain financial covenants and restricts us from, among other things, paying cash dividends, incurring debt and entering into certain transactions without the prior consent of the lenders. Repayments of amounts borrowed under the credit facility may be accelerated if an event of default occurs, which includes, among other things, a violation of such financial covenants and negative covenants. Our debt and related covenants could limit our ability to satisfy our obligations, limit our ability to operate our business and impair our competitive position. For example, it could:

- require us to dedicate a substantial portion of our cash flow from operations to payments on our debt, reducing the availability of our cash flow from operations to fund working capital, capital expenditures or other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and industry;
- place us at a disadvantage compared to competitors that may have proportionately less debt; and
- increase our cost of borrowing.

If our laboratory facilities become damaged or inoperable, or we are required to vacate any facility, our ability to provide services and pursue our research and development efforts may be jeopardized.

We currently derive substantially all of our revenues from our laboratory testing services. We do not have any clinical reference laboratory facilities outside of our facilities in Rutherford, New Jersey, Morrisville, North Carolina, Hyderabad, India and Los Angeles, California. Our facilities and equipment could be harmed or rendered inoperable by natural or man-made disasters, including fire, flooding and power outages, which may render it difficult or impossible for us to perform our tests or provide laboratory services for some period of time. The inability to perform our tests or the backlog of tests that could develop if any of our facilities is inoperable for even a short period of time may result in the loss of customers or harm to our reputation or relationships with collaborators, and we may be unable to regain those customers or repair our reputation in the future. Furthermore, our facilities and the equipment we use to perform our research and development work could be costly and time-consuming to repair or replace.

Additionally, a key component of our research and development process involves using biological samples and the resulting data sets and medical histories, as the basis for our diagnostic test development. In some cases, these samples are difficult to obtain. If the parts of our laboratory facilities where we store these biological samples are damaged or compromised, our ability to pursue our research and development projects, as well as our reputation, could be jeopardized. We carry insurance for damage to our property and the disruption of our business, but this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, if at all.

Further, if any of our laboratories became inoperable we may not be able to license or transfer our proprietary technology to a third-party, with established state licensure and CLIA certification under the scope of which our diagnostic tests could be performed following validation and other required procedures, to perform the tests. Even if we find a third-party with such qualifications to perform our tests, such party may not be willing to perform the tests for us on commercially reasonable terms. Moreover, we believe our tests are currently subject to an exercise of enforcement discretion by the FDA because the tests are considered LDTs. If we are required to find a third-party laboratory to conduct our testing services, we believe the FDA would consider our tests to be medical devices that are no longer subject to its exercise of enforcement discretion for LDTs. In that case, we may be required to obtain premarket clearance or approval prior to offering our tests, which would be time-consuming and costly and could result in delays in our ability to sell or offer our tests.

If we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenues or achieve and sustain profitability.

We face competition from mainstream diagnostic methods that pathologists and oncologists use and have used for many years. It may be difficult to change the methods or behavior of the referring pathologists and oncologists to incorporate our molecular diagnostic testing in their practices. We believe that we can introduce our diagnostic tests successfully due to their clinical utility and the desire of pathologists and oncologists to find solutions for more accurate diagnosis, prognosis and personalized treatment options for cancer patients.

We also face competition from companies that currently offer or are developing products to profile genes, gene expression or protein biomarkers in various cancers. Personalized genetic diagnostics is a new area of science, and we cannot predict what tests others will develop that may compete with or provide results superior to the results we are able to achieve with the tests we develop. Our competitors include public companies such as NeoGenomics, Inc., Quest Diagnostics, Abbott Laboratories, Inc., Johnson & Johnson, Roche Molecular Systems, Inc., bioTheranostics, Inc. (part of bioMérieux SA), Genomic Health, Inc., Myriad Genetics Inc., and Foundation Medicine, Inc., and many private companies. We expect that pharmaceutical and biopharmaceutical companies will increasingly focus attention and resources on the personalized diagnostic sector as the potential and prevalence increases for molecularly targeted oncology therapies approved by FDA along with companion diagnostics. For example, FDA has recently approved two such agents-Xalkori crizotinib from Pfizer Inc. along with its companion anaplastic lymphoma kinase FISH test from Abbott Laboratories, Inc. and Zelboraf vemurafenib from Genentech USA Incorporated and Daiichi-Sankyo Inc. along with its companion B-RAF kinase V600 mutation test from Roche Molecular Systems, Inc. These two recent FDA approvals are only the second and third instances of simultaneous approvals of a drug and companion diagnostic, the first being the 1998 approval of Genentech, Inc.'s Herceptin trastuzumab for HER2 positive breast cancer along with the HercepTest from partner Dako A/S.

With respect to our clinical laboratory sciences business we face competition from companies such as Genoptix, Inc. (a Novartis AG Company), Clarient, Inc. (a division of GE Healthcare, a unit of General Electric Company), Bio-Reference Laboratories, Inc., and Genzyme Genetics (a LabCorp Specialty Testing Group).

Many of our present and potential competitors have widespread brand recognition and substantially greater financial and technical resources and development, production and marketing capabilities than we do. Others may develop lower-priced, less complex tests that payors, pathologists and oncologists could view as functionally equivalent to our tests, which could force us to lower the list price of our tests and impact our operating margins and our ability to achieve profitability. In addition, technological innovations that result in the creation of enhanced diagnostic tools may enable other clinical laboratories, hospitals, physicians or medical providers to provide specialized diagnostic services similar to ours in a more patient-friendly, efficient or cost-effective manner than is currently possible. If we cannot compete successfully against current or future competitors, we may be unable to increase market acceptance and sales of our tests, which could prevent us from increasing or sustaining our revenues or achieving or sustaining profitability.

A small number of test ordering sites account for most of the sales of our tests and services. If any of these sites orders fewer tests from us for any reason, our revenues could decline.

Due to the early stage nature of our business and our limited sales and marketing activities to date, we have historically derived a significant portion of our revenue from a limited number of test ordering sites, although the test ordering sites that generate a significant portion of our revenue may change from period to period. Our test ordering sites are largely hospitals, cancer centers, reference laboratories and physician offices, as well as biopharmaceutical companies as part of a clinical trial. Oncologists and pathologists at these sites order the tests on behalf of the needs of their oncology patients or as part of a clinical trial sponsored by a biopharmaceutical company in which the patient is being enrolled. The top five test ordering sites during 2015, 2014 and 2013 accounted for 49%, 56% and 69% respectively, of our clinical testing volumes, with 18%, 38% and 36% respectively, of the volume coming from community hospitals. During the year ended December 31, 2015, one Biopharma client accounted for approximately 19% of our revenue. During the year ended December 31, 2014, two Biopharma clients accounted for approximately 23% and 12%, respectively, of our revenue. During the year ended December 31, 2013 there was one Biopharma client that accounted for approximately 40% of our revenue.

We expect to continue to incur significant expenses to develop and market our diagnostic tests, which could make it difficult for us to achieve and sustain profitability.

In recent years, we have incurred significant costs in connection with the development of our diagnostic tests. For the year ended December 31, 2015, our research and development expenses were $5.5 million, which was 30% of our revenue and our sales and marketing expenses were $5.3 million, which was 29% of revenue. For the year ended December 31, 2014, our research and development expenses were $4.6 million, which was 45% of our net revenue and our sales and marketing expenses were $4.0 million, which was 39% of revenue. For the year ended December 31, 2013, our research and development expenses were $2.2 million, which was 33% of our revenue, and our sales and marketing expenses were $1.8 million, which was 28% of revenue. We expect our expenses to continue to increase, in absolute dollars, for the foreseeable future as we seek to expand the clinical utility of our diagnostic tests, drive adoption of and reimbursement for our diagnostic tests and develop new tests. As a result, we will need to generate significant revenues in order to achieve sustained profitability.

We depend on certain collaborations with third parties for the supply of certain tissue samples and biological materials that we use in our research and development efforts. If the costs of such collaborations increase or our third party collaborators terminate their relationship with us, our business may be materially harmed.

Under standard clinical practice in the United States, tumor biopsies removed from patients are chemically preserved, embedded in paraffin wax and stored. Our clinical development relies on our ability to access these archived tumor biopsy samples, as well as information pertaining to their associated clinical outcomes. Other companies often compete with us for access. Additionally, the process of negotiating access to archived samples is lengthy, because it typically involves numerous parties and approvals to resolve complex issues such as usage rights, institutional review board approval, privacy rights, publication rights, intellectual property ownership and research parameters.

We have collaborative relationships with Memorial Sloan-Kettering Cancer Center, Mayo, North Shore-Long Island Jewish Health System, the National Cancer Institute, the Cleveland Clinic and other institutions who provide us with tissue samples and other biological materials that we use in developing and validating our tests. We do not have any written arrangement with certain third party collaborators, and in many of the cases in which the arrangements are in writing, our collaborative relationships are terminable on 30 days' notice or less. If one or more collaborators terminate their relationship with us, we will need to identify other third parties to provide us with tissue samples and biological materials, which could result in a delay in our research and development activities and negatively affect our business.

We currently rely on a single third-party to produce our microarrays and any problems experienced by this vendor could result in a delay or interruption in the supply of our microarrays to us until the problem is cured by such vendor or until we locate and qualify an alternative source of supply.

The design of our microarrays is currently optimized on a family of instruments referred to as the Agilent Microarray Platform, which is currently produced solely by Agilent Technologies Inc. (“Agilent”). We currently purchase these components from Agilent under purchase orders and do not have a long-term contract with Agilent. If Agilent were to delay or stop producing our microarrays, or if the prices Agilent charges us were to increase significantly, we would need to identify another supplier and optimize our microarrays on a new technology platform. We could experience delays in manufacturing the microarrays while finding another acceptable supplier, which could impact our results of operations. The changes could also result in increased costs associated with migrating to the new technology platform and in increased manufacturing costs. Further, any prolonged disruption in Agilent's operations could have a significant negative impact on the supply of our microarrays.

If we were sued for product liability or professional liability, we could face substantial liabilities that exceed our resources.

The marketing, sale and use of our tests could lead to the filing of product liability claims were someone to allege that our tests failed to perform as designed. We may also be subject to liability for errors in the test results we provide to pathologists and oncologists or for a misunderstanding of, or inappropriate reliance upon, the information we provide. A product liability or professional liability claim could result in substantial damages and be costly and time-consuming for us to defend.

Although we believe that our existing product and professional liability insurance is adequate, our insurance may not fully protect us from the financial impact of defending against product liability or professional liability claims. Any product liability or professional liability claim brought against us, with or without merit, could increase our insurance rates or prevent us from securing insurance coverage in the future. Additionally, any product liability lawsuit could damage our reputation, result in the recall of our tests, or cause current clinical partners to terminate existing agreements and potential clinical partners to seek other partners, any of which could impact our results of operations.

If we use biological and hazardous materials in a manner that causes injury, we could be liable for damages.

Our activities currently require the controlled use of potentially harmful biological materials and hazardous materials and chemicals. We cannot eliminate the risk of accidental contamination or injury to employees or third parties from the use, storage, handling or disposal of these materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could exceed our resources or any applicable insurance coverage we may have. Additionally, we are subject to, on an ongoing basis, federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and specified waste products. The cost of compliance with these laws and regulations may become significant and could have a material adverse effect on our financial condition, results of operations and cash flows. In the event of an accident or if we otherwise fail to comply with applicable regulations, we could lose our permits or approvals or be held liable for damages or penalized with fines.

If we cannot support demand for our tests, including successfully managing the evolution of our technology and manufacturing platforms, our business could suffer.

As our test volume grows, we will need to increase our testing capacity, implement increases in scale and related processing, customer service, billing, collection and systems process improvements and expand our internal quality assurance program and technology to support testing on a larger scale. We will also need additional certified laboratory scientists and other scientific and technical personnel to process these additional tests. Any increases in scale, related improvements and quality assurance may not be successfully implemented and appropriate personnel may not be available. As additional tests are commercialized, we will need to bring new equipment on line, implement new systems, technology, controls and procedures and hire personnel with different qualifications. Failure to implement necessary procedures or to hire the necessary personnel could result in a higher cost of processing or an inability to meet market demand. We cannot assure you that we will be able to perform tests on a timely basis at a level consistent with demand, that our efforts to scale our commercial operations will not negatively affect the quality of our test results or that we will respond successfully to the growing complexity of our testing operations. If we encounter difficulty meeting market demand or quality standards for our tests, our reputation could be harmed and our future prospects and business could suffer, which may have a material adverse effect on our financial condition, results of operations and cash flows.

We depend on our information technology and telecommunications systems, and any failure of these systems could harm our business.

We depend on information technology and telecommunications systems for significant aspects of our operations. In addition, our third-party billing and collections provider depends upon telecommunications and data systems provided by outside vendors and information we provide on a regular basis. These information technology and telecommunications systems support a variety of functions, including test processing, sample tracking, quality control, customer service and support, billing and reimbursement, research and development activities and our general and administrative activities. Information technology and telecommunications systems are vulnerable to damage from a variety of sources, including telecommunications or network failures, malicious human acts and natural disasters. Moreover, despite network security and back-up measures, some of our servers are potentially vulnerable to physical or electronic break-ins, computer viruses and similar disruptive problems. Despite the precautionary measures we have taken to prevent unanticipated problems that could affect our information technology and telecommunications systems, failures or significant downtime of our information technology or telecommunications systems or those used by our third-party service providers could prevent us from processing tests, providing test results to pathologists, oncologists, billing payors, processing reimbursement appeals, handling patient or physician inquiries, conducting research and development activities and managing the administrative aspects of our business. Any disruption or loss of information technology or telecommunications systems on which critical aspects of our operations depend could have an adverse effect on our business.

Security breaches, loss of data, and other disruptions could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to fines, penalties, liability, and adverse effects to our business and our reputation.

In the ordinary course of our business, we and our third-party billing and collections provider collect and store sensitive data, including legally protected health information, personally identifiable information, intellectual property, and proprietary business information owned or controlled by ourselves or our customers, payors, and biopharmaceutical partners. The secure processing, storage, maintenance, and transmission of this critical information is vital to our operations and business strategy, and we devote significant resources to protecting such information. Although we take measures to protect sensitive information from unauthorized access or disclosure, our information technology and infrastructure, and that of our third-party billing and collections provider, may be vulnerable to attacks by hackers or viruses or breached due to employee error, malfeasance, or other disruptions. Any such breach or interruption could compromise our networks, and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost, or stolen. Any such improper access or disclosure, or loss of information could require us to provide notice to the affected individuals, the press, and regulatory bodies, result in legal claims or proceedings, liability, fines and penalties under laws that protect the privacy of personal information, such as the Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), the Health Information Technology for Economic and Clinical Health Act (“HITECH”), their implementing regulations, and similar state laws. Unauthorized access, loss, or dissemination could also disrupt our operations, including our ability to conduct our analyses, provide test results, bill payors or patients, process claims and appeals, provide customer assistance services, conduct research and development activities, collect, process, and prepare company financial information, provide information about our products and other patient and physician education and outreach efforts through our website, manage the administrative aspects of our business, and damage our reputation, any of which could adversely affect our business.

The U.S. Department of Health and Human Services Office for Civil Rights (“OCR”) may impose penalties on a covered entity, such as us, for a failure to comply with a requirement of HIPAA. Penalties will vary significantly depending on factors such as the date of the violation, whether the covered entity knew or should have known of the failure to comply, or whether the covered entity's failure to comply was due to willful neglect. These penalties include civil monetary penalties of $100 to $50,000 per violation, up to an annual, per violation cap of $1,500,000. A single breach incident can result in violations of multiple standards, resulting in possible penalties potentially in excess of $1,500,000. A person who knowingly obtains or discloses individually identifiable health information in violation of HIPAA may face a criminal penalty of up to $50,000 and up to one year imprisonment. The criminal penalties increase to $100,000 and up to five years imprisonment if the wrongful conduct involves false pretenses, and to $250,000 and up to 10 years imprisonment if the wrongful conduct involves the intent to sell, transfer, or use identifiable health information for commercial advantage, personal gain, or malicious harm. The U.S. Department of Justice is responsible for criminal prosecutions under HIPAA.

HIPAA authorizes state attorneys general to file suit under HIPAA on behalf of state residents. Courts can award damages, costs and attorneys' fees related to violations of HIPAA in such cases. While HIPAA does not create a private right of action allowing individuals to sue us in civil court for HIPAA violations, its standards have been used as the basis for a duty of care in state civil suits such as those for negligence or recklessness in the misuse or breach of Protected Health Information.

In addition, HIPAA mandates that the Secretary of HHS conduct periodic compliance audits of HIPAA covered entities for compliance with the HIPAA privacy and security regulations. It also tasks HHS with establishing a methodology whereby harmed individuals who were the victims of breaches of unsecured Protected Health Information may receive a percentage of the Civil Monetary Penalty fine paid by the violator.

HIPAA further requires covered entities to notify affected individuals "without unreasonable delay and in no case later than 60 calendar days after discovery of the breach" if their unsecured Protected Health Information is subject to an unauthorized access, use or disclosure. If a breach affects 500 patients or more, it must be reported to HHS and local media without unreasonable delay, and HHS will post the name of the breaching entity on its public website. If a breach affects fewer than 500 individuals, the covered entity must log it and notify HHS at least annually.

In addition, the interpretation and application of consumer, health-related, and data protection laws in the United States, Europe, and elsewhere are often uncertain, contradictory, and in flux. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our practices. If so, this could result in government-imposed fines or orders requiring that we change our practices, which could adversely affect our business. In addition, these privacy regulations may differ from country to country, and may vary based on whether testing is performed in the United States or in the local country. Complying with these various laws could cause us to incur substantial costs or require us to change our business practices and compliance procedures in a manner adverse to our business.

Regulatory Risks Relating to Our Business

Health care policy changes, including recently enacted legislation reforming the U.S. health care system, may have a material adverse effect on our financial condition, results of operations and cash flows.

In March 2010, U.S. President Barack Obama signed the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, "PPACA"), which makes a number of substantial changes in the way health care is financed by both governmental and private insurers. Among other things, the PPACA:

- Requires each medical device manufacturer to pay a sales tax equal to 2.3% of the price for which such manufacturer sells its medical devices, beginning in 2013. This tax may apply to some or all of our current products and products which are in development.
- Mandates a reduction in payments for clinical laboratory services paid under the Medicare Clinical Laboratory Fee Schedule ("CLFS") of 1.75% for the years 2011 through 2015. In addition, a productivity adjustment is made to the fee schedule payment amount. These changes in payments apply to some or all of the clinical laboratory test services we furnish to Medicare beneficiaries.
- Establishes an Independent Payment Advisory Board to reduce the per capita rate of growth in Medicare spending. The Independent Payment Advisory Board has broad discretion to propose policies, which may have a negative impact on payment rates for services, including clinical laboratory services, beginning in 2016, and for hospital services beginning in 2020.

Although some of these provisions may negatively impact payment rates for clinical laboratory services, the PPACA also extends coverage to approximately 32 million previously uninsured people, which may result in an increase in the demand for our tests and services. The mandatory purchase of insurance has been strenuously opposed by a number of state governors, resulting in lawsuits challenging the constitutionality of certain provisions of the PPACA. On June 28, 2012, the Supreme Court upheld the constitutionality of the health care reform law, with the exception of certain provisions dealing with the expansion of Medicaid coverage under the law. While most of the law's provisions went into effect in 2013 and 2014, Congress has proposed a number of legislative initiatives, including possible repeal of the PPACA. On June 25, 2015, the Supreme Court affirmed the Fourth Circuit Court of Appeals in *King v. Burwell*, which allows the federal government to continue to extend tax subsidies to those individuals who purchased coverage through federal exchanges, in addition to the exchanges established by individual states.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. Recently, on August 2, 2011, the President signed into law the Budget Control Act of 2011, which, among other things, creates the Joint Select Committee on Deficit Reduction to recommend proposals in spending reductions to Congress. The Joint Select Committee did not achieve a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of 2% per fiscal year, starting in 2013. This 2% sequester was recently extended through 2024.

The full impact on our business of the PPACA and the new law is uncertain. In addition, on February 22, 2012, the President signed the Middle Class Tax Relief and Job Creation Act of 2012 ("MCTRJCA"), which, among other things, mandated an additional change in Medicare reimbursement for clinical laboratory services. This legislation requires a rebasing of the Medicare CLFS to effect a 2% reduction in payment rates otherwise determined for 2013. This will serve as a base for 2014 and subsequent years. As a result of the changes mandated by PPACA and MCTRJCA, the Centers for Medicare & Medicaid Services ("CMS") projects laboratory services for 2015 will be reduced by approximately 0.25%.

Further, in 2014, Congress passed the Protecting Access to Medicare Act or PAMA which also makes significant changes in the way the Medicare will pay for laboratory services. Under PAMA, laboratories were required to report the amount that they are paid by third party payors for each test beginning in January 2016. CMS will use this data to calculate a weighted median for each test. That new price is supposed to effective on January 1, 2017, although any resulting reductions will be phased in over time. This data reporting process will be repeated every three years for most tests, although certain advanced diagnostic tests will have to report every year. It is possible that some of our tests may qualify as Advanced Diagnostic Laboratory Tests, which will require us to submit pricing annually. In addition, under PAMA, we will also be required to obtain new codes from CMS or any entity it designates, for our tests that do not currently have codes. Although CMS was also required to issue a Final Rule implementing PAMA by June 30, 2016, it failed to do so. It did issue a Proposed Rule, however, on October 1, 2015. As a result of this delay, many of the statutory deadlines will likely not be met. If PAMA results in a significant reduction in the prices for our tests, it could have a significant impact on our revenues and it is not known at this time how the implementation of PAMA will affect our reimbursement.

Certain of our laboratory services are paid under the Medicare Physician Fee Schedule and, under the current statutory formula, the rates for these services are updated annually. For the past several years, the application of the statutory formula would have resulted in substantial payment reductions if Congress failed to intervene. In the past, Congress passed interim legislation to prevent the decreases. On April 16, 2015, President Obama signed the Medicare and CHIP Reauthorization Act ("MACRA"), which had previously been passed by both houses of Congress. MACRA repealed the provisions related to the Medicare SGR formula and implements a new physician payment system that is designed to reward the quality of care. In addition, it extends the current Medicare Physician Fee Schedule rates through June 2015, and then increases them by 0.5%t for the remainder of 2015. Beginning on January 1, 2016, the rates will be increased annually by 0.5%, through 2019. For 2020 through 2025 payments will be frozen, although payment will be adjusted to account for performance on certain quality metrics under the Merit-Based Incentive Payment Systems ("MIPS") or to reflect physician participation in alternative payment models ("APMs"). For 2026 and subsequent years, qualified APM participants receive an annual 0.75% update on Medicare physician payment rates, while those not participating receive a 0.25% annual payment update, plus any applicable MIPS-based payment adjustments. At this time, it is too early to determine how these changes may impact our business beyond 2015. It is unclear what impact, if any, MACRA will have on our business and operating results, but any resulting decrease in payment may result in reduced demand for our services, which could adversely impact our revenues and results of operations.

On October 30, 2015, CMS issued its Final Physician Fee Schedule Rule for 2016, which set out policies that will be effective January 2016. Among those policy changes are reductions in the payments for flow cytometry and immunohistochemistry, two types of tests that we frequently perform. CMS has also stated that certain of these same tests may be considered "misvalued" which means they could be subject to additional scrutiny in the future. At this time, we are still assessing the potential impact of these changes.

In addition, many of the Current Procedure Terminology ("CPT") procedure codes that we use to bill our tests were revised by the AMA, effective January 1, 2013. In the Final Physician Fee Schedule Rule for 2013, CMS announced that it has decided to keep the new molecular codes on the CLFS, rather than move them to the Medicare Physician Fee Schedule as some stakeholders had urged. CMS also announced that for 2013 it would price the new codes using a "gapfilling" process by which it will refer the codes to the Medicare contractors to allow them to determine an appropriate price. Those prices were determined and became effective January 1, 2014. In addition, CMS also stated that it would not recognize certain of the new codes for Multi-Analyte Assays with Algorithmic Assays ("MAAAs") because it does not believe they qualify as clinical laboratory tests. However, more recently, it has determined that the individual contractors may determine whether to pay for MAAA tests on a case by case basis. On September 25, 2015, CMS released its Preliminary Determinations for new CPT codes effective in 2016, including several new MAAA CPT codes. CMS had proposed "crosswalking" these codes to an unrelated test, resulting in a significant cut in their reimbursement. However, on November 17, 2015, CMS reversed its policy and directed that the tests be gapfilled by the local contracts. It is expected that when PAMA is fully implemented, many of the MAAA codes will be considered and reimbursed as Advanced Diagnostic Laboratory Tests ("ADLTs"). There can be no guarantees that Medicare and other payors will establish positive or adequate coverage policies or reimbursement rates.

We cannot predict whether future health care initiatives will be implemented at the federal or state level, or how any future legislation or regulation may affect us. The taxes imposed by the new federal legislation and the expansion of government's role in the U.S. health care industry as well as changes to the reimbursement amounts paid by payors for our products or our medical procedure volumes may reduce our profits and have a materially adverse effect on our business, financial condition, results of operations and cash flows. Moreover, Congress has proposed on several occasions to impose a 20% coinsurance on patients for clinical laboratory tests reimbursed under the CLFS, which would require us to bill patients for these amounts. Because of the relatively low reimbursement for many clinical laboratory tests, in the event that Congress were to ever enact such legislation, the cost of billing and collecting for these services would often exceed the amount actually received from the patient and effectively increase our costs of billing and collecting.

We depend on Medicare and a limited number of private payors for a significant portion of our revenues and if these or other payors stop providing reimbursement or decrease the amount of reimbursement for our tests, our revenues could decline.

For the year ended December 31, 2015, we derived approximately 12% of our total revenue from private insurance, including managed care organizations and other health care insurance providers, 10% from Medicare and 9% from other health care facilities billed directly. Medicare and other third-party payors may withdraw their coverage policies or cancel their contracts with us at any time, review and adjust the rate of reimbursement or stop paying for our tests altogether, which would reduce our total revenues.

Payors have increased their efforts to control the cost, utilization and delivery of health care services. In the past, measures have been undertaken to reduce payment rates for and decrease utilization of the clinical laboratory industry generally. Because of the cost-trimming trends, third-party payors that currently cover and provide reimbursement for our tests may suspend, revoke or discontinue coverage at any time, or may reduce the reimbursement rates payable to us. Any such action could have a negative impact on our revenues, which may have a material adverse effect on our financial condition, results of operations and cash flows.

In addition, we are currently considered a “non-contracting provider” by a number of private third-party payors because we have not entered into a specific contract to provide our specialized diagnostic services to their insured patients at specified rates of reimbursement. If we were to become a contracting provider in the future, the amount of overall reimbursement we receive is likely to decrease because we will be reimbursed less money per test performed at a contracted rate than at a non-contracted rate, which could have a negative impact on our revenues. Further, we typically are unable to collect payments from patients beyond that which is paid by their insurance and will continue to experience lost revenue as a result.

Because of certain Medicare billing rules, we may not receive reimbursement for all tests provided to Medicare patients.

Under current Medicare billing rules, claims for our tests performed on Medicare beneficiaries who were hospital inpatients when the tumor tissue samples were obtained and whose tests were ordered less than 14 days from discharge must be incorporated in the payment that the hospital receives for the inpatient services provided. Accordingly, we must bill individual hospitals for tests performed on Medicare beneficiaries during these timeframes in order to receive payment for our tests. Because we generally do not have a written agreement in place with these hospitals that purchase these tests, we may not be paid for our tests or may have to pursue payment from the hospital on a case-by-case basis. In addition, until 2012, we were permitted to bill globally for certain anatomic pathology services we furnished to certain hospitals, i.e. we billed both the technical component and the professional component to Medicare. As part of the Middle Class Tax Relief and Job Creation Act of 2012, Congress terminated the special provision for "grandfathered" hospitals as of July 1, 2012. Therefore, as of that date we were required to bill all hospitals for the technical component of all anatomic pathology services we furnish to their patients, which may be difficult and/or costly for us.

Further, the Medicare Administrative Contractors who process claims for Medicare also can impose their own rules related to coverage and payment for laboratory services provided in their jurisdiction. Recently, Palmetto GBA, the Medicare Administrative Contractor for North Carolina, South Carolina, Virginia and West Virginia, announced a comprehensive new billing policy and a coverage policy applicable to molecular diagnostic tests, such as ours. Under coverage policy, Palmetto will deny payment for molecular diagnostic tests, unless it has issued a positive coverage determination for the test. Other Medicare contractors are also adopting policies similar to Palmetto's. If any of our tests are subject to the Palmetto policy and/or the Palmetto policy is adopted by other contractors that process claims with hospitals or laboratories that purchase and bill for our tests, our business could be adversely impacted.

Complying with numerous regulations pertaining to our business is an expensive and time-consuming process, and any failure to comply could result in substantial penalties.

We are subject to CLIA, a federal law regulating clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. Our clinical laboratory must be certified under CLIA in order for us to perform testing on human specimens. In addition, our proprietary tests must also be recognized as part of our accredited programs under CLIA so that we can offer them in our laboratory. CLIA is intended to ensure the quality and reliability of clinical laboratories in the United States by mandating specific standards in the areas of personnel qualifications, administration, and participation in proficiency testing, patient test management, quality control, quality assurance and inspections. We have a current certificate under CLIA to perform high complexity testing and our laboratory is accredited by CAP, one of six CLIA-approved accreditation organizations. To renew this certificate, we are subject to survey and inspection every two years. Moreover, CLIA inspectors may make periodic inspections of our clinical reference laboratory outside of the renewal process.

The law also requires us to maintain a state laboratory license to conduct testing in that state. Our laboratory is located in New Jersey and must have a New Jersey state license; as we expand our geographic focus, we may need to obtain laboratory licenses from additional states. New Jersey laws establish standards for day-to-day operation of our clinical reference laboratory, including the training and skills required of personnel and quality control. In addition, several other states require that we hold licenses to test specimens from patients in those states. Other states may have similar requirements or may adopt similar requirements in the future. Finally, we may be subject to regulation in foreign jurisdictions as we seek to expand international distribution of our tests.

If we were to lose our CLIA certification, CAP accreditation or New Jersey laboratory license, whether as a result of a revocation, suspension or limitation, we would no longer be able to offer our tests, which would limit our revenues and harm our business. If we were to lose our license in other states where we are required to hold licenses, we would not be able to test specimens from those states.

If FDA were to begin requiring approval or clearance of our tests, we could incur substantial costs and time delays associated with meeting requirements for pre-market clearance or approval or we could experience decreased demand for, or reimbursement of, our tests.

Although FDA maintains that it has authority to regulate the development and use of LDTs, such as ours, as medical devices, it has not exercised its authority with respect to most LDTs as a matter of enforcement discretion. FDA does not generally extend its enforcement discretion to reagents or software provided by third parties and used to perform LDTs, and therefore these products must typically comply with FDA medical device regulations, which are wide-ranging and govern, among other things: product design and development, product testing, product labeling, product storage, pre-market clearance or approval, advertising and promotion and product sales and distribution.

We believe that our proprietary tests, as utilized in our laboratory testing, are LDTs. As a result, we believe that pursuant to FDA's current policies and guidance that FDA does not require that we obtain regulatory clearances or approvals for our LDTs. The container we provide for collection and transport of tumor samples from a pathology laboratory to our clinical reference laboratory may be a medical device subject to FDA's enforcement of its medical device regulations but we believe it is currently exempt from pre-market review by FDA. While we believe that we are currently in material compliance with applicable laws and regulations, we cannot assure you that FDA or other regulatory agencies would agree with our determination, and a determination that we have violated these laws, or a public announcement that we are being investigated for possible violations of these laws, could adversely affect our business, prospects, results of operations or financial condition.

Moreover, FDA guidance and policy pertaining to diagnostic testing is continuing to evolve and is subject to ongoing review and revision. A significant change in any of the laws, regulations or policies may require us to change our business model in order to maintain regulatory compliance. At various times since 2006, FDA has issued guidance documents or announced draft guidance regarding initiatives that may require varying levels of FDA oversight of our tests. For example, in June 2010, FDA announced a public meeting to discuss the agency's oversight of LDTs prompted by the increased complexity of LDTs and their increasingly important role in clinical decision-making and disease management, particularly in the context of personalized medicine. FDA indicated that it was considering a risk-based application of oversight to LDTs and that, following public input and discussion, it might issue separate draft guidance on the regulation of LDTs, which ultimately could require that we seek and obtain either pre-market clearance or approval of LDTs, depending upon the risk-based approach FDA adopts. The public meeting was held in July 2010 and further public comments were submitted to FDA through September 2010. Section 1143 of the Food and Drug Administration Safety and Innovation Act, signed by the U.S. President on July 9, 2012, required FDA to notify U.S. Congress at least 60 days prior to issuing a draft or final guidance regulating LDTs and provide details of the anticipated action.

On July 31, 2014, FDA notified Congress pursuant to the FDASIA that it intended to issue draft Guidances that would modify its policy of enforcement discretion with respect to LDTs and begin to enforce the applicable medical device regulations with respect to such products and tests. On October 3, 2014, the FDA issued two separate draft guidances: “Framework for Regulatory Oversight of Laboratory Developed Tests (LDTs)” (“The Framework Draft Guidance”) and “FDA Notification and Medical Device Reporting for Laboratory Developed Tests” (the “Notification Draft Guidance”). In the Framework Draft Guidance, FDA states that after the Guidances are finalized, it will no longer exercise enforcement discretion with respect to LDTs and will, instead, regulate them in a risk-based manner consistent with the existing classification of medical devices. Thus, the FDA plans to begin to enforce its medical device requirements, including premarket submission requirements, on LDTs that have historically been marketed without FDA premarket review and oversight. Comments on the Draft Guidances were due on February 2 and those comments are now being considered by the FDA. It is not known when the FDA may issue final Guidances or what form those Guidances may take.

The Framework Draft Guidance states that within six months after the Guidances are finalized, all laboratories will be required to give notice to the FDA and provide basic information concerning the nature of the LDTs offered. The FDA will then begin a phased review of the LDTs available, based on the risk associated with the test. For the highest risk LDTs, which the FDA classifies as Class III devices, the Framework Draft Guidance states that the FDA will begin to require premarket review within 12 months after the Guidance is finalized. Other high risk LDTs will be reviewed over the next four years and then lower risk tests, which will be classified as Class II, will be reviewed in the following four to nine years. The Framework Draft Guidance states that FDA expects to issue a separate Guidance describing the criteria for its risk-based classification 18-24 months after the Guidances are finalized. At this time, we cannot predict how our tests would be classified.

If the FDA regulates LDTs as proposed, then it would classify LDTs according to the current system used to regulate medical devices. Under that system, there are three different classes of medical devices, with the requirements becoming more stringent depending on the Class.

If and when the Guidances are finalized, and the FDA begins to actively enforce its premarket submission regulations with respect to LDTs, we will be required to obtain premarket clearance for our tests under Section 510(k) of the FDCA or approval of a PMA, unless an exemption applies. The premarket review process may require that we conduct clinical trials in support of a 510(k) submission or PMA application. These trials generally require an effective Investigational Device Exemption, or IDE, from FDA for a specified number of patients, unless the product is exempt from IDE requirements or deemed a non-significant risk device eligible for more abbreviated IDE requirements. The IDE application must be supported by appropriate data, such as animal and laboratory testing results. Clinical trials may begin 30 days after the submission of the IDE application unless FDA or the appropriate institutional review boards at the clinical trial sites place the trial on clinical hold.

The process for submitting a 510(k) premarket notification and receiving FDA clearance usually takes from three to twelve months, but it can take significantly longer and clearance is never guaranteed. The process for submitting and obtaining FDA approval of a PMA is much more costly, lengthy and uncertain. It generally takes from one to three years or even longer and approval is not guaranteed. PMA approval typically requires extensive clinical data and can be significantly longer, more expensive and more uncertain than the 510(k) clearance process. Despite the time, effort and expense expended, there can be no assurance that a particular test ultimately will be cleared or approved by the FDA through either the 510(k) clearance process or the PMA process on a timely basis, or at all.

Under the Guidances, we could also for the first time be subject to enforcement of other regulatory requirements applicable to medical devices. For example, our currently-marketed LDTs would be subject to the above pre-market requirements, as well as significant post-market requirements. After a device is placed on the market, regardless of the classification or pre-market pathway, it remains subject to significant regulatory requirements. Even if regulatory approval or clearance of a medical device is granted, FDA may impose limitations or restrictions on the uses and indications for which the device may be labeled and promoted. Medical devices may be marketed only for the uses and indications for which they are cleared or approved.

Device manufacturers must also comply with the FDA's registration and device listing requirements. A medical device manufacturer's manufacturing processes and those of its suppliers are required to comply with the applicable portions of the Quality Systems Regulation, which covers the methods and documentation of the design, testing, production, processes, controls, quality assurance, labeling, packaging and shipping of medical devices. Domestic facility records and manufacturing processes are subject to periodic unscheduled inspections by FDA. FDA also may inspect foreign facilities that export products to the United States.

Failure to comply with applicable regulatory requirements can result in enforcement action by FDA, which may include any of the following sanctions: warning letters, fines, injunctions, civil or criminal penalties, recall or seizure of current or future products, operating restrictions, partial suspension or total shutdown of production, denial of 510(k) clearance or PMA applications for new products, or challenges to or withdrawal of existing 510(k) clearances or PMA applications. In addition, FDA could publicly issue a safety notice related to our test or request updates to our product labeling, including the addition of warnings, precautions or contraindications.

We cannot provide any assurance that FDA regulation, including pre-market review, will not be required in the future for our tests, whether through additional guidance issued by FDA, new enforcement policies adopted by FDA or new legislation enacted by Congress. We believe it is possible that legislation will be enacted into law or guidance could be issued by FDA, which may result in increased regulatory burdens for us to continue to offer our tests or to develop and introduce new tests. Given the attention Congress continues to give to these issues, legislation affecting this area may be enacted into law and may result in increased regulatory burdens on us as we continue to offer our tests and to develop and introduce new tests.

In addition, the Secretary of the Department of Health and Human Services requested that its Advisory Committee on Genetics, Health and Society make recommendations about the oversight of genetic testing. A final report was published in April 2008. If the report's recommendations for increased oversight of genetic testing were to result in further regulatory burdens, they could negatively affect our business and delay the commercialization of tests in development.

The requirement of pre-market review could negatively affect our business until such review is completed and clearance or approval to market is obtained. FDA could require that we stop selling our tests pending pre-market clearance or approval. If FDA allows our tests to remain on the market but there is uncertainty about our tests, if they are labeled investigational by FDA or if labeling claims FDA allows us to make are very limited, orders or reimbursement may decline. The regulatory approval

process may involve, among other things, successfully completing additional clinical trials and making a 510(k) submission, or filing a PMA application with FDA. If FDA requires pre-market review, our tests may not be cleared or approved on a timely basis, if at all. We may also decide voluntarily to pursue FDA pre-market review of our tests if we determine that doing so would be appropriate.

Additionally, should future regulatory actions affect any of the reagents we obtain from vendors and use in conducting our tests, our business could be adversely affected in the form of increased costs of testing or delays, limits or prohibitions on the purchase of reagents necessary to perform our testing.

If we were required to conduct additional clinical trials prior to continuing to offer our proprietary tests or any other tests that we may develop as LDTs, those trials could lead to delays or failure to obtain necessary regulatory approval, which could cause significant delays in commercializing any future products and harm our ability to achieve sustained profitability.

If FDA decides to require that we obtain clearance or approvals to commercialize our proprietary tests, we may be required to conduct additional clinical testing prior to submitting a 510(k) premarket notification or PMA application for commercial sales. In addition, as part of our long-term strategy we plan to seek FDA clearance or approval so we can sell our proprietary tests outside our laboratory; however, we need to conduct additional clinical validation activities on our proprietary tests before we can submit an application for FDA approval or clearance. Clinical trials must be conducted in compliance with FDA regulations or FDA may take enforcement action or reject the data. The data collected from these clinical trials may ultimately be used to support market clearance or approval for our tests. Once commenced, we believe it would likely take two years or more to conduct the studies and trials necessary to obtain clearance or approval from FDA to commercially launch any of our proprietary microarrays outside of our clinical laboratory. Even if our clinical trials are completed as planned, we cannot be certain that their results will support our test claims or that FDA or foreign authorities will agree with our conclusions regarding our test results. Success in early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the later trials will replicate the results of prior trials and studies. If we are required to conduct clinical trials, whether using prospectively acquired samples or archival samples, delays in the commencement or completion of clinical testing could significantly increase our test development costs, delay commercialization, and interrupt sales of our current products and tests. Many of the factors that may cause or lead to a delay in the commencement or completion of clinical trials may also ultimately lead to delay or denial of regulatory clearance or approval. The commencement of clinical trials may be delayed due to insufficient patient enrollment, which is a function of many factors, including the size of the patient population, the nature of the protocol, the proximity of patients to clinical sites and the eligibility criteria for the clinical trial. Moreover, the clinical trial process may fail to demonstrate that our tests are effective for the proposed indicated uses, which could cause us to abandon a test candidate and may delay development of other tests.

We may find it necessary to engage contract research organizations to perform data collection and analysis and other aspects of our clinical trials, which might increase the cost and complexity of our trials. We may also depend on clinical investigators, medical institutions and contract research organizations to perform the trials properly. If these parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, or if the quality, completeness or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or for other reasons, our clinical trials may have to be extended, delayed or terminated. Many of these factors would be beyond our control. We may not be able to enter into replacement arrangements without undue delays or considerable expenditures. If there are delays in testing or approvals as a result of the failure to perform by third parties, our research and development costs would increase, and we may not be able to obtain regulatory clearance or approval for our tests. In addition, we may not be able to establish or maintain relationships with these parties on favorable terms, if at all. Each of these outcomes would harm our ability to market our tests or to achieve sustained profitability.

We are subject to federal and state health care fraud and abuse laws and regulations and could face substantial penalties if we are unable to fully comply with such laws.

We are subject to health care fraud and abuse regulation and enforcement by both the federal government and the states in which we conduct our business. These health care laws and regulations include, for example:

- the federal Anti-kickback Statute, which prohibits, among other things, persons or entities from soliciting, receiving, offering or providing remuneration, directly or indirectly, in return for or to induce either the referral of an individual for, or the purchase order or recommendation of, any item or services for which payment may be made under a federal health care program such as the Medicare and Medicaid programs;
- the federal physician self-referral prohibition, commonly known as the Stark Law, which prohibits physicians from referring Medicare or Medicaid patients to providers of "designated health services" with whom the physician or a

member of the physician's immediate family has an ownership interest or compensation arrangement, unless a statutory or regulatory exception applies;
- HIPAA, which established federal crimes for knowingly and willfully executing a scheme to defraud any health care benefit program or making false statements in connection with the delivery of or payment for health care benefits, items or services;
- the federal civil monetary penalties law, which prohibits, among other things, offering or transferring remuneration, including waivers of co-payments and deductible amounts (or any part thereof), to a federal healthcare beneficiary that a person knows or should know is likely to influence the beneficiary's decision to order or receive items or services reimbursable by the government from a particular provider or supplier;
- federal false claims laws, which, prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, which may apply to items or services reimbursed by any third-party payor, including commercial insurers.

Further, the PPACA, among other things, amends the intent requirement of the federal anti-kickback and criminal health care fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the false claims statutes.

The PPACA, among other things, also imposed new reporting requirements on manufacturers of certain devices, drugs and biologics for certain payments and transfers of value by them and in some cases their distributors to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Failure to submit required information timely, completely and accurately for all payments, transfers of value and ownership or investment interests may result in civil monetary penalties of up to an aggregate of $150,000 per year (or up to an aggregate of $1.0 million per year for “knowing failures”). Manufacturers must submit reports by the 90th day of each calendar year. Any failure to comply with these reporting requirements could result in significant fines and penalties. Because we manufacture our own LDTs solely for use by or within our own laboratory, we believe that we are exempt from these reporting requirements. We cannot assure you, however, that the government will agree with our determination, and a determination that we have violated these laws and regulations, or a public announcement that we are being investigated for possible violations, could adversely affect our business, prospects, results of operations or financial condition.

We have adopted policies and procedures designed to comply with these laws, including policies and procedures relating to financial arrangements between us and physicians who refer patients to us. In the ordinary course of our business, we conduct internal reviews of our compliance with these laws. Our compliance is also subject to governmental review. The government alleged that we engaged in improper billing practices in the past and we may be the subject of such allegations in the future as the growth of our business and sales organization may increase the potential of violating these laws or our internal policies and procedures. The risk of our being found in violation of these laws and regulations is further increased by the fact that many of them have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations.

Any action brought against us for violation of these laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any of these laws and regulations, we may be subject to any applicable penalty associated with the violation, including civil and criminal penalties, damages and fines, and/or exclusion from participation in Medicare, Medi-Cal or other state or federal health care programs, we could be required to refund payments received by us, and we could be required to curtail or cease our operations. Any of the foregoing consequences could seriously harm our business and our financial results.

We are required to comply with laws governing the transmission, security and privacy of health information that require significant compliance costs, and any failure to comply with these laws could result in material criminal and civil penalties.

Under the administrative simplification provisions of HIPAA, the U.S. Department of Health and Human Services has issued regulations which establish uniform standards governing the conduct of certain electronic health care transactions and protecting the privacy and security of Protected Health Information used or disclosed by health care providers and other covered entities. Three principal regulations with which we are currently required to comply have been issued in final form under HIPAA: privacy regulations, security regulations and standards for electronic transactions.

The privacy regulations cover the use and disclosure of Protected Health Information by health care providers. It also sets forth certain rights that an individual has with respect to his or her Protected Health Information maintained by a health care provider, including the right to access or amend certain records containing Protected Health Information or to request restrictions on the use or disclosure of Protected Health Information. We have implemented policies, procedures and standards in an effort to comply appropriately with the final HIPAA security regulations, which establish requirements for safeguarding the confidentiality, integrity and availability of Protected Health Information, which is electronically transmitted or electronically stored. The HIPAA privacy and security regulations establish a uniform federal "floor" and do not supersede state laws that are more stringent or provide individuals with greater rights with respect to the privacy or security of, and access to, their records containing Protected Health Information. As a result, we are required to comply with both HIPAA privacy regulations and varying state privacy and security laws. Moreover, HITECH, among other things, established certain health information security breach notification requirements. Under HIPAA, a covered entity must notify any individual "without unreasonable delay and in no case later than 60 calendar days after discovery of the breach" if their unsecured Protected Health Information is subject to an unauthorized access, use or disclosure. If a breach affects 500 patients or more, it must be reported to HHS and local media without unreasonable delay, and HHS will post the name of the breaching entity on its public website. If a breach affects fewer than 500 individuals, the covered entity must log it and notify HHS at least annually.

These laws contain significant fines and other penalties for wrongful use or disclosure of Protected Health Information. We have implemented practices and procedures to meet the requirements of the HIPAA privacy regulations and state privacy laws. In addition, we are in the process of taking necessary steps to comply with HIPAA's standards for electronic transactions, which establish standards for common health care transactions. Given the complexity of the HIPAA, HITECH and state privacy restrictions, the possibility that the regulations may change, and the fact that the regulations are subject to changing and potentially conflicting interpretation, our ability to comply with the HIPAA, HITECH and state privacy requirements is uncertain and the costs of compliance are significant. To the extent that we submit electronic health care claims and payment transactions that do not comply with the electronic data transmission standards established under HIPAA and HITECH, payments to us may be delayed or denied. Additionally, the costs of complying with any changes to the HIPAA, HITECH and state privacy restrictions may have a negative impact on our operations. We could be subject to criminal penalties and civil sanctions for failing to comply with the HIPAA, HITECH and state privacy restrictions, which could result in the incurrence of significant monetary penalties. For further discussion of HIPAA and the impact on our business, see the section entitled "*Risk Factors-Risks Related to Our Business and Strategy-Security breaches, loss of data, and other disruptions could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to fines, penalties, liability, and adverse effects to our business and our reputation."*

Intellectual Property Risks Related to Our Business

Our rights to use technologies licensed from third parties are not within our control, and we may not be able to sell our products if we lose our existing rights or cannot obtain new rights on reasonable terms.

Our ability to market certain of our tests and services, domestically and/or internationally, is in part derived from licenses to intellectual property which is owned by third parties. As such, we may not be able to continue selling our tests and services if we lose our existing licensed rights or sell new tests and services if we cannot obtain such licensed rights on reasonable terms. In particular, we currently in-license a biomarker from the National Cancer Institute used in our FHACT probe. Further, we may also need to license other technologies to commercialize future products. As may be expected, our business may suffer if (i) these licenses terminate; (ii) if the licensors fail to abide by the terms of the license, properly maintain the licensed intellectual property or fail to prevent infringement of such intellectual property by third parties; (iii) if the licensed patents or other intellectual property rights are found to be invalid or (iv) if we are unable to enter into necessary licenses on reasonable terms or at all. In return for the use of a third-party's technology, we may agree to pay the licensor royalties based on sales of our products as well as other fees. Such royalties and fees are a component of cost of product revenues and will impact the margins on our tests.

Our collaborators may assert ownership or commercial rights to inventions we develop from our use of the biological materials they provide to us.

We rely on certain collaborators to provide us with tissue samples and biological materials that we use to develop our tests. In some cases we have written agreements with collaborators that may require us to negotiate ownership and commercial rights with the collaborator if our use of such collaborator's materials results in an invention. Other agreements may limit our use of those materials to research/not for profit use. In other cases, we may not have written agreements, or the written agreements we have may not clearly deal with intellectual property rights. If we cannot successfully negotiate sufficient ownership and commercial rights to the inventions that result from our use of a collaborator's materials where required, or if disputes

otherwise arise with respect to the intellectual property developed with the use of a collaborator's samples, we may be limited in our ability to capitalize on the market potential of these inventions.

The U.S. government may have "march-in rights" to certain of our probe related intellectual property.

Because federal grant monies were used in support of the research and development activities that resulted in our two issued U.S. patents, the federal government retains what are referred to as "march-in rights" to these patents. In particular, the National Cancer Institute and the National Institutes of Health, each of which administered grant monies to us, technically retain the right to require us, under certain specific circumstances, to grant the U.S. government either a nonexclusive, partially exclusive, or exclusive license to the patented invention in any field of use, upon terms that are reasonable for a particular situation. Circumstances that trigger march-in rights include, for example, failure to take, within a reasonable time, effective steps to achieve practical application of the invention in a field of use, failure to satisfy the health and safety needs of the public, and failure to meet requirements of public use specified by federal regulations. The National Cancer Institute and the National Institutes of Health can elect to exercise these march-in rights on their own initiative or at the request of a third-party.

If we are unable to maintain intellectual property protection, our competitive position could be harmed.

Our ability to protect our proprietary discoveries and technologies affects our ability to compete and to achieve sustained profitability. Currently, we rely on a combination of U.S. and foreign patents and patent applications, copyrights, trademarks and trademark applications, confidentiality or non-disclosure agreements, material transfer agreements, licenses, work-for-hire agreements and invention assignment agreements to protect our intellectual property rights. We also maintain as trade secrets certain company know-how and technological innovations designed to provide us with a competitive advantage in the marketplace. Currently, including both U.S. and foreign patent applications, we have only two issued U.S. patents and twelve pending patent applications relating to various aspects of our technology. While we intend to pursue additional patent applications, it is possible that our pending patent applications and any future applications may not result in issued patents. Even if patents are issued, third parties may independently develop similar or competing technology that avoids our patents. Further, we cannot be certain that the steps we have taken will prevent the misappropriation of our trade secrets and other confidential information and technology, particularly in foreign countries where we do not have intellectual property rights.

From time to time the U.S. Supreme Court, other federal courts, the U.S. Congress or the U.S. Patent and Trademark Office (“USPTO”) may change the standards of patentability. Any such changes could have a negative impact on our business. For instance, on October 30, 2008, the Court of Appeals for the Federal Circuit issued a decision that methods or processes cannot be patented unless they are tied to a machine or involve a physical transformation. The U.S. Supreme Court later reversed that decision in *Bilski v. Kappos*, finding that the "machine-or-transformation" test is not the only test for determining patent eligibility. The Court, however, declined to specify how and when processes are patentable. Most recently, on March 20, 2012, in the case *Mayo v. Prometheus*, the U.S. Supreme Court reversed the Federal Circuit's application of *Bilski* and invalidated a patent focused on a diagnostic process because the patent claim embodied a law of nature. On July 3, 2012, the USPTO issued its Interim Guidelines for Subject Matter Eligibility Analysis of Process Claims Involving Laws of Nature in view of the *Prometheus* decision. It remains to be seen how these guidelines play out in the actual prosecution of diagnostic claims. Similarly, it remains to be seen lower courts will interpret the *Prometheus* decision. Some aspects of our technology involve processes that may be subject to this evolving standard, and we cannot guarantee that any of our pending process claims will be patentable as a result of such evolving standards.

The U.S. Supreme Court's June 14, 2013 decision in *Association for Molecular Pathology v. Myriad* will likely have an impact on the entire biotechnology industry. Specifically, the case involved certain of Myriad Genetics, Inc.'s U.S. patents related to the breast cancer susceptibility genes BRCA1 and BRCA2. Plaintiffs asserted that the breast cancer genes were not patentable subject matter. The Supreme Court unanimously held that the isolated form of naturally occurring DNA molecules does not rise to the level of patent-eligible subject matter. But the Court also held that claims directed to complementary DNA (cDNA) molecules were patent-eligible because cDNA is not naturally occurring. The Supreme Court focused on the informational content of the isolated DNA and determined that the information contained in the isolated DNA molecule was not markedly different from that naturally found in the human chromosome. Yet, in holding isolated cDNA molecules patent-eligible, the Court recognized the differences between human chromosomal DNA and the corresponding cDNA. Because the non-coding regions of naturally occurring chromosomal DNA have been removed in cDNA, the Court accepted that cDNA is not a product of nature and, therefore, is patent-eligible subject matter.

It does not appear that the Supreme Court's ruling in *Myriad* will adversely affect our current patent portfolio which, unlike the claims at issue in *Myriad*, centers on algorithmic methods associating chromosomal markers to specific clinical end-points. Nevertheless, we of course need to remain mindful that this is an evolving area of law.

In addition, on February 5, 2010, the Secretary's Advisory Committee on Genetics, Health and Society voted to approve a report entitled “Gene Patents and Licensing Practices and Their Impact on Patient Access to Genetic Tests.” That report defines "patent claims on genes" broadly to include claims to isolated nucleic acid molecules as well as methods of detecting particular sequences or mutations. The report also contains six recommendations, including the creation of an exemption from liability for infringement of patent claims on genes for anyone making, using, ordering, offering for sale or selling a test developed under the patent for patient care purposes, or for anyone using the patent-protected genes in the pursuit of research. The report also recommended that the Secretary should explore, identify and implement mechanisms that will encourage more voluntary adherence to current guidelines that promote nonexclusive in-licensing of diagnostic genetic and genomic technologies. It is unclear whether the U.S. Department of Health and Human Services will act upon these recommendations, or if the recommendations would result in a change in law or process that could negatively impact our patent portfolio or future research and development efforts.

We may become involved in lawsuits or other proceedings to protect or enforce our patents or other intellectual property rights, which could be time-consuming and costly to defend, and could result in our loss of significant rights and the assessment of treble damages.

From time to time we may face intellectual property infringement (or misappropriation) claims from third parties. Some of these claims may lead to litigation. The outcome of any such litigation can never be guaranteed, and an adverse outcome could affect us negatively. For example, were a third-party to succeed on an infringement claim against us, we may be required to pay substantial damages (including up to treble damages if such infringement were found to be willful). In addition, we could face an injunction, barring us from conducting the allegedly infringing activity. The outcome of the litigation could require us to enter into a license agreement which may not be pursuant to acceptable or commercially reasonable or practical terms or which may not be available at all. It is also possible that an adverse finding of infringement against us may require us to dedicate substantial resources and time in developing non-infringing alternatives, which may or may not be possible. In the case of diagnostic tests, we would also need to include non-infringing technologies which would require us to re-validate our tests. Any such re-validation, in addition to being costly and time consuming, may be unsuccessful.

Furthermore, we may initiate claims to assert or defend our own intellectual property against third parties. Any intellectual property litigation, irrespective of whether we are the plaintiff or the defendant, and regardless of the outcome, is expensive and time-consuming, and could divert our management's attention from our business and negatively affect our operating results or financial condition. We may not be able to prevent, alone or with our collaborators, misappropriation of our proprietary rights, particularly in countries where the laws may not protect those rights as fully as in the United States. In addition, interference proceedings brought by the USPTO may be necessary to determine the priority of inventions with respect to our patents and patent applications or those of our current or future collaborators.

Finally, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential and proprietary information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on our financial condition.

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

Filing, prosecuting and defending patents on our technologies in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. 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 rights are not as strong as those in the United States. These products may compete with our technologies in jurisdictions where we do not have any issued patents and our patent claims or other intellectual rights may not be effective or sufficient to prevent them from so competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not

issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Risks Relating to our International Operations

International expansion of our business exposes us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.

Our business strategy incorporates international expansion, including our recent acquisitions which have provided us with facilities in India and China, and the possibility of establishing and maintaining clinician marketing and education capabilities in other locations outside of the United States and expanding our relationships with distributors and manufacturers. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as tax and transfer pricing laws, export and import restrictions, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us or our distributors to obtain regulatory approvals for the sale or use of our tests in various countries, including failure to achieve "CE Marking", a conformity mark which is required to market in vitro diagnostic medical devices in the European Economic Area and which is broadly accepted in other international markets;
- difficulties in managing foreign operations;
- complexities associated with managing multiple payor-reimbursement regimes or self-pay systems;
- logistics and regulations associated with shipping tissue samples, including infrastructure conditions and transportation delays;
- limits on our ability to penetrate international markets if our diagnostic tests cannot be processed by an appropriately qualified local laboratory;
- financial risks, such as longer payment cycles, difficulty enforcing contracts and collecting accounts receivable and exposure to foreign currency exchange rate fluctuations;
- reduced protection for intellectual property rights;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions; and
- failure to comply with the Foreign Corrupt Practices Act, including its books and records provisions and its anti-bribery provisions, by maintaining accurate information and control over sales and distributors' activities.

Any of these risks, if encountered, could significantly harm our future international expansion and operations and, consequently, have a material adverse effect on our financial condition, results of operations and cash flows.

Our operations are subject to risks associated with emerging markets, including China and India.

Emerging markets are a significant focus of our growth strategy. The developing nature of these markets presents several risks, including deterioration of social, political, labor, or economic conditions in a country or region, and difficulties in staffing and managing foreign operations. Perceived risks associated with investing in emerging markets such as China and India, or a general disruption in the development of such markets could materially and adversely affect our business, operating results and financial condition.

With the completion of the Gentris acquisition, a portion of our assets and operations are located in China and we are subject to regulatory, economic, political and other uncertainties in China.

The Chinese government has the ability to exercise significant influence and control over our operations in China. In recent years, the Chinese government has implemented measures for economic reform, the reduction of state ownership of productive assets and the establishment of corporate governance practices in business enterprises. However, many productive assets in China are still owned by the Chinese government. In addition, the government continues to play a significant role in regulating industrial development by imposing business regulations. It also exercises significant control over the country's economic growth through the allocation of resources, controlling payment of foreign currency-denominated obligations, setting monetary policy and providing preferential treatment to particular industries or companies.

There can be no assurance that China's economic, political or legal systems will not develop in a way that becomes detrimental to our business, results of operations and financial condition. Our activities may be materially and adversely affected by changes

in China's economic and social conditions and by changes in the policies of the government, such as measures to control inflation, changes in the rates or method of taxation and the imposition of additional restrictions on currency conversion.

Additional factors that we may experience in connection with having operations in China or other foreign countries that may adversely affect our business and results of operations include:

- our inability to enforce or obtain a remedy under any material agreements;
- Chinese restrictions on foreign investment that could impair our ability to conduct our business or acquire or contract with other entities in the future;
- restrictions on currency exchange that may limit our ability to use cash flow most effectively or to repatriate our investment;
- fluctuations in currency values;
- cultural, language and managerial differences that may reduce our overall performance; and
- political instability.

With the completion of the BioServe acquisition a portion of our assets and operations are located in India and we are subject to regulatory, economic, political and other uncertainties in India.

In August 2014 we acquired BioServe a leading genomic service and next-generation sequencing company founded in 2002 serving both the research and clinical markets and based in Hyderabad, India. In the past, the Indian economy has experienced many of the problems that commonly confront the economies of developing countries, including high inflation, erratic gross domestic product growth and shortages of foreign exchange. The Indian government has exercised, and continues to exercise, significant influence over many aspects of the Indian economy through the allocation of resources, controlling payment of foreign currency-denominated obligations, setting monetary policy and providing preferential treatment to particular industries, and Indian government actions concerning the economy could have a material adverse effect on private sector entities like us.

India has experienced significant economic growth over the last several years, but faces major challenges in sustaining that growth in the years ahead. These challenges include the need for substantial infrastructure development. India has also recently experienced civil unrest and terrorism and has been involved in conflicts with neighboring countries. In recent years, there have been military confrontations between India and Pakistan that have occurred in the region of Kashmir and along the India-Pakistan border. If India becomes engaged in armed hostilities, particularly if these hostilities are protracted or involve the threat of or use of weapons of mass destruction, it is likely that our operations would be materially adversely affected.

Our financial performance may be adversely affected by general economic conditions and economic and fiscal policy in India, including changes in exchange rates and controls, interest rates and taxation policies, as well as social stability and political, economic or diplomatic developments affecting India in the future.

Some of our contract manufacturers and distributors are located outside of the United States, which may subject us to increased complexity and costs.

We rely on manufacturing facilities located outside the United States for our FHACT probes, particularly in India. We also utilize distributors to sell FHACT probes outside the United States. Our FHACT probe manufacturing and international sales may be subject to certain risks, including:

- difficulty in obtaining, maintaining or enforcing intellectual property rights in some countries;
- local business and cultural factors that differ from our normal standards and practices;
- foreign currency exchange fluctuations;
- different regulatory requirements;
- impediments to the flow of foreign exchange capital payments and receipts due to exchange controls instituted by certain foreign governments and the fact that local currencies of some countries are not freely convertible;
- geopolitical and economic instability and military conflicts;
- difficulties in managing international distributors;
- burdens of complying with a variety of foreign laws and treaties and changes in local laws and regulations, including tax and transfer pricing laws;
- difficulty in enforcing agreements, judgments and arbitration awards in foreign jurisdictions; and
- adverse economic conditions in any jurisdiction.

Our operating results may be adversely affected by fluctuations in foreign currency exchange rates and restrictions on the deployment of cash across our global operations.

Although we report our operating results in U.S. dollars, a portion of our revenues and expenses are or will be denominated in currencies other than the U.S. dollar. Fluctuations in foreign currency exchange rates can have a number of adverse effects on us. Because our consolidated financial statements are presented in U.S. dollars, we must translate revenues, expenses and income, as well as assets and liabilities, into U.S. dollars at exchange rates in effect during or at the end of each reporting period. Therefore, changes in the value of the U.S. dollar against other currencies will affect our revenues, income from operations, other income (expense), net and the value of balance sheet items originally denominated in other currencies. There is no guarantee that our financial results will not be adversely affected by currency exchange rate fluctuations. In addition, in some countries we could be subject to strict restrictions on the movement of cash and the exchange of foreign currencies, which could limit our ability to use these funds across our global operations.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and other worldwide anti-bribery laws.

The FCPA and anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments for the purpose of obtaining or retaining business or other commercial advantage. Our policies mandate compliance with these anti-bribery laws, which often carry substantial penalties, including criminal and civil fines, potential loss of export licenses, possible suspension of the ability to do business with the federal government, denial of government reimbursement for products and exclusion from participation in government health care programs. We operate in jurisdictions such as India and China that have experienced governmental and private sector corruption to some degree, and, in certain circumstances, strict compliance with anti-bribery laws may conflict with certain local customs and practices. We cannot assure that our internal control policies and procedures always will protect us from reckless or other inappropriate acts committed by our affiliates, employees or agents. Violations of these laws, or allegations of such violations, could have a material adverse effect on our business, financial position and results of operations.

Risks Relating to Our Common Stock

There has been a limited trading market for our common stock.

We received approval to list our common stock on The NASDAQ Capital Market in August 2013. No assurance can be given that an active trading market will be sustained. A lack of an active market may impair the ability of our stockholders to sell shares at the time they wish to sell them or at a price that they consider reasonable. The lack of an active market may also reduce the fair market value of our shares. An inactive market may also impair our ability to raise capital by selling shares of capital stock and may impair our ability to acquire other companies or technologies by using our common stock as consideration.

The price of our common stock may be volatile, and the market price of our common stock may decrease.

Our stock price per share may vary from time to time. Even if an active market for our stock continues, our stock price nevertheless may be volatile. Market prices for securities of early-stage life sciences companies have historically been particularly volatile. The factors that may cause the market price of our common stock to fluctuate include, but are not limited to:

- progress, or lack of progress, in developing and commercializing our proprietary tests;
- favorable or unfavorable decisions about our tests or services from government regulators, insurance companies or other third-party payors;
- our ability to recruit and retain qualified regulatory and research and development personnel;
- changes in investors' and securities analysts' perception of the business risks and conditions of our business;
- changes in our relationship with key collaborators;
- changes in the market valuation or earnings of our competitors or companies viewed as similar to us;
- changes in key personnel;
- depth of the trading market in our common stock;
- changes in our capital structure, such as future issuances of securities or the incurrence of additional debt;
- the granting or exercise of employee stock options or other equity awards;
- realization of any of the risks described under this section titled “Risk Factors”; and
- general market and economic conditions.

In addition, the equity markets have experienced significant price and volume fluctuations that have affected the market prices for the securities of newly public companies for a number of reasons, including reasons that may be unrelated to our business or operating performance. These broad market fluctuations may result in a material decline in the market price of our common

stock and you may not be able to sell your shares at prices you deem acceptable. In the past, following periods of volatility in the equity markets, securities class action lawsuits have been instituted against public companies. Such litigation, if instituted against us, could result in substantial cost and the diversion of management attention.

Our stockholders may be diluted by exercises of outstanding options and warrants.

As of December 31, 2015, we had outstanding options to purchase an aggregate of 1,960,929 shares of our common stock at a weighted average exercise price of $10.55 per share and warrants to purchase an aggregate of 4,431,925 shares of our common stock at a weighted average exercise price of $6.78 per share. The exercise of such outstanding options and warrants will result in dilution of the value of our shares.

Reports published by securities or industry analysts, including projections in those reports that exceed our actual results, could adversely affect our common stock price and trading volume.

Securities research analysts, including those affiliated with our underwriters, establish and publish their own periodic projections for our business. These projections may vary widely from one another and may not accurately predict the results we actually achieve. Our stock price may decline if our actual results do not match securities research analysts' projections. Similarly, if one or more of the analysts who writes reports on us downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price could decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, our stock price or trading volume could decline. While we expect securities research analyst coverage, if no securities or industry analysts begin to cover us, the trading price for our stock and the trading volume could be adversely affected.

Our directors and executive officers have substantial influence over us and could delay or prevent a change in corporate control.

Our directors and executive officers, together with their affiliates, in the aggregate beneficially own approximately 25.2% of our outstanding common stock, based on the number of shares outstanding on December 31, 2015. These stockholders, acting together, have significant influence over the outcome of matters submitted to our stockholders for approval, including the election of directors and any merger, consolidation or sale of all or substantially all of our assets. In addition, these stockholders, acting together, have significant influence over our management and affairs. Accordingly, this concentration of ownership might harm the market price of our common stock by:

- delaying, deferring or preventing a change in control;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

We are an "emerging growth company," and any decision on our part to comply only with certain reduced disclosure requirements applicable to "emerging growth companies" could make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and, for as long as we continue to be an "emerging growth company," we intend to take advantage of exemptions from various reporting requirements applicable to other public companies but not to "emerging growth companies," including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as discussed below, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year in which we have total annual gross revenue of $1.0 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our initial public offering; (iii) the date on which we have issued more than $1.0 billion in nonconvertible debt during the previous three years; and (iv) the date on which we are deemed to be a large accelerated filer under the rules of the SEC. We have irrevocably chosen to "opt out" of the extended transition periods available under the JOBS Act for complying with new or revised accounting standards. We intend to take advantage of certain exemptions from various reporting requirements including, but not limited to, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved, and if we do take advantage of these exemptions, we cannot predict if investors will find our common stock less attractive as a result. If some investors find our common stock less attractive as a result of any choices to take advantage of these reduced disclosure obligations, there may be a less active trading market for our common stock and our stock price may be more volatile.

We are incurring significantly increased costs and devote substantial management time as a result of operating as a public company particularly after we are no longer an "emerging growth company."

As a public company and particularly after we cease to be an "emerging growth company," we are incurring significant legal, accounting and other expenses that we did not incur as a private company and which may increase after we are no longer an "emerging growth company." For example, in addition to being required to comply with certain requirements of the Sarbanes-Oxley Act of 2002, we will be required to comply with certain requirements of the Dodd Frank Wall Street Reform and Consumer Protection Act, as well as rules and regulations subsequently implemented by the SEC, including the establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. We expect that compliance with these requirements will increase our legal and financial compliance costs and will make some activities more time consuming and costly. In addition, we expect that our management and other personnel will need to divert attention from operational and other business matters to devote substantial time to these public company requirements.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. In addition, after we are no longer an "emerging growth company," we will be required to have our independent registered public accounting firm attest to the effectiveness of our internal control over financial reporting. Our compliance with Section 404 of the Sarbanes-Oxley Act, as applicable, requires us to incur substantial accounting expense and expend significant management efforts. We currently do not have an internal audit group, and we will need to continue to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. If we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by the NASDAQ, the SEC or other regulatory authorities, which would require additional financial and management resources.

Our ability to successfully implement our business plan and comply with Section 404, as applicable, requires us to be able to prepare timely and accurate financial statements. We expect that we will need to continue to improve existing, and implement new operational and financial systems, procedures and controls to manage our business effectively. Any delay in the implementation of, or disruption in the transition to, new or enhanced systems, procedures or controls, may cause our operations to suffer and we may be unable to conclude that our internal control over financial reporting is effective and to obtain an unqualified report on internal controls from our auditors as required under Section 404 of the Sarbanes-Oxley Act. If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results, and current and potential stockholders may lose confidence in our financial reporting. This, in turn, could have an adverse impact on trading prices for our common stock, and could adversely affect our ability to access the capital markets.

Anti-takeover provisions of our certificate of incorporation, our bylaws and Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove the current members of our board and management.

Certain provisions of our amended and restated certificate of incorporation and bylaws could discourage, delay or prevent a merger, acquisition or other change of control that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. Furthermore, these provisions could prevent or frustrate attempts by our stockholders to replace or remove members of our board of directors. These provisions also could limit the price that investors might be willing to pay in the future for our common stock, thereby depressing the market price of our common stock. Stockholders who wish to participate in these transactions may not have the opportunity to do so. These provisions, among other things:

- allow the authorized number of directors to be changed only by resolution of our board of directors;
- authorize our board of directors to issue, without stockholder approval, preferred stock, the rights of which will be determined at the discretion of the board of directors and that, if issued, could operate as a "poison pill" to dilute the stock ownership of a potential hostile acquirer to prevent an acquisition that our board of directors does not approve;
- establish advance notice requirements for stockholder nominations to our board of directors or for stockholder proposals that can be acted on at stockholder meetings; and
- limit who may call a stockholder meeting.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, or DGCL, which may, unless certain criteria are met, prohibit large stockholders, in particular those owning 15% or more of the voting rights on our common stock, from merging or combining with us for a prescribed period of time.

Because we do not expect to pay cash dividends for the foreseeable future, you must rely on appreciation of our common stock price for any return on your investment. Even if we change that policy, we may be restricted from paying dividends on our common stock.

We do not intend to pay cash dividends on shares of our common stock for the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend upon results of operations, financial performance, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant. Accordingly, you will have to rely on capital appreciation, if any, to earn a return on your investment in our common stock. Investors seeking cash dividends in the foreseeable future should not purchase our common stock.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

Our ability to utilize our federal net operating loss, carryforwards and federal tax credits are limited under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended. The limitations apply since we have experienced an "ownership change," as defined by Section 382, as a result of the Company's securities offerings. Generally, an ownership change occurs if the percentage of the value of the stock that is owned by one or more direct or indirect "five percent shareholders" changes by more than 50 percentage points over their lowest ownership percentage at any time during the applicable testing period (typically three years). Since we have experienced an "ownership change", our NOL carryforwards and federal tax credits are subject to limitations as to our ability to utilize them to offset taxable income and related income taxes. In addition, future changes in our stock ownership, which may be outside of our control, may trigger further "ownership changes" which would further limit their utilization. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards and other tax attributes to offset United States federal taxable income and related income taxes are subject to limitations, which could potentially result in increased future tax liability to us.

Our failure to meet the continued listing requirements of The NASDAQ Capital Market could result in a de-listing of our common stock.

If we fail to satisfy the continued listing requirements of The NASDAQ Capital Market, such as the corporate governance requirements or the minimum closing bid price requirement, NASDAQ may take steps to de-list our common stock. Such a de-listing would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a de-listing, we would take actions to restore our compliance with NASDAQ's listing requirements, but we can provide no assurance that any such action taken by us would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the NASDAQ minimum bid price requirement or prevent future non-compliance with NASDAQ listing requirements.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of December 31, 2015, we had a lease for approximately 17,900 square feet of office and laboratory space in Rutherford, New Jersey, 24,900 square feet of laboratory space located in Research Triangle Park (RTP) in Morrisville, North Carolina, 10,000 square feet of laboratory space in Hyderabad, India, 2,700 square feet of laboratory space in Shanghai, China and approximately 27,000 square feet of laboratory space in Los Angeles, California. We have escalating lease agreements for both our New Jersey and North Carolina spaces which expire February 2018 and May 2020 respectively. We also have a lease agreement for our California space which expires on June 30, 2016. We currently are negotiating an extension of our California lease.

Item 3. Legal Proceedings

In the normal course of business, the Company may be involved in legal proceedings or threatened legal proceedings. We are not party to any legal proceedings or aware of any threatened legal proceedings which are expected to have a material adverse effect on our financial condition, results of operations or liquidity.

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

The following table sets forth, for the periods indicated, the reported high and low sales prices of our common stock on The NASDAQ Capital Market.

	High	Low
4th Quarter 2015	$ 8.51	$ 2.75
3rd Quarter 2015	$ 12.75	$ 7.57
2nd Quarter 2015	$ 12.22	$ 7.57
1st Quarter 2015	$ 9.76	$ 6.55
4th Quarter 2014	$ 8.95	$ 4.83
3rd Quarter 2014	$ 11.35	$ 8.36
2nd Quarter 2014	$ 16.55	$ 8.54
1st Quarter 2014	$ 20.00	$ 13.50

Holders

As of December 31, 2015, we had approximately 105 holders of record of our common stock. The number of record holders was determined from the records of our transfer agent and does not include beneficial owners of common stock whose shares are held in the names of various security brokers, dealers, and registered clearing agencies. The transfer agent of our common stock is Continental Stock Transfer & Trust, 17 Battery Place, 8th Floor, New York, New York, 10004.

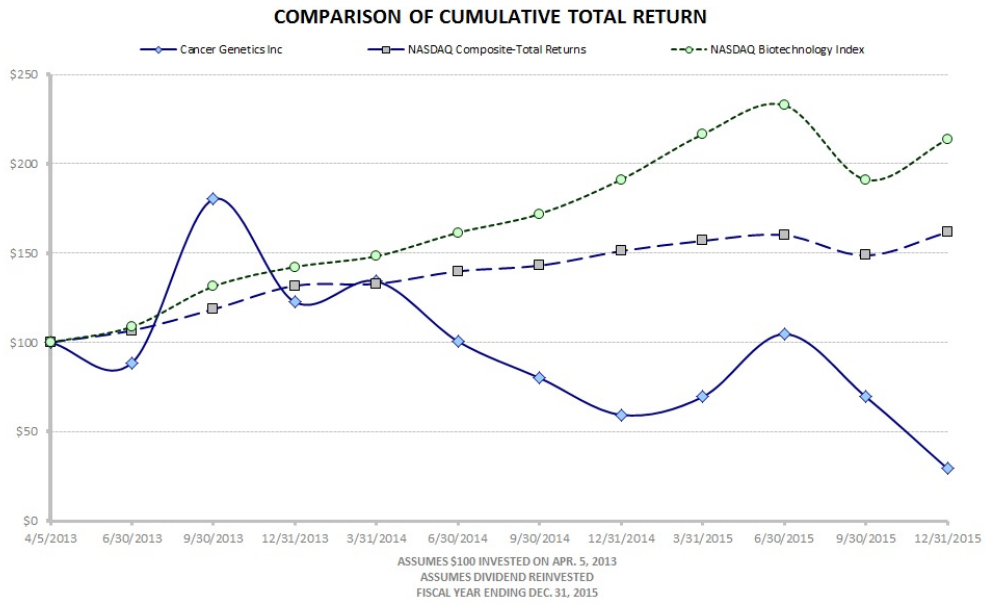
Dividends

We have never declared dividends on our equity securities, and currently do not plan to declare dividends on shares of our common stock in the foreseeable future. We expect to retain our future earnings, if any, for use in the operation and expansion of our business. Subject to the foregoing, the payment of cash dividends in the future, if any, will be at the discretion of our board of directors and will depend upon such factors as earnings levels, capital requirements, our overall financial condition and any other factors deemed relevant by our board of directors.

Stock Performance Graph

This graph is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference into any of our filings under the Securities Act or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

The following graph shows the total stockholder return of an investment of $100 in cash on April 5, 2013 (the first day of trading on our common stock), through December 31, 2015 for (i) our common stock, (ii) the NASDAQ Composite Index (U.S.), and (iii) NASDAQ Biotechnology Index. Pursuant to applicable SEC rules, all values assume reinvestment of the full amount of all dividends; however, no dividends have been declared on our common stock to date. The stockholder return shown on the graph below is not necessarily indicative of future performance, and we do not make or endorse any predictions as to future stockholder returns.



Equity Compensation Plan Information

The following table provides information as of December 31, 2015 regarding shares of our common stock that may be issued under our existing equity compensation plans, including our 2008 Stock Option Plan (the "2008 Plan") and our 2011 Equity Incentive Plan (the "2011 Plan") as well as shares issued outside of these plans.

	Equity Compensation Plan Information			
Plan Category	**(a) Number of securities to be issued upon exercise of outstanding options and rights(1)**	**(b) Weighted Average exercise price of outstanding options and rights**	**(c) Number of securities remaining available for future issuance under equity compensation plan (excluding securities referenced in column (a))**	
Equity compensation plans approved by security holders (2)	1,924,929	$ 10.56	964,253	(3)
Equity compensation plans not approved by security holders (4)	36,000	$ 10.00	—	
Total	1,960,929	$ 10.55	964,253	

(1) Does not include any restricted stock as such shares are already reflected in our outstanding shares.
(2) Consists of the 2008 Plan and the 2011 Plan.
(3) Includes securities available for future issuance under the 2008 Plan and the 2011 Plan.
(4) These options were issued to one of our current board members in connection with consulting services.

Item 6. Selected Financial Data.

The selected financial data set forth below as of December 31, 2015 and 2014, and for each of the years ended December 31, 2015, 2014, and 2013 has been derived from the audited consolidated financial statements of the Company, which are included elsewhere in this Annual Report on Form 10-K. We derived the consolidated financial data for the years ended December 31,

2012 and 2011, and as of December 31, 2013, 2012 and 2011 from our audited consolidated financial statements that are not included elsewhere in this Annual Report on Form 10-K.

The information set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the audited consolidated financial statements, and the notes thereto, and other financial information included herein. Our historical results are not necessarily indicative of our future results.

	Year Ended December 31,				
	2015	**2014**	**2013**	**2012**	**2011**
	(in thousands, expect per share data)				
Consolidated Statements of Operations Data:					
Revenue	**$ 18,040**	$ 10,199	$ 6,610	$ 4,302	$ 3,019
Cost of revenues	**14,098**	8,453	4,925	3,929	3,117
Gross profit (loss)	**3,942**	1,746	1,685	373	(98)
Operating expenses:					
Research and development	**5,483**	4,622	2,190	2,112	2,074
General and administrative	**14,567**	12,369	6,115	4,503	4,439
Sales and marketing	**5,269**	3,964	1,842	1,399	1,574
Total operating expenses	**25,319**	20,955	10,147	8,014	8,087
Loss from operations	**(21,377)**	(19,209)	(8,462)	(7,641)	(8,185)
Other income (expense):					
Interest expense	**(344)**	(473)	(2,388)	(4,701)	(1,314)
Interest income	**49**	74	30	—	—
Change in fair value of warrant liability	**35**	417	4,633	7,538	(10,388)
Change in fair value of acquisition note payable	**269**	198	—	—	—
Loss on debt and warrant restructuring	**—**	—	—	(1,862)	—
Debt conversion costs	**—**	—	(6,850)	—	—
Total other income (expense)	**9**	216	(4,575)	975	(11,702)
Loss before income taxes	**(21,368)**	(18,993)	(13,037)	(6,666)	(19,887)
Income tax (benefit)	**(1,184)**	(2,350)	(664)	—	—
Net (loss)	**$ (20,184)**	$ (16,643)	$ (12,373)	$ (6,666)	$ (19,887)
Basic net (loss) per share	**$ (1.96)**	$ (1.76)	$ (2.65)	$ (4.97)	$ (15.61)
Diluted net (loss) per share	**$ (1.96)**	$ (1.80)	$ (3.64)	$ (10.55)	$ (15.61)
Basic weighted average shares outstanding	**10,298**	9,449	4,665	1,342	1,274
Diluted weighted average shares outstanding	**10,299**	9,462	4,676	1,346	1,274

	Year Ended December 31,				
	2015	**2014**	**2013**	**2012**	**2011**
Consolidated Balance Sheet Data:	*(in thousands)*				
Cash and cash equivalents	**$ 19,459**	$ 25,554	$ 49,460	$ 820	$ 2,417
Working capital (deficit)	**18,333**	27,389	43,272	(9,612)	(1,078)
Total assets	**48,884**	47,105	55,157	8,952	7,031
Debt, excluding current portion	**4,642**	6,000	—	8,441	10,350
Accumulated deficit	**(98,151)**	(77,967)	(61,325)	(48,935)	(42,269)
Total stockholders' equity (deficit)	**$ 33,017**	$ 34,554	$ 45,463	$ (23,981)	$ (19,065)

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

As used herein, the "Company," "we," "us," "our" or similar terms, refer to Cancer Genetics, Inc. and its wholly owned subsidiaries: Cancer Genetics Italia, S.r.l., Gentris, LLC and BioServe Biotechnologies (India) Private Limited, except as expressly indicated or unless the context otherwise requires. The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is intended to help facilitate an understanding of our financial condition and our historical results of operations for the periods presented. This MD&A should be read in conjunction with the audited consolidated financial statements and notes thereto included in this annual report Form10-K. This MD&A may contain forward-looking statements that involve risks and uncertainties. For a discussion on forward-looking statements, see the information set forth in the Introductory Note to this Annual Report under the caption "Forward Looking Statements", which information is incorporated herein by reference.

Overview

We are an emerging leader in the field of personalized medicine, enabling precision medicine in the field of oncology through our diagnostic products and services and molecular markers. We develop, commercialize and provide molecular- and biomarker-based tests and services that enable physicians to personalize the clinical management of each individual patient by providing genomic information to better diagnose, monitor and inform cancer treatment and that enable biopharmaceutical companies engaged in oncology trials to better select candidate populations and reduce adverse drug reactions by providing information regarding genomic factors influencing subject responses to therapeutics. We have a comprehensive, disease-focused oncology testing portfolio. Our tests and techniques target a wide range of cancers, covering eight of the top ten cancers in prevalence in the United States, with additional unique capabilities offered by our Tissue of Origin® test for identifying difficult to diagnose tumor types or poorly differentiated metastatic disease.

Our vision is to become the oncology diagnostics partner for biopharmaceutical companies and clinicians by participating in the entire care continuum from bench to bedside. We believe the diagnostics industry is undergoing a rapid evolution in its approach to oncology testing, embracing precision medicine and individualized testing as a means to drive higher standards of patient treatment and disease management. Similarly, biopharmaceutical companies are increasingly engaging companies such as ours to provide information on clinical trial participants' molecular profiles in order to identify biomarker and genomic variations that may be responsible for differing responses to pharmaceuticals, and particularly to oncology drugs, thereby increasing the efficiency of trials while lowering related costs. We believe tailored therapeutics can revolutionize oncology medicine through molecular- and biomarker-based testing services, enabling physicians and researchers to target the factors that make each patient and disease unique. We have created a unique position in the industry by providing targeted somatic analysis of tumor sample cells alongside germline analysis of an individual's non-cancerous cells' molecular profile as we attempt to reach the next milestone in personalized medicine. Individuals are born with germline mutations, and somatic mutations arise in tissues over the course of a lifetime.

Our services are performed at our state-of-the-art laboratories located in New Jersey, North Carolina, California, Shanghai (China), and Hyderabad, India. Our laboratories comply with the highest regulatory standards as appropriate for the services they deliver including CLIA, CAP, NY State, California State and NABL (India). We have two advisory boards to counsel our scientific and clinical direction. Our Scientific Advisory Board is comprised of preeminent scientists and physicians from the fields of cancer biology, cancer pathology, cancer medicine and molecular genetics. Our Clinical Advisory Board is comprised of clinicians and scientists focused on clinical implementation of our proprietary tests and services and mapping those tests and services to patient needs. Our services are built on a foundation of world-class scientific knowledge and intellectual property in solid and blood-borne cancers, as well as strong academic relationships with major cancer centers such as Memorial Sloan-Kettering, Mayo Clinic, and the National Cancer Institute.

Our clinical offerings include our portfolio of proprietary tests targeting hematological, urogenital and HPV-associated cancers, in conjunction with ancillary non-proprietary tests. Our proprietary tests target cancers that are difficult to prognose and predict treatment outcomes through currently available mainstream techniques. We provide our proprietary tests and services, along with a comprehensive range of non-proprietary oncology-focused tests and laboratory services, to oncologists and pathologists at hospitals, cancer centers, and physician offices, as well as biotech and pharmaceutical companies to support their clinical trials. Our proprietary tests are based principally on our expertise in specific cancer types, test development methodologies and proprietary algorithms correlating genetic events with disease specific information. Our portfolio primarily includes comparative genomic hybridization (CGH) microarrays and next generation sequencing (NGS) panels, and DNA fluorescent *in situ* hybridization (FISH) probes.

The non-proprietary testing services we offer are focused in part on specific oncology categories where we are developing our proprietary tests. We believe that there is significant synergy in developing and marketing a complete set of tests and services that are disease focused and delivering those tests and services in a comprehensive manner to help with treatment decisions.

The insight that we develop in delivering the non-proprietary services are often leveraged in the development of our proprietary programs and now increasingly in the validation of our proprietary programs, such as MatBA and Focus::NGS.

We expect to continue to incur significant losses for the near future. We incurred losses of $20.2 million, $16.6 million and $12.4 million for fiscal years ended December 31, 2015, 2014 and 2013, respectively. As of December 31, 2015, we had an accumulated deficit of $98.2 million.

Acquisitions

On July 16, 2014, we purchased substantially all of the assets of Gentris Corporation, a Delaware corporation ("Gentris"), with its principal place of business in North Carolina, for aggregate consideration of approximately $4.8 million.

On August 18, 2014, we acquired BioServe Biotechnologies (India) Private Limited, an Indian corporation ("BioServe") for an aggregate purchase price of approximately $1.1 million.

On October 9, 2015, we acquired substantially all of the assets of Response Genetics, Inc. ("Response Genetics") with its principal place of business in California, for aggregate consideration of approximately $12.9 million.

Key Factors Affecting our Results of Operations and Financial Condition

Our overall long-term growth plan is predicated on our ability to develop and commercialize our proprietary tests, penetrate the Biopharma community to achieve more revenue supporting clinical trials and develop and penetrate the Indian market. Our proprietary tests include CGH microarrays, NGS panels, and DNA FISH probes.We continue to develop additional proprietary tests. To facilitate market adoption of our proprietary tests, we anticipate having to successfully complete additional studies with clinical samples and publish our results in peer-reviewed scientific journals. Our ability to complete such studies is dependent upon our ability to leverage our collaborative relationships with leading institutions to facilitate our research and obtain data for our quality assurance and test validation efforts.

We believe that the factors discussed in the following paragraphs have had and are expected to continue to have a material impact on our results of operations and financial condition.

Revenues

Our revenue is primarily generated through our Clinical Services and Biopharma Services. Clinical Services can be billed to Medicare, another third party insurer or the referring community hospital or other healthcare facility in accordance with state and federal law. Biopharma Services are billed to the customer directly. While we have agreements with our Biopharma clients, volumes from these clients are subject to the progression and continuation of the trials which can impact testing volume. We also derive limited revenue from Discovery Services, which are services provided in the development of new testing assays and methods. Discovery Services are billed directly to the customer.

We have historically derived a significant portion of our revenue from a limited number of test ordering sites, although the test ordering sites that generate a significant portion of our revenue have changed from period to period. Test ordering sites account for all of our Clinical Services revenue along with a portion of the Biopharma Services revenue. Our test ordering sites are hospitals, cancer centers, reference laboratories, physician offices and biopharmaceutical companies. Oncologists and pathologists at these sites order the tests on behalf of the needs of their oncology patients or as part of a clinical trial sponsored by a biopharmaceutical company in which the patient is being enrolled.

The top five test ordering clients during 2015 and 2014 accounted for 49% and 56%, respectively, of our testing volumes, with 18% and 38%, respectively, of the test volume coming from community hospitals. During the year ended December 31, 2015, one Biopharma client accounted for approximately 19% of our revenue. During the year ended December 31, 2014 there were two Biopharma clients that accounted for approximately 23% and 12%, respectively, of our revenue. The loss of our largest client would materially adversely affect our results of operations, however the loss of any other test ordering client would not materially adversely affect our results of operations.

We receive revenue for our Clinical Services from Medicare, other insurance carriers and other healthcare facilities. Some of our customers choose, generally at the beginning of our relationship, to pay for laboratory services directly as opposed to having patients (or their insurers) pay for those services and providing us with the patients' insurance information. A hospital may elect to be a direct bill customer and pay our bills directly, or may provide us with patient information so that their patients pay our bills, in which case we generally expect payment from their private insurance carrier or Medicare. In a few instances,

we have arrangements where a hospital may have two accounts with us, so that certain tests are billed directly to the hospital, and certain tests are billed to and paid by a patient's insurer. The billing arrangements generally are dictated by our customers and in accordance with state and federal law.

For the year ended December 31, 2015, Medicare accounted for approximately 10% of our total revenue, other insurance accounted for approximately 12% of our total revenue and other healthcare facilities accounted for 9% of our total revenue. On average, we generate less revenue per test from other healthcare facilities billed directly, than from other insurance payors.

Cost of Revenues

Our cost of revenues consists principally of internal personnel costs, including stock-based compensation, laboratory consumables, shipping costs, overhead and other direct expenses, such as specimen procurement and third party validation studies. We are pursuing various strategies to reduce and control our cost of revenues, including automating our processes through more efficient technology and attempting to negotiate improved terms with our suppliers. We completed two acquisitions in 2014; Gentris in North Carolina and BioServe in India. In 2015, we acquired substantially all of the assets of Response Genetics in California. With these three acquisitions, we have made significant process with integrating our resources and services in an effort to reduce costs. We will continue to assess how geographic advantage can help us improve our cost structure.

Operating Expenses

We classify our operating expenses into three categories: research and development, sales and marketing, and general and administrative. Our operating expenses principally consist of personnel costs, including stock-based compensation, outside services, laboratory consumables and overhead, development costs, marketing program costs and legal and accounting fees.

Research and Development Expenses. We incur research and development expenses principally in connection with our efforts to develop our proprietary tests. Our primary research and development expenses consist of direct personnel costs, laboratory equipment and consumables and overhead expenses. In 2013, we entered into a joint venture with the Mayo Foundation for Medical Education and Research, with a focus on developing oncology diagnostic services and tests utilizing next generation sequencing. All research and development expenses are charged to operations in the periods they are incurred.

General and Administrative Expenses. General and administrative expenses consist principally of personnel-related expenses, professional fees, such as legal, accounting and business consultants, occupancy costs, bad debt and other general expenses. We have incurred increases in our general and administrative expenses and anticipate further increases as we expand our business operations.

Sales and Marketing Expenses. Our sales and marketing expenses consist principally of personnel and related overhead costs for our sales team and their support personnel, travel and entertainment expenses, and other selling costs including sales collaterals and trade shows. We expect our sales and marketing expenses to increase as we expand into new geographies and add new clinical tests and services.

Seasonality

Our business experiences decreased demand during spring vacation season, summer months and the December holiday season when patients are less likely to visit their health care providers. We expect this trend in seasonality to continue for the foreseeable future.

Results of Operations

Years Ended December 31, 2015 and 2014

The following table sets forth certain information concerning our results of operations for the periods shown:

	Year Ended December 31,		Change	
	2015	2014	$	%
(dollars in thousands)				
Revenue	**$ 18,040**	$ 10,199	$ 7,841	77 %
Cost of revenues	**14,098**	8,453	5,645	67 %
Research and development expenses	**5,483**	4,622	861	19 %
General and administrative expenses	**14,567**	12,369	2,198	18 %
Sales and marketing expenses	**5,269**	3,964	1,305	33 %
Total operating loss	**$ (21,377)**	$ (19,209)	$ (2,168)	11 %
Interest income (expense)	**(295)**	(399)	104	-26 %
Change in fair value of warrant liability	**35**	417	(382)	-92 %
Change in fair value of acquisition note payable	**269**	198	71	36 %
Loss before income taxes	**(21,368)**	(18,993)	(2,375)	13 %
Income tax benefit (expense)	**1,184**	2,350	(1,166)	-50 %
Net loss	**$ (20,184)**	$ (16,643)	$ (3,541)	21 %

Revenue

The breakdown of our revenue is as follows:

	Year Ended December 31,				Change	
	2015		2014			
(dollars in thousands)	$	%	$	%	$	%
Biopharma Services	**11,564**	**64%**	5,606	55%	5,958	106%
Clinical Services	**5,651**	**31%**	4,432	43%	1,219	28%
Discovery Services	**825**	**5%**	161	2%	664	412%
Total Revenue	**18,040**	**100%**	10,199	100%	7,841	77%

Revenue increased 77%, or $7.8 million, to $18.0 million for the year ended December 31, 2015, from $10.2 million for the year ended December 31, 2014, principally due to the acquisitions of Gentris, BioServe and Response Genetics, whose revenue accounted for $5.5 million of the increase. The increase of $2.4 million was driven by additional clinical trial studies performed by our New Jersey location. Our average revenue (excluding probe revenue) per test decreased to $532 per test for the year ended December 31, 2015 from $550 per test for the year ended December 31, 2014, principally due to lower revenue per test at the newly acquired West Coast location. Overall test volumes increased by 68% from 11,912 tests for the year ended December 31, 2014 to 19,996 tests for the year ended December 31, 2015.

Revenue from Biopharma Services increased 106%, or $6.0 million, to $11.6 million for the year ended December 31, 2015, from $5.6 million for the year ended December 31, 2014, principally due to the acquisition of Gentris whose revenue accounted for a $3.1 million increase; additional clinical trial studies performed at our New Jersey location which accounted for $2.4 million of the increase; and the acquisition of Response Genetics, which accounted for $0.5 million of the increase. Revenue from Clinical Services customers increased 28%, or $1.2 million, to $5.7 million for the year ended December 31, 2015, from $4.4 million for the year ended December 31, 2014, principally due to the acquisition of Response Genetics, which accounted for $1.2 million of the increase. Revenue from Discovery Services, our new line of business in 2014, increased $0.7 million, to $0.8 million for the year ended December 31, 2015, representing 5% of total revenue.

Cost of Revenues

Cost of revenues increased 67%, or $5.6 million, to $14.1 million for the year ended December 31, 2015, from $8.5 million for the year ended December 31, 2014, principally due to the following: costs of revenue from the acquired businesses of $4.8 million, lab supplies expenses increased by $0.4 million or 27% as a result of higher test volumes, and compensation costs increased by $0.2 million or 9% as a result of us securing the expertise needed to continue to deliver high quality test results. Overall the cost of revenue as a percentage of revenue decreased in comparison to 2014 as a result of us implementing cost transformation programs to reduce shipping, consulting and direct labor costs.

Operating Expenses

Research and Development Expenses. Research and development expenses increased 19%, or $0.9 million, to $5.5 million for the year ended December 31, 2015, from $4.6 million for the year ended December 31, 2014, principally due to the following: compensation increased by $0.4 million or 24% due to key additions to the R&D team; supplies costs increased by $0.3 million or 45% as a result of us accelerating the development of proprietary tests; costs associated with the acquired businesses of $0.2 million; and collaboration costs increased by $0.2 million or 65% as we teamed up with other research labs to capitalize on R&D efforts. These increases were partially offset by a decrease in our share of the loss from Oncospire, our joint venture with Mayo Clinic, of $0.2 million or 25%.

General and Administrative Expenses. General and administrative expenses increased 18%, or $2.2 million to $14.6 million for the year ended December 31, 2015, from $12.4 million for the year ended December 31, 2014, principally due to the following: $0.9 million of costs from the acquisition of Response Genetics; costs from the acquired businesses of $2.2 million; increased compensation costs of $0.2 million or 8% as a result of increased headcount; and increased bad debt allowance of $0.2 million or 92% as a result of establishing a reserve for potential uncollectible amounts in our Clinical Services businesses. These increases were partially off-set by a decrease in stock-based compensation of $0.9 million or 32%; a reduction in Delaware corporate taxes of $0.1 million or 41%; a reduction of Medical Billing third-party expenses of $0.1 million or 17% as a result of bringing part of the function in-house; a reduction of $0.1 million in recruiting fees or 35% as a result of stabilizing our staff; and a reduction of $41,000 or 19% in printing costs as a result of our cost transformation initiatives.

Sales and Marketing Expenses. Sales and marketing expenses increased 33%, or $1.3 million, to $5.3 million for the year ended December 31, 2015, from $4.0 million for the year ended December 31, 2014, principally due to the following: costs from the acquired businesses of $1.0 million, and compensation costs increased by $0.3 million, or 11%, as a result of increased commissions resulting from increased revenue and us building and developing our team.

Interest Income and Expense

Interest expense decreased 26%, or $0.1 million, to $0.3 million for the year ended December 31, 2015, from $0.4 million for the year ended December 31, 2014, principally due to the decrease in amortization of loan guarantee and financing fees, offset by the higher interest rate related to debt that was refinanced in May 2015.

Change in Fair Value of Warrant Liability

The change in the fair market value of our warrant liability resulted in $35,000 in non-cash income for the year ended December 31, 2015, as compared to non-cash income of $0.4 million for the year ended December 31, 2014. The fair market value of these common stock warrants decreased as a consequence of a decrease in our stock price and the expiration 15,000 warrants in 2015.

Change in Fair Value of Acquisition Note Payable

The change in fair value of the acquisition note payable resulted in $0.3 million in non-cash income for the year ended December 31, 2015, as compared to $0.2 million for the year ended December 31, 2014. The fair value of the note, representing part of the purchase price for BioServe, decreased as a consequence of a decrease in our stock price.

Income Taxes

In November 2015, we received $1.2 million from sales of state NOL's and research and development tax credits. During the year ended December 31, 2014, we received two payments totaling $2.4 million from sales of state NOL’s.

Year Ended December 31, 2014 and 2013

The following table sets forth certain information concerning our results of operations for the periods shown:

	Year Ended December 31,		Change	
	2014	2013	$	%
(dollars in thousands)				
Revenue	$ 10,199	$ 6,610	$ 3,589	54 %
Cost of revenues	8,453	4,925	3,528	72 %
Research and development expenses	4,622	2,190	2,432	111 %
General and administrative expenses	12,369	6,115	6,254	102 %
Sales and marketing expenses	3,964	1,842	2,122	115 %
Total operating loss	$ (19,209)	$ (8,462)	$ (10,747)	127 %
Interest income (expense)	(399)	(2,358)	1,959	-83 %
Change in fair value of warrant liability	417	4,633	(4,216)	-91 %
Change in fair value of acquisition note payable	198	—	198	n/a
Debt conversion costs	—	(6,850)	6,850	100 %
Loss before income taxes	(18,993)	(13,037)	(5,956)	46 %
Income tax benefit (expense)	2,350	664	1,686	254 %
Net loss	$ (16,643)	$ (12,373)	$ (4,270)	35 %

Revenue

The breakdown of our revenue is as follows:

	Year Ended December 31,				Change	
	2014		2013			
(dollars in thousands)	$	%	$	%	$	%
Biopharma Services	5,606	55%	2,650	40%	2,956	112 %
Clinical Services	4,432	43%	3,663	55%	769	21 %
Discovery Services	161	2%	—	—%	161	n/a
Grants	—	—%	297	5%	(297)	(100)%
Total Revenue	10,199	100%	6,610	100%	3,589	54 %

Revenue increased 54%, or $3.6 million, to $10.2 million for the year ended December 31, 2014, from $6.6 million for the year ended December 31, 2013, principally due to the acquisitions of Gentris and BioServe, whose revenue accounted for $3.3 million of the increase. Our average revenue (excluding grant revenue and probe revenue) per test decreased to $550 per test for the year ended December 31, 2014 from $566 per test for the year ended December 31, 2013, principally due to a decrease in the average revenue per test from private insurance carriers and other non-Medicare payors. This was offset by an 11% increase in test volume from 10,771 tests for the year ended December 31, 2013, to 11,912 tests for the year ended December 31, 2014.

Revenue from Biopharma Services increased 112%, or $3.0 million, to $5.6 million for the year ended December 31, 2014, from $2.7 million for the year ended December 31, 2013, principally due to the acquisition of Gentris whose revenue accounted for a $3.1 million increase offset by an $0.2 million decrease in legacy Biopharma Services. Revenue from Clinical Services customers increased 21%, or $0.8 million, to $4.4 million for the year ended December 31, 2014, from $3.7 million for the year ended December 31, 2013, principally due to an increase in test volume. This increase in volume was partially offset by a decrease in average revenue per test. Revenue from Discovery Services, our new line of business, increased $0.2 million for the year ended December 31, 2014 representing 2% of total revenue. Revenue from Grants decreased 100%, or $0.3 million, for the year ended December 31, 2014, due to the completion of all grant activities in the year ended December 31, 2013.

Cost of Revenues

Cost of revenues increased 72%, or $3.5 million, to $8.4 million for the year ended December 31, 2014, from $4.9 million for the year ended December 31, 2013, principally due to the following: Costs of revenue from the acquired businesses of $2.2 million, lab supplies expenses increased by $0.5 million or 40% as a result of higher test volumes, shipping costs increased by $0.3 million or 130% as a result of higher test volume, outsourcing services increased by $0.2 million or 257% as a result of us

contracting with select labs to perform some of our tests, and compensation costs increased by $0.2 million or 9% as a result of us securing the expertise needed to continue to deliver high quality test results. Overall the cost of revenue did not increase proportionately with revenue, due to the cost of revenue in 2013 being lower in proportion as a result of us performing a large number of tests for a clinical trials client in 2013 and in 2013 there was $0.3 million in grant revenues that carried minimal costs, whereas in 2014 there were no grant revenues.

Operating Expenses

Research and Development Expenses. Research and development expenses increased 111%, or $2.4 million, to $4.6 million for the year ended December 31, 2014, from $2.2 million for the year ended December 31, 2013, principally due to the following: Our share of the loss from Oncospire, our joint venture with Mayo Clinic, increased $0.9 million, as it incurred a full year of research expenses related to the pursuit of developing new clinical tests. (In 2013, the costs associated with our joint venture was $12,000). Compensation costs increased by $0.8 million or 88% as a result of us building up our R&D team, and supplies costs increased by $0.3 million or 64% as a result of us accelerating the development of our proprietary tests.

General and Administrative Expenses. General and administrative expenses increased 102%, or $6.3 million to $12.4 million for the year ended December 31, 2014, from $6.1 million for the year ended December 31, 2013, principally due to the following: Costs from the acquired businesses of $1.4 million, stock-based compensation increased by $2.5 million, costs associated with being a public company increased by $1.5 million due to higher consulting, legal and insurance expenses, compensation costs increased by $0.6 million primarily due to a severance agreement for a former officer, allowance for doubtful accounts increased by $0.2 million as we established a reserve for potential uncollectable amounts in our Clinical Services business, professional and consulting fees increased by $0.1 million, recruiting fee costs increased by $0.1 million, and travel costs increased by $0.1 million as a result of the increased travel related to the acquisitions and our expanded customer base, partially off-set by $0.6 million in IPO costs incurred in 2013, which did not recur in 2014.

Sales and Marketing Expenses. Sales and marketing expenses increased 115%, or $2.1 million, to $3.9 million for the year ended December 31, 2014, from $1.8 million for the year ended December 31, 2013, principally due to the following: Costs from the acquired businesses of $0.5 million, compensation costs increased by $1.1 million or 86% as a result of us building and developing our team, marketing costs increased by $0.2 million or 163% as a result of a concentrated effort to expand our customer base, travel costs increased by $0.1 million, and stock-based compensation increased by $0.1 million due to increases in the number of sales personnel.

Interest Income and Expense

Interest expense decreased 83%, or $2.0 million, to $0.4 million for the year ended December 31, 2014, from $2.4 million for the year ended December 31, 2013. The decrease is attributable to the conversion of $9.6 million of debt into common stock which occurred concurrently with the closing of our IPO on April 10, 2013 and the repayment of $3.5 million in indebtedness in August 2013.

Debt Conversion Costs

On April 10, 2013, we completed our IPO. In connection with the IPO, $9.6 million of debt was converted into common stock at the IPO price of $10.00 per share. In connection with the conversion of debt into common stock, we expensed the applicable remaining debt discounts of $3.5 million, financing fees of $0.4 million and a contingently recognizable beneficial conversion feature in the converted debt of $3.0 million, the total of which resulted in a $6.9 million write-off. There were no comparable costs in 2014.

Change in Fair Value of Warrant Liability

The change in the fair market value of our warrant liability resulted in $0.4 million in non-cash income for the year ended December 31, 2014, as compared to non-cash income of $4.6 million for the year ended December 31, 2013. The fair market value of these common stock warrants decreased as a consequence of a decrease in our stock price.

Income Taxes

During the year ended December 31, 2014, we received two payments totaling $2.4 million from sales of state NOL's. During January 2013, we received $0.7 million from the sale of state NOL's.

Liquidity and Capital Resources

Sources of Liquidity

Our primary sources of liquidity have been funds generated from our debt financings and equity financings. In addition, we have generated funds from the following sources: (i) cash collections from customers and (ii) cash received from sale of state NOL's.

During November 2015, we received $1.2 million from sales of state NOL's and research and development tax credits. During the year ended December 31, 2014, we received two payments totaling $2.4 million from sales of state NOL's. During January 2013, we received $0.7 million from the sale of state NOL's.

In general, our primary uses of cash are providing for operating expenses, working capital purposes and servicing debt. As of December 31, 2015, we have not borrowed on our line of credit, which allows for borrowings of up to $4.0 million. Our largest source of operating cash flow is cash collections from our customers.

Offerings

On April 10, 2013, we sold 690,000 shares of common stock at a public offering price of $10.00 per share and completed our initial public offering, or IPO, with net proceeds of $5.2 million. Upon the closing of the IPO, all shares of our then-outstanding Series A and Series B convertible preferred stock automatically converted into an aggregate of 1,287,325 shares of common stock. Concurrent with the IPO, certain derivative warrants with a fair value of $7.2 million were reclassified into equity due to the lapsing of anti-dilution provisions in the warrants. Also concurrent with the IPO, $9.6 million of debt converted into 963,430 shares of common stock. Refer to Notes 1, 6 and 11 in the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report.

On August 19, 2013 in our Secondary Offering, or our Secondary Offering, we sold 1,500,000 shares of common stock at a public offering price of $10.00 per share which resulted in gross proceeds of $15.0 million ($13.3 million of net proceeds after offering expenses and underwriting discounts). On September 5, 2013, we sold 105,000 additional common shares pursuant to the underwriter's partial exercise of the over-allotment option which resulted in gross proceeds of $1.1 million ($0.9 million of net proceeds after offering expenses and underwriting discounts). Upon completion of the Secondary Offering we repaid indebtedness in the aggregate principal amount of $3.5 million plus accrued interest to DAM and to one of our directors, Andrew Pecora, and an affiliated company NJCCA, all of which indebtedness was due on August 15, 2013.

On October 28, 2013 in a follow-on public offering, or our Follow-On Offering, we sold 3,286,700 shares of common stock (including the underwriter's overallotment of 428,700 shares), at a public offering price of $14.00 per share resulting in gross proceeds of $46.0 million (net proceeds of $42.3 million).

In July 2015, we sold 2,800 shares of common stock that resulted in net proceeds to the Company of $34,000 through our sales agreement with Cantor Fitzgerald & Co. See Note 19 in the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report.

On November 12, 2015, we sold 3,000,000 shares of common stock with warrants to purchase an aggregate of 3,000,000 shares of common stock at a combined public offering price of $4.00 per share and warrant resulting in gross proceeds of $12.0 million ($10.3 million of net proceeds after offering expenses and underwriting discounts). The underwriters also received 450,000 warrants pursuant to the partial exercise of the over-allotment option. The warrants have an exercise price of $5.00, became fully-exercisable at issuance and expire on November 12, 2020.

Credit Facility

On May 7, 2015, we entered into a new debt financing facility with Silicon Valley Bank ("SVB") to refinance the Company's cash collateralized loan from Wells Fargo and to provide an additional working capital line of credit. The SVB credit facility provides for a $6.0 million term note ("Term Note") and a revolving line of credit ("Line of Credit") for an amount not to exceed the lesser of (i) $4.0 million or (ii) an amount equal to 80% of eligible accounts receivable. The Term Note requires interest-only payments through April 30, 2016 and beginning May 1, 2016, monthly principal payments of approximately$167,000 will be required plus interest through maturity on April 1, 2019. The interest rate of the Term Note is the Wall Street Journal prime rate plus 2%, with a floor of 5.25% (5.50% at December 31, 2015) and an additional deferred interest payment of $180,000 will be due upon maturity. The Line of Credit requires monthly interest-only payments of the Wall Street Journal prime rate plus 1.5% (5.00% at December 31, 2015) and matures on May 7, 2017. The new loan agreement requires maintenance of certain financial ratios and grants SVB a first security interest in substantially all Company assets (other than

our intellectual property). Pursuant to the new loan agreement, we are no longer required to maintain restricted cash accounts. At December 31, 2015, the principal balance of the Term Note was $6,000,000 and the principal balance of the Line of Credit was $0. Pursuant to the amendment dated January 28, 2016, we are restricted from using the Line of Credit until $13 million of additional equity is raised.

Cash Flows

Our net cash flow from operating, investing and financing activities for the periods below were as follows:

	Year Ended December 31,		
	2015	2014	2013
(in thousands)			
Cash provided by (used in):			
Operating activities	**$ (13,599)**	$ (12,338)	$ (8,075)
Investing activities	**(2,640)**	(11,373)	(1,399)
Financing activities	**10,144**	(195)	58,114
Net increase (decrease) in cash and cash equivalents	**$ (6,095)**	$ (23,906)	$ 48,640

We had cash and cash equivalents of $19.5 million at December 31, 2015, $25.6 million at December 31, 2014, and $49.5 million at December 31, 2013.

The $6.1 million decrease in cash and cash equivalents for the year ended December 31, 2015 was principally the result of the use of $13.6 million of net cash in operations, purchasing substantially all of assets of Response Genetics for $7.5 million (plus stock), and investing $1.0 million in fixed assets, offset by the $6.0 million decrease in restricted cash and the $10.3 million in net proceeds from the 2015 Offering.

The $23.9 million decrease in cash and cash equivalents for the year ended December 31, 2014 was principally the result of the use of $12.3 million of net cash in operations, restricting $6.0 million to secure a line of credit with Wells Fargo of $6.0 million, payments of $2.9 million for the acquisitions of Gentris and BioServe, payment of $1.0 million to invest in our joint venture with Mayo and the purchase of fixed assets of $1.4 million.

The $48.6 million increase in cash and cash equivalents for the year ended December 31, 2013 was principally the result of the receipt of $5.0 million in proceeds received in our IPO, the receipt of $14.2 in net proceeds from our Secondary Offering, and the receipt of $42.3 million in net proceeds from our Follow-On Offering, all of which were offset by $1.0 million paid to invest in our joint venture with Mayo, the repayment of $3.6 million in indebtedness and the use of $8.1 million of net cash in operations.

Cash Used in Operating Activities

Net cash used in operating activities was $13.6 million for the year ended December 31, 2015. We used $15.7 million in net cash to run our core operations, which included $0.2 million in cash paid for interest. We incurred additional uses of cash when adjusting for working capital items as follows: a net increase in accounts receivable of $1.7 million; an increase in other current assets of $0.4 million and an increase in other assets of $0.1 million. All of these uses of cash were partially offset by a net increase in accounts payable, accrued expenses and deferred revenue of $3.1 million and the receipt of $1.2 million from the sale of state NOL carryforwards and research and development credits in November 2015.

Net cash used in operating activities was $12.3 million for the year ended December 31, 2014. We used $13.5 million in net cash to run our core operations, which included $0.1 million in cash paid for interest. We incurred additional uses of cash when adjusting for working capital items as follows: a net increase in accounts receivable of $1.7 million; an increase in other current assets of $0.2 million which included prepayments for our insurance policies. All of these uses of cash were partially offset by a net increase in accounts payable, accrued expenses and deferred revenue of $0.7 million and the receipt of $2.4 million from the sale of certain state NOL carryforwards in January 2014 and December 2014.

Net cash used in operating activities was $8.1 million for the year ended December 31, 2013. We used $7.1 million in net cash to run our core operations, which included $0.6 million in cash paid for interest. We incurred additional uses of cash as follows: $0.7 million for a net decrease in accounts payable, accrued expenses and deferred revenue; $0.4 million to increase other

current assets which included prepayments for consumables and other supplies used to run our operations as well as prepayments for our insurance policies, and; accounts receivable increased by $0.7 million. All of these uses of cash were partially offset by the receipt of $0.7 million from the sale of certain state NOL carryforwards in January 2013.

Cash Used in Investing Activities

Net cash used in investing activities was $2.6 million for the year ended December 31, 2015 and principally resulted from the purchase of substantially all assets of Response Genetics for $7.5 million, plus stock, and the purchase of fixed assets for $1.0 million, offset by the $6.0 million decrease in restricted cash resulting from refinancing our debt in May 2015.

Net cash used in investing activities was $11.4 million for the year ended December 31, 2014 and principally resulted from an increase in our restricted cash of $6.0 million related to the collateralization of our line of credit with Wells Fargo; cash paid of $2.9 million in the acquisitions of Gentris and BioServe; investment of $1.0 million in our Joint Venture with the Mayo Foundation and purchase of fixed assets of $1.4 million.

Net cash used in investing activities was $1.4 million for the year ended December 31, 2013 and principally resulted from: a $1.0 million payment to Mayo to fund our joint venture; purchases of fixed assets of $0.3 million; patent application costs of $0.1 million, and; an increase in our restricted cash related to a $0.1 million increase in the Letter of Credit related to our lease. Pursuant to the terms of our lease for our Rutherford facility, we were required to maintain a letter of credit in the amount of $0.3 million to use as a guarantee for the security deposit.

Cash Used/Provided by Financing Activities

Net cash provided by financing activities was $10.1 million for the year ended December 31, 2015 principally due to the 2015 Offering, which resulted in $10.3 million in net proceeds, offset by capital lease payments of $0.1 million and equity issuance costs of $0.1 million.

Net cash used in financing activities was $0.2 million for the year ended December 31, 2014, and primarily resulted from payments on notes payable of $0.4 million; partially off-set by proceeds received from warrant and option exercises of $0.3 million.

Net cash provided by financing activities was $58.1 million for the year ended December 31, 2013, and primarily consisted of receipt of $61.5 million in net proceeds raised in our IPO, Secondary Offering and Follow-On Offering offset by the repayment of $3.6 million in indebtedness.

Capital Resources, Acquisitions and Expenditure Requirements

We expect to continue to incur substantial operating losses in the future. It may take several years, if ever, to achieve positive operational cash flow. Until we can generate a sufficient amount of revenue to finance our cash requirements, which we may never do, we will need to continue to raise additional capital to fund our operations.

We also expect to use significant cash to fund acquisitions. On July 16, 2014, we purchased substantially all of the assets of Gentris, with its principal place of business in North Carolina for approximately $4.8 million. On August 18, 2014, we acquired BioServe, an Indian corporation, for an aggregate purchase price of approximately $1.1 million. On October 9, 2015, we acquired substantially all of the assets of Response Genetics, Inc. for aggregate consideration of approximately $12.9 million consisting of $7.5 million in cash and our common stock valued at approximately $5.4 million.

In May 2015, we entered into a line of credit with Silicon Valley Bank. Pursuant to the amendment dated January 28, 2016, the Company agreed not to draw on the line of credit until $13 million of additional equity is raised. See Note 6 in the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report.

On July 15, 2015, the Company entered into a Controlled Equity Offering℠ Sales Agreement (“Sales Agreement”) with Cantor Fitzgerald & Co., (“Cantor”) as sales agent, pursuant to which the Company may offer from time to time through Cantor, shares of our common stock having an aggregate offering price of up to $20.0 million.

We believe that our current cash will support operations for the next 15 to 24 months. We can provide no assurances that any additional sources of financing will be available to us on favorable terms, if at all, when needed. Our forecast of the period of time through which our current financial resources will be adequate to support our operations and the costs to support our

general and administrative, sales and marketing and research and development activities are forward-looking statements and involve risks and uncertainties.

We expect our operating expenses to increase as we continue investing in sales and marketing, research and development and other general and administrative expenses.

Our forecast of the period of time through which our current financial resources will be adequate to support our operations and our expected operating expenses are forward-looking statements and involve risks and uncertainties. Actual results could vary materially and negatively as a result of a number of factors, including:

- our ability to achieve revenue growth and profitability;
- the costs for funding the operations we recently acquired, including Response Genetics, and our ability to successfully integrate those operations with and into our own;
- our ability to obtain approvals for our new diagnostic tests;
- our ability to execute on our marketing and sales strategy for our genomic tests and gain acceptance of our tests in the market;
- our ability to obtain adequate reimbursement from governmental and other third-party payors for our tests and services;
- the costs, scope, progress, results, timing and outcomes of the clinical trials of our diagnostic tests;
- the costs of operating and enhancing our laboratory facilities;
- our ability to succeed with our cost control initiative;
- the timing of and the costs involved in regulatory compliance, particularly if the regulations change;
- the costs of maintaining, expanding and protecting our intellectual property portfolio, including potential litigation costs and liabilities;
- our ability to manage the costs of manufacturing our tests;
- our rate of progress in, and cost of research and development activities associated with, products in research and early development;
- the effect of competing technological and market developments;
- costs related to expansion;
- our ability to secure financing and the amount thereof; and
- other risks discussed in the section entitled “Risk Factors.”

We expect that our operating expenses and capital expenditures will increase in the future as we expand our business and integrate our recent acquisitions. We plan to increase our sales and marketing headcount to promote our new clinical tests and services and to expand into new geographies and to increase our research and development expenditures associated with performing work with research collaborators, to expand our pipeline and to perform work associated with our research collaborations. For example, in 2011 we entered into an affiliation agreement to form a joint venture with the Mayo Foundation for Medical Education and Research pursuant to which we made an initial $1.0 million capital contribution in October 2013 and $1.0 million in the third quarter of 2014. We currently anticipate that we will make capital contributions of $1.0 million in the second quarter of 2016 and expect to make additional capital contributions of up to $3.0 million, subject to the joint venture entity’s achievement of certain operational milestones. Until we can generate a sufficient amount of revenues to finance our cash requirements, which we may never do, we may need to raise additional capital to fund our operations.

We need to raise additional capital to fund our current operations, to repay certain outstanding indebtedness and to fund expansion of our business to meet our long-term business objectives through public or private equity offerings, debt financings, borrowings or strategic partnerships coupled with an investment in our company or a combination thereof. If we raise additional funds through the issuance of convertible debt securities, or other debt securities, these securities could be secured and could have rights senior to those of our common stock. In addition, any new debt incurred by the Company could impose covenants that restrict our operations and increase our interest expense. The issuance of any new equity securities will also dilute the interest of our current stockholders. Given the risks associated with our business, including our unprofitable operating history and our ability to develop additional proprietary tests, additional capital may not be available when needed on acceptable terms, or at all. If adequate funds are not available, we will need to curb our expansion plans or limit our research and development activities, which would have a material adverse impact on our business prospects and results of operations.

Future Contractual Obligations

The following table reflects a summary of our estimates of future contractual obligations as of December 31, 2015. The information in the table reflects future unconditional payments and is based on the terms of the relevant agreements, appropriate classification of items under U.S. GAAP as currently in effect and certain assumptions, such as the interest rate on

our variable debt that was in effect as of December 31, 2015. Future events could cause actual payments to differ from these amounts.

	Payments Due by Period				
Contractual Obligations	**Total**	**Less than 1 Year**	**1-3 Years**	**3-5 Years**	**More than 5 years**
(dollars in thousands)					
Principal and interest under notes payable and lines of credit	$ 6,771	$ 1,629	$ 4,288	$ 854	$ —
Capital Lease obligations, including interest, for equipment	449	143	153	129	24
Operating lease obligations relating to corporate headquarters and clinical laboratories	3,206	1,396	1,333	477	—
Total	$ 10,426	$ 3,168	$ 5,774	$ 1,460	$ 24

Income Taxes

Over the past several years we have generated operating losses in all jurisdictions in which we may be subject to income taxes. As a result, we have accumulated significant net operating losses and other deferred tax assets. Because of our history of losses and the uncertainty as to the realization of those deferred tax assets, a full valuation allowance has been recognized. We do not expect to report a benefit related to the deferred tax assets until we have a history of earnings, if ever, that would support the realization of our deferred tax assets.

Off-Balance Sheet Arrangements

Since inception, we have not engaged in any off balance sheet activities as defined in Item 303(a)(4) of Regulation S-K.

Critical Accounting Policies and Significant Judgment and Estimates

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of our consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates based on historical experience and make various assumptions, which management believes to be reasonable under the circumstances, which form the basis for judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Section 107 of the JOBS Act provides that an "emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. In other words, an "emerging growth company" can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. However, we have chosen to "opt out" of such extended transition period, and as a result, we will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision to opt out of the extended transition period for complying with new or revised accounting standards is irrevocable.

The notes to our audited consolidated financial statements contain a summary of our significant accounting policies. We consider the following accounting policies critical to the understanding of the results of our operations:

- Revenue recognition;
- Accounts receivable and bad debts;
- Stock-based compensation; and
- Warrant liability.

Item 7A. Qualitative and Quantitative Disclosures about Market Risk

We have exposure to financial market risks, including changes in foreign currency exchange rates and interest rates, and risk associated with how we invest our cash.

Foreign Exchange Risk

We conduct business in foreign markets through our subsidiary in India (BioServe Biotechnologies (India) Private Limited) and in Italy through our subsidiary (Cancer Genetics Italia, S.r.l.). For the years ended December 31, 2015, 2014 and 2013 approximately 5%, 4% and 3%, respectively, of our revenues were earned outside the United States and collected in local currency. We are subject to risk for exchange rate fluctuations between such local currencies and the United States dollar and the subsequent translation of the Indian Rupee or Euro to United States dollars. We currently do not hedge currency risk. The translation adjustments for the years ended December 31, 2015, 2014 and 2013 were not significant.

Interest Rate Risk

At December 31, 2015, we had interest rate risk primarily related to borrowings of $6.0 million on the term note with Silicon Valley Bank ("Silicon Valley Line"). Borrowings under the Silicon Valley term note bear interest at the Wall Street Journal prime rate plus 2%, with a floor of 5.25% (5.50% at December 31, 2015). If interest rates increased by 1.0%, interest expense in 2016 on our current borrowings would increase by approximately $60,000.

Investment of Cash

We invest our cash primarily in money market funds. Because of the short-term nature of these investments, we do not believe we have material exposure due to market risk. The impact to our financial position and results of operations from likely changes in interest rates is not material.

Item 8. Financial Statements and Supplementary Data

INDEX TO FINANCIAL STATEMENTS

Cancer Genetics, Inc. and Subsidiaries

Consolidated Financial Report December 31, 2015

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders
Cancer Genetics, Inc. and Subsidiaries

We have audited the accompanying consolidated balance sheets of Cancer Genetics, Inc. and subsidiaries as of December 31, 2015 and 2014, and the related consolidated statements of operations, changes in stockholders' equity (deficit), and cash flows for each of the three years in the period ended December 31, 2015. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these 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. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, 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 Cancer Genetics, Inc. and subsidiaries as of December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015 in conformity with U.S. generally accepted accounting principles.

/s/ RSM US LLP

New York, New York
March 10, 2016

CANCER GENETICS, INC. AND SUBSIDIARIES

Consolidated Balance Sheets

(in thousands, except par value)

	December 31,	
	2015	2014
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	**$ 19,459**	$ 25,554
Accounts receivable, net of allowance for doubtful accounts of 2015 $664; 2014 $251	**6,621**	5,028
Other current assets	**2,118**	1,173
Total current assets	**28,198**	31,755
FIXED ASSETS, net of accumulated depreciation	**6,069**	4,310
OTHER ASSETS		
Restricted cash	**300**	6,300
Patents and other intangible assets, net of accumulated amortization	**1,727**	503
Investment in joint venture	**341**	1,048
Goodwill	**12,029**	3,187
Other	**220**	2
Total other assets	**14,617**	11,040
Total Assets	**$ 48,884**	$ 47,105
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
CURRENT LIABILITIES		
Accounts payable and accrued expenses	**$ 7,579**	$ 3,763
Obligations under capital leases, current portion	**122**	59
Deferred revenue	**831**	544
Bank term note, current portion	**1,333**	—
Total current liabilities	**9,865**	4,366
Obligations under capital leases	**276**	300
Deferred rent payable and other	**315**	348
Line of credit	**—**	6,000
Warrant liability	**17**	52
Acquisition note payable	**—**	560
Deferred revenue, long-term	**752**	925
Bank term note	**4,642**	—
Total Liabilities	**15,867**	12,551
STOCKHOLDERS' EQUITY		
Preferred stock, authorized 9,764 shares $0.0001 par value, none issued	**—**	—
Common stock, authorized 100,000 shares, $0.0001 par value, 13,652 and 9,821 shares issued and outstanding as of December 31, 2015 and 2014, respectively	**1**	1
Additional paid-in capital	**131,167**	112,520
Accumulated deficit	**(98,151)**	(77,967)
Total Stockholders' Equity	**33,017**	34,554
Total Liabilities and Stockholders' Equity	**$ 48,884**	$ 47,105

See Notes to Consolidated Financial Statements.

CANCER GENETICS, INC. AND SUBSIDIARIES

Consolidated Statements of Operations

(in thousands, except per share amounts)

	Years Ended December 31,		
	2015	2014	2013
Revenue	**$ 18,040**	$ 10,199	$ 6,610
Cost of revenues	**14,098**	8,453	4,925
Gross profit	**3,942**	1,746	1,685
Operating expenses:			
Research and development	**5,483**	4,622	2,190
General and administrative	**14,567**	12,369	6,115
Sales and marketing	**5,269**	3,964	1,842
Total operating expenses	**25,319**	20,955	10,147
Loss from operations	**(21,377)**	(19,209)	(8,462)
Other income (expense):			
Interest expense	**(344)**	(473)	(2,388)
Interest income	**49**	74	30
Change in fair value of warrant liability	**35**	417	4,633
Change in fair value of acquisition note payable	**269**	198	—
Debt conversion costs	**—**	—	(6,850)
Total other income (expense)	**9**	216	(4,575)
Loss before income taxes	**(21,368)**	(18,993)	(13,037)
Income tax (benefit)	**(1,184)**	(2,350)	(664)
Net (loss)	**$ (20,184)**	$ (16,643)	$ (12,373)
Basic net (loss) per share	**$ (1.96)**	$ (1.76)	$ (2.65)
Diluted net (loss) per share	**$ (1.96)**	$ (1.80)	$ (3.64)
Basic weighted average shares outstanding	**10,298**	9,449	4,665
Diluted weighted average shares outstanding	**10,299**	9,462	4,676

See Notes to Consolidated Financial Statements.

CANCER GENETICS, INC. AND SUBSIDIARIES

Consolidated Statements of Changes in Stockholders' Equity (Deficit)
Years Ended December 31, 2015, 2014 and 2013
(in thousands)

	Preferred Stock Series A		Preferred Stock Series B		Common Stock		Additional Paid-in Capital	Treasury Stock	Accumulated Deficit	Total
	Shares	Amount	Shares	Amount	Shares	Amount				
Balance, December 31, 2012	588	$ —	1,822	$ —	1,350	$ —	$ 24,970	$ (17)	$ (48,934)	$ (23,981)
Stock based compensation - employees	—	—	—	—	3	—	647	—	—	647
Stock based compensation - non-employees	—	—	—	—	—	—	88	—	—	88
Vesting of common pursuant to joint venture agreement	—	—	—	—	—	—	232	—	—	232
Conversion of preferred stock into common stock	(588)	—	(1,822)	—	1,287	—	—	—	—	—
Conversion of debt into common stock	—	—	—	—	963	—	12,596	—	—	12,596
Issuance of common stock in IPO, net of offering costs	—	—	—	—	690	—	3,743	—	—	3,743
Issuance of common stock in Secondary Offering, net of offering costs	—	—	—	—	1,605	—	14,230	—	—	14,230
Issuance of common stock in Follow-On Offering, net of offering costs	—	—	—	—	3,287	1	42,302	—	—	42,303
Issuance of common stock pursuant to license agreement	—	—	—	—	2	—	20	—	—	20
Issuance of common stock pursuant to joint venture agreement	—	—	—	—	10	—	175	—	—	175
Reclassification of derivative warrants	—	—	—	—	—	—	7,170	—	—	7,170
Exercise of warrants	—	—	—	—	78	—	612	—	—	612
Exercise of options	—	—	—	—	—	—	2	—	—	2
Retirement of treasury stock	—	—	—	—	—	—	—	17	(17)	—
Net loss	—	—	—	—	—	—	—	—	(12,373)	(12,373)
Balance, December 31, 2013	—	—	—	—	9,275	1	106,787	—	(61,324)	45,464
Stock based compensation - employees	—	—	—	—	208	—	3,462	—	—	3,462
Stock based compensation - non-employees	—	—	—	—	5	—	373	—	—	373
Exercise of warrants	—	—	—	—	135	—	303	—	—	303
Exercise of options	—	—	—	—	19	—	79	—	—	79
Issuance of stock - acquisition of Gentris Corporation	—	—	—	—	148	—	1,272	—	—	1,272
Issuance of stock - acquisition of BioServe	—	—	—	—	31	—	244	—	—	244
Net loss	—	—	—	—	—	—	—	—	(16,643)	(16,643)
Balance, December 31, 2014	—	—	—	—	9,821	1	112,520	—	(77,967)	34,554
Stock based compensation—employees	—	—	—	—	35	—	2,558	—	—	2,558
Stock based compensation—non-employees	—	—	—	—	—	—	276	—	—	276
Exercise of warrants	—	—	—	—	—	—	1	—	—	1
Exercise of options	—	—	—	—	4	—	23	—	—	23
Issuance of stock - Cantor Sales Agreement	—	—	—	—	3	—	34	—	—	34
Issuance of stock - acquisition of Response Genetics	—	—	—	—	789	—	5,436	—	—	5,436
Issuance of stock with warrants in 2015 Offering	—	—	—	—	3,000	—	10,319	—	—	10,319
Net loss	—	—	—	—	—	—	—	—	(20,184)	(20,184)
Balance, December 31, 2015	—	$ —	—	$ —	13,652	$ 1	$ 131,167	$ —	$ (98,151)	$ 33,017

See Notes to Consolidated Financial Statements

CANCER GENETICS, INC. AND SUBSIDIARIES

Consolidated Statements of Cash Flows

(in thousands)

	Years Ended December 31,		
	2015	2014	2013
CASH FLOWS FROM OPERATING ACTIVITIES			
Net loss	**$ (20,184)**	$ (16,643)	$ (12,373)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	**1,503**	810	311
Amortization	**159**	28	15
Provision for bad debts	**413**	215	—
Stock-based compensation	**2,834**	3,835	735
Stock-based research and development/general and administrative expenses	**—**	—	427
Change in fair value of acquisition note payable	**269**	(198)	—
Change in fair value of Gentris contingent consideration	**(207)**	—	—
Change in fair value of warrant liability	**(35)**	(417)	(4,633)
Amortization of loan guarantee, financing fees and debt issuance costs	**8**	311	1,195
Accretion of discount on debt	**—**	—	585
Loss in equity-method investment	**707**	940	12
Loss on conversion of debt to equity	**—**	—	6,850
Deferred initial public offering costs expensed	**—**	—	618
Change in working capital components:			
Accounts receivable	**(1,662)**	(1,657)	(717)
Other current assets	**(384)**	(199)	(375)
Other non-current assets	**(101)**	—	—
Accounts payable, accrued expenses and deferred revenue	**3,114**	675	(731)
Deferred rent and other	**(33)**	(38)	6
Net cash (used in) operating activities	**(13,599)**	(12,338)	(8,075)
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of fixed assets	**(1,008)**	(1,374)	(257)
(Increase) decrease in restricted cash	**6,000**	(6,000)	(50)
Patent costs	**(137)**	(130)	(92)
Investment in joint venture	**—**	(1,000)	(1,000)
Cash used in acquisition of Gentris, net of cash received	**—**	(3,181)	—
Cash from acquisition of BioServe	**—**	312	—
Cash used in acquisition of Response Genetics	**(7,495)**	—	—
Net cash (used in) investing activities	**(2,640)**	(11,373)	(1,399)
CASH FLOWS FROM FINANCING ACTIVITIES			
Principal payments on capital lease obligations	**(83)**	(44)	(17)
Payment of equity issuance costs	**(117)**	—	—
Proceeds from public offerings of common stock, net of offering costs	**10,353**	—	61,517
Proceeds from warrant exercises	**1**	178	192
Proceeds from option exercises	**23**	79	2
Payment of debt issuance costs	**(33)**	—	—
Principal payments on notes payable	**—**	(408)	(3,580)
Net cash provided by (used in) financing activities	**10,144**	(195)	58,114
Net increase (decrease) in cash and cash equivalents	**(6,095)**	(23,906)	48,640
CASH AND CASH EQUIVALENTS			
Beginning	**25,554**	49,460	820
Ending	**$ 19,459**	$ 25,554	$ 49,460
SUPPLEMENTAL CASH FLOW DISCLOSURE			
Cash paid for interest	**$ 240**	$ 128	$ 608
SUPPLEMENTAL DISCLOSURE OF NONCASH			
INVESTING AND FINANCING ACTIVITIES			
Fixed assets acquired through capital lease arrangements	**$ —**	$ 42	$ 354
Warrants issued for financing fees	**—**	—	47
Retirement of treasury stock	**—**	—	17
Conversion of notes payable and lines of credit to common stock	**—**	—	9,634
Value of shares issued as partial consideration to purchase Gentris and BioServe	**—**	1,516	—
Value of shares issued as partial consideration to purchase Response Genetics	**5,436**	—	—
Reclassification of derivative warrants	**—**	—	7,170
Cashless exercise of derivative warrants	**—**	125	420
Offering costs discounted	**—**	—	733
Net tangible assets acquired via acquisition	**2,843**	1,255	—
Accrued expenses reclassified as derivative warrant liability	**—**	—	221

See Notes to Consolidated Financial Statements.

CANCER GENETICS, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Note 1. Organization, Acquisitions, Description of Business, Reverse Stock Split and Charter Amendment

We are an emerging leader in the field of personalized medicine, enabling precision medicine in the field of oncology through our diagnostic products and services and molecular markers. We develop, commercialize and provide molecular- and biomarker-based tests and services that enable physicians to personalize the clinical management of each individual patient by providing genomic information to better diagnose, monitor and inform cancer treatment and that enable biopharmaceutical companies engaged in oncology trials to better select candidate populations and reduce adverse drug reactions by providing information regarding genomic factors influencing subject responses to therapeutics. We have a comprehensive, disease-focused oncology testing portfolio. Our tests and techniques target a wide range of cancers, covering eight of the top ten cancers in prevalence in the United States, with additional unique capabilities offered by our Tissue of Origin® test for identifying difficult to diagnose tumor types or poorly differentiated metastatic disease.

We were incorporated in the State of Delaware on April 8, 1999 and have offices and state-of-the-art laboratories located in California, New Jersey, North Carolina, Shanghai (China), and Hyderabad (India). Our laboratories comply with the highest regulatory standards as appropriate for the services they deliver including CLIA, CAP, NY State, California State and NABL (India).We have two advisory boards to counsel our scientific and clinical direction. Our Scientific Advisory Board is comprised of preeminent scientists and physicians from the fields of cancer biology, cancer pathology, cancer medicine and molecular genetics. Our Clinical Advisory Board is comprised of clinicians and scientists focused on clinical implementation of our proprietary tests and services and mapping those tests and services to patient needs. Our services are built on a foundation of world-class scientific knowledge and intellectual property in solid and blood-borne cancers, as well as strong academic relationships with major cancer centers such as Memorial Sloan-Kettering, Mayo Clinic, and the National Cancer Institute.

Acquisition of Gentris Corporation
On July 16, 2014, we purchased substantially all of the assets of Gentris Corporation ("Gentris"), a laboratory specializing in pharmacogenomics profiling for therapeutic development, companion diagnostics and clinical trials. Gentris' laboratory is located in Morrisville, North Carolina and the company has a CLIA and FDA-compliant laboratory facility in Shanghai, China. Upon closing of the acquisition transaction, Gentris Corporation was re-named Gentris, LLC and is now a wholly-owned subsidiary of Cancer Genetics, Inc. The acquisition allows us to expand our biopharma services.

The assets and liabilities of Gentris were recorded in our consolidated financial statements at their estimated fair values as of the acquisition date. The excess value of the consideration paid over the fair value of assets acquired and liabilities assumed was recorded as goodwill. Goodwill arising from the acquisition consists largely from a trained workforce in place and expected synergies with existing operations. Goodwill recorded in conjunction with the acquisition is deductible for income tax purposes. The total consideration for the Gentris acquisition is as follows (in thousands except share amounts):

	Amount
Cash paid at closing	$ 3,250
Issuance of 147,843 common shares	1,272
Estimated fair value of contingent consideration	293
Total purchase price	$ 4,815

During the year ended December 31, 2015, we recognized a gain of $207,000 due to settling the contingent consideration for $86,400.

We incurred a finder's fee of $147,500 related to the transaction.

The following table summarizes the final valuation of the assets acquired and liabilities assumed as of July 16, 2014 (in thousands):

	Amount
Accounts receivable	$ 1,869
Other current assets	266
Current liabilities	(785)
Deferred revenue, long-term	(938)
Fixed assets	1,951
Goodwill	2,452
Total purchase price	$ 4,815

Acquisition of BioServe Biotechnologies (India) Pvt. Ltd.

On August 18, 2014 we entered into two agreements by which we acquired BioServe Biotechnologies (India) Pvt. Ltd. ("BioServe"), a premier genomics services provider serving both the research and clinical markets in India. This transaction was completed through a newly formed subsidiary, Cancer Genetics (India) Pvt. Ltd. BioServe is a leading genomic service and next-generation sequencing company serving both the research and clinical markets based in Hyderabad, India. With the BioServe acquisition we believe we will be able to access the Indian healthcare market. The acquisition provides us with an infrastructure in India for developing lower cost manufacturing of probes and kits including probes and kits used for our proprietary FHACT test and access to one of the fastest-growing molecular and clinical diagnostic markets in the world. BioServe will continue to serve biotechnology and biopharmaceutical companies, diagnostic companies and research hospitals, including those owned or operated by the Indian government, as well as seek to expand its customer base.

The assets and liabilities of BioServe were recorded in the Company's consolidated financial statements at their estimated fair values as of the acquisition date. The excess value of the consideration paid over the fair value of assets acquired and liabilities assumed is recorded as goodwill. Goodwill arising from the acquisition consists largely from a trained workforce in place and expected synergies from new lines of business. Goodwill recorded in conjunction with the acquisition is not deductible for income tax purposes. The aggregate purchase price is as follows (in thousands except share amounts):

	Amount
Cash paid at closing	$ 73
Notes payable	24
Notes payable (value of 84,278 common shares)	733
Issuance of 31,370 common shares	244
Total purchase price	$ 1,074

The final payment for BioServe will be a cash payment equal to the value of 84,278 shares of our common stock in November 2016. This liability is subject to future adjustment based upon changes to our stock price. During the year ended December 31, 2015 and 2014, we recognized a gain of $269,000 and $198,000, respectively, due to the decrease in value of this note. The amounts used in computing the purchase price differ from the amounts in the purchase agreements due to fair value measurement conventions prescribed in accounting standards.

During 2015, the Company made revisions to the preliminary valuation of certain assets acquired which increased goodwill by approximately $193,000, reduced fixed assets by approximately $136,000, reduced other assets by approximately $38,000 and reduced other current assets by approximately $19,000.

The following table summarizes the final valuation of the assets acquired and liabilities assumed as of August 18, 2014 (in thousands):

	Amount
Accounts receivable	$ 151
Other current assets	102
Fixed assets	489
Other assets	378
Goodwill	735
Current liabilities	(759)
Other liabilities	(22)
Total purchase price	$ 1,074

Acquisition of Response Genetics, Inc.

On October 9, 2015, we acquired substantially all the assets and assumed certain liabilities of Response Genetics, Inc. ("Response Genetics"), with its principal place of business in California, in a transaction valued at approximately $12.9 million, comprised of $7,495,193 in cash and 788,584 shares of the Company's common stock, with the common stock being valued at $5,436,104.
Response Genetics was a life sciences company engaged in the research and development of clinical diagnostic tests for cancer. Response Genetics generated revenues primarily from sales of its ResponseDX® diagnostic tests, which Response Genetics launched in 2008, and by providing clinical trial testing services to pharmaceutical companies.

The transaction is being accounted for using the acquisition method of accounting for business combinations in accordance with GAAP. Under this method, the total consideration transferred to consummate the acquisition is being allocated to the identifiable tangible and intangible assets acquired and liabilities assumed based on their respective fair values as of the closing date of the acquisition. The acquisition method of accounting requires extensive use of estimates and judgments to allocate the consideration transferred to the identifiable tangible and intangible assets acquired and liabilities assumed.

Goodwill arising from the acquisition consists largely from a trained workforce in place and expected synergies from new lines of business. Goodwill recorded in conjunction with the acquisition is deductible for income tax purposes. Business transactions expense of approximately $890,000 incurred in connection with the acquisition was expensed as incurred.

The final allocation of the purchase price of the fair value of the assets acquired and the liabilities assumed as of October 9, 2015 is as follows (in thousands):

	Amount
Accounts receivable	$ 344
Prepaid expenses and other current assets	561
Fixed assets	2,254
Intangible assets	1,246
Goodwill	8,842
Current liabilities	(194)
Obligations under capital lease	(122)
Total purchase price	$ 12,931

Acquisitions Pro Forma Financial Information

The following table provides certain pro forma financial information for the Company as if the acquisitions of Response Genetics, Gentris and Bioserve discussed above occurred on January 1, 2013 (in thousands except per share amounts):

	Unaudited		
	Year Ended December 31,		
	2015	2014	2013
Revenue	**$ 28,528**	$ 34,167	$ 32,488
Net loss	**(33,237)**	(26,427)	(26,712)
Basic net loss per share	**$ (3.05)**	$ (2.56)	$ (4.74)
Dilutive net loss per share	**(3.05)**	(2.59)	(5.55)

The pro forma numbers above are derived from historical numbers of the Company, Response Genetics, Gentris and Bioserve. Over time the operations of Response Genetics will be integrated into the operations of the Company. This integration may change how certain tests are coded and submitted to payers (including Medicare) and, consequently, may result in differences in the future in which revenues and bad debt expenses are recorded when compared with the historical methods of Response Genetics. At the current time, we do not have enough information to prepare a reliable estimate of any possible changes.

The results of operations for the year ended December 31, 2015 include the operations of Response Genetics from October 9, 2015 and twelve months of operations of Gentris and Bioserve with combined revenues of $8,771,000. The net loss of Response Genetics, Gentris and Bioserve cannot be determined, as their operations are integrated with Cancer Genetics. The results of operations for the year ended December 31, 2014 include the the operations of Gentris from July 16, 2014 and BioServe from August 18, 2014 and include combined revenues of $3,296,465.

Reverse Stock Splits

On February 8, 2013, we filed a charter amendment with the Secretary of State for the State of Delaware and effected a 1-for-2 reverse stock split of our common stock. On March 1, 2013, we filed another charter amendment with the Secretary of State for the State of Delaware and effected a 1-for-2.5 reverse stock split of our common stock. All shares and per share information referenced throughout the consolidated financial statements have been retroactively adjusted to reflect both reverse stock splits.

Public Offerings

On April 10, 2013, we sold 690,000 shares of common stock at a public offering price of $10.00 per share and completed our initial public offering (“IPO”) with gross proceeds of $6.9 million (net proceeds of $5 million). Upon the closing of the IPO, all shares of our then-outstanding Series A and Series B convertible preferred stock automatically converted into an aggregate of 1,287,325 shares of common stock. Concurrent with the IPO, certain derivative warrants with a fair value of $7.2 million were reclassified into equity due to the lapsing of anti-dilution provisions in the warrants. Also concurrent with the IPO, $9.6 million of debt converted into 963,430 shares of common stock. All references to our Series A convertible preferred stock refer collectively to the Series A and Series A-1 convertible preferred shares.

On August 19, 2013, we sold 1,500,000 shares of common stock at a public offering price of $10.00 per share resulting in gross proceeds of $15.0 million (net proceeds of $13.3 million). We used $3.5 million of the proceeds to repay certain indebtedness which was due on August 15, 2013 (see Note 6 for further discussion of the Company’s debt). On September 5, 2013, we sold 105,000 additional common shares pursuant to partial exercise of the underwriter’s over-allotment option which resulted in gross proceeds of $1.1 million (net proceeds of $947,000). All references to the sales of common stock mentioned in this paragraph are referred to as the “Secondary Offering.”

On October 28, 2013, we sold 3,286,700 shares of common stock, (including the underwriter’s overallotment of 428,700 shares), at a public offering price of $14.00 per share resulting in gross proceeds of $46.0 million (net proceeds of $42.3 million). All references to the sales of common stock mentioned in this paragraph are referred to as the “Follow-On Offering.”

On November 12, 2015, we sold 3,000,000 shares of common stock with warrants to purchase an aggregate of 3,000,000 shares of common stock at a combined public offering price of $4.00 per share and warrant resulting in gross proceeds of $12.0 million ($10.3 million of net proceeds after offering expenses and underwriting discounts). The underwriters also received 450,000 warrants pursuant to the partial exercise of the over-allotment option. The warrants have an exercise price of $5.00, became fully-exercisable at issuance and expire on November 12, 2020. All references to the sales of common stock with warrants mentioned in this paragraph are referred to as the “2015 Offering.”

Note 2. Significant Accounting Policies

Basis of presentation: We prepare our financial statements on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America.

Segment reporting: Operating segments are defined as components of an enterprise about which separate discrete information is used by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. We view our operations and manage our business in one operating segment, which is the business of developing and selling diagnostic tests.

Liquidity: Our primary sources of liquidity have been funds generated from our debt financings and equity financings. In addition, we have generated funds from the following sources: (i) cash collections from our customers; (ii) grants from the National Institutes of Health and (iii) the sale of State of New Jersey net operating loss carryforwards.

Principles of consolidation: The accompanying consolidated financial statements include the accounts of Cancer Genetics, Inc. and our wholly owned subsidiaries, Cancer Genetics Italia S.r.l ("CGI Italia"), Gentris LLC (from July 16, 2014), Bioserve Biotechnologies (India) Private Limited (from August 18, 2014).

All significant intercompany account balances and transactions have been eliminated in consolidation.

Use of estimates and assumptions: The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates made by management include, among others, realization of amounts billed, realization of long-lived assets, realization of intangible assets, accruals for litigation and registration payments, assumptions used to value stock options, warrants and goodwill and the valuation of assets acquired and liabilities assumed from acquisitions. Actual results could differ from those estimates.

Risks and uncertainties: We operate in an industry that is subject to intense competition, government regulation and rapid technological change. Our operations are subject to significant risk and uncertainties including financial, operational, technological, regulatory, foreign operations, and other risks, including the potential risk of business failure.

Cash and cash equivalents: Highly liquid investments with original maturities of three months or less when purchased are considered to be cash equivalents. Financial instruments which potentially subject us to concentrations of credit risk consist primarily of cash and cash equivalents. We maintain cash and cash equivalents with high-credit quality financial institutions. At times, such amounts may exceed insured limits. We have not experienced any losses in such accounts and believe we are not exposed to any significant credit risk on our cash and cash equivalents.

Restricted cash: Represents cash held at financial institutions which we may not withdraw and which collateralizes certain of our financial commitments. All of our restricted cash is invested in interest bearing certificates of deposit. Our restricted cash collateralizes a $300,000 letter of credit in favor of our landlord, pursuant to the terms of the lease for our Rutherford facility.

Revenue recognition: Revenue is recognized in accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 605, Revenue Recognition, and ASC 954-605 Health Care Entities, Revenue Recognition which requires that four basic criteria must be met before revenue can be recognized: (1) persuasive evidence that an arrangement exists; (2) delivery has occurred and title and the risks and rewards of ownership have been transferred to the customer or services have been rendered; (3) the price is fixed or determinable; and (4) collectability is reasonably assured. In determining whether the price is fixed or determinable, we consider payment limits imposed by insurance carriers and Medicare and the amount of revenue recorded takes into account the historical percentage of revenue we have collected for each type of test for each payor category. Periodically, an adjustment is made to revenue to record differences between our anticipated cash receipts from insurance carriers and Medicare and actual receipts from such payors. For the periods presented, such adjustments were not significant. For some Clinical Service and Biopharma customers billed directly, revenue is recorded based upon the contractually agreed upon fee schedule. When assessing collectability, we consider whether we have sufficient payment history to reliably estimate a payor's individual payment patterns. For new tests where there is no evidence of payment history at the time the tests are completed, we only recognize revenues once reimbursement experience can be established. We then recognize revenue equal to the amount of cash received. We do not bill customers for shipping and handling fees and do not collect any sales or other taxes.

Revenues from grants to support product development are recognized when costs and expenses under the terms of the grant have been incurred and payments under the grants become contractually due.

Accounts receivable: Accounts receivable are carried at original invoice amount less an estimate for contractual adjustments and doubtful receivables, the amounts of which are determined by an analysis of individual accounts. Our policy for assessing the collectability of receivables is dependent upon the major payor source of the underlying revenue. For direct bill clients, an assessment of credit worthiness is performed prior to initial engagement and is reassessed periodically. If deemed necessary, an allowance is established on receivables from direct bill clients. For insurance carriers where there is not an established pattern of collection, revenue is not recorded until cash is received. For receivables where insurance carriers have made payments to patients instead of directing payments to the Company, an allowance is established for a portion of such receivables. After reasonable collection efforts are exhausted, amounts deemed to be uncollectible are written off against the allowance for doubtful accounts. Since the Company only recognizes revenue to the extent it expects to collect such amounts, bad debt expense related to receivables from patient service revenue is recorded in general and administrative expense in the consolidated statement of operations. Recoveries of accounts receivable previously written off are recorded when received.

Deferred revenue: Payments received in advance of services rendered are recorded as deferred revenue and are subsequently recognized as revenue in the period in which the services are performed.

Fixed assets: Fixed assets consist of diagnostic equipment, furniture and fixtures and leasehold improvements. Fixed assets are carried at cost and are depreciated using the straight-line method over the estimated useful lives of the assets, which generally range from five to seven years. Leasehold improvements are depreciated over the lesser of the lease term or the estimated useful lives of the improvements using the straight-line method. Repairs and maintenance are charged to expense as incurred while improvements are capitalized. Upon sale, retirement or disposal of fixed assets, the accounts are relieved of the cost and the related accumulated depreciation with any gain or loss recorded to the consolidated statement of operations.

Fixed assets are reviewed for impairment whenever changes in circumstances indicate that the carrying amount of an asset may not be recoverable. These computations utilize judgments and assumptions inherent in our estimate of future cash flows to determine recoverability of these assets. If our assumptions about these assets were to change as a result of events or circumstances, we may be required to record an impairment loss.

Goodwill: Goodwill resulted from the purchases of Gentris and BioServe in 2014 and the purchase of Response Genetics in 2015, as described in Note 1. In accordance with ASC 350, Intangibles - Goodwill and Other, we are required to test goodwill for impairment and adjust for impairment losses, if any, at least annually and on an interim basis if an event or circumstance indicates that it is likely impairment has occurred. Our annual goodwill impairment testing date is October 1 of each year. No such losses were incurred during the years ended December 31, 2015 and 2014.

Goodwill (in thousands)		
Balance, December 31, 2013	$	—
Purchased through acquisitions of Gentris and BioServe		3,187
Balance, December 31, 2014		3,187
Purchased through acquisition of Response Genetics		8,842
Balance, December 31, 2015	$	12,029

Loan guarantee and financing fees: Loan guarantee fees are amortized on a straight-line basis over the term of the guarantee. Financing fees are amortized using the effective interest method over the term of the related debt.

Warrant liability: We have issued certain warrants which contain an exercise price adjustment feature in the event we issue additional equity instruments at a price lower than the exercise price of the warrant. The warrants are described herein as derivative warrants. We account for these derivative warrants as liabilities. These common stock purchase warrants do not trade in an active securities market, and as such, we estimate the fair value of these warrants using the binomial lattice valuation pricing model with the assumptions as follows: The risk-free interest rate for periods within the contractual life of the warrant is based on the U.S. Treasury yield curve. The expected life of the warrants is based upon the contractual life of the warrants. Volatility is estimated based on an average of the historical volatilities of the common stock of four entities with characteristics similar to those of the Company. Prior to our IPO, the measurement date fair value of the underlying common shares was based upon an external valuation of our shares. (See Notes 13 and 14). Subsequent to the IPO and Secondary Offering, we used the closing price of our shares on the OTC Bulletin Board and the NASDAQ Capital Market, respectively.

We compute the fair value of the warrant liability at each reporting period and the change in the fair value is recorded as non-cash expense or non-cash income. The key component in the value of the warrant liability is our stock price, which is subject to significant fluctuation and is not under our control. The resulting effect on our net income (loss) is therefore subject to significant fluctuation and will continue to be so until the warrants are exercised, amended or expire. Assuming all other fair value inputs remain constant, we will record non-cash expense when the stock price increases and non-cash income when the stock price decreases.

Income taxes: Income taxes are provided for the tax effects of transactions reported in the consolidated financial statements and consist of taxes currently due plus deferred income taxes. Deferred income taxes are recognized for temporary differences between the financial statement and tax bases of assets and liabilities that will result in taxable or deductible amounts in the future. Deferred income taxes are also recognized for net operating loss carryforwards that are available to offset future taxable income and research and development credits.

Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized. We have established a full valuation allowance on our deferred tax assets as of December 31, 2015 and 2014, therefore we have not recognized any tax benefit or expense in the periods presented.

ASC 740, Income Taxes, clarifies the accounting for uncertainty in income taxes recognized in the financial statements. ASC 740 provides that a tax benefit from uncertain tax positions may be recognized when it is more-likely-than-not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits of the position. Income tax positions must meet a more-likely-than-not recognition threshold to be recognized. ASC 740 also provides guidance on measurement, de-recognition, classification, interest and penalties, accounting in interim periods, disclosure and transition. At December 31, 2015 and 2014 we had no uncertain tax positions.

Our policy is to recognize interest and/or penalties related to income tax matters in income tax expense. There is no accrual for interest or penalties on our consolidated balance sheets at December 31, 2015 or 2014, and we have not recognized interest and/or penalties in the consolidated statements of operations for the years ended December 31, 2015, 2014 or 2013.

Patents and other intangible assets: We account for intangible assets under ASC 350-30. Patents consisting of legal fees incurred are initially recorded at cost. We have also acquired patents that are initially recorded at fair value. Patents are amortized over the useful lives of the assets, using the straight-line method. Certain patents are in the legal application process and therefore are not currently being amortized. We review the carrying value of patents at the end of each reporting period. Based upon our review, there were no patent impairments in 2015, 2014 or 2013.

Other intangible assets consist of software acquired with Response Genetics, which are amortized using the straight-line method over the estimated useful lives of the assets, which range from three to five years.

Research and development: Research and development costs associated with service and product development include direct costs of payroll, employee benefits, stock-based compensation and supplies and an allocation of indirect costs including rent, utilities, depreciation and repairs and maintenance. All research and development costs are expensed as they are incurred.

Registration payment arrangements: We account for our obligations under registration payment arrangements in accordance with ASC 825-20, *Registration Payment Arrangements*. ASC 825-20 requires us to record a liability if we determine a registration payment is probable and if it can reasonably be estimated. As of both December 31, 2015 and 2014, we have an accrued liability of $300,000.

Stock-based compensation: Stock-based compensation is accounted for in accordance with the provisions of ASC 718, *Compensation-Stock Compensation*, which requires the measurement and recognition of compensation expense for all stock-based awards made to employees and directors based on estimated fair values on the grant date. We estimate the fair value of stock-based awards on the date of grant using the Black-Scholes option pricing model. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service periods using the straight-line method. See additional information in Note 12.

All issuances of stock options or other issuances of equity instruments to employees as the consideration for services received by us are accounted for based on the fair value of the equity instrument issued.

We account for stock-based compensation awards to non-employees in accordance with ASC 505-50, *Equity Based Payments to Non-Employees*. Under ASC 505-50, we determine the fair value of the warrants or stock-based compensation awards granted as either the fair value of the consideration received or the fair value of the equity instruments issued, whichever is

more reliably measurable. Stock-based compensation awards issued to non-employees are recorded in expense and additional paid-in capital in stockholders' equity (deficit) over the applicable service periods based on the fair value of the awards or consideration received at the vesting date.

Fair value of financial instruments: The carrying amount of cash and cash equivalents, restricted cash, accounts receivable, accounts payable and accrued expenses, approximate their estimated fair values due to the short term maturities of those financial instruments. The fair value of warrants recorded as derivative liabilities, contingent consideration and note payable to VenturEast are described in Notes 14 and 15.

Joint venture accounted for under the equity method: The Company records its joint venture investment following the equity method of accounting, reflecting its initial investment in the joint venture and its share of the joint venture's net earnings or losses and distributions. The Company's share of the joint venture's net loss was approximately $707,000 in 2015, $940,000 in 2014 and $12,000 in 2013 (the first year of the joint venture's operations) and is included in research and development expense on the Consolidated Statement of Operations. The Company has a net receivable due from the joint venture of approximately $10,000 and $10,000 at December 31, 2015 and 2014, respectively, which is included in other assets in the Consolidated Balance Sheet. See additional information in Note 17.

Subsequent events: We have evaluated potential subsequent events through the date the financial statements were issued.

Recent Accounting Pronouncements: In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)," which provides guidance for accounting for leases. Under ASU 2016-02, the Company will be required to recognize the assets and liabilities for the rights and obligations created by leased assets. ASU 2016-02 will take effect for public companies for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Company is currently evaluating the effect this standard will have on the consolidated financial statements.

In September 2015, the FASB issued ASU 2015-16, Business Combinations (Topic 805) "Simplifying the Accounting for Measurement-Period Adjustments," which eliminates the requirement for an acquirer in a business combination to account for measurement-period adjustments retrospectively. Under this ASU, acquirers must recognize measurement-period adjustments in the period in which they determine the amounts, including the effect on earnings of any amounts they would have recorded in previous periods if the accounting had been completed at the acquisition date. The amendments in this update should be applied prospectively. This guidance is effective for fiscal years beginning after December 15, 2015, with early adoption permitted for financial statements that have not been issued.

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers (Topic 606), requiring an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. As issued and amended, ASU 2014-9 will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective and permits the use of either a full retrospective or retrospective with cumulative effect transition method. The updated standard becomes effective for the Company in the first quarter of fiscal year 2018. Early adoption is permitted in the first quarter of fiscal year 2017. The Company has not yet selected a transition method and is currently evaluating the effect that the updated standard will have on the consolidated financial statements.

During the second quarter of 2015, the Company adopted ASU 2015-03, Interest-Imputation of Interest (Subtopic 835-30) "Simplifying the Presentation of Debt Issuance Costs" and ASU 2015-15, Interest-Imputation of Interest (Subtopic 835-30) "Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements." Previously, debt issuance costs were recorded as assets on the balance sheet. ASU 2015-03 requires that debt issuance costs related to a debt liability be presented on the balance sheet as a direct deduction from the carrying amount of the debt liability, consistent with debt discounts. ASU 2015-03 does not change the recognition and measurement of debt issuance costs and requires retrospective adoption. ASU 2015-15 expands on the treatment of debt issuance costs related to line-of-credit arrangements. Under ASU 2015-15, an entity is allowed to defer and present debt issuance costs related to line-of-credit arrangements as an asset and to amortize these costs ratably over the term of the debt, regardless of whether there is any outstanding borrowings on the line-of-credit. The Company did not have debt issuance costs in the December 31, 2014 Consolidated Balance Sheet.

In August 2014, the FASB issued ASU 2014-15, Presentation of Financial Statements - Going Concern (Subtopic 205-40) "Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern." The objective of the guidance is to require management to explicitly assess an entity's ability to continue as a going concern, and to provide related footnote disclosures in certain circumstances. In connection with each annual and interim period, management will assess if there is substantial doubt about an entity's ability to continue as a going concern within one year after the issuance date of an entity's financial statements. The new standard defines substantial doubt and provides examples of indicators thereof. The definition of

substantial doubt incorporates a likelihood threshold of "probable" similar to the current use of that term in U.S. GAAP for loss contingencies. The new standard will be effective for all entities in the first annual period ending after December 15, 2016. Earlier application is permitted. The Company is currently assessing this standard for its impact on future reporting periods.

Earnings (loss) per share: Basic earnings (loss) per share is computed by dividing net income (loss) available to common stockholders by the weighted average number of common shares assumed to be outstanding during the period of computation. Diluted earnings per share is computed similar to basic earnings per share except that the numerator is adjusted for the change in fair value of the warrant liability (only if dilutive) and the denominator is increased to include the number of dilutive potential common shares outstanding during the period using the treasury stock method.

Basic net loss and diluted net loss per share data were computed as follows (in thousands, except per share amounts):

	2015	2014	2013
Numerator:			
Net (loss) for basic earnings per share	**$ (20,184)**	$ (16,643)	$ (12,373)
Less change in fair value of warrant liability	**35**	417	4,633
Net (loss) for diluted earnings per share	**$ (20,219)**	$ (17,060)	$ (17,006)
Denominator:			
Weighted-average basic common shares outstanding	**10,298**	9,449	4,665
Assumed conversion of dilutive securities:			
Common stock purchase warrants	**1**	13	11
Potentially dilutive common shares	**1**	13	11
Denominator for diluted earnings per share—adjusted weighted-average shares	**10,299**	9,462	4,676
Basic net loss per share	**$ (1.96)**	$ (1.76)	$ (2.65)
Diluted net loss per share	**$ (1.96)**	$ (1.80)	$ (3.64)

The following table summarizes potentially dilutive adjustments to the weighted average number of common shares which were excluded from the calculation (in thousands):

	2015	2014	2013
Common stock purchase warrants	**4,372**	1,061	1,702
Stock options	**1,961**	1,839	874
Restricted shares of common stock	**121**	133	7
	6,454	3,033	2,583

Note 3. Revenue and Accounts Receivable

Revenue by service type for each of the years ended December 31 is comprised of the following (in thousands):

	2015	2014	2013
Biopharma Services	**$ 11,564**	$ 5,606	$ 2,650
Clinical Services	**5,651**	4,432	3,663
Discovery Services	**825**	161	—
Grants	**—**	—	297
	$ 18,040	$ 10,199	$ 6,610

The table above includes approximately $486,000 of biopharma services revenue and approximately $1,265,000 of clinical services revenue from our acquisition of Response Genetics for the period October 9, 2015 through December 31, 2015.

Accounts receivable by service type at December 31, 2015 and 2014 consists of the following (in thousands):

	2015	2014
Biopharma Services	**$ 3,238**	$ 3,203
Clinical Services	**3,733**	1,925
Discovery Services	**314**	151
Allowance for doubtful accounts	**(664)**	(251)
	$ 6,621	$ 5,028

Allowance for Doubtful Accounts (in thousands)	
Balance, December 31, 2013	$ 36
Additions to allowance for doubtful accounts	215
Balance, December 31, 2014	251
Additions to allowance for doubtful accounts	413
Balance, December 31, 2015	$ 664

Revenue for Biopharma Services are customized solutions for patient stratification and treatment selection through an extensive suite of DNA-based testing services. Clinical Services are tests performed to provide information on diagnosis, prognosis and theranosis of cancers to guide patient management. These tests can be billed to Medicare, another third party insurer or the referring community hospital or other healthcare facility. Discovery Services are services that provide the tools and testing methods for companies and researchers seeking to identify new DNA-based biomarkers for disease. Grants includes revenue from grants. The breakdown of our Clinical Services revenue (as a percent of total revenue) is as follows:

	2015	2014	2013
Medicare	**10%**	11%	13%
Other insurers	**12%**	16%	25%
Other healthcare facilities	**9%**	16%	18%
Total Clinical Services	**31%**	43%	56%

We have historically derived a significant portion of our revenue from a limited number of test ordering sites. Test ordering sites account for all of our Clinical Services and Biopharma Services revenue. Our test ordering sites are largely hospitals, cancer centers, reference laboratories, physician offices and biopharmaceutical companies. Oncologists and pathologists at these sites order the tests on behalf of the needs of their oncology patients or as part of a clinical trial sponsored by a biopharmaceutical company in which the patient is being enrolled. We generally do not have formal, long-term written agreements with such test ordering sites, and, as a result, we may lose a significant test ordering site at any time.

The top five test ordering clients during 2015, 2014 and 2013 accounted for 49%, 56% and 69% respectively, of our testing volumes, with 18%, 38% and 36% respectively, of the test volume coming from community hospitals. During the year ended December 31, 2015, one Biopharma client accounted for approximately 19% of our revenue. During the year ended December 31, 2014 there were two Biopharma clients that accounted for approximately 23% and 12%, respectively, of our revenue. During 2013, there was one client that accounted for approximately 40% of our revenue.

Note 4. Other Current Assets

At December 31, 2015 and 2014, other current assets consisted of the following (in thousands):

	2015	2014
Inventory	**$ 133**	$ 280
Prepaid expenses	**1,985**	893
	$ 2,118	$ 1,173

Note 5. Lease Commitments

We lease our laboratory, research facility and administrative office space under various operating leases. We have approximately 17,900 square feet of office and laboratory space in Rutherford, New Jersey, 24,900 square feet in Morrisville, North Carolina, 27,400 square feet in Los Angeles, California, 10,000 square feet in Hyderabad, India and 2,700 square feet in Shanghai, China. We have escalating lease agreements for both our New Jersey and North Carolina spaces which expire January 2018 and May 2020, respectively. These leases require monthly rent with periodic rent increases that vary from $1 to $2 per square foot of the rented premises per year. The difference between minimum rent and straight-line rent is recorded as deferred rent payable. The terms of our New Jersey lease require that a $300,000 security deposit for the facility be held in a stand by letter of credit in favor of the landlord (see Note 7). The California lease expires June 30, 2016.

We acquired office and scientific equipment under long term leases which have been capitalized at the present value of the minimum lease payments. The equipment under these capital leases had a cost of $706,154 and accumulated depreciation of $311,855, as of December 31, 2015.

Minimum future lease payments under all capital and operating leases as of December 31, 2015 are as follows (in thousands):

	Capital Leases	Operating Leases	Total
December 31,			
2016	$ 143	$ 1,396	$ 1,539
2017	78	936	1,014
2018	75	397	472
2019	70	342	412
2020	59	135	194
Thereafter	24	—	24
Total minimum lease payments	$ 449	$ 3,206	$ 3,655
Less amount representing interest	51		
Present value of net minimum obligations	398		
Less current obligation under capital lease	122		
Long-term obligation under capital lease	$ 276		

Rent expense for the years ended December 31, 2015, 2014 and 2013 was $1,136,778, $692,324, and $550,882, respectively.

Note 6. Debt

Term Note - Silicon Valley Bank

On May 7, 2015, we entered into a new debt financing facility with Silicon Valley Bank (“SVB”) to refinance the Company’s cash collateralized loan from Wells Fargo and to provide an additional working capital line of credit. The SVB credit facility provides for a $6.0 million term note (“Term Note”) and a revolving line of credit (“Line of Credit”) for an amount not to exceed the lesser of (i) $4.0 million or (ii) an amount equal to 80% of eligible accounts receivable. The Term Note requires interest-only payments through April 30, 2016 and beginning May 1, 2016, monthly principal payments of approximately$167,000 will be required plus interest through maturity on April 1, 2019. The interest rate of the Term Note is the Wall Street

Journal prime rate plus 2%, with a floor of 5.25% (5.50% at December 31, 2015) and an additional deferred interest payment of $180,000 will be due upon maturity. The Line of Credit requires monthly interest-only payments of the Wall Street Journal prime rate plus 1.5% (5.00% at December 31, 2015) and matures on May 7, 2017. The new loan agreement requires maintenance of certain financial ratios and grants SVB a first security interest in substantially all Company assets (other than our intellectual property). Pursuant to the new loan agreement, the Company is no longer required to maintain restricted cash accounts. At December 31, 2015, the principal balance of the Term Note was $6,000,000 and the principal balance of the Line of Credit was $0. On January 28, 2016, the Line of Credit was amended with SVB and we are no longer able to draw on the Line of Credit until we raise approximately $13 million of additional equity.

The following is a summary of long-term debt as of December 31, 2015 (in thousands):

Term Note, principal balance	**$**	**6,000**
Less unamortized debt issuance costs		**25**
Term Note, net		**5,975**
Less current maturities	**$**	**1,333**
Long-term portion	**$**	**4,642**

Principal maturities of the Term Note as of December 31, 2015 are as follows: 2016 - $1,333,333; 2017 - $2,000,000; 2018 - $2,000,000; 2019 - $666,667.

Business Line of Credit - Wells Fargo

At December 31, 2014, we had a long-term, fully-utilized line of credit with Wells Fargo Bank, which provided for maximum borrowings of $6 million. The line of credit had a maturity date of April 1, 2016 and required monthly interest payments equal to the Daily One Month LIBOR rate plus 1.75%. The line of credit was collateralized with $6 million in restricted cash and was refinanced by the SVB Term Note in May 2015.

Conversion of Debt concurrent with IPO

On April 10, 2013, we completed our IPO and converted the following indebtedness into shares of common stock at the IPO price of $10.00 per share (in thousands):

		Converted Amount	Common Shares
December 2011 Financing Transaction	$	4,500	450
2012 Convertible Debt Financing Transaction		3,000	300
December 2012 Bridge Financing Transaction		1,000	100
Business Lines of Credit (DAM)		1,000	100
Other Note Payable and accrued interest		134	13
	$	9,634	963

In connection with the conversion of debt into common stock, we expensed the applicable remaining debt discounts of $3.5 million, financing fees of $419,000 and a contingently recognizable beneficial conversion feature in the converted debt of $3 million.

December 2011 Financing Transaction

The December 2011 Credit Agreement was with John Pappajohn and Andrew Pecora (indirectly through an investment company), both then members of our board of directors, and NNJCA Capital, LLC (“NNJCA”), a limited liability company of which Dr. Pecora is a member. Mr. Pappajohn originally provided $4.0 million of financing, NNJCA originally provided $1.5 million of financing and Dr. Pecora provided $500,000 of financing under the Credit Agreement. On April 10, 2013, Mr. Pappajohn converted $4.0 million and Dr. Pecora converted $500,000 into 450,000 shares of our common stock at the IPO price of $10.00 per share concurrent with our IPO. The remaining outstanding balance of $1.5 million was repaid on August 19, 2013 using a portion of the proceeds from our Secondary Offering.

2012 Convertible Debt Financing Transaction

On April 10, 2013, the entire $3 million outstanding under a Restated Credit Agreement dated as of August 27, 2012, as amended and restated as of October 17, 2012, ($1,750,000 provided by Mr. Pappajohn and $1,250,000 provided by Mr. Mark Oman) was converted into 300,000 shares of common stock at the IPO price of $10 per share.

December 2012 Bridge Financing Transaction

On April 10, 2013, the entire $1 million outstanding under a credit agreement dated as of December 7, 2012, (all of which was provided by Mr. Pappajohn), was converted into 100,000 shares of common stock at the IPO price of $10.00 per share.

Business Line of Credit – DAM

On April 10, 2013, $1 million of indebtedness under this line with DAM Holdings, LLC was converted into 100,000 shares of common stock at the IPO price of $10 per share. The remaining outstanding balance of $2.0 million was repaid on August 19, 2013 using a portion of the proceeds from our Secondary Offering.

Other Note Payable

On April 10, 2013, a $100,000 note payable and accrued interest payable to Dr. Chaganti was converted into 13,430 shares of common stock at the IPO price of $10.00 per share.

Note 7. Letter of Credit

We maintain a $300,000 letter of credit in favor of our landlord pursuant to the terms of the lease for our Rutherford facility. At December 31, 2015 the letter of credit was fully secured by the restricted cash disclosed on our Consolidated Balance Sheet.

Note 8. Fixed Assets

Fixed assets are summarized by major classifications as follows (in thousands):

	2015	2014
Equipment	**$ 8,442**	$ 5,777
Furniture and fixtures	**1,083**	548
Leasehold improvements	**932**	870
	10,457	7,195
Less accumulated depreciation	**(4,388)**	(2,885)
Net fixed assets	**$ 6,069**	$ 4,310

Note 9. Patents and Other Intangible Assets

Patents and other intangible assets consist of the following at December 31, 2015 and 2014:

	(in thousands) **2015**	(in thousands) 2014	Weighted-Average Amortization Period
Patents	**$ 724**	$ 587	10 years
Patents - Response Genetics acquisition	**800**	—	7 years
Software - Response Genetics acquisition	**446**	—	2 years
	1,970	587	
Less accumulated amortization	**(243)**	(84)	
Net patent and other intangible assets	**$ 1,727**	$ 503	

Future amortization expense for legally approved patents (excluding patent applications in progress) and other intangible assets, is estimated as follows (in thousands):

2016	$ 344
2017	290
2018	202
2019	151
2020	140
2021 and thereafter	282
Total	$ 1,409

Note 10. Income Taxes

The provision for income taxes for the years ended December 31, 2015, 2014 and 2013 differs from the approximate amount of income tax benefit determined by applying the U.S. federal income tax rate to pre-tax loss, due to the following (in thousands):

	For the Year Ended December 31, 2015		For the Year Ended December 31, 2014		For the Year Ended December 31, 2013	
	Amount (in thousands)	**% of Pretax Loss**	**Amount (in thousands)**	**% of Pretax Loss**	**Amount (in thousands)**	**% of Pretax Loss**
Income tax benefit at federal statutory rate	**$ (7,479)**	**35.0 %**	$ (6,648)	35.0 %	$ (4,563)	35.0 %
State tax provision, net of federal tax benefit	**(878)**	**4.1 %**	(807)	4.2 %	(359)	2.8 %
Tax credits	**(232)**	**1.1 %**	(154)	0.8 %	(126)	1.0 %
Stock based compensation	**201**	**(0.9)%**	207	(1.1)%	229	(1.8)%
Derivative warrants	**(12)**	**0.1 %**	(146)	0.8 %	(1,622)	12.4 %
Investor consideration	**(110)**	**0.5 %**	(69)	0.4 %	—	— %
Debt and warrant conversion costs	**—**	**— %**	—	— %	3,454	(26.5)%
Change in valuation allowance	**6,617**	**(31.0)%**	5,255	(27.7)%	2,356	(18.1)%
Foreign operations	**283**	**(1.3)%**	—	— %	—	— %
Other	**426**	**(2.1)%**	12	— %	(33)	0.3 %
Income tax (benefit) provision	**$ (1,184)**	**5.5 %**	$ (2,350)	12.4 %	$ (664)	5.1 %

During November 2015, we sold $15,990,475 of gross State of New Jersey NOL carryforwards relating to the 2013 and 2014 tax years as well as $289,978 of research and development tax credits, resulting in the receipt of $1,183,564, net of expenses. During January and December 2014, we sold $28,640,223 of gross State of New Jersey NOL carryforwards relating to tax years 2009 through 2012, resulting in the receipt of $2,350,185. During 2013, we sold $8,018,107 of gross State of New Jersey NOL carryforwards, resulting in the receipt of $663,900.

We transferred the NOL carryforwards through the Technology Business Tax Certificate Transfer Program sponsored by the New Jersey Economic Development Authority.

Approximate deferred taxes consist of the following components as of December 31, 2015 and 2014 (in thousands):

	2015	2014
Deferred tax assets:		
Net operating loss carryforwards	**$ 25,085**	$ 20,982
Accruals and reserves	**1,100**	773
Non-qualified stock options	**3,357**	1,912
Research and development tax credits	**989**	758
Derivative warrant liability	**26**	26
Investment in joint venture	**251**	163
Goodwill	**283**	23
Fixed assets	**78**	—
Other	**6**	6
Total deferred tax assets	**31,175**	24,643
Less valuation allowance	**(31,175)**	(24,558)
Net deferred tax assets	—	85
Deferred tax liabilities:		
Fixed assets	—	(85)
Net deferred taxes	**$ —**	$ —

Due to a history of losses we have generated since inception, we believe it is more-likely-than-not that all of the deferred tax assets will not be realized as of December 31, 2015 and 2014. Therefore, we have recorded a full valuation allowance on our deferred tax assets. We have net operating loss carryforwards for federal income tax purposes of approximately $69 million as of December 31, 2015. The net operating loss carryforwards will begin to expire in 2027. Utilization of these carryforwards is subject to limitation due to ownership changes that may delay the utilization of a portion of the carryforwards.

Note 11. Capital Stock

IPO

On April 10, 2013, we completed our IPO in which we issued and sold 690,000 shares of common stock (including the underwriter's overallotment of 90,000 shares) at a public offering price of $10.00 per share resulting in gross proceeds of $6.9 million. In connection with the offering, all outstanding shares of Series A preferred stock were converted into 376,525 shares of common stock, and all outstanding shares of Series B preferred stock were converted into 910,800 shares of common stock. Concurrent with the IPO, we issued 2,000 shares of common stock to Cleveland Clinic pursuant to our license agreement with Cleveland Clinic.

Secondary Offering

On August 19, 2013, we sold 1,500,000 shares of common stock at a public offering price of $10.00 per share resulting in gross proceeds of $15.0 million ($13.3 million of net proceeds after offering expenses and underwriting discounts).

On September 5, 2013, we sold 105,000 additional common shares pursuant to the underwriter's partial exercise of the over-allotment option which resulted in gross proceeds of $1.1 million ($947,000 of net proceeds after offering expenses and underwriting discounts).

Follow-On Offering

On October 28, 2013, we sold 3,286,700 shares of common stock, (including the underwriter's over-allotment of 428,700 shares), at a public offering price of $14.00 per share resulting in gross proceeds of $46.0 million (net proceeds of $42.3 million).

Cantor Sales Agreement

In July 2015, we sold 2,800 shares of common stock that resulted in net proceeds to the Company of $34,000 through our sales agreement with Cantor Fitzgerald & Co. See Note 19.

2015 Offering

On November 12, 2015, we sold 3,000,000 shares of common stock with warrants to purchase an aggregate of 3,000,000 shares of common stock at a combined public offering price of $4.00 per share and warrant resulting in gross proceeds of $12.0 million ($10.3 million of net proceeds after offering expenses and underwriting discounts). The underwriters also received 450,000 warrants pursuant to the partial exercise of the over-allotment option. The warrants have an exercise price of $5.00, became fully-exercisable at issuance and expire on November 12, 2020.

Preferred Stock

We are currently authorized to issue up to 9,764,000 shares of preferred stock.

Note 12. Stock-Based Compensation

We have two equity incentive plans: the 2008 Stock Option Plan (the "2008 Plan") and the 2011 Equity Incentive Plan (the "2011 Plan", and together with the 2008 Plan, the "Stock Option Plans"). The Stock Option Plans are meant to provide additional incentive to officers, employees and consultants to remain in our employment. Options granted are generally exercisable for up to 10 years.

The Board of Directors adopted the 2011 Plan on June 30, 2011 and reserved 350,000 shares of common stock for issuance under the 2011 Plan. On May 22, 2014 and on May 14, 2015, the stockholders voted to increase the number of shares reserved by the plan to 2,000,000 and 2,650,000 shares of common stock, respectively, under several types of equity awards including stock options, stock appreciation rights, restricted stock awards and other awards defined in the 2011 Plan.

The Board of Directors adopted the 2008 Plan on April 29, 2008 and reserved 251,475 shares of common stock for issuance under the plan. On April 1, 2010, the stockholders voted to increase the number of shares reserved by the plan to 550,000. We are authorized to issue incentive stock options or non-statutory stock options to eligible participants.

We have also issued 48,000 options outside of the Stock Option Plans.

At December 31, 2015, 853,504 shares remain available for future awards under the 2011 Plan and 110,749 shares remain available for future awards under the 2008 Plan.

As of December 31, 2015, no stock appreciation rights and 275,500 shares of restricted stock had been awarded under the Stock Option Plans.

Prior to our IPO in April 2013, the Board of Directors authorized an offer to certain employee and non-employee options holders on the following terms: those holding stock options with a strike price of $25.00 or more had the opportunity to exchange their options for 60% of the number of options currently held with an exercise price equal to the IPO price, which was $10.00 per share, and those holding stock options with a strike price of $12.50 had the opportunity to exchange their options for 80% of the number of options currently held with an exercise price equal to the IPO price which was $10.00 per share. On April 5, 2013, our initial public offering became effective and 336,300 options with exercise prices ranging from $12.50 to $33.80 were exchanged for 242,070 options with an exercise price of $10.00. The options did not result in the recognition of incremental compensation cost. In addition, 53,500 options which were approved to be issued and priced at the IPO price were issued to employees with an exercise price of $10.00 per share.

A summary of employee and non-employee stock option activity for the years ended December 31, 2015, 2014 and 2013 is as follows:

	Options Outstanding			
	Number of Shares (in thousands)	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding January 1, 2013	553	$ 12.76	7.13	$ 1,142
Granted	427	14.57		
Canceled or expired	(106)	20.46		
Outstanding December 31, 2013	874	$ 10.83	7.75	$ 3,139
Granted	1,154	10.41		
Exercised	(30)	6.61		
Canceled or expired	(159)	11.45		
Outstanding December 31, 2014	1,839	$ 10.58	8.49	$ 618
Granted	312	$ 9.77		
Exercised	(4)	$ 5.37		
Canceled or expired	(186)	$ 9.69		
Outstanding December 31, 2015	1,961	$ 10.55	7.68	$ —
Exercisable, December 31, 2015	958	$ 10.09	6.61	$ —

Aggregate intrinsic value represents the difference between the fair value of our common stock and the exercise price of outstanding, in-the-money options. During the year ended December 31, 2015, 2014 and 2013, we received $23,480, $79,018 and $1,640, respectively, from the exercise of options. Also during the year ended December 31, 2014, an option holder exercised options to purchase 12,000 shares of common stock with an exercise price of $10.00 per share using the net issue exercise method whereby the option holder surrendered 11,429 shares in payment in full of the exercise price resulting in net issuance of 571 shares of common stock.

As of December 31, 2015, total unrecognized compensation cost related to non-vested stock options granted to employees was $4,782,125, which we expect to recognize over the next 3.10 years.

As of December 31, 2015, total unrecognized compensation cost related to non-vested stock options granted to non-employees was $150,000, which we expect to recognize over the next 2.01 years.

The fair value of options granted to employees is estimated on the grant date using the Black-Scholes option valuation model. This valuation model for stock-based compensation expense requires us to make assumptions and judgments about the

variables used in the calculation, including the fair value of our common stock (see Note 14), the expected term (the period of time that the options granted are expected to be outstanding), the volatility of our common stock, a risk-free interest rate, and expected dividends. We also estimate forfeitures of unvested stock options. To the extent actual forfeitures differ from the estimates, the difference will be recorded as a cumulative adjustment in the period estimates are revised. No compensation cost is recorded for options that do not vest. We use the simplified calculation of expected life described in the SEC's Staff Accounting Bulletin No. 107, Share-Based Payment, and volatility is based on an average of the historical volatilities of the common stock of three entities with characteristics similar to those of the Company. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the expected life of the option. We use an expected dividend yield of zero, as we do not anticipate paying any dividends in the foreseeable future. Expected forfeitures are assumed to be zero due to the plan design which has monthly vesting after an initial cliff vesting period.

The following table presents the weighted-average assumptions used to estimate the fair value of options granted to employees during the periods presented:

	Year Ended December 31,		
	2015	2014	2013
Volatility	**60.69 %**	70.17 %	76.60 %
Risk free interest rate	**1.63 %**	1.78 %	1.79 %
Dividend yield	**—**	—	—
Term (years)	**6.13**	5.98	6.14
Weighted-average fair value of options granted during the period	**$ 5.54**	$ 5.29	$ 9.85

In 2010, we issued an aggregate of 80,000 options to non-employees with an exercise price of $25.00. As described above, on April 5, 2013, these options were exchanged for 48,000 options with an exercise price of $10.00. In October 2013, we issued 10,000 options to a non-employee with an exercise price of $15.39. In May 2014, we issued 200,000 options to a Director, with an exercise price of $15.89. See Note 18 for additional information. The following table presents the weighted-average assumptions used to estimate the fair value of options reaching their measurement date for non-employees during the periods presented:

	Year Ended December 31,		
	2015	2014	2013
Volatility	**70.38 %**	71.76 %	75.68 %
Risk free interest rate	**2.10 %**	2.44 %	1.53 %
Dividend yield	**—**	—	—
Term (years)	**8.73**	9.68	7.68

Starting in 2013, restricted stock awards have been granted to employees, directors and consultants as compensation for services. At December 31, 2015, there was $720,934 of unrecognized compensation cost related to non-vested restricted stock granted to employees; we expect to recognize the cost over 2.47 years.

The following table summarizes the activities for our non-vested restricted stock awards for the years ended December 31, 2015, 2014 and 2013:

	Non-vested Restricted Stock Awards	
	Number of Shares (in thousands)	Weighted-Average Grant Date Fair Value
Non-vested at January 1, 2013	$ —	$ —
Granted	8	13.50
Vested	(3)	15.39
Non-vested at December 31, 2013	$ 5	$ 12.55
Granted	220	9.01
Vested	(80)	10.19
Forfeited/canceled	(12)	12.04
Non-vested at December 31, 2014	$ 133	$ 8.14
Granted	48	9.50
Vested	(47)	9.09
Forfeited/canceled	(13)	9.03
Non-vested at December 31, 2015	121	8.25

The following table presents the effects of stock-based compensation related to stock option and restricted stock awards to employees and non-employees on our Statement of Operations during the periods presented (in thousands):

	Year Ended December 31,		
	2015	2014	2013
Cost of revenues	**$ 233**	$ 149	$ 41
Research and development	**360**	473	114
General and administrative	**2,106**	3,058	516
Sales and marketing	**135**	155	64
Total stock-based compensation	**$ 2,834**	$ 3,835	$ 735

Note 13. Warrants

We have issued certain warrants which contain an exercise price adjustment feature in the event we issue additional equity instruments at a price lower than the exercise price of the warrant. The warrants are described herein as derivative warrants. For all derivative warrants, in the event equity instruments are issued at a price lower than the exercise price of the warrant, the exercise price is adjusted to the price of the new equity instruments issued (price adjustment feature). For certain of these warrants, the number of shares underlying the warrant is also adjusted to an amount computed by dividing the proceeds of the warrant under its original terms by the revised exercise price (share adjustment feature). These warrants are initially recorded as a warrant liability at fair value with a corresponding entry to the loan guarantee fee asset, debt discount, additional paid-in capital or expense dependent upon the service provided in exchange for the warrant grant. Subsequently, any change in fair value is recognized in earnings until such time as the warrants are exercised, amended or expire. As of December 31, 2015 and 2014 all warrants with a share adjustment feature have either expired or have been exercised.

In connection with debt guarantees and extensions, we issued 1,051,506 warrants to Mr. Pappajohn, a member of our Board of Directors and stockholder, at various dates prior to 2013 (see Note 18). These warrants were initially recorded at fair value as a loan guarantee fee amortized over the period of the guarantee to interest expense.

In connection with the 2012 Convertible Debt Financing Transaction, we granted 4,118 warrants to Mr. Pappajohn and 2,941 warrants to Mr. Oman on February 22, 2013. The warrants have a ten-year term and an exercise price equal to the IPO price of $10.00 per share. Pursuant to a subsequent agreement, the warrants held by Mr. Pappajohn have an exercise price of $15.00 per share. These warrants were initially recorded at fair value as a financing fee asset and were amortized over the period of the note to interest expense. The issue date fair value of these warrants was $221,000.

In connection with the December 2012 Bridge Financing Transaction, we granted 2,353 ten-year warrants with an exercise price equal to the IPO price of $10.00 per share to Mr. Pappajohn on March 7, 2013. Mr. Pappajohn subsequently agreed that if our final IPO price was below $15.00, there would be no further adjustment to the price or number of shares covered by the warrants held by him. These warrants were initially recorded at fair value as a financing fee asset and were amortized over the period of the note to interest expense. The issue date fair value of these warrants was $47,000.

On February 11, 2013, John Pappajohn agreed to limit certain anti-dilution rights in his warrants to purchase shares of the Company's common stock. Subject to the consummation of an IPO prior to April 13, 2013, Mr. Pappajohn agreed that if the final IPO price was below $15.00, the exercise price of the warrants held by him would adjust to $15.00 and the number of shares underlying the warrants would be adjusted as if the IPO price were $15.00 and then there would be no further adjustment to the price or number of shares covered by warrants held by him. In February 2013, certain warrant holders agreed to waive the price and share adjustment provisions of their warrants, except for the anti-dilution provisions related to stock splits, subdivisions and combinations, with respect to an aggregate of 114,030 shares of common stock underlying such warrants, effective immediately following the consummation of our IPO on April 10, 2013 at $10.00 per share.

On April 10, 2013, the Company completed the IPO at $10.00 per share. The shares of common stock issuable upon the exercise of warrants increased by 838,889 shares and the exercise prices of 1,656,860 warrants were adjusted as a result of share and exercise price adjustment features in certain warrants.

On April 29, 2013, the Company received $96,000 from shareholders who exercised warrants to purchase 24,000 shares of common stock at $4.00 per share.

On July 6, 2013, a warrant holder exercised a warrant to purchase 6,000 shares of common stock at an exercise price of $4.00 per share using the net issuance exercise method whereby 2,072 shares were surrendered as payment in full of the exercise price resulting in a net issuance of 3,928 shares.

On July 8, 2013, the Company received $96,000 from shareholders who exercised warrants to purchase 24,000 shares of common stock at $4.00 per share.

On September 10, 2013 and September 27, 2013, the Company extended the expiration date of 42,468 warrants for 17 days and 11 days respectively.

On September 30, 2013, warrant holders exercised warrants to purchase 30,034 shares of common stock at an exercise price of $10.00 per share using the net issuance exercise method whereby 14,313 shares were surrendered as payment in full of the exercise price resulting in a net issuance of 15,721 shares.

On October 7, 2013 and October 8, 2013, warrant holders exercised warrants to purchase 33,868 shares of common stock, at exercise prices ranging from $10.00 – $14.10 per share, using the net issuance exercise method whereby 23,188 shares were surrendered as payment in full of the exercise price resulting in a net issuance of 10,680 shares.

In January 2014, the Company received $950 from a warrant holder who exercised warrants to purchase 95 shares of common stock at $10.00 per share. In February 2014 a warrant holder exercised warrants to purchase 3,320 shares of common stock at an exercise price of $10.00 per share using the net issuance exercise method whereby 1,661 shares were surrendered in payment in full of the exercise price resulting in a net issuance of 1,659 shares. In March 2014 a warrant holder exercised warrants to purchase 12,500 shares of common stock at an exercise price of $10.00 per share using the net issuance exercise method whereby 7,230 shares were surrendered in payment in full of the exercise price resulting in a net issuance of 5,270 shares. In June 2014, we received $177,154 from Mr. Pappajohn who exercised warrants to purchase 44,288 shares of common stock at an exercise price of $4.00 per share.

In July 2014, warrant holders exercised warrants to purchase 130,000 shares of common stock at an exercise price of $4.00 per share using the net issuance exercise method whereby 45,894 shares were surrendered in payment in full of the exercise price resulting in a net issuance of 84,106 shares.

In October 2014, 470,833 warrants expired unexercised, of which 233,333 were warrants held by Mr. Pappajohn.

On April 1, 2015, 19,138 warrants expired unexercised.

On November 12, 2015, the Company issued 3,000,000 warrants in conjunction with the 2015 Offering and an additional 450,000 warrants pursuant to the underwriter's partial exercise of the over-allotment option. The warrants have an exercise price of $5.00 per share and will expire November 12, 2020. See Note 11. We have evaluated the terms and conditions of warrants issued with the 2015 Offering and determined the warrants should be included in equity and are not required to be reported as a liability.

On November 12, 2015, the exercise price of 75,215 warrants were adjusted from $10.00 per common share to $4.00 per common share due to 2015 Offering and the exercise price adjustment feature in certain warrants.

On November 18, 2015, 14,665 warrants expired unexercised and the Company received $1,400 from a warrant holder who exercised warrants to purchase 350 shares of common stock at $4.00 per share.

On December 9, 2015, 120,000 warrants held by Mr. Pappajohn expired unexercised.

The following table summarizes the warrant activity for the years ending December 31, 2015, 2014 and 2013 (in thousands, except exercise price):

Issued With / For	Exercise Price	Warrants Outstanding January 1, 2013	2013 Warrants Issued	2013 Warrants Exercised	2013 Warrants Expired	IPO Adjustments (E)	Warrants Outstanding December 31, 2013	2014 Warrants Exercised	2014 Warrants Expired	Warrants Outstanding December 31, 2014	2015 Warrants Issued	2015 Offering Adjustments (F)	2015 Warrants Exercised	2015 Warrants Expired	Warrants Outstanding December 31, 2015
Non-Derivative Warrants:															
Financing	$ 10.00	—	—	—	—	243	243	—	—	243	—	—	—	—	243
Financing	15.00	—	—	—	—	436	436	—	—	436	—	—	—	—	436
Debt Guarantee	4.00	228	—	(54)	—	—	174	(174)	—	—	—	—	—	—	—
Debt Guarantee	10.00	—	—	—	—	238	238	—	(238)	—	—	—	—	—	—
Debt Guarantee	15.00	—	—	—	—	586	586	—	(233)	353	—	—	—	(120)	233
Series A Pref. Stock	14.10	66	—	(30)	(36)	—	—	—	—	—	—	—	—	—	—
Consulting	10.00	—	—	—	—	29	29	—	—	29	—	—	—	(19)	10
2015 Offering	5.00	—	—	—	—	—	—	—	—	—	3,450	—	—	—	3,450
	$ 6.82 G	294	—	(84)	(36)	1,532	1,706	(174)	(471)	1,061	3,450	—	—	(139)	4,372
Derivative Warrants:															
Financing	4.00 B	—	—	—	—	—	—	—	—	—	—	60	—	—	60
Financing	10.00 B	—	—	—	—	60	60	—	—	60	—	(60)	—	—	—
Financing	25.00 B	60	—	—	—	(60)	—	—	—	—	—	—	—	—	—
Financing	42.50 BCD	75	—	—	—	(75)	—	—	—	—	—	—	—	—	—
Financing	42.50 AD	55	3	—	—	(58)	—	—	—	—	—	—	—	—	—
Financing	42.50 ACD	121	6	—	—	(127)	—	—	—	—	—	—	—	—	—
Debt Guarantee	10.00 A	—	—	—	—	13	13	(13)	—	—	—	—	—	—	—
Debt Guarantee	25.00 ACD	212	—	—	—	(212)	—	—	—	—	—	—	—	—	—
Debt Guarantee	25.00 AD	100	—	—	—	(100)	—	—	—	—	—	—	—	—	—
Debt Guarantee	32.45 AC	40	—	—	—	(40)	—	—	—	—	—	—	—	—	—
Debt Guarantee	42.50 ACD	38	—	—	—	(38)	—	—	—	—	—	—	—	—	—
Debt Guarantee	42.50 BCD	37	—	—	—	(37)	—	—	—	—	—	—	—	—	—
Series B Pref. Stock	4.00 B	—	—	—	—	—	—	—	—	—	—	15	—	(15)	—
Series B Pref. Stock	10.00 B	—	—	(34)	—	52	18	(3)	—	15	—	(15)	—	—	—
Series B Pref. Stock	25.00 B	52	—	—	—	(52)	—	—	—	—	—	—	—	—	—
Consulting	12.50 AD	4	—	—	—	(4)	—	—	—	—	—	—	—	—	—
Consulting	14.10 AD	10	—	—	—	(10)	—	—	—	—	—	—	—	—	—
Consulting	25.00 AD	4	—	—	—	(4)	—	—	—	—	—	—	—	—	—
	$ 4.00 G	808	9	(34)	—	(692)	91	(16)	—	75	—	—	—	(15)	60
	$ 6.78 G	1,102	9	(118)	(36)	840	1,797	(190)	(471)	1,136	3,450	—	—	(154)	4,432

A These warrants are subject to fair value accounting and contain exercise price and number of share adjustment features. See Note 14.

B These warrants are subject to fair value accounting and contain an exercise price adjustment feature. See Note 14.

C On February 11, 2013, these warrants held by John Pappajohn were amended to limit the adjustment feature(s) to $15.00 per share in an initial public offering (totaling 530,022 warrants).

D The exercise price and/or number of share adjustment features of these warrants expired and are no longer subject to fair value accounting after our initial public offering.

E On April 10, 2013 the Company completed the IPO at $10.00 per share. The shares of common stock issuable upon the exercise of warrants outstanding as of April 10, 2013 increased by 838,889 shares and the exercise prices of 1,656,860 warrants were adjusted as a result of the share and exercise price adjustment features described above.

F On November 12, 2015 the Company completed the 2015 Offering and the exercise price of certain derivative warrants were adjusted to $4.00.

G Weighted average exercise prices are as of December 31, 2015.

Note 14. Fair Value of Warrants

The following tables summarize the assumptions used in computing the fair value of derivative warrants subject to fair value accounting at the date of issue during the years ended December 31, 2015, 2014 and 2013 and at December 31, 2015, December 31, 2014, December 31, 2013, and April 5, 2013 (IPO valuation date). In computing the fair value of the warrants, if the stated exercise price of the warrants exceeded the assumed value of the Company stock at the date the fair value was being computed, the exercise price and number of shares (if applicable) underlying the warrants were adjusted to reflect an assumed trigger of the price and/or share adjustment features related to the applicable warrants. Such adjustments were only applicable to 2013 due to the relative price of the warrants and the assumed Company stock price:

Debt Guarantee	Exercised During the Year Ended December 31, 2014	IPO Date April 5, 2013
Exercise Price	$ 10.00	$ 13.56
Expected life (years)	0.60	2.42
Expected volatility	49.01%	66.37%
Risk-free interest rate	0.08%	0.32%
Expected dividend yield	0.00%	0.00%

Series B	Exercised During the Year Ended December 31, 2015	Exercised During the Year Ended December 31, 2014	As of December 31, 2014
Exercise Price	**$ 4.00**	$ 10.00	$ 10.00
Expected life (years)	**0.01**	1.72	0.88
Expected volatility	**12.33%**	46.60%	49.95%
Risk-free interest rate	**0.07%**	0.33%	0.25%
Expected dividend yield	**0.00%**	0.00%	0.00%

Consulting	As of December 31, 2015	As of December 31, 2014	IPO Date April 5, 2013
Exercise Price	**$ 4.00**	$ 10.00	$ 10.00
Expected life (years)	**0.14**	1.14	2.33
Expected volatility	**57.39%**	49.25%	63.20%
Risk-free interest rate	**0.16%**	0.25%	0.27%
Expected dividend yield	**0.00%**	0.00%	0.00%

Financing	Issued During the Year Ended December 31, 2013	As of December 31, 2015	As of December 31, 2014	IPO Date April 5, 2013
Exercise Price	$ 13.34	**$ 4.00**	$ 10.00	$ 13.21
Expected life (years)	9.78	**0.23**	1.23	8.30
Expected volatility	74.70%	**70.82%**	50.23%	73.22%
Risk-free interest rate	1.95%	**0.16%**	0.25%	1.44%
Expected dividend yield	0.00%	**0.00%**	0.00%	0.00%

The assumed ranges of Company stock prices used in computing the warrant fair value for warrants issued during the year is as follows: in 2015, $3.30—$11.76 in 2014, $6.68—$19.86; in 2013, $9.60—$20.26. In determining the fair value of warrants issued at each reporting date, the assumed Company stock price was $3.30 and $6.68 (the closing price on the NASDAQ Capital Market) at December 31, 2015 and 2014.

The following table summarizes the derivative warrant activity subject to fair value accounting for the years ended December 31, 2015, 2014 and 2013 (in thousands):

	Issued with Series B Preferred Stock	Issued For Debt Guarantee	Issued For Consulting	Issued For Financing	Total
Fair value of warrants outstanding as of January 1, 2013	$ 230	$ 5,679	$ 147	$ 6,493	$ 12,549
Fair value of warrants issued	—	—	—	268	268
Fair value of warrants exercised	(420)	—	—	—	(420)
Reclassification to equity in IPO	—	(2,514)	(108)	(4,548)	(7,170)
Change in fair value of warrants	307	(3,101)	(38)	(1,801)	(4,633)
Fair value of warrants outstanding as of December 31, 2013	117	64	1	412	594
Fair value of warrants exercised	(38)	(87)	—	—	(125)
Change in fair value of warrants	(71)	23	(1)	(368)	(417)
Fair value of warrants outstanding as of December 31, 2014	8	—	—	44	52
Change in fair value of warrants	(8)	—	—	(27)	(35)
Fair value of warrants outstanding as of December 31, 2015	$ —	$ —	$ —	$ 17	$ 17

Note 15. Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. The Fair Value Measurements and Disclosures Topic of the FASB Accounting Standards Codification requires the use of valuation techniques that are consistent with the market approach, the income approach and/or the cost approach. Inputs to valuation techniques refer to the assumptions that market participants would use in pricing the asset or liability. Inputs may be observable, meaning those that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from independent sources, or unobservable, meaning those that reflect our own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances. In that regard, the Topic establishes a fair value hierarchy for valuation inputs that give the highest priority to quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs.

The fair value hierarchy is as follows:

Level 1: Quoted prices (unadjusted) for identical assets or liabilities in active markets that we have the ability to access as of the measurement date.

Level 2: Significant other observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3: Significant unobservable inputs that reflect our own assumptions about the assumptions that market participants would use in pricing an asset or liability.

The following table summarizes the financial liabilities measured at fair value on a recurring basis segregated by the level of valuation inputs within the fair value hierarchy utilized to measure fair value (in thousands):

	2015			
	Total	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Warrant liability	**$ 17**	**—**	**—**	**$ 17**
Notes payable	**266**	**—**	**—**	**266**
	$ 283	**—**	**—**	**$ 283**

	2014			
	Total	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Warrant liability	$ 52	—	—	$ 52
Gentris contingent consideration	293	—	—	293
Notes payable	535	—	—	535
	$ 880	—	—	$ 880

The warrant liability consists of stock warrants we issued that contain an exercise price adjustment feature. In accordance with derivative accounting for warrants, we calculated the fair value of warrants and the assumptions used are described in Note 14, “Fair Value of Warrants.” Realized and unrealized gains and losses related to the change in fair value of the warrant liability are included in other income (expense) on the Consolidated Statement of Operations and Comprehensive Loss.

The value of the Gentris contingent consideration was determined using a discounted cash flow of the expected payments required by the purchase agreement. During the year ended December 31, 2015 we recognized a gain of $207,000 due to settling the contingent consideration for $86,400.

The ultimate payment to VenturEast will be the value of 84,278 shares of common stock at the time of payment. The value of the note payable to VenturEast was determined using the fair value of our common stock less a discount for credit risk. During the years ended December 31, 2015 and 2014 we recognized a gain of $269,000 and $198,000, respectively, due to the decrease in value of the note.

Realized and unrealized gains and losses related to the change in fair value of the Gentris contingent consideration are included in general and administrative expense, while realized and unrealized gains and losses related to the VenturEast note are included in other income (expense) on the Consolidated Statement of Operations and Comprehensive Loss.

A table summarizing the activity for the derivative warrant liability which is measured at fair value using Level 3 inputs is presented in Note 14. The following table summarizes the activity of the notes payable to VenturEast and Gentris contingent consideration which were measured at fair value using Level 3 inputs (in thousands):

	Note Payable to VenturEast	Gentris Contingent Consideration
Fair value at January 1, 2014	$ —	$ —
Fair value at issuance	733	293
Change in fair value	(198)	—
Fair value at December 31, 2014	$ 535	$ 293
Change in fair value	(269)	(207)
Settlement of liability	—	(86)
Fair value at December 31, 2015	$ 266	$ —

Note 16. Contingencies

In the normal course of business, the Company is involved in various claims and legal proceedings. In the opinion of management, the ultimate liability or disposition thereof is not expected to have a material adverse effect on our financial condition, results of operations or liquidity.

Note 17. Joint Venture Agreement

In November 2011, we entered into an affiliation agreement with the Mayo Foundation for Medical Education and Research ("Mayo"), subsequently amended. Under the agreement, we formed a joint venture with Mayo in May 2013 to focus on developing oncology diagnostic services and tests utilizing next generation sequencing. The joint venture is a limited liability company, with each party initially holding fifty percent of the issued and outstanding membership interests of the new entity (the "JV"). In exchange for our membership interest in the JV, we made an initial capital contribution of $1.0 million in October 2013. In addition, we issued 10,000 shares of our common stock to Mayo pursuant to our affiliation agreement and recorded an expense of approximately $175,000. We also recorded additional expense of approximately $231,000 during the fourth quarter of 2013 related to shares issued to Mayo in November of 2011 as the JV achieved certain performance milestones. In the third quarter of 2014 we made an additional $1.0 million capital contribution.

The agreement also requires aggregate total capital contributions by us of up to an additional $4.0 million. We currently anticipate that we will make capital contributions of $1.0 million in the second quarter of 2016. The timing of the remaining installments is subject to the JV's achievement of certain operational milestones agreed upon by the board of governors of the JV. In exchange for its membership interest, Mayo's capital contribution will take the form of cash, staff, services, hardware and software resources, laboratory space and instrumentation, the fair market value of which will be approximately equal to $6.0 million. Mayo's continued contribution will also be conditioned upon the JV's achievement of certain milestones.

The joint venture is considered a variable interest entity under ASC 810-10, but we are not the primary beneficiary as we do not have the power to direct the activities of the joint venture that most significantly impact its performance. Our evaluation of ability to impact performance is based on our equal board membership and voting rights and day to day management functions which are performed by the Mayo personnel.

Note 18. Related Party Transactions

John Pappajohn, a member of the Board of Directors and stockholder, had personally guaranteed our revolving line of credit with Wells Fargo Bank through March 31, 2014. As consideration for his guarantee, as well as each of the eight extensions of this facility through March 31, 2014, Mr. Pappajohn received warrants to purchase an aggregate of 1,051,506 shares of common stock of which Mr. Pappajohn assigned warrants to purchase 284,000 shares of common stock to certain third parties. Through December 31, 2015, warrants to purchase 440,113 shares of common stock have been exercised by Mr. Pappajohn and 353,333 warrants to purchase common stock have expired. After adjustment pursuant to the terms of the warrants in conjunction with our IPO, the number of these warrants outstanding retained by Mr. Pappajohn was 232,312 at $15.00 per share on December 31, 2015.

In addition, John Pappajohn also had loaned us an aggregate of $6,750,000 (all of which was converted into 675,000 shares of common stock at the IPO price of $10.00 per share). In connection with these loans, Mr. Pappajohn received warrants to purchase an aggregate of 202,630 shares of common stock. After adjustment pursuant to the terms of the warrants in conjunction with our IPO, the number of warrants outstanding was 436,079 at $15.00 per share at December 31, 2015.

Effective January 6, 2014, the board of directors appointed John Pappajohn to serve as the Chairman of the Board, a position previously held by Dr. Raju S.K. Chaganti. As compensation for serving as the Chairman of the Board, the Company will pay Mr. Pappajohn $100,000 per year and granted to Mr. Pappajohn 25,000 restricted shares of the Company's common stock, and options to purchase an aggregate of 100,000 shares of the Company's common stock. The options have a term of ten years from the date on which they were granted. The restricted stock and the options each vest in two equal installments on the one year anniversary and the two year anniversary of the date on which Mr. Pappajohn became the Chairman of the Board.

On October 14, 2015 the Board of Directors granted John Pappajohn and Dr. Chaganti 2,500 restricted shares each of the Company's common stock and options to purchase an aggregate of 10,000 shares each of the Company's common stock as compensation for serving on the Board of Directors. The restricted stock vests on the one-year anniversary date of the grant and the stock options vest in two equal installments on the one-year anniversary and the two-year anniversary date of the grant.

In August 2010, we entered into a consulting agreement with Equity Dynamics, Inc. ("EDI"), an entity controlled by John Pappajohn, pursuant to which EDI received a monthly fee of $10,000. The consulting agreement was terminated effective March 31, 2014.

Subsequently the Company entered into a new consulting agreement with EDI effective April 1, 2014 pursuant to which it receives a monthly fee of $10,000. We expensed $120,000 annually for the years ended December 31, 2015, 2014 and 2013 related to this agreement.

On May 19, 2006, we issued a convertible promissory note in favor of our then Chairman and founder, Dr. Chaganti, the holder, which obligated us to pay the holder the sum of $100,000, together with interest at the rate of 8.5% per annum, due April 1, 2014. Interest expense was $2,400 for the year ended December 31, 2013. On April 10, 2013 the note and accrued interest converted into 13,430 shares of common stock at the IPO price of $10.00 per share. Pursuant to a consulting and advisory agreement, Dr. Chaganti also received options to purchase a total of 36,000 shares of common stock at a price of $10.00 per share which vested over a two year period. Total non-cash stock-based compensation recognized under the consulting agreement for the year ended December 31, 2013 was $76,220. Additionally, on September 15, 2010, we entered into a three year consulting agreement with Dr. Chaganti which was subsequently renewed through December 31, 2016 pursuant to which Dr. Chaganti receives $5,000 per month for providing consulting and technical support services. Total expenses for each of the years ended December 31, 2015, 2014 and 2013 were $60,000. Pursuant to the terms of the renewed consulting agreement, Dr. Chaganti received an option to purchase 200,000 shares of our common stock at a purchase price of $15.89 per share vesting over a period of four years. Total non-cash stock-based compensation recognized under this consulting agreement for the years ended December 31, 2015, 2014 and 2013 was $239,375, $341,000 and $0, respectively. Also pursuant to the consulting agreement, Dr. Chaganti assigned to us all rights to any inventions which he may invent during the course of rendering consulting services to us. In exchange for this assignment, if the USPTO issues a patent for an invention on which Dr. Chaganti is listed as an inventor, we are required to pay Dr. Chaganti (i) a one-time payment of $50,000 and (ii)1% of any net revenues we receive from any licensed sales of the invention. In 2014 we paid Dr. Chaganti $150,000 which was recognized as an expense in fiscal 2013 when three patents were issued. Also in February 2015, we paid Dr. Chaganti $150,000 for which was recognized as an expense in 2014 when three additional patents were issued.

Andrew Pecora (indirectly through an investment company), when a member of our board of directors, and NNJCA, a limited liability company of which Dr. Pecora is a member originally provided $0.5 and $1.5 million of financing, respectively, under a Credit Agreement dated as of December 21, 2011, as amended and restated as of February 13, 2012. On April 10, 2013, NNJCA converted $0.5 million of its outstanding indebtedness into 50,000 shares of our common stock at the IPO price of $10.00 per share concurrent with our IPO. On August 19, 2013, the remaining principal under these notes were repaid to Dr. Pecora and NNJCA using a portion of the proceeds from our Secondary Offering. The loan bore an annual interest rate equal to the prime rate plus 6.25% (9.50% at August 19, 2013). We paid a pre-payment penalty due to Pecora and NNJCA of $130,000 of which $32,667 was paid upon conversion of the notes and the remaining balance paid on August 19, 2013.

On November 12, 2015, John Pappajohn, Chairman of the Board and Edward Sitar, Chief Financial Officer purchased 100,000 and 5,000, respectively, of shares of common stock with warrants to purchase 100,000 shares of common stock and 5,000 shares of common stock, respectively, in the 2015 Offering described in Note 11.

Note 19. Cantor Sales Agreement

On July 15, 2015, the Company entered into a Controlled Equity Offering℠ Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co., ("Cantor") as sales agent, pursuant to which the Company may offer from time to time through Cantor, shares of our common stock having an aggregate offering price of up to $20.0 million. Subject to the terms and conditions of the Sales Agreement, Cantor will use commercially reasonable efforts consistent with its normal trading and sales practices, applicable state and federal law, rules and regulations and the rules of The NASDAQ Capital Market to sell shares from time to time based upon the Company's instructions, including any price, time or size limits specified by the Company. Under the Sales Agreement, Cantor may sell shares by any method deemed to be an "at-the-market" offering as defined in Rule 415 under the U.S. Securities Act of 1933, as amended, or, with the Company's prior consent, any other method permitted by law, including in privately negotiated transactions. The Company may instruct Cantor not to sell shares if the sales cannot be effected at or above the price designated by the Company from time to time. The Company is not obligated to make any sales of the shares under the Sales Agreement. The offering of shares pursuant to the Sales Agreement will terminate upon the earlier of (a) the sale of all of the shares subject to the Sales Agreement or (b) the termination of the Sales Agreement by Cantor or the Company, as permitted therein. Cantor will receive a commission rate of 3.0% of the aggregate gross proceeds from each sale of shares and the Company has agreed to provide Cantor with customary indemnification and contribution rights. The Company will also reimburse Cantor for certain specified expenses in connection with entering into the Sales Agreement. During 2015, the Company sold 2,800 shares of its common stock that resulted in net proceeds to the Company of approximately $34,000. In July 2015, we temporarily suspended selling shares of common stock using the Sales Agreement. Furthermore, under the terms of our lock up agreement with Joseph Gunnar and Feltl, we were prohibited from selling our common stock under the Sales Agreement until 90 days after the 2015 Offering, or February 5, 2016.

Note 20. Subsequent Events

On January 28, 2016, the Line of Credit was amended with Silicon Valley Bank. See Note 6.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures.

We evaluated, under the supervision and with the participation of the Chief Executive Officer and Chief Financial Officer, the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities and Exchange Act of 1934 ("Exchange Act"), as amended) as of December 31, 2015, the end of the period covered by this report on Form 10-K. Based on this evaluation, our President and Chief Executive Officer (principal executive officer) and our Chief Financial Officer (principal accounting and financial officer) have concluded that our disclosure controls and procedures were effective at December 31, 2015. Disclosure controls and procedures are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act (i) is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and were operating in an effective manner for the period covered by this report, and (ii) is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

Management's Report on Internal Control Over Financial Reporting.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934.

The 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 and includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- 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 our management and directors; and
- 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 risk that controls may become inadequate because of changes in conditions or because of declines in the degree of compliance with policies or procedures.

We completed the acquisition of Response Genetics on October 9, 2015. Management's assessment of and conclusion on the effectiveness of our internal control over financial reporting excludes the internal controls over the financial reporting of this acquisition. This acquisition contributed approximately 10 percent of our net sales for the year ended December 31, 2015 and accounted for approximately 28 percent of our total assets as of December 31, 2015. Registrants are permitted to exclude acquisitions from their assessment of internal controls over financial reporting during the first year if, among other circumstances and factors, there is not adequate time between the consummation date of the acquisition and the assessment date for assessing internal controls.

Our management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2015. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control-Integrated Framework (2013)*.

Based on management's assessment, as of December 31, 2015, the Company's internal control over financial reporting was effective.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item will be contained in the Proxy Statement for our 2016 Annual Meeting of Stockholders, which we anticipate will be filed no later than 120 days after the end of our fiscal year ended December 31, 2015 and is incorporated herein by reference herein.

Item 11. Executive Compensation.

The information required by this item will be contained in the Proxy Statement for our 2016 Annual Meeting of Stockholders, which we anticipate will be filed no later than 120 days after the end of our fiscal year ended December 31, 2015 and is incorporated by reference herein.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item will be contained in the Proxy Statement for our 2016 Annual Meeting of Stockholders, which we anticipate will be filed no later than 120 days after the end of our fiscal year ended December 31, 2015 and is incorporated by reference herein.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item will be contained in the Proxy Statement for our 2016 Annual Meeting of Stockholders, which we anticipate will be filed no later than 120 days after the end of our fiscal year ended December 31, 2015 and is incorporated by reference herein.

Item 14. Principal Accounting Fees and Services.

The information required by this item will be contained in the Proxy Statement for our 2016 Annual Meeting of Stockholders, which we anticipate will be filed no later than 120 days after the end of our fiscal year ended December 31, 2015 and is incorporated by reference herein.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a)(1) *Financial Statements*. The financial statements filed as part of this report are listed on the Index to the Consolidated Financial Statements.

(a)(2) *Financial Statement Schedules*. Schedules are omitted because they are not applicable or the required information is shown in the consolidated financial statements or notes thereto.

(a)(3) *Exhibits.* Reference is made to the Exhibit Index. The exhibits are included, or incorporated by reference, in this annual report on Form 10-K and are numbered in accordance with Item 601 of Regulation S-K.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Cancer Genetics, Inc.
(Registrant)

Date: March 10, 2016

/s/ Panna L. Sharma
Panna L. Sharma
President and Chief Executive Officer
(Principal Executive Officer and duly authorized signatory)

Date: March 10, 2016

/s/ Edward J. Sitar
Edward J. Sitar
Chief Financial Officer
(Principal Financial and Accounting Officer)

SIGNATURES AND POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Panna Sharma and Edward Sitar, and each of them, his true and lawful agent, proxy and attorney-in-fact, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to (i) act on, sign and file with the Securities and Exchange Commission any and all amendments to this annual report on Form 10-K together with all schedules and exhibits thereto, (ii) act on, sign and file such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith and, (iii) take any and all actions which may be necessary or appropriate to be done, as fully for all intents and purposes as he might or could do in person, hereby approving, ratifying and confirming all that such agent, proxy and attorney-in-fact or any of his substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act, this annual report on Form 10-K has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Panna L. Sharma Panna L. Sharma	President, Chief Executive Officer and Director *(Principal Executive Officer)*	March 10, 2016
/s/ Edward J. Sitar Edward J. Sitar	Chief Financial Officer *(Principal Financial Officer and Principal Accounting Officer)*	March 10, 2016
/s/ John Pappajohn John Pappajohn	Chairman of the Board of Directors	March 10, 2016
/s/ Geoffrey Harris Geoffrey Harris	Director	March 10, 2016
/s/ Edmund Cannon Edmund Cannon	Director	March 10, 2016
/s/ Howard McLeod Howard McLeod	Director	March 10, 2016
/s/ Michael J. Welsh Michael J. Welsh	Director	March 10, 2016
/s/ Raju S. K. Chaganti Raju S. K. Chaganti, Ph.D.	Director	March 10, 2016
/s/ Franklyn G. Prendergast Franklyn G. Prendergast, M.D., Ph.D.	Director	March 10, 2016

INDEX TO EXHIBITS

Exhibit No.	Description
3.1	Third Amended and Restated Certificate of Incorporation of Cancer Genetics, Inc., filed as Exhibit 3.1 to quarterly report on Form 10-Q filed on May 15, 2013 and incorporated herein by reference.
3.2	Amended and Restated Bylaws of Cancer Genetics, Inc., filed as Exhibit 3.4 to Form S-1/A filed on April 30, 2012 (File No. 333-178836) and incorporated herein by reference.
4.1	Specimen Common Stock certificate of Cancer Genetics, Inc., filed as Exhibit 4.1 to Form S-1/A filed on May 16, 2012 (File No. 333-178836) and incorporated herein by reference.
4.2	Form of Short Form Cashless Exercise Warrant, filed as Exhibit 4.9 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
4.3	Form of Medium Form Warrant, filed as Exhibit 4.10 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
4.4	Form of Long Form Warrant, filed as Exhibit 4.11 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
4.5	Form of Bridge Financing Warrant issued by Cancer Genetics, Inc. to John Pappajohn, NNJCA Capital, LLC, Pecora and Company and DAM Holdings, LLC, filed as Exhibit 10.36 to Form S-1/A filed on March 13, 2012 (File No. 333-178836) and incorporated herein by reference.
4.6	Form of Modified Bridge Warrant issued by Cancer Genetics, Inc. to John Pappajohn and Mark Oman, filed as Exhibit 10.50 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
4.7	Form of October 2012 Warrant issued by Cancer Genetics, Inc. to John Pappajohn and Mark Oman, filed as Exhibit 10.53 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
4.8	Asset Purchase Agreement, by and among Cancer Genetics, Inc., Gentris, LLC and Gentris Corporation, dated July 15, 2014 (incorporated by reference to Exhibit 4.1 of the Company's current report on Form 8-K filed on July 22, 2014 with the Securities and Exchange Commission).
4.9	Share Purchase Agreement, by and among Cancer Genetics (India) Private Limited, Cancer Genetics, Inc., BioServe Biotechnologies (India) Pvt. Ltd., BioServe Biotechnologies Ltd., and each of the Selling Shareholders named therein, dated May 12, 2014 (incorporated by reference to Exhibit 4.1 of the Company's current report on Form 8-K filed on August 18, 2014 with the Securities and Exchange Commission).
4.10	Stock Purchase Agreement, by and between Cancer Genetics, Inc. and BioServe Biotechnologies Ltd., dated May 12, 2014 (incorporated by reference to Exhibit 4.2 of the Company's current report on Form 8-K filed on August 18, 2014 with the Securities and Exchange Commission).
10.1	Amended and Restated 2008 Stock Option Plan, filed as Exhibit 10.1 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.2	Form of Notice of Stock Option Grant under 2008 Stock Option Plan, filed as Exhibit 10.2 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.3	Form of Stock Option Grant Agreement under 2008 Stock Option Plan, filed as Exhibit 10.3 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.4	Form of Exercise Notice and Restricted Stock Purchase Agreement under 2008 Stock Option Plan, filed as Exhibit 10.4 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.5	Amended and Restated 2011 Equity Compensation Plan, dated May 22, 2014 (incorporated by reference to Exhibit 10.1 to the Company's current report on Form 8-K filed on May 22, 2014 with the Securities and Exchange Commission)
10.6	Form of Stock Option Grant Agreement under 2011 Stock Option Plan, filed as Exhibit 10.6 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.7	Form of Indemnification Agreement, filed as Exhibit 10.7 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.

Exhibit No.	Description
10.8	Medical Director Agreement, between Cancer Genetics, Inc. and Lan Wang, M.D., dated October 9, 2009, filed as Exhibit 10.9 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.9	Consulting Agreement, between Cancer Genetics, Inc. and R.S.K. Chaganti, dated September 15, 2010, filed as Exhibit 10.15 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.10	Employment Agreement, between Panna Sharma and Cancer Genetics, Inc., effective as of April 1, 2010, filed as Exhibit 10.17 to Form S-1/A filed on February 14, 2012 (File No. 333-178836) and incorporated herein by reference.
10.11	Employment Agreement, between Jane Houldsworth El Naggar, Ph.D. and Cancer Genetics, Inc., effective as of January 1, 2012, filed as Exhibit 10.19 to Form S-1/A filed on February 14, 2012 (File No. 333-178836) and incorporated herein by reference.
10.12	Office Lease Agreement, between Cancer Genetics, Inc. and Onyx Equities, LLC, dated October 9, 2007, filed as Exhibit 10.20 to Form S-1/A filed on April 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.13	Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated April 29, 2008, filed as Exhibit 10.21 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.14	Security Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated April 29, 2008, filed as Exhibit 10.22 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.15	First Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated July 7, 2008, filed as Exhibit 10.23 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.16	Second Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated March 30, 2009, filed as Exhibit 10.24 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.17	Third Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated July 2, 2009, filed as Exhibit 10.25 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference
10.18	Fourth Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated October 21, 2009, filed as Exhibit 10.26 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.19	Fifth Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated July 29, 2010, filed as Exhibit 10.27 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.20	Credit Agreement, between Cancer Genetics, Inc. and DAM Holdings, LLC, dated March 23, 2011, filed as Exhibit 10.28 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.21	Inter-creditor Agreement, between Cancer Genetics, Inc., John Pappajohn and DAM Holdings, LLC, dated March 23, 2011, filed as Exhibit 10.29 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.22	General Business Security Agreement, between Cancer Genetics, Inc. and DAM Holdings, LLC, dated March 23, 2011, filed as Exhibit 10.30 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.23	Promissory Note, issued by Cancer Genetics, Inc. to DAM Holdings, LLC, dated March 23, 2011, filed as Exhibit 10.31 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.24	Sixth Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated June 6, 2011, filed as Exhibit 10.32 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.25	Amended and Restated Credit Agreement, by and among Cancer Genetics, Inc., John Pappajohn, Pecora and Company and NNJCA Capital, LLC dated February 13, 2012, filed as Exhibit 10.33 to Form S-1/A filed on March 13, 2012 (File No. 333-178836) and incorporated herein by reference.

Exhibit No.	Description
10.26	Form of Promissory Note issued by Cancer Genetics, Inc. to John Pappajohn, filed as Exhibit 10.34 to Form S-1/A filed on March 13, 2012 (File No. 333-178836) and incorporated herein by reference.
10.27	Form of Promissory Note issued by Cancer Genetics, Inc. to NNJCA Capital, LLC and Pecora and Company, filed as Exhibit 10.35 to Form S-1/A filed on March 13, 2012 (File No. 333-178836) and incorporated herein by reference.
10.28	Inter-Creditor Agreement, between Cancer Genetics, Inc., John Pappajohn, DAM Holdings, LLC, Pecora and Company, NNJCA Capital, LLC and Equity Dynamics, Inc., dated February 13, 2012, filed as Exhibit 10.37 to Form S-1/A filed on March 13, 2012 (File No. 333-178836) and incorporated herein by reference.
10.29	Seventh Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated February 15, 2012, filed as Exhibit 10.38 to Form S-1/A filed on March 13, 2012 (File No. 333-178836) and incorporated herein by reference.
10.30	Amendment to Credit Agreement, between Cancer Genetics, Inc. and DAM Holdings, LLC, dated March 9, 2012, filed as Exhibit 10.33 to Form S-1/A filed on March 13, 2012 (File No. 333-178836) and incorporated herein by reference.
10.31	Affiliation Agreement, between Cancer Genetics, Inc. and Mayo Foundation for Medical Education and Research dated November 7, 2011, filed as Exhibit 10.35 to Form S-1 filed on December 30, 2011 (File No. 333-178836) and incorporated herein by reference.
10.32	Consulting Agreement with Equity Dynamics, Inc., filed as Exhibit 10.38 to Form S-1/A filed on February 14, 2012 (File No. 333-178836) and incorporated herein by reference.
10.33	Letter Agreement, between Meadows Office, L.L.C. and Cancer Genetics, Inc., dated January 10, 2008, filed as Exhibit 10.44 to Form S-1/A filed on April 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.34	Letter of Credit from JPMorgan Chase Bank, N.A., dated April 19, 2012, filed as Exhibit 10.46 to Form S-1/A filed on April 30, 2012 (File No. 333-178836) and incorporated herein by reference.
10.35	Letter Agreement between Cancer Genetics, Inc. and John Pappajohn, filed as Exhibit 10.47 to Form S-1/A filed on May 7, 2012 (File No. 333-178836) and incorporated herein by reference.
10.36	Amendment No. 1 to Affiliation Agreement, between Cancer Genetics, Inc. and Mayo Foundation for Medical Education and Research, dated September 29, 2012, filed as Exhibit 10.49 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.37	Restated Credit Agreement, between Mark Oman and John Pappajohn and Cancer Genetics, Inc., dated October 17, 2012, filed as Exhibit 10.51 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.38	Form of Restated Promissory Note issued by Cancer Genetics, Inc. to John Pappajohn and Mark Oman, filed as Exhibit 10.52 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.39	Restated Registration Rights Agreement, between Cancer Genetics, Inc., Mark Oman and John Pappajohn, dated October 17, 2012, filed as Exhibit 10.54 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.40	Letter Agreement between Cancer Genetics, Inc. and Pecora, filed as Exhibit 10.55 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.41	Letter Agreement between Cancer Genetics, Inc. and NNJCA Capital, LLC, filed as Exhibit 10.56 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.42	Letter Agreement between Cancer Genetics, Inc. and DAM Holdings, Inc., filed as Exhibit 10.57 to Form S-1/A filed on October 23, 2012 (File No. 333-178836) and incorporated herein by reference.
10.43	Eighth Addendum to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated October 18, 2012, filed as Exhibit 10.58 to Form S-1/A filed on November 16, 2012 (File No. 333-178836) and incorporated herein by reference.
10.44	Credit Agreement between John Pappajohn and Cancer Genetics, Inc. dated December 4, 2012, filed as Exhibit 10.59 to Form S-1/A filed on December 14, 2012 (File No. 333-178836) and incorporated herein by reference.

Exhibit No.	Description
10.45	Promissory Note issued by Cancer Genetics, Inc. to John Pappajohn dated December 4, 2012, filed as Exhibit 10.60 to Form S-1/A filed on December 14, 2012 (File No. 333-178836) and incorporated herein by reference.
10.46	Amendment No. 2 to Affiliation Agreement between Cancer Genetics, Inc. and Mayo Foundation for Medical Education and Research, dated January 4, 2013, filed as Exhibit 10.61 to Form S-1/A filed on January 8, 2013 (File No. 333-178836) and incorporated herein by reference.
10.47	Letter Agreement between Cancer Genetics, Inc. and John Pappajohn dated February 11, 2013, filed as Exhibit 10.63 to Form S-1/A filed on February 12, 2013 (File No. 333-178836) and incorporated herein by reference.
10.48	Letter Agreement between Cancer Genetics, Inc. and John Pappajohn (on behalf of his spouse) dated February 13, 2013, filed as Exhibit 10.64 to Form S-1/A filed on February 14, 2013 (File No. 333-178836) and incorporated herein by reference.
10.49	Letter Agreement between Cancer Genetics, Inc. and NNJCA Capital, LLC dated as of February 13, 2013, filed as Exhibit 10.65 to Form S-1/A filed on February 14, 2013 (File No. 333-178836) and incorporated herein by reference.
10.50	Letter Agreement between Cancer Genetics, Inc. and DAM Holdings, LLC dated February 13, 2013, filed as Exhibit 10.66 to Form S-1/A filed on February 14, 2013 (File No. 333-178836) and incorporated herein by reference.
10.51	Letter Agreement between Cancer Genetics, Inc. and R.S.K. Chaganti, dated February 13, 2013, filed as Exhibit 10.67 to Form S-1/A filed on March 4, 2013 (File No. 333-178836) and incorporated herein by reference.
10.52	Form of Letter Agreement between Cancer Genetics, Inc. and certain warrant holders waiving certain anti-dilution rights, filed as Exhibit 10.68 to Form S-1/A filed on March 4, 2013 (File No. 333-178836) and incorporated herein by reference.
10.53	Letter Amendment dated March 20, 2013 to Letter Agreement, between Meadows Office, L.L.C. and Cancer Genetics, Inc., dated April 6, 2012, filed as Exhibit 10.72 to Form S-1/A filed on March 22, 2013 (File No. 333-178836) and incorporated herein by reference.
10.54	Amendment No. 3 to Affiliation Agreement between the Company and Mayo Foundation for Medical Education and Research, dated May 21, 2013, filed as Exhibit 10.73 to Form S-1 filed on June 5, 2013 (File No. 333-189117) and incorporated herein by reference.
10.55	Limited Liability Company Agreement of OncoSpire Genomics, LLC, dated May 21, 2013, filed as Exhibit 10.74 to Form S-1/A filed on July 12, 2013 (File No. 333-189117) and incorporated herein by reference.
10.56	Joint Development Intellectual Property Agreement, among the Company, Mayo Foundation for Medical Education and Research and OncoSpire Genomics, LLC, dated May 21, 2013, filed as Exhibit 10.75 to Form S-1/A filed on July 12, 2013 (File No. 333-189117) and incorporated herein by reference.
10.57	Letter Agreement, between Cancer Genetics, Inc. and Andrew L. Pecora, effective February 18, 2014 (incorporated by reference to Exhibit 10.66 of the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
10.58	Consulting Agreement, between Cancer Genetics, Inc. and R.S.K. Chaganti, dated February 19, 2014 (incorporated by reference to Exhibit 10.67 of the Company's Annual Report on Form 10-k for the year ended December 31, 2013).
10.59	Employment Agreement, between Cancer Genetics, Inc. and Edward J. Sitar, dated March 17, 2014 (incorporated by reference to Exhibit 10.69 of the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
10.60	Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated April 1, 2014 (incorporated by reference to Exhibit 10.1 of the Company’s current report on Form 8-K filed on April 4, 2014 with the Securities and Exchange Commission).
10.61	Revolving Line of Credit Note, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated April 1, 2014 (incorporated by reference to Exhibit 10.2 of the Company’s current report on Form 8-K filed on April 4, 2014 with the Securities and Exchange Commission).
10.62	Consulting Agreement, between Cancer Genetics Inc. and Equity Dynamics, dated November 6, 2014 and effective as of April 1, 2014 (incorporated by reference to Exhibit 10.4 of the Company’s quarterly report on Form 10-Q for the period ended September 30, 2014 with the Securities and Exchange Commission).

Exhibit No.	Description
10.63	Security Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated November 12, 2014 (incorporated by reference to Exhibit 10.5 of the Company's quarterly report on Form 10-Q for the period ended September 30, 2014 with the Securities and Exchange Commission).
10.64	First Amendment to Credit Agreement, between Cancer Genetics, Inc. and Wells Fargo Bank, N.A., dated November 12, 2014. (incorporated by reference to Exhibit 10.6 of the Company's quarterly report on Form 10-Q for the period ended September 30, 2014 with the Securities and Exchange Commission).
10.65	Loan and Security Agreement, between Cancer Genetics, Inc. and Silicon Valley Bank, dated May 7, 2015.(incorporated by reference to Exhibit 10.1 of the Company's quarterly report on Form 10-Q for the period ended March 31, 2015 with the Securities and Exchange Commission).
10.66	Amended and Restated Asset Purchase Agreement By and Between Response Genetics, Inc. a Delaware Corporation, and Cancer Genetics., a Delaware Corporation, dated as of August 14, 2015 (incorporated by reference to the Company's current report on Form 8-K filed on August 21, 2015).
10.67	2011 Equity Incentive Plan, as amended and restated effective May 14, 2015, filed as Exhibit 10.1 to Form S-8 filed on July 28, 2015 (File Number 333-205903) and incorporated herein by reference.
10.68	Employment Agreement between Dr. Shaknovich and Cancer Genetics, Inc., effective as of July 1, 2015.(incorporated by reference to the Company's current report on Form 8-K filed on July 7, 2015).
10.69	Controlled Equity Offering℠ Sales Agreement, dated July 15, 2015, by and between Cancer Genetics, Inc. and Cantor Fitzgerald & Co. (incorporated by reference to the Company's current report on Form 8-K filed on July 16, 2015).
10.70	Form of Warrant Agreement of Cancer Genetics, Inc. (corrected) (incorporated by reference to Exhibit 4.1 of the Company's quarterly report on Form 10-Q for the period ended September 30, 2015 with the Securities and Exchange Commission).
10.71*	Office Lease, between Response Genetics, Inc. and Health Research Association, dated September 16, 2014.
10.72*	Tenth Amendment to Office Lease, between Response Genetics, Inc. and University of Southern California, dated June 30, 2015.
10.73*	Consent and First Amendment to Loan and Security Agreement, between Cancer Genetics, Inc. and Silicon Valley Bank, dated January 28, 2016.
21.1*	Subsidiaries of Cancer Genetics, Inc.
23.1*	Consent of RSM US LLP.
24.1	Power of attorney (included on the signature page).
31.1*	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities and Exchange Act of 1934, as amended.
31.2*	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities and Exchange Act of 1934, as amended.
32.1**	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2**	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101*	The following financial statements from this annual report on Form 10-K of Cancer Genetics, Inc. for the year-ended December 31, 2015, filed on March 10, 2016, formatted in XBRL (eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Cash, (iv) the Consolidated Statements of Stockholders' Equity and (v) the Notes to the Consolidated Financial Statements.

* Filed herewith.

** Furnished herewith.

OFFICE LEASE

HEALTH RESEARCH ASSOCIATION

a California non-profit public benefit corporation,

as Landlord,

and

Response Genetics, Inc.,

a Delaware corporation,

as Tenant

SUMMARY OF BASIC LEASE INFORMATION

The undersigned hereby agree to the following terms of this Summary of Basic Lease Information (the "Summary"). This Summary is hereby incorporated into and made a part of the attached Office Lease (this Summary and the Office Lease to be known collectively as the "Lease"). Each reference in the Office Lease to any term of this Summary shall have the meaning as set forth in this Summary for such term. In the event of a conflict between the terms of this Summary and the Office Lease, the terms of the Office Lease shall prevail. Any initially capitalized terms used herein and not otherwise defined herein shall have the meaning as set forth in the Office Lease.

	TERMS OF LEASE (References are to the Office Lease)	DESCRIPTION
1.	Dated as of:	September 16, 2004
2.	Landlord:	Health Research Association, a California non-profit public benefit corporation
3.	Address of Landlord (Section 30.14):	1640 Marengo Street, 7th Floor Los Angeles, California 90033 Attention: CFO
4.	Tenant:	Response Genetics, Inc., a Delaware corporation
5.	Address of Tenant (Section 30.14):	1640 Marengo Street, 6th Floor Los Angeles, California 90033 Attention: Eric Alcorn, Vice President, Finance
6.	Premises (Article 1)	
6.1	Building:	1640 Marengo Street Los Angeles, California 90033
6.2	Premises:	Suites 600 and 620, consisting of approximately 9,318 rentable square feet (9,318 useable square feet) of space located on the 6th floor of the Building, as set forth in Exhibit A attached hereto.
6.3	Number of rentable square feet in Building:	59,488 rentable square feet
7.	Term (Article 2)	

7.1	Lease Term:	January 25, 2005 through January 31, 2010
7.2	Lease Commencement Date:	January 25, 2005
7.3	Lease Expiration Date:	January 31, 2010

8. Base Rent (Article 3):

Lease Year	Annual Base Rent	Monthly Installment of Base Rent	Annual Rental Rate Per Rentable Square Foot
2005	$229,222,80	$19,101.90	$2.05
2006	2005 plus CPI increase	2005 plus CPI increase	2005 plus CPI increase
2007	2006 plus CPI increase	2006 plus CPI increase	2006 plus CPI increase
2008	2007 plus CPI increase	2007 plus CPI increase	2007 plus CPI increase
2009	2008 plus CPI increase	2008 plus CPI increase	2009 plus CPI increase

9.	Additional Rent (Article 4):	
9.1	Base Year:	The calendar year of 2004.
9.2	Tenant's Share	15.66% not to exceed an increase equal to the CPI increase per year
10.	Security Deposit (Article 21):	$19,101.90
11.	Number of Parking Passes (Article 28):	Twenty-one (21) unreserved parking spaces in the surface lot surrounding the Building at Zero Dollars ($0.00) per space per month. Additional unreserved parking spaces may be requested by Tenant; if available such parking spaces shall be at Twenty Dollars ($20.00) per space per month.
12.	Brokers (Section 30.19):	None
13.	Permitted Use (Article 5):	General office and research laboratory purposes in keeping with the character of a first class office building.

The foregoing terms of this Summary are hereby agreed to by Landlord and Tenant.

"Landlord"	"Tenant"
HEALTH RESEARCH ASSOCIATION, a California non-profit public benefit corporation	RESPONSE GENETICS, INC., a Delaware corporation
By: _____	By: _____
Its: Pres & CEO	Its: PRESIDENT AND CEO

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INDEX OF MAJOR DEFINED TERMS

OFFICE LEASE

This Office Lease, which includes the preceding Summary of Basic Lease Information (the "Summary") attached hereto as pages (i) through (v) and incorporated herein by this reference (the Office Lease and Summary to be known sometimes collectively hereafter as the "Lease"), dated as of the date set forth in Section 1 of the Summary, is made by and between Landlord and Tenant.

ARTICLE I
REAL PROPERTY, BUILDING AND PREMISES

Upon and subject to the terms set forth in this Lease, Landlord hereby leases to Tenant and Tenant hereby leases from Landlord the Premises, which Premises are located in the Building, reserving, however, to Landlord: (i) the sole and exclusive right to consent to the use or occupancy of the Premises by any person other than Tenant, whether by sublease, assignment or otherwise, and all right, title and interest in the economic value of the leasehold estate in the Premises for the Lease Term, all as more fully set forth in Article 14 of this Lease, (ii) all of the Building, except for the space within the inside surfaces bounding the Premises, and except as provided below in this Article 1, and (iii) the rights, interests and estates reserved to Landlord by provisions of this Lease or operation of law. The outline of the Premises is set forth in Exhibit A attached hereto. The rentable square footages of the Premises and the Building are set forth in Section 6 of the Summary. The Building, the parking area servicing the Building, and the land upon which the Building stands, and all appurtenances thereto, are herein sometimes collectively referred to as the "Real Property". Tenant acknowledges that Landlord has made no representation or warranty regarding the condition of the Real Property except as specifically set forth in this Lease. Tenant is hereby granted the right to the nonexclusive use of the common corridors and hallways, stairwells, elevators, restrooms and other public or common areas located on the Real Property; provided, however, that the manner in which such public and common areas are maintained and operated shall be at the sole discretion of Landlord and the use thereof shall be subject to the rules, regulations and restrictions attached hereto as Exhibit B (the "Rules and Regulations"). Landlord reserves the right to make alterations or additions to or to change the location of elements of the Real Property and the common areas thereof, provided, however, that no such alteration, addition or change shall materially interfere with Tenant's Permitted Use of the Premises.

ARTICLE II
LEASE TERM

2.1 Initial Term. The terms and provisions of this Lease shall be effective as of the date of this Lease. The term of this Lease (the "Lease Term") shall be as set forth in Section 7.1 of the Summary and shall commence on the Lease Commencement Date, and shall terminate on the Lease Expiration Date, unless this Lease is sooner terminated as hereinafter provided. For purposes of this Lease, the term "Lease Year" shall mean each consecutive twelve (12) month period during the Lease Term; provided, however, that the first Lease Year shall commence on the Lease Commencement Date and end on the last day of the month in which the first anniversary of the Lease Commencement Date occurs and the second and each succeeding Lease Year shall commence on the first day of the next calendar month; and further provided that the last Lease Year shall end on the Lease Expiration Date. At any time during the Lease Term,

Landlord may deliver to Tenant a notice in the form as set forth in Exhibit C, attached hereto, which Tenant shall execute and return to Landlord within ten (10) business days of receipt thereof, and thereafter the dates set forth on such notice shall be conclusive and binding upon Tenant.

2.2 Option Term.

2.2.1 Option Right. Landlord hereby grants the named Tenant, two (2) options to extend the Lease Term for a period of two (2) years each (each, an "Option Term"), which options shall be exercisable only by written notice delivered by Tenant to Landlord as provided below, provided that, as of the date of delivery of such notice, Tenant is not in default under this Lease and Tenant has not previously been in default under this Lease beyond the applicable cure period provided in this Lease more than once. Upon the proper exercise of each option to extend, and provided that, as of the end of the initial Lease Term (or Option Term, as the case may be), Tenant is not in default under this Lease and Tenant has not previously been in default under this Lease beyond the applicable cure period provided in this Lease more than once, the Lease Term, as it applies to the Premises, shall be extended for a period of two (2) years on the same terms and conditions of the Lease, except that the Base Rent shall be adjusted to the prevailing market rental rate for comparable leases in the market area of the Building. The rights contained in this Section 2.2 shall be personal to the named Tenant, and may only be exercised by the named Tenant (and not any assignee, sublessee or transferee of Tenant's interest in this Lease) if the named Tenant occupies the entire Premises.

2.2.2 Option Rent. The prevailing market rental rate to be payable by Tenant during each Option Term (the "Option Rent") shall be determined taking into consideration the following concessions: (a) rental abatement concessions, if any, being granted tenants in connection with comparable space; and (b) other monetary concessions being granted tenants in connection with comparable space; provided, however, that in calculating the Option Rent, no consideration shall be given to (i) the fact that Landlord is or is not required to pay a real estate brokerage commission in connection with Tenant's exercise of its right to lease the Premises during the Option Term or the fact that landlords are or are not paying real estate brokerage commissions in connection with comparable space, (ii) any period of rental abatement, if any, granted to tenants in comparable transactions for the design, permitting and construction of tenant improvements in such comparable spaces, and (iii) any tenant improvements or allowances provided or to be provided for such comparable space.

2.2.3 Exercise of Option. Each option contained in this Section 2.2 shall be exercised by Tenant, if at all, and only in the following manner: (i) Tenant shall deliver irrevocable written notice to Landlord not less than twelve (12) months prior to the expiration of the initial Lease Term (or Option Term, as the case may be), stating that Tenant is exercising its option; (ii) Landlord, after receipt of Tenant's notice, shall deliver notice (the "Option Rent Notice") to Tenant not less than ten (10) months prior to the expiration of the initial Lease Term (or Option Term, as the case may be), setting forth the Option Rent; and (iii) Tenant shall, on or before the earlier of (A) the date occurring nine (9) months prior to the expiration of the initial Lease Term (or Option Term, as the case may be), and (B) the date occurring thirty (30) days after Tenant's receipt of the Option Rent Notice, notify Landlord whether or not Tenant accepts the Option Rent set forth in the Option Rent Notice. If Tenant timely objects to the Option Rent

set forth in the Option Rent Notice, the parties shall follow the procedure, and the Option Rent shall be determined, as set forth in Section 2.2.4. If Tenant fails to timely object to the Option Rent specified in Landlord's Option Rent Notice, Tenant shall be deemed to have accepted the Option Rent so specified by Landlord.

2.2.4 Arbitration of Option Rent. If Tenant timely objects to Landlord's proposed Option Rent, the parties shall negotiate in good faith to resolve their differences for a period of thirty (30) days. Upon the expiration of such thirty (30) day period, if the parties are not in agreement as to such prevailing market rental value, then either party may initiate appraisal to determine the prevailing market rental value by giving written notice to the other party, such notice containing the name of an appraiser appointed by such initiating party. Within fifteen (15) days thereafter, the party receiving such notice shall appoint its own appraiser and give written notice thereof to the initiating party. If the second appraiser is not appointed within such fifteen day period, then the appraiser selected by the initiating party shall determine the prevailing market rental value of the Premises, and such appraisal shall be binding upon the parties. If the second appraiser is timely appointed, then the two appraisers shall select a third appraiser who shall determine the prevailing market rental value. All appraisers shall be members of the MAI and shall have at least ten (10) years' experience appraising similar property in the area of the Building. Each party shall bear the cost of the appraiser appointed by such party, and the parties shall share equally in the cost of the third appraiser. If the two appraisers initially appointed are unable to agree on a third appraiser, then either party shall have the right to apply to the presiding judge of the Superior Court having jurisdiction over the Premises for the appointment of a third appraiser. In the event that the Option Rent has not been determined as of the commencement date of the applicable Option Term pursuant to this Section 2.2.4, Tenant shall pay Option Rent to Landlord beginning on the commencement date of the applicable Option Term, at the rental rate of Landlord's submitted Option Rent, and, thereafter, in the event Tenant's submitted Option Rent is selected as the Option Rent pursuant to this Section 2.2.4, Tenant shall receive a credit against rent next due under this Lease for any excess rent paid by Tenant prior to the actual determination of the Option Rent.

ARTICLE III
BASE RENT

Tenant shall pay, without notice, demand or offset, to Landlord at such place as Landlord may from time to time designate in writing, in the form of a check (which is drawn upon a bank which is located in (or has an agency or branch located in) the State of California) Base Rent as set forth in Section 8 of the Summary, payable in equal monthly installments in advance on or before the first day of each and every calendar month during the Lease Term, without any setoff or deduction whatsoever. The Base Rent for the first full calendar month of the Lease Term shall be paid at the time of Tenant's execution of this Lease. If any Rent payment date (including the Lease Commencement Date) falls on a day of a calendar month other than the first day of such calendar month or if any Rent payment is for a period which is shorter than one calendar month such as during the last month of the Lease Term, the Rent for any fractional calendar month shall accrue on a daily basis for the period from the date such payment is due to the end of such calendar month or to the end of the Lease Term at a rate per day which is equal to 1/365 of the annual Rent. All other payments or adjustments required to be made under the terms of this Lease that require proration on a time basis shall be prorated on the same basis.

ARTICLE IV
ADDITIONAL RENT

4.1 Additional Rent. In addition to paying the Base Rent specified in Article 3 of this Lease, Tenant shall pay as additional rent Tenant's Share of the annual Direct Expenses in accordance with this Article 4. Such additional rent, together with any and all other amounts payable by Tenant to Landlord, as additional rent or otherwise, pursuant to the terms of this Lease, shall be hereinafter collectively referred to as the "Additional Rent." The Base Rent and Additional Rent are herein collectively referred to as the "Rent." All amounts due under this Article 4 as Additional Rent shall be payable for the same periods and in the same manner, time and place as the Base Rent. Without limitation on other obligations of Tenant which arise during the Lease Term or during Tenant's occupancy of the Premises and which shall survive the expiration of the Lease Term, the obligations of Tenant to pay the Additional Rent provided for in this Article 4 shall survive the expiration of the Lease Term.

4.2 Definitions. As used in this Article 4, the following terms shall have the meanings hereinafter set forth:

4.2.1 "Base Year" shall mean the period set forth in Section 9.1 of the Summary.

4.2.2 "Direct Expenses" shall mean Operating Expenses and Tax Expenses.

4.2.3 "Electricity Expenses" shall mean the actual cost (without markup by Landlord) of all electricity directly serving the Real Property. Electricity Expenses shall be expressly excluded from the Operating Expenses.

4.2.4 "Expense Year" shall mean each calendar year in which any portion of the Lease Term falls, through and including the calendar year in which the Lease Term expires.

4.2.5 "Operating Expenses" shall mean all expenses, costs and amounts of every kind and nature which Landlord shall pay or incur during any Expense Year in connection with the ownership, management, maintenance, repair, replacement, restoration or operation of the Real Property, including, without limitation, any amounts paid or incurred for (i) the cost of supplying all utilities, the cost of operating, maintaining, repairing, replacing, renovating and managing the utility systems, mechanical systems, sanitary and storm drainage systems, and escalator and elevator systems, and the cost of supplies, tools, and equipment and maintenance and service contracts in connection therewith; (ii) the cost of licenses, certificates, permits and inspections and the cost of reasonably contesting the validity or applicability of any governmental enactments which may affect Operating Expenses, and the costs incurred in connection with the implementation and operation of a governmentally mandated transportation system management program or similar program; (iii) the cost of earthquake insurance and other insurance carried by Landlord, in such amounts as Landlord may reasonably determine; (iv) fees, charges and other costs, including management fees, or amounts in lieu thereof; consulting fees (including but not limited to any consulting fees incurred in connection with the procurement of insurance), legal fees and accounting fees, of all persons engaged by Landlord or otherwise reasonably incurred by Landlord in connection with the management, operation, maintenance

and repair of the Real Property; (v) the cost of parking area repair, restoration, and maintenance, including, but not limited to, resurfacing, repainting, restriping, and cleaning; (vi) wages, salaries and other compensation and benefits of all employees of Landlord engaged in the operation, maintenance or security of the Real Property, and employer's Social Security taxes, unemployment taxes or insurance, and any other taxes which may be levied on such wages, salaries, compensation and benefits; provided, that if any employees of Landlord provide services for more than one building of Landlord's, then a prorated portion of such employees' wages, benefits and taxes shall be included in Operating Expenses based on the portion of their working time devoted to the Real Property, and provided further, that no portion of any employees' wages, benefits, or taxes allocable to time spent on the development or marketing of the Real Property shall be included in Operating Expenses; (vii) payments required under any easement, license, operating agreement, declaration, restrictive covenant, or instrument pertaining to the sharing of costs by the Building; (viii) amortization (including interest on the unamortized cost at a rate equal to the "prime rate," "reference rate" or other benchmark rate of interest publicly announced from time to time by Bank of America, N.T. & S.A., a national banking association, or its successor (the "Interest Rate")) of the cost of acquiring or the rental expense of personal property used in the maintenance, operation and repair of the Building and Real Property; and (ix) the cost of capital expenditures or other costs incurred in connection with the Real Property which (A) in Landlord's reasonable judgment will result in reductions of Operating Expenses, amortized over the useful life of such capital expenditure, or if the same were not financed, at an interest rate representing Landlord's then actual cost of funds had the same been borrowed, or (B) are required by laws, regulations or ordinances enacted after the date of execution of this Lease, provided that the same shall be amortized over the applicable useful life. If the Building is not fully occupied during all or a portion of any Expense Year (including the Base Year), Landlord shall make an appropriate adjustment to the variable components of Operating Expenses for such Expense Year as reasonably determined by Landlord employing sound accounting and management principles, to determine the amount of Operating Expenses that would have been paid had the Building been ninety five percent (95%) occupied during the entire Expense Year, and the amount so determined shall be deemed to have been the amount of Operating Expenses for such Expense Year. For the purposes of this Lease, Operating Expenses shall not include taxes included in the definition of Tax Expenses in Section 4.2.6 or Electricity Expenses for the Premises described in Section 4.2.3.

4.2.6 "Tax Expenses" shall mean all federal, state, county, or local governmental or municipal taxes, fees, charges or other impositions of every kind and nature, whether general, special, ordinary or extraordinary (including, without limitation, real estate taxes, general and special assessments, transit taxes, leasehold taxes or taxes based upon the receipt of rent, including gross receipts or sales taxes applicable to the receipt of rent, unless required to be paid by Tenant, personal property taxes imposed upon the fixtures, machinery, equipment, apparatus, systems and equipment, appurtenances, furniture and other personal property used in connection with the Building), which Landlord shall pay or incur during any Expense Year (without regard to any different fiscal year used by such governmental or municipal authority) because of or in connection with the ownership, leasing and operation of the Real Property. For purposes of this Lease, Tax Expenses shall be calculated as if the tenant improvements in the Building were fully constructed and the Real Property, the Building, and all tenant improvements in the Building were fully assessed for real estate tax purposes, and

accordingly, during the portion of any Expense Year occurring during the Base Year, Tax Expenses shall be deemed to be increased appropriately.

4.2.6.1. Tax Expenses shall include, without limitation:

(i) Any assessment, tax, fee, levy or charge in addition to, or in substitution, partially or totally, of any assessment, tax, fee, levy or charge previously included within the definition of real property tax, it being acknowledged by Tenant and Landlord that Proposition 13 (codified as California Constitution Article XIIIA) was adopted by the voters of the State of California in the June 1978 election ("Proposition 13") and that assessments, taxes, fees, levies and charges may be imposed by governmental agencies for such services as fire protection, street, sidewalk and road maintenance, conservation, refuse removal and for other governmental services formerly provided without charge to property owners or occupants, and, in further recognition of the decrease in the level and quality of governmental services and amenities as a result of Proposition 13, Tax Expenses shall also include any governmental or private assessments or the Building's contribution towards a governmental or private cost sharing agreement for the purpose of augmenting or improving the quality of services and amenities normally provided by governmental agencies. It is the intention of Tenant and Landlord that all such new and increased assessments, taxes, fees, levies, and charges and all similar assessments, taxes, fees, levies and charges be included within the definition of Tax Expenses for purposes of this Lease;

(ii) Any assessment, tax, fee, levy, or charge allocable to or measured by the area of the Premises or the rent payable hereunder, including, without limitation, any gross income tax with respect to the receipt of such rent, or upon or with respect to the possession, leasing, operating, management, maintenance, alteration, repair, use or occupancy by Tenant of the Premises, or any portion thereof;

(iii) Any assessment, tax, fee, levy or charge, upon this transaction or any document to which Tenant is a party, creating or transferring an interest or an estate in the Premises; and

(iv) Any possessory taxes charged or levied in lieu of real estate taxes.

4.2.6.2. Any expenses incurred by Landlord in reasonably attempting to protest, reduce or minimize Tax Expenses shall be included in Tax Expenses in the Expense Year such expenses are paid. Tax refunds shall be deducted from Tax Expenses in the Expense Year they are received by Landlord. All special assessments which may be paid in installments shall be paid by Landlord in the

maximum number of installments permitted by law and not included in Operating Expenses except in the year in which the assessment is actually paid.

4.2.6.3. Notwithstanding anything to the contrary contained in this Section 4.2.6 (except as set forth in Section 4.2.5.1 or levied in whole or part in lieu of Tax Expenses), there shall be excluded from Tax Expenses (i) all excess profits taxes, franchise taxes, gift taxes, capital stock taxes, inheritance and succession taxes, estate taxes, federal and state income taxes, and other taxes to the extent applicable to Landlord's general or net income (as opposed to rents, receipts or income attributable to operations at the Building), (ii) any items included as Operating Expenses, and (iii) any items paid by Tenant under Section 4.5 of this Lease.

4.2.7 "Tenant's Share" shall mean the percentage set forth in Section 9.2 of the Summary. Tenant's Share was calculated by dividing the number of rentable square feet of the Premises by the total rentable square feet in the Building. In the event either the Premises and/or the Building is expanded or reduced, Tenant's Share shall be appropriately adjusted, and, as to the Expense Year in which such change occurs, Tenant's Share for such year shall be determined on the basis of the number of days during such Expense Year that each such Tenant's Share was in effect.

4.3 Calculation and Payment of Additional Rent.

4.3.1 Calculation of Operating Expense Excess and Tax Expense Excess.

4.3.1.1. If for any Expense Year ending or commencing within the Lease Term, Tenant's Share of Operating Expenses for such Expense Year exceeds Tenant's Share of the amount of Operating Expenses applicable to the Base Year, then Tenant shall pay to Landlord, in the manner set forth in Section 4.3.2, and as Additional Rent, an amount equal to the excess (the "Operating Expense Excess") up to a maximum of the CPI increase for that Expense Year. In the event that Tenant's Share of Operating Expenses for any Expense Year are less than Tenant's Share of the amount of Operating Expenses applicable to the Base Year, Tenant shall not be entitled to any credit or reduction in Base Rent. Furthermore, in no event shall Tenant be entitled to any credit or offset against any Tax Expense Excess payable by Tenant under Sections 4.3.1.2 or 4.3.1.3.

4.3.1.2. If for any Expense Year ending or commencing within the Lease Term, Tenant's Share of Tax Expenses for such Expense Year exceeds Tenant's Share of the amount of Tax Expenses applicable to the Base Year, then Tenant shall pay to Landlord, in the manner set forth in Section 4.3.2, and as Additional Rent, an amount equal to the excess (the "Tax Expense Excess"). In the event that Tenant's Share of Tax Expenses for any Expense Year are less than Tenant's Share of the amount of Tax Expenses applicable to the Base Year, Tenant shall not be entitled to any credit or reduction in Base Rent. Furthermore, in no event shall Tenant be entitled to any credit or offset against any Operating Expense Excess payable by Tenant under Sections 4.3.1.1 or 4.3.1.3.

4.3.1.3. Landlord agrees to install a meter prior to the commencement of this Lease, which will separately monitor Tenant's electricity usage. Tenant agrees to pay all Electricity Expenses directly related to Tenant's electricity usage.

4.3.2 Statement of Actual Direct Expenses and Payment by Tenant. Landlord shall endeavor to give to Tenant, on or before the first day of April following the end of each Expense Year, a statement (the "Statement") which shall state the Direct Expenses incurred or accrued for such preceding Expense Year, and which shall indicate the amount, if any, of each Excess. Upon receipt of the Statement for each Expense Year ending during the Lease Term, if an Excess is present, Tenant shall pay, with its next installment of Base Rent due, the full amount of each Excess for such Expense Year, less the amounts, if any, paid during such Expense Year as "Estimated Excess," as that term is defined in Section 4.3.3, below. The failure of Landlord to timely furnish the Statement for any Expense Year shall not prejudice Landlord from enforcing its rights under this Article 4. Even though the Lease Term has expired and Tenant has vacated the Premises, when the final determination is made of Tenant's Share of the Direct Expenses for the Expense Year in which this Lease terminates, taking into consideration that the Lease Expiration Date may have occurred prior to the final day of the applicable Expense Year, if an Excess is present, Tenant shall immediately pay to Landlord an amount as calculated pursuant to the provisions of Section 4.3.1 of this Lease. If Tenant's Share of Direct Expenses for such Expense Year is less than the "Estimated Excess," as that term is defined in Section 4.3.3, below, paid by Tenant for such Expense Year, then Landlord shall credit the difference to the Rent next coming due under this Lease, or in the event this Lease has expired or been terminated, then Landlord shall pay the difference to Tenant within thirty (30) days following Landlord's delivery to Tenant of the Statement for such Expense Year. The provisions of this Section 4.3.2 shall survive the expiration or earlier termination of the Lease Term.

4.3.3 Statement of Estimated Direct Expenses. On or before the end of each Expense Year, Landlord shall give Tenant a yearly expense estimate statement (the "Estimate Statement") which shall set forth Landlord's reasonable estimate (the "Estimate") of the total amount of Direct Expenses for the succeeding Expense Year and the estimated amount of each Excess (the "Estimated Excess") as calculated by comparing Direct Expenses, which shall be based upon the Estimate, to the amount of Direct Expenses applicable to the Base Year, which Estimate Statement may be revised and reissued by Landlord from time to time. The failure of Landlord to timely furnish the Estimate Statement for any Expense Year shall not preclude Landlord from enforcing its rights to collect any Estimated Excess under this Article 4. If pursuant to the Estimate Statement (or a revision thereof) an Estimated Excess is calculated for the then current Expense Year, Tenant shall pay, with its next installment of Base Rent due, a fraction of the Estimated Excess (or the increase in the Estimated Excess if pursuant to a revised Estimated Statement) for the then current Expense Year (reduced by any amounts paid pursuant to the last sentence of this Section 4.3.3). Such fraction shall have as its numerator the number of months which have elapsed in such current Expense Year to the month of such payment, both months inclusive, and shall have twelve (12) as its denominator. Until a new Estimate Statement is furnished, Tenant shall pay monthly, with the monthly Base Rent installments, an amount equal to one twelfth (1/12) of the total Estimated Excess set forth in the previous Estimate Statement delivered by Landlord to Tenant.

4.4 Taxes and Other Charges for Which Tenant Is Directly Responsible. Tenant shall reimburse Landlord, as Additional Rent, upon demand for any and all taxes required to be paid by Landlord (except to the extent included in Tax Expenses by Landlord), excluding state, local and federal personal or corporate income taxes measured by the net income of Landlord from all sources and estate and inheritance taxes, whether or not now customary or within the contemplation of the parties hereto, when:

4.4.1 Said taxes are measured by or reasonably attributable to the cost or value of Tenant's equipment, furniture, fixtures and other personal property located in the Premises, or by the cost or value of any leasehold improvements made in or to the Premises by or for Tenant, to the extent the cost or value of such leasehold improvements exceeds the cost or value of a building standard build out as determined by Landlord regardless of whether title to such improvements shall be vested in Tenant or Landlord;

4.4.2 Said taxes are assessed upon or with respect to the possession, leasing, operation, management, maintenance, alteration, repair, use or occupancy by Tenant of the Premises, any portion of the Real Property or the parking facility used by Tenant in connection with this Lease; or

4.4.3 Said taxes are assessed upon this transaction or any document to which Tenant is a party creating or transferring an interest or an estate in the Premises.

ARTICLE V
USE OF PREMISES

Tenant shall use the Premises solely for the Permitted Use as set forth in Section 13 of the Summary, and Tenant shall not use or permit the Premises to be used for any other purpose or purposes whatsoever without the prior written consent of Landlord, which may be withheld in Landlord's sole discretion. Tenant further covenants and agrees that it shall not use, or suffer or permit any person or persons to use, the Premises or any part thereof for any use or purpose contrary to the Rules and Regulations, or in violation of the laws of the United States of America, the State of California, or the ordinances, regulations or requirements of the local municipal or county governing body or other lawful authorities having jurisdiction over the Building. Tenant shall faithfully observe and comply with the Rules and Regulations. Landlord shall not be responsible to Tenant for the nonperformance of any of such Rules and Regulations by or otherwise with respect to the acts or omissions of any other tenants or occupants of the Building, provided, however, Landlord shall enforce the Rules and Regulations in a non discriminatory manner. Tenant shall comply with all recorded covenants, conditions, and restrictions now or hereafter affecting the Real Property. Subject to the terms of this Lease, Tenant shall have access to the Premises, Building and parking facility twenty-four (24) hours a day, every day of the year.

ARTICLE VI
SERVICES AND UTILITIES

6.1 Standard Tenant Services. Landlord shall provide the following services on all days during the Lease Term, unless otherwise stated below.

6.1.1 Subject to all governmental rules, regulations and guidelines applicable thereto, Landlord shall provide heating and air conditioning when necessary for normal comfort for normal office use in the Premises, from Monday through Friday, during the period from 6:00 a.m. to 7:00 p.m., and on Saturdays during the period from 9:00 a.m. to 1:00 p.m., except for Sundays and New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving Day, Christmas Day and any other nationally recognized holidays (collectively, the "Holidays").

6.1.2 Landlord shall provide twenty four (24) hours per day, every day of the year, electrical power for normal general office use as determined by Landlord; provided, however, that electrical usage, shall be monitored separately and shall be subject to the terms of Section 6.2, below. Tenant shall bear the cost of replacement of non Building standard lamps, starters and ballasts for lighting fixtures within the Premises. Landlord may install devices to separately meter electricity use in the Premises.

6.1.3 Landlord shall provide city water from the regular Building outlets for drinking, lavatory and toilet purposes.

6.1.4 Landlord shall provide janitorial services comparable to janitorial services in comparable buildings, Monday through Friday except the date of observation of the Holidays, in and about the Premises.

6.1.5 Landlord shall provide access to the Premises by automated elevator twenty-four (24) hours per day, every day of the year.

6.2 Overstandard Tenant Use. Tenant shall not, without Landlord's prior written consent, use heat generating machines, machines other than normal fractional horsepower office machines, or equipment or lighting other than building standard lights in the Premises, which may materially affect the temperature otherwise maintained by the air- conditioning system or increase the water normally furnished for the Premises by Landlord pursuant to the terms of Section 6.1 of this Lease. If such consent is given, Landlord shall have the right to install supplementary air-conditioning units or other facilities in the Premises, including supplementary or additional metering devices, and the cost thereof, including the cost of installation, operation and maintenance, increased wear and tear on existing equipment and other similar charges, shall be paid by Tenant to Landlord upon billing by Landlord. If Tenant uses water, electricity, heat or air-conditioning in excess of that supplied by Landlord pursuant to Section 6.1 of this Lease, Tenant shall pay to Landlord, upon billing, the cost of such excess consumption, the cost of the installation, operation, and maintenance of equipment which is installed in order to supply such excess consumption, and the cost of the increased wear and tear on existing equipment caused by such excess consumption; and Landlord may install devices to separately meter any increased use and in such event Tenant shall pay the increased cost directly to Landlord, on demand. If Tenant desires to use heat, ventilation or air-conditioning during hours other than those for which Landlord is obligated to supply such utilities pursuant to the terms of Section 6.1 of this Lease, Tenant shall give Landlord such prior notice, as Landlord shall from time to time establish as appropriate, of Tenant's desired use and Landlord shall supply such utilities to Tenant at Landlord's cost. Amounts payable by Tenant to Landlord for such use of additional utilities shall be deemed Additional Rent hereunder and shall be billed on a monthly basis.

6.3 Utility Deregulation. In connection with Landlord's operation and management of the Building, Landlord shall have the right at any time and from time to time during the Term to contract for electric service from a company or companies providing electricity service (each such company shall hereinafter be referred to as an "Electric Service Provider"), and to replace or supplement such Electric Service Provider or continue to contract for service from such Electric Service Provider. All electricity to the Building and the Premises shall be provided by the Electric Service Provider(s) designated by Landlord from time to time. Tenant shall cooperate with Landlord and the Electric Service Provider(s) at all times and, as reasonably necessary, shall allow Landlord and Electric Service Provider reasonable access to the Building's electric lines, feeders, risers, wiring, and any other machinery within the Premises. Landlord shall in no way be liable or responsible for any loss, damage, or expense that Tenant may sustain or incur by reason of any change, failure, interference, disruption, or defect in the supply or character of the electric energy furnished to the Premises, or if the quantity or character of the electric energy supplied by any Electric Service Provider is no longer available or suitable for Tenant's requirements, and no such change, failure, defect, unavailability, or unsuitability shall constitute an actual or constructive eviction, in whole or in part, or relieve Tenant from any of its obligations under the Lease.

6.4 Interruption of Use. Landlord shall not be liable for damages, by abatement of Rent or otherwise, for failure to furnish or delay in furnishing any service (including telephone and telecommunication services), or for any diminution in the quality or quantity thereof, when such failure or delay or diminution is occasioned, in whole or in part, by repairs, replacements, or improvements, by any strike, lockout or other labor trouble, by inability to secure electricity, gas, water, or other fuel at the Building after reasonable effort to do so, by any accident or casualty whatsoever, by act or default of Tenant or other parties, or by any other cause; and such failures or delays or diminution shall never be deemed to constitute an eviction or disturbance of Tenant's use and possession of the Premises or relieve Tenant from paying Rent or performing any of its obligations under this Lease. Furthermore, Landlord shall not be liable under any circumstances for a loss of, or injury to, property or for injury to, or interference with, Tenant's business, including, without limitation, loss of profits, however occurring, through or in connection with or incidental to a failure to furnish any of the services or utilities as set forth in this Article 6. Landlord may comply with voluntary controls or guidelines promulgated by any governmental entity relating to the use or conservation of energy, water, gas, light or electricity or the reduction of automobile or other emissions without creating any liability of Landlord to Tenant under this Lease, provided that the Premises are not thereby rendered untenantable.

ARTICLE VII
REPAIRS

Landlord shall repair and maintain the structural portions of the Building, including the foundation, floor/ceiling slabs, roof, curtain wall, exterior glass and mullions, columns, beams, shafts (including elevator shafts), stairs, parking areas, stairwells, escalators, elevators, plazas, pavement, sidewalks, curbs, entrances, landscaping, art work, sculptures, men's and women's public washrooms, Building mechanical, electrical and telephone closets, and all common and public areas (collectively, "Building Structure") and the Base Building mechanical, electrical, life safety, plumbing, sprinkler systems and HVAC systems which were not constructed by or on behalf of Tenant (collectively, the "Building Systems"). Notwithstanding anything in this Lease

to the contrary, Tenant shall pay the cost of repairs or maintenance to the Building Structure and/or the Building Systems to the extent required because of (i) Tenant's use of the Premises for other than other than normal and customary business office operations, or (ii) the negligence or willful misconduct of Tenant or the Tenant Parties. Tenant shall, at Tenant's own expense, pursuant to the terms of this Lease, including without limitation Article 8 hereof, keep the non-structural, interior elements of the Premises, including all "Tenant Improvements," as that term is defined in the Tenant Work Letter attached as Exhibit D, and "Alterations," as that term is defined in Section 8.1, below, fixtures, and the floor or floors of the Building on which the Premises are located, in good order, repair and condition at all times during the Lease Term. In addition, Tenant shall, at Tenant's own expense but under the supervision and subject to the prior approval of Landlord, and within any reasonable period of time specified by Landlord, pursuant to the terms of this Lease, including without limitation Article 8 hereof, promptly and adequately repair all damage to the Premises, all HVAC, plumbing, electrical, life safety and mechanical systems servicing the Premises and replace or repair all damaged or broken fixtures and appurtenances; provided however, that if Tenant fails to promptly make such repairs after receiving written notice from Landlord regarding the need for such repairs, then Landlord may, but need not, make such repairs and replacements, and Tenant shall pay Landlord the cost thereof, including a percentage of the cost thereof (to be uniformly established for the Building) sufficient to reimburse Landlord for all overhead, general conditions, fees and other costs or expenses arising from Landlord's involvement with such repairs and replacements forthwith upon being billed for same. Landlord may, but shall not be required to, enter the Premises at all reasonable times to make such repairs, alterations, improvements and additions to the Premises or to the Building or to any equipment located in the Building as Landlord shall desire or deem necessary or as Landlord may be required to do by governmental or quasi governmental authority or court order or decree, provided that Landlord shall use commercially reasonable efforts not to materially interfere with Tenant's use of the Premises. Tenant hereby waives and releases its right to make repairs at Landlord's expense under Sections 1941 and 1942 of the California Civil Code or under any similar law, statute, or ordinance now or hereafter in effect.

ARTICLE VIII
ADDITIONS AND ALTERATIONS

8.1 Landlord's Consent to Alterations. Tenant may not make any improvements, alterations, additions or changes to the Premises (collectively, the "Alterations") without first procuring the prior written consent of Landlord to such Alterations, which consent shall be requested by Tenant not less than thirty (30) days prior to the commencement thereof, and which consent shall not be unreasonably withheld by Landlord.

8.2 Manner of Construction. Landlord may impose, as a condition of its consent to all Alterations or repairs of the Premises or about the Premises, such requirements as Landlord in its reasonable discretion may deem desirable, including, but not limited to, the requirement that Tenant utilize for such purposes only contractors, materials, mechanics and materialmen reasonably approved by Landlord. Notwithstanding the foregoing, Landlord may impose, as a condition of its consent to all Alterations or repairs of the Premises or about the Premises which affect the systems and equipment of the Building, exterior appearance of the Building or structural aspects of the Building, such requirements as Landlord in its sole discretion may deem desirable, including but not limited to the requirement that Tenant utilize for such purposes only

contractors, materials, mechanics and materialmen selected by Landlord. Tenant shall construct such Alterations and perform such repairs in conformance with any and all applicable rules and regulations of any federal, state, county or municipal code or ordinance and pursuant to a valid building permit, issued by the City of Los Angeles, in conformance with Landlord's construction rules and regulations. All work with respect to any Alterations must be done in a good and workmanlike manner and diligently prosecuted to completion to the end that the Premises shall at all times be a complete unit except during the period of work. In performing the work of any such Alterations, Tenant shall have the work performed in such manner as not to obstruct access to the Building or the common areas for any other tenant of the Building, and as not to obstruct the business of Landlord or other tenants in the Building, or interfere with the labor force working in the Building. Upon completion of any Alterations, Tenant agrees to cause a timely Notice of Completion to be recorded in the office of the Recorder of the County of Los Angeles in accordance with the terms of Section 3093 of the Civil Code of the State of California or any successor statute, and Tenant shall deliver to the Building management office a reproducible copy of the "as built" drawings of the Alterations. Tenant shall promptly upon demand reimburse Landlord for any out-of-pocket costs incurred by Landlord in reviewing and supervising Tenant's Alterations, including, but not limited to, the cost of any consultants reasonably retained by Landlord. In addition, Tenant shall pay to Landlord a construction supervision fee in the amount of three percent (3%) of the total costs of any Alterations.

8.3 Payment for Improvements. In the event Tenant orders any Alterations or repair work directly from Landlord or from a contractor selected by Landlord, the charges for such work shall be deemed Additional Rent under this Lease, payable upon billing therefor, either periodically during construction or upon the substantial completion of such work, at Landlord's option. Upon completion of any work not ordered directly from Landlord, Tenant shall deliver to Landlord evidence of payment, contractors' affidavits and full and final waivers of all liens for labor, services or materials. If Tenant orders any work directly from Landlord, then Tenant shall pay to Landlord a percentage of the cost of any such work (such percentage to be established on a uniform basis for the Building) sufficient to compensate Landlord for all overhead, general conditions, fees and other costs and expenses arising from Landlord's involvement with such work.

8.4 Construction Insurance. In the event that Tenant makes any Alterations, Tenant agrees to carry "Builder's All Risk" insurance in an amount approved by Landlord covering the construction of such Alterations, and such other insurance as Landlord may require, it being understood and agreed that all of such Alterations shall be insured by Tenant pursuant to Article 10 immediately upon completion thereof. In addition, Landlord may, in its reasonable discretion, require Tenant to obtain a lien and completion bond or some alternate form of security satisfactory to Landlord in an amount sufficient to ensure the lien free completion of such Alterations and naming Landlord as a co obligee.

8.5 Landlord's Property. Except for the initial Tenant Improvements, all Alterations, improvements, fixtures and/or equipment which may be installed or placed in or about the Premises by or on behalf of Tenant, and all signs installed in, on or about the Premises by or on behalf of Tenant, from time to time, shall upon the expiration or earlier termination of the Lease Term, be removed by Tenant and Tenant shall repair any damage to the Premises and Building caused by such removal. If Tenant fails to complete such removal and/or to repair any damage

caused by the removal of any Alterations, Landlord may do so and may charge the cost thereof to Tenant.

ARTICLE IX
COVENANT AGAINST LIENS

Tenant has no authority or power to cause or permit any lien or encumbrance of any kind whatsoever, whether created by act of Tenant, operation of law or otherwise, to attach to or be placed upon the Real Property, Building or Premises, and any and all liens and encumbrances created by Tenant shall attach to Tenant's interest only. Landlord shall have the right at all times to post and keep posted on the Premises any notice which it deems necessary for protection from such liens. Tenant covenants and agrees not to suffer or permit any lien of mechanics or materialmen or others to be placed against the Real Property, the Building or the Premises with respect to work or services claimed to have been performed for or materials claimed to have been furnished to Tenant or the Premises, and, in case of any such lien attaching or notice of any lien, Tenant covenants and agrees to cause it to be immediately released and removed of record by bond or otherwise. Notwithstanding anything to the contrary set forth in this Lease, in the event that such lien is not released and removed by bond or otherwise on or before the date occurring five (5) days after notice of such lien is delivered by Landlord to Tenant, Landlord, at its sole option, may immediately take all action necessary to release and remove such lien, without any duty to investigate the validity thereof, and all sums, costs and expenses, including reasonable attorneys' fees and costs, incurred by Landlord in connection with such lien shall be deemed Additional Rent under this Lease and shall immediately be due and payable by Tenant.

ARTICLE X
INSURANCE

10.1 Indemnification and Waiver. Landlord, its partners, trustees, ancillary trustees and their respective officers, directors, shareholders, beneficiaries, agents, servants, employees, and independent contractors (collectively, the "Landlord Parties") shall not be liable for any damage either to person or property or resulting from the loss of use thereof, which damage is sustained by Tenant or by other persons claiming through Tenant. Tenant shall indemnify, defend, protect, and hold harmless Landlord Parties from any and all loss, cost, damage, expense and liability (including without limitation court costs and reasonable attorneys' fees) incurred in connection with or arising from any cause related to Tenant's occupancy of the Premises or any acts, omissions or negligence of Tenant or of any person claiming by, through or under Tenant, its partners, and their respective officers, agents, servants, employees, and independent contractors (collectively, the "Tenant Parties"), in, on or about the Real Property, either prior to, during, or after the expiration of the Lease Term, provided that the terms of the foregoing indemnity shall not apply to the gross negligence or willful misconduct of Landlord or the Landlord Parties. Should Landlord be named as a defendant in any suit brought against Tenant in connection with or arising out of an event covered by the foregoing indemnity, Tenant shall pay to Landlord its costs and expenses incurred in such suit, including without limitation, its actual professional fees such as appraisers', accountants' and attorneys' fees. Further, Tenant's agreement to indemnify Landlord pursuant to this Section 10.1 is not intended and shall not relieve any insurance carrier of its obligations under policies required to be carried by Tenant pursuant to the provision of this Lease, to the extent such policies cover the matters subject to

Tenant's indemnification obligations; nor shall they supersede any inconsistent agreement of the parties set forth in any other provision of this Lease. The provisions of this Section 10.1 shall survive the expiration or sooner termination of this Lease with respect to any claims or liability occurring prior to such expiration or termination.

10.2 Landlord's Insurance. Landlord shall insure the Building during the Lease Term against loss or damage due to fire and other casualties covered within the classification of fire and extended coverage, vandalism coverage and malicious mischief, sprinkler leakage, water damage and special extended coverage. Such coverage shall be in such amounts, from such companies, and on such other terms and conditions as Landlord may from time to time reasonably determine. Additionally, at the option of Landlord, such insurance coverage may include the risks of earthquakes and/or flood damage and additional hazards, a rental loss endorsement and any other coverages required by the holders of any mortgages or deeds of trust encumbering the interest of Landlord in the Building or the ground or underlying lessors of the Building, or any portion thereof. Tenant shall, at Tenant's expense, comply with all insurance company requirements pertaining to the use of the Premises. If Tenant's conduct or use of the Premises causes any increase in the premium for any insurance policies carried by Landlord, then Tenant shall reimburse Landlord for any such increase. Tenant, at Tenant's expense, shall comply with all rules, orders, regulations or requirements of the American Insurance Association (formerly the National Board of Fire Underwriters) and with any similar body.

10.3 Tenant's Insurance. Tenant shall maintain the following coverages in the following amounts.

10.3.1 Commercial General Liability Insurance covering the insured against claims of bodily injury, personal injury and property damage arising out of Tenant's operations, assumed liabilities or use of the Premises, including a Commercial General Liability endorsement covering the insuring provisions of this Lease and the performance by Tenant of the indemnity agreements set forth in Section 10.1 of this Lease, for limits of liability not less than: (i) Bodily Injury and Property Damage Liability $5,000,000 each occurrence and $5,000,000 annual aggregate, and (ii) Personal Injury Liability $5,000,000 each occurrence and $5,000,000 annual aggregate.

10.3.2 Property Damage Insurance covering (i) all office furniture, trade fixtures, office equipment, merchandise and all other items of Tenant's property on the Premises installed by, for, or at the expense of Tenant, and (ii) all improvements, Alterations, fixtures and additions to the Premises. Such insurance shall be written on an "all risks" of physical loss or damage basis, for the full replacement cost value new without deduction for depreciation of the covered items and in amounts that meet any co insurance clauses of the policies of insurance and shall include a vandalism and malicious mischief endorsement, sprinkler leakage coverage and earthquake sprinkler leakage coverage.

10.3.3 Loss of income and extra expense insurance in such amounts as will reimburse Tenant for direct or indirect loss of earnings attributable to all perils commonly insured against by prudent tenants or attributable to prevention of access to the Premises or to the Building as a result of such perils.

10.3.4 Form of Policies. The minimum limits of policies of insurance required of Tenant under this Lease shall in no event limit the liability of Tenant under this Lease. Such insurance shall (i) name Landlord, and any other party that has an insurable interest, which Landlord so specifies, as an additional insured; (ii) specifically cover the liability assumed by Tenant under this Lease, including, but not limited to, Tenant's obligations under Section 10.1 of this Lease; (iii) be issued by an insurance company having a rating of not less than A XII in Best's Insurance Guide or which is otherwise acceptable to Landlord and licensed to do business in the State of California; (iv) be primary insurance as to all claims thereunder and provide that any insurance carried by Landlord is excess and is non contributing with any insurance requirement of Tenant; (v) provide that said insurance shall not be canceled or coverage changed unless thirty (30) days' prior written notice shall have been given to Landlord and any mortgagee of Landlord; and (vi) contain a cross liability endorsement or severability of interest clause acceptable to Landlord. Tenant shall deliver said policy or policies or certificates thereof to Landlord on or before the Lease Commencement Date and at least thirty (30) days before the expiration dates thereof. Each policy required under this Section 10.3 shall contain a loss payable endorsement (form 438BFU or an alternative acceptable to Landlord in its sole discretion) requiring all proceeds to be paid to Landlord.

10.4 Subrogation. Landlord and Tenant agree to have their respective insurance companies issuing property damage insurance waive any rights of subrogation that such companies may have against Landlord or Tenant, as the case may be, so long as the insurance carried by Landlord and Tenant, respectively, is not invalidated thereby. As long as such waivers of subrogation are contained in their respective insurance policies, Landlord and Tenant hereby waive any right that either may have against the other on account of any loss or damage to their respective property to the extent such loss or damage is insurable under policies of insurance for fire and all risk coverage, theft, or other similar insurance. If either party fails to carry the amounts and types of insurance required to be carried by it pursuant to this Article 10, in addition to any remedies the other party may have under this Lease, such failure shall be deemed to be a covenant and agreement by such party to self insure with respect to the type and amount of insurance which such party so failed to carry, with full waiver of subrogation with respect thereto.

10.5 Additional Insurance Obligations. Tenant shall carry and maintain during the entire Lease Term, at Tenant's sole cost and expense, increased amounts of the insurance required to be carried by Tenant pursuant to this Article 10, and such other reasonable types of insurance coverage and in such reasonable amounts covering the Premises and Tenant's operations therein, as may be reasonably requested by Landlord, but in no event shall such increased amounts of insurance or such other reasonable types of insurance be in excess of that required by landlords of comparable buildings located in the vicinity of the Building. Notwithstanding anything to the contrary contained in this Lease, in the event of any termination of this Lease pursuant to Article 11 or Article 13 below, Tenant shall assign and deliver to Landlord (or to any party designated by Landlord) all insurance proceeds payable to Tenant under Tenant's insurance required under Section 10.3.2(ii) of this Lease.

ARTICLE XI
DAMAGE AND DESTRUCTION

11.1 Repair of Damage to Premises by Landlord. Tenant shall promptly notify Landlord of any damage to the Premises resulting from fire or any other casualty. If the Premises or any common areas of the Building serving or providing access to the Premises shall be damaged by fire or other casualty, Landlord shall promptly and diligently, subject to reasonable delays for insurance adjustment or other matters beyond Landlord's reasonable control, and subject to all other terms of this Article 11, restore the base, shell, and core of the Premises and such common areas. Such restoration shall be to substantially the same condition of the base, shell, and core of the Premises and common areas prior to the casualty, except for modifications required by zoning and building codes and other laws or by the holder of a mortgage on the Building or any other modifications to the common areas deemed desirable by Landlord, provided access to the Premises and any common restrooms serving the Premises shall not be materially impaired. Notwithstanding any other provision of this Lease, upon the occurrence of any damage to the Premises, Tenant shall assign to Landlord (or to any party designated by Landlord) all insurance proceeds payable to Tenant under Tenant's insurance required under Section 10.3 of this Lease, and Landlord shall repair any injury or damage to the Tenant Improvements installed in the Premises and shall return such Tenant Improvements to their original condition; provided that if the cost of such repair by Landlord exceeds the amount of insurance proceeds received by Landlord from Tenant's insurance carrier, as assigned by Tenant, the cost of such repairs shall be paid by Tenant to Landlord prior to Landlord's repair of the damage. In connection with such repairs and replacements, Tenant shall, prior to the commencement of construction, submit to Landlord, for Landlord's review and approval, all plans, specifications and working drawings relating thereto, and Landlord shall select the contractors to perform such improvement work. Such submittal of plans and construction of improvements shall be performed in accordance with Landlord's policies and practices. If the cost of repair is reasonably anticipated to exceed the amount of insurance proceeds to be received therefor by Tenant from its insurance carrier, then Tenant shall have the right within five (5) days of Tenant's receipt of notice to that effect to request changes to the work which will reduce the cost thereof. Landlord shall not be liable for any inconvenience or annoyance to Tenant or its visitors, or injury to Tenant's business resulting in any way from such damage or the repair thereof; provided however, that if such fire or other casualty shall have damaged the Premises or common areas necessary to Tenant's occupancy, and if such damage is not the result of the negligence or willful misconduct of Tenant or Tenant's employees, contractors, licensees, or invitees, Landlord shall allow Tenant a proportionate abatement of Rent, during the time and to the extent the Premises are unfit for occupancy for the purposes permitted under this Lease, and not occupied by Tenant as a result thereof, provided, further, if the Premises are damaged such that the remaining portion thereof is not sufficient to allow Tenant to conduct its business operations from such remaining portion and Tenant does not conduct its business operations therefrom, and if such damage is not the result of the negligence or willful misconduct of Tenant or any of the Tenant Parties, Landlord shall allow Tenant a total abatement of Rent during the time and to the extent the Premises are unfit for occupancy for the purposes permitted under this Lease, and not occupied by Tenant as a result of the subject damage.

11.2 Landlord's Option to Repair. Notwithstanding the terms of Section 11.1 of this Lease, Landlord may elect not to rebuild and/or restore the Premises and/or Building and instead

terminate this Lease by notifying Tenant in writing of such termination within sixty (60) days after the date of damage, such notice to include a termination date giving Tenant ninety (90) days to vacate the Premises, but Landlord may so elect only if the Building shall be damaged by fire or other casualty or cause, whether or not the Premises are affected, and one or more of the following conditions is present: (i) repairs cannot reasonably be completed within one hundred eighty (180) days of the date of damage (when such repairs are made without the payment of overtime or other premiums); (ii) the holder of any mortgage on the Building or ground lessor with respect to the Real Property shall require that the insurance proceeds or any portion thereof be used to retire the mortgage debt, or shall terminate the ground lease, as the case may be; or (iii) the damage is not fully covered, except for deductible amounts, by Landlord's insurance policies.

11.3 Waiver of Statutory Provisions. The provisions of this Lease, including this Article 11, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, the Building or any other portion of the Real Property, and any statute or regulation of the State of California, including, without limitation, Sections 1932(2) and 1933(4) of the California Civil Code, with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall have no application to this Lease or any damage or destruction to all or any part of the Premises, the Building or any other portion of the Real Property.

11.4 Damage Near End of Term. In the event that the Premises or the Building is destroyed or damaged to any substantial extent during the last eighteen (18) months of the Lease Term, then notwithstanding anything contained in this Article 11, Landlord shall have the option to terminate this Lease by giving written notice to Tenant of the exercise of such option within thirty (30) days after such damage or destruction, in which event this Lease shall cease and terminate as of the date of such notice, Tenant shall pay the Base Rent and Additional Rent, properly apportioned up to such date of damage, and both parties hereto shall thereafter be freed and discharged of all further obligations hereunder, except as provided for in provisions of this Lease which by their terms survive the expiration or earlier termination of the Lease Term.

ARTICLE XII
NONWAIVER

No waiver of any provision of this Lease shall be implied by any failure of Landlord to enforce any remedy on account of the violation of such provision, even if such violation shall continue or be repeated subsequently, any waiver by Landlord of any provision of this Lease may only be in writing, and no express waiver shall affect any provision other than the one specified in such waiver and that one only for the time and in the manner specifically stated. No receipt of monies by Landlord from Tenant after the termination of this Lease shall in any way alter the length of the Lease Term or of Tenant's right of possession hereunder or after the giving of any notice shall reinstate, continue or extend the Lease Term or affect any notice given Tenant prior to the receipt of such monies, it being agreed that after the service of notice or the commencement of a suit or after final judgment for possession of the Premises, Landlord may receive and collect any Rent due, and the payment of said Rent shall not waive or affect said notice, suit or judgment. No payment by Tenant or receipt or acceptance by Landlord of a lesser

amount than the correct Rent due shall be deemed to be other than a payment on account, nor shall any endorsement or statement on any check or any letter accompanying any check or payment be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance, treat such partial payment as a default or pursue any other remedy provided in this Lease or at law.

ARTICLE XIII
CONDEMNATION

If ten percent (10%) or more of the rentable square feet of the Premises or Building shall be taken by power of eminent domain or condemned by any competent authority for any public or quasi-public use or purpose, or if Landlord shall grant a deed or other instrument in lieu of such taking by eminent domain or condemnation, Landlord shall have the option to terminate this Lease upon ninety (90) days' notice, provided such notice is given no later than one hundred eighty (180) days after the date of such taking, condemnation, reconfiguration, vacation, deed or other instrument. If more than twenty five percent (25%) of the rentable square feet of the Premises is taken, or if access to the Premises is substantially impaired, Tenant shall have the option to terminate this Lease upon ninety (90) days' notice, provided such notice is given no later than one hundred eighty (180) days after the date of such taking. Landlord shall be entitled to receive the entire award or payment in connection therewith, except that Tenant shall have the right to file any separate claim available to Tenant for any taking of Tenant's personal property and fixtures belonging to Tenant and removable by Tenant upon expiration of the Lease Term pursuant to the terms of this Lease, and for moving expenses, so long as such claim does not diminish the award available to Landlord, its ground lessor with respect to the Real Property or its mortgagee, and such claim is payable separately to Tenant or is otherwise separately identifiable. All Rent shall be apportioned as of the date of such termination, or the date of such taking, whichever shall first occur. If any part of the Premises shall be taken, and this Lease shall not be so terminated, the Rent shall be proportionately abated. Tenant hereby waives any and all rights it might otherwise have pursuant to Section 1265.130 of the California Code of Civil Procedure.

ARTICLE XIV
ASSIGNMENT AND SUBLETTING

14.1 Transfers. Tenant shall not, without the prior written consent of Landlord, (i) assign for collateral purposes, mortgage, pledge, hypothecate, encumber, or permit any lien to attach to, or otherwise transfer, this Lease or any interest hereunder (collectively, the transactions described in (i) are referred to as "Financial Transfers"); or (ii) permit any assignment or other such transfer of this Lease or any interest hereunder by operation of law, sublet the Premises or any part thereof, or permit the use of the Premises by any persons other than Tenant and its employees (collectively, the transactions described in (ii) are referred to as "Transfers"; any person to whom any Transfer or Financial Transfer is made or sought to be made is hereinafter referred to as a "Transferee"). If Tenant shall desire Landlord's consent to any Financial Transfer or Transfer, Tenant shall notify Landlord in writing, which notice (the "Transfer Notice") shall include (i) the proposed effective date of the Financial Transfer or Transfer, which shall not be less than thirty (30) days nor more than one hundred eighty (180) days after the date of delivery of the Transfer Notice, (ii) a description of the portion of the Premises to be

transferred (the "Subject Space"), (iii) all of the terms of the proposed Financial Transfer or Transfer and the consideration therefor, including a calculation of the "Transfer Premium," as that term is defined in Section 14.3, below, in connection with such Financial Transfer or Transfer, the name and address of the proposed Transferee, and a copy of all existing and/or proposed documentation pertaining to the proposed Financial Transfer or Transfer, including all existing operative documents to be executed to evidence such Financial Transfer or Transfer or the agreements incidental or related to such Financial Transfer or Transfer, (iv) current financial statements of the proposed Transferee certified by an officer, partner or owner thereof, and any other information required by Landlord, which will enable Landlord to determine the financial responsibility, character, and reputation of the proposed Transferee, nature of such Transferee's business and proposed use of the Subject Space, (v) an executed estoppel certificate from Tenant in the form attached hereto as Exhibit E, and (vi) such other information as Landlord may reasonably require. Any Financial Transfer or Transfer made without Landlord's prior written consent shall, at Landlord's option, be null, void and of no effect, and shall, at Landlord's option, constitute a default by Tenant under this Lease. Whether or not Landlord shall grant consent, Tenant shall pay Landlord's review and processing fees, as well as any reasonable legal fees incurred by Landlord within thirty (30) days after written request by Landlord.

14.2 Landlord's Consent. Landlord may withhold or condition its consent to a Financial Transfer in its sole and absolute discretion. Landlord shall not unreasonably withhold its consent to any proposed Transfer of the Subject Space to the Transferee on the terms specified in the Transfer Notice. The parties hereby agree that it shall be deemed to be reasonable under this Lease and under any applicable law for Landlord to withhold consent to any proposed Transfer where one or more of the following apply, without limitation as to other reasonable grounds for withholding consent:

14.2.1 The Transferee is of a character or reputation or engaged in a business which is not consistent with the quality of the Building;

14.2.2 The Transferee is either a governmental agency or instrumentality thereof (i) which is that of a foreign country, (ii) which is of a character or reputation, is engaged in a business, or is of or is associated with, a political orientation or faction, which is inconsistent with the quality of the Building, or which would otherwise reasonably offend a landlord of a comparable building located in the vicinity of the Building, (iii) which is capable of exercising the power of eminent domain or condemnation, or (iv) which would significantly increase the human traffic in the Premises or Building;

14.2.3 The Transferee's intended use of the Premises is inconsistent with the Permitted Use;

14.2.4 There shall exist a default by Tenant under this Lease or an event which, with the passage of time and/or the giving of notice would constitute a default;

14.2.5 The Transferee is not a party of reasonable financial worth and/or financial stability in light of the responsibilities involved under the Lease on the date consent is requested;

14.2.6 The proposed Transfer would cause Landlord to be in violation of another lease or agreement to which Landlord is a party, or would give an occupant of the Building a right to cancel its lease;

14.2.7 The terms of the proposed Transfer will allow a Transferee, other than an Affiliate, to exercise a right of renewal, right of expansion, right of first offer, or other similar right held by Tenant (or will allow the Transferee to occupy space leased by Tenant pursuant to any such right); or

14.2.8 Either the proposed Transferee, or any person or entity which directly or indirectly, controls, is controlled by, or is under common control with, the proposed Transferee, (i) is negotiating with Landlord to lease space in the Building at such time, or (ii) has negotiated with Landlord during the six (6) month period immediately preceding the Transfer Notice.

Tenant shall indemnify, defend and hold harmless Landlord from any and all liability, losses, claims, damages, costs, expenses, causes of action and proceedings involving any third party or parties (including without limitation Tenant's proposed subtenant or assignee) who claim they were damaged by Landlord's wrongful withholding or conditioning of Landlord's consent. If Landlord consents to any Transfer pursuant to the terms of this Section 14.2, Tenant may within three (3) months after Landlord's consent, but not later than the expiration of said three (3)-month period, enter into such Transfer of the Premises or portion thereof, upon substantially the same terms and conditions as are set forth in the Transfer Notice furnished by Tenant to Landlord pursuant to Section 14.1 of this Lease, provided that if there are any changes in the terms and conditions from those specified in the Transfer Notice (i) such that Landlord would initially have been entitled to refuse its consent to such Transfer under this Section 14.2, or (ii) which would cause the proposed Transfer to be more favorable to the Transferee than the terms set forth in Tenant's original Transfer Notice, Tenant shall again submit the Transfer to Landlord for its approval and other action under this Article 14. Notwithstanding anything to the contrary in this Lease, if Tenant or any proposed Transferee claims that Landlord has unreasonably withheld or delayed its consent under Section 14.2 or otherwise has breached or acted unreasonably under this Article 14, Tenant hereby waives any right at law or equity to terminate this Lease, on its own behalf and, to the extent permitted under all applicable laws, on behalf of the proposed Transferee, but Tenant retains the right to sue Landlord for any contract damages suffered by Tenant if Landlord unreasonably withholds its consent to a proposed Transfer (other than damages for injury to, or interference with, Tenant's business including, without limitation, loss of profits, however occurring).

14.3 Transfer Premium. If Landlord consents to a Transfer, as a condition thereto which the parties hereby agree is reasonable, Tenant shall pay to Landlord ten percent (10%) of any "Transfer Premium," as that term is defined in this Section 14.3, received by Tenant from such Transferee. "Transfer Premium" shall mean all rent, additional rent or other consideration payable by such Transferee in excess of the Rent and Additional Rent payable by Tenant under this Lease, on a per rentable square foot basis if less than all of the Premises is transferred, after deducting the reasonable expenses incurred by Tenant for any brokerage commissions in connection with the Transfer, and the cost of any reasonable and customary improvements paid for by Tenant in connection with such Transfer (collectively "Subleasing Costs"). "Transfer

Premium" shall also include, but not be limited to, key money and bonus money paid by Transferee to Tenant in connection with such Transfer, and any payment in excess of fair market value for services rendered by Tenant to Transferee or for assets, fixtures, inventory, equipment, or furniture transferred by Tenant to Transferee in connection with such Transfer. With respect to the recovery of Subleasing Costs by Tenant, Tenant shall amortize the Subleasing Costs over the anticipated term of the Transfer.

14.4 Effect of Transfer. If Landlord consents to a Financial Transfer or Transfer, (i) the terms and conditions of this Lease shall in no way be deemed to have been waived or modified, (ii) such consent shall not be deemed consent to any further Financial Transfer or Transfer by either Tenant or a Transferee, (iii) Tenant shall deliver to Landlord, promptly after execution, an original executed copy of all documentation pertaining to the Financial Transfer or Transfer in form reasonably acceptable to Landlord, (iv) Tenant shall furnish upon Landlord's request a complete statement, certified by an independent certified public accountant, or Tenant's chief financial officer, setting forth in detail the computation of any Transfer Premium Tenant has derived and shall derive from such Financial Transfer or Transfer, and (v) no Financial Transfer or Transfer relating to this Lease or agreement entered into with respect thereto, whether with or without Landlord's consent, shall relieve Tenant from liability under this Lease. Landlord or its authorized representatives shall have the right at all reasonable times and upon reasonable notice to Tenant, to audit the books, records and papers of Tenant relating to any Financial Transfer or Transfer, and shall have the right to make copies thereof. If the Transfer Premium respecting any Financial Transfer or Transfer shall be found understated, Tenant shall, within thirty (30) days after demand, pay the deficiency and Landlord's costs of such audit and if understated by more than fifteen percent (15%), Landlord shall have the right to cancel this Lease upon thirty (30) days' notice to Tenant.

14.5 Additional Transfers. For purposes of this Lease, the term "Transfer" shall also include (i) if Tenant is a partnership, the withdrawal or change, voluntary, involuntary or by operation of law, of twenty five percent (25%) or more of the partners, or transfer of twenty five percent or more of partnership interests, within a twelve (12) month period, or the dissolution of the partnership without immediate reconstitution thereof, and (ii) if Tenant is a corporation whose stock is not publicly held and not traded through an exchange or over the counter, (A) the dissolution, merger, consolidation or other reorganization of Tenant, (B) the sale or other transfer of more than an aggregate of twenty five percent (25%) of the voting shares of Tenant, or (C) the sale, mortgage, hypothecation or pledge of more than an aggregate of twenty five percent (25%) of the value of the unencumbered assets of Tenant.

14.6 Non Transfers. Notwithstanding anything to the contrary contained in this Lease, an assignment or subletting of all or a portion of the Premises to an "Affiliate" of Tenant (which term is defined to mean an entity which is controlled by, controls, or is under common control with, Tenant), shall not be deemed a Financial Transfer or Transfer under Article 14 of this Lease, provided that Tenant notifies Landlord of any such assignment or sublease and promptly supplies Landlord with any documents or information reasonably requested by Landlord regarding such transfer or transferee, that such assignment or sublease is not a subterfuge by Tenant to avoid its obligations under this Lease, and that such transferee or affiliate shall have a net worth (not including goodwill as an asset) computed in accordance with generally accepted accounting principles (the "Net Worth") at least equal to the greater of (A) the Net Worth of

Tenant immediately prior to such assignment or sublease, or (B) the Net Worth on the date of this Lease of the original named Tenant. "Control," as used in this Section 14.7, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a person or entity, whether by the ownership of voting securities, by contract or otherwise.

ARTICLE XV
SURRENDER OF PREMISES: REMOVAL OF TRADE FIXTURES

15.1 Surrender of Premises. No act or thing done by Landlord or any agent or employee of Landlord during the Lease Term shall be deemed to constitute an acceptance by Landlord of a surrender of the Premises unless such intent is specifically acknowledged in a writing signed by Landlord. The delivery of keys to the Premises to Landlord or any agent or employee of Landlord shall not constitute a surrender of the Premises or effect a termination of this Lease, whether or not the keys are thereafter retained by Landlord, and notwithstanding such delivery Tenant shall be entitled to the return of such keys at any reasonable time upon request until this Lease shall have been terminated. The voluntary or other surrender of this Lease by Tenant, whether accepted by Landlord or not, or a mutual termination hereof, shall not work a merger, and at the option of Landlord shall operate as an assignment to Landlord of all subleases or subtenancies affecting the Premises, provided that Landlord shall assume Tenant's obligations arising thereunder after the date of any such assumption by Landlord.

15.2 Removal of Tenant Property by Tenant. All articles of personal property and all business and trade fixtures, machinery and equipment, furniture and movable partitions owned by Tenant or installed by Tenant at its expense in the Premises, which Tenant can substantiate to Landlord have not been paid for with any tenant improvement allowance funds provided to Tenant by Landlord, shall remain the property of Tenant, and may be removed by Tenant at any time during the Lease Term as long as Tenant is not in default under this Lease with any applicable cure period having expired. Upon the expiration of the Lease Term, or upon any earlier termination of this Lease, Tenant shall, subject to the provisions of this Article 15, quit and surrender possession of the Premises to Landlord in as good order and condition as when Tenant took possession and as thereafter improved by Landlord and/or Tenant, reasonable wear and tear and repairs which are specifically made the responsibility of Landlord hereunder excepted. Upon such expiration or termination, Tenant shall, without expense to Landlord, remove or cause to be removed from the Premises all debris and rubbish, and such items of furniture, equipment, freestanding cabinet work, and other articles of personal property owned by Tenant or installed or placed by Tenant at its expense in the Premises, and such similar articles of any other persons claiming under Tenant, as Landlord may, in its sole discretion, require to be removed, and Tenant shall repair at its own expense all damage to the Premises and Building resulting from such removal.

ARTICLE XVI
HOLDING OVER

If Tenant holds over after the expiration of the Lease Term hereof, with or without the express or implied consent of Landlord, such tenancy shall be from month to month only, and

shall not constitute a renewal hereof or an extension for any further term, and in such case Rent shall be payable at a monthly rate equal to the product of (i) the Rent applicable during the last rental period of the Lease Term under this Lease, and (ii) a percentage equal to two hundred percent (200%). Such month to month tenancy shall be subject to every other term, covenant and agreement contained herein. Nothing contained in this Article 16 shall be construed as consent by Landlord to any holding over by Tenant, and Landlord expressly reserves the right to require Tenant to surrender possession of the Premises to Landlord as provided in this Lease upon the expiration or other termination of this Lease. The provisions of this Article 16 shall not be deemed to limit or constitute a waiver of any other rights or remedies of Landlord provided herein or at law. Tenant acknowledges that if Tenant holds over without Landlord's consent, such holding over may compromise or otherwise affect Landlord's ability to enter into new leases with prospective tenants regarding the Premises. Therefore, if Tenant fails to surrender the Premises upon the termination or expiration of this Lease, in addition to any other liabilities to Landlord accruing therefrom, Tenant shall protect, defend, indemnify and hold Landlord harmless from all loss, costs (including reasonable attorneys' fees) and liability resulting from such failure, including, without limiting the generality of the foregoing, any claims made by any succeeding tenant founded upon such failure to surrender, and any losses suffered by Landlord, including lost profits, resulting from such failure to surrender.

ARTICLE XVII
ESTOPPEL CERTIFICATES

Within ten (10) days following a request in writing by Landlord, Tenant shall execute and deliver to Landlord an estoppel certificate, which, as submitted by Landlord, shall be substantially in the form of Exhibit E, attached hereto (or such other form as may be required by any prospective mortgagee or purchaser of the Building, or any portion thereof), indicating therein any exceptions thereto that may exist at that time, and shall also contain any other information reasonably requested by Landlord or Landlord's mortgagee or prospective mortgagee or purchasers. Tenant shall execute and deliver whatever other instruments may be reasonably required for such purposes. Failure of Tenant to timely execute and deliver such estoppel certificate or other instruments shall constitute an acceptance of the Premises and an acknowledgment by Tenant that statements included in the estoppel certificate are true and correct, without exception.

ARTICLE XVIII
SUBORDINATION

This Lease is subject and subordinate to all present and future ground or underlying leases of the Real Property and to the lien of any mortgages or trust deeds, now or hereafter in force against the Real Property and the Building, if any, and to all renewals, extensions, modifications, consolidations and replacements thereof, and to all advances made or hereafter to be made upon the security of such mortgages or trust deeds, unless the holders of such mortgages or trust deeds, or the lessors under such ground lease or underlying leases, require in writing that this Lease be superior thereto. Tenant covenants and agrees in the event any proceedings are brought for the foreclosure of any such mortgage, to attorn, without any deductions or set offs whatsoever, to the purchaser upon any such foreclosure sale if so requested to do so by such purchaser, and to recognize such purchaser as the lessor under this Lease. Tenant shall, within

five (5) days of request by Landlord, execute an agreement in such commercially reasonable form as may be requested by Landlord, or such further instruments or assurances as Landlord may reasonably deem necessary to evidence or confirm the subordination or superiority of this Lease to any such mortgages, trust deeds, ground leases or underlying leases. Tenant waives the provisions of any current or future statute, rule or law which may give or purport to give Tenant any right or election to terminate or otherwise adversely affect this Lease and the obligations of the Tenant hereunder in the event of any foreclosure proceeding or sale.

ARTICLE XIX
DEFAULTS; REMEDIES

19.1 Defaults. The occurrence of any of the following shall constitute a default of this Lease by Tenant:

19.1.1 Any failure by Tenant to pay any Rent or any other charge required to be paid under this Lease, or any part thereof, within three (3) business days of notice that the same was not received when due (or if no due date is specified within the Lease, within three (3) business days of such notice from Landlord), which notice shall be in lieu of any notice required under California Code of Civil Procedure Section 1161 or any similar or successor law; or

19.1.2 Any failure by Tenant to observe or perform any other provision, covenant or condition of this Lease to be observed or performed by Tenant where such failure continues for thirty (30) days after written notice thereof from Landlord to Tenant; provided however, that any such notice shall be in lieu of, and not in addition to, any notice required under California Code of Civil Procedure Section 1161 or any similar or successor law; and provided further that if the nature of such default is such that the same cannot reasonably be cured within a thirty (30)-day period, Tenant shall not be deemed to be in default if it diligently commences such cure within such period and thereafter diligently proceeds to rectify and cure said default, as soon as possible; or

19.1.3 A general assignment by Tenant or any guarantor of the Lease for the benefit of creditors, or the filing by or against Tenant or any guarantor of any proceeding under an insolvency or bankruptcy law, unless in the case of a proceeding filed against Tenant or any guarantor the same is dismissed within sixty (60) days, or the appointment of a trustee or receiver to take possession of all or substantially all of the assets of Tenant or any guarantor, unless possession is restored to Tenant or such guarantor within thirty (30) days, or any execution or other judicially authorized seizure of all or substantially all of Tenant's assets located upon the Premises or of Tenant's interest in this Lease, unless such seizure is discharged within thirty (30) days.

19.1.4 Vacation or abandonment of the Premises by Tenant for a continuous period in excess of five (5) consecutive business days or fails to conduct the business described as the Permitted Use for a continuous period of 30 days; or

19.1.5 Tenant's failure to execute and deliver any documents required by this Lease within the time periods specified; or

19.1.6 The default under or termination or cancellation of any guaranty of this Lease by any guarantor, or the written assertion by any guarantor that it is not bound by the terms of its guaranty of this Lease; or

19.1.7 Any material misrepresentation herein by Tenant, or any material misrepresentation or omission in any financial statements or other materials provided to Landlord by or on behalf of Tenant or any guarantor in connection with negotiating or entering into this Lease, or provided by or on behalf of Tenant, or a guarantor, or by any Transferee in connection with any Transfer.

19.2 Remedies Upon Default. Upon the occurrence of a default by Tenant, Landlord shall have, in addition to any other remedies available to Landlord at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

19.2.1 Landlord may terminate this Lease, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim or damages therefor; and Landlord may recover from Tenant the following:

(i) The worth at the time of award of any unpaid rent which has been earned at the time of such termination; plus

(ii) The worth at the time of award of the amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(iii) The worth at the time of award of the amount by which the unpaid rent for the balance of the Lease Term after the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(iv) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(v) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

The term "rent" as used in this Section 19.2 shall be deemed to be and to mean all sums of every nature required to be paid by Tenant pursuant to the terms of this Lease as Base Rent, Additional Rent or otherwise, whether to Landlord or to others, and all such amounts shall constitute "rent" within the meaning of California Civil Code Section 1951(a). As used in Sections 19.2.1(i) and (ii), above, the "worth at the time of award" shall be computed by allowing interest at the rate set forth in Article 25 of this Lease, but in no case greater than the maximum amount of such interest permitted by law. As used in Section 19.2.1(iii) above, the "worth at the time of award" shall be computed by discounting such amount at the discount rate of the Federal Reserve Bank of San Francisco at the time of award plus one percent (1%).

19.2.2 Landlord shall have the remedy described in California Civil Code Section 1951.4 (lessor may continue lease in effect after lessee's breach and abandonment and recover Rent as it becomes due, if lessee has the right to sublet or assign, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease on account of any default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies under this Lease, including the right to recover all rent as it becomes due. Tenant hereby waives California Code of Civil Procedure Section 1179.

19.3 Subleases of Tenant. Whether or not Landlord elects to terminate this Lease on account of any default by Tenant, as set forth in this Article 19, Landlord shall have the right to terminate any and all subleases, licenses, concessions or other consensual arrangements for possession entered into by Tenant and affecting the Premises or may, in Landlord's sole discretion, succeed to Tenant's interest in such subleases, licenses, concessions or arrangements, provided that Landlord shall assume Tenant's obligations arising thereunder after the date of any such assumption by Landlord. In the event of Landlord's election to succeed to Tenant's interest in any such subleases, licenses, concessions or arrangements, Tenant shall, as of the date of notice by Landlord of such election, have no further right to or interest in the rent or other consideration receivable thereunder.

19.4 Form of Payment After Default. Following the occurrence of a default by Tenant which is not cured during the applicable cure period, Landlord shall have the right to require that any or all subsequent amounts paid by Tenant to Landlord hereunder, whether in the cure of the default in question or otherwise, be paid in the form of cash, money order, cashier's or certified check drawn on an institution acceptable to Landlord, or by other means approved by Landlord, notwithstanding any prior practice of accepting payments in any different form.

19.5 Efforts to Relet. For the purposes of this Article 19, Tenant's right to possession shall not be deemed to have been terminated by efforts of Landlord to relet the Premises, by its acts of maintenance or preservation with respect to the Premises, or by appointment of a receiver to protect Landlord's interests hereunder. The foregoing enumeration is not exhaustive, but merely illustrative of acts which may be performed by Landlord without terminating Tenant's right to possession.

ARTICLE XX
ATTORNEYS' FEES

If either party commences litigation against the other for the specific performance of this Lease, for damages for the breach hereof or otherwise for enforcement of any remedy hereunder,

the parties hereto agree to and hereby do waive any right to a trial by jury and, in the event of any such commencement of litigation, the prevailing party shall be entitled to recover from the other party such costs and reasonable attorneys' fees as may have been incurred.

ARTICLE XXI
SECURITY DEPOSIT

Concurrent with Tenant's execution of this Lease, Tenant shall deposit with Landlord a security deposit (the "Security Deposit") in the amount set forth in Section 10 of the Summary. The Security Deposit shall be held by Landlord as security for the faithful performance by Tenant of all the terms, covenants, and conditions of this Lease to be kept and performed by Tenant during the Lease Term. If Tenant defaults with respect to any provisions of this Lease, including, but not limited to, the provisions relating to the payment of Rent, Landlord may, but shall not be required to, use, apply or retain all or any part of the Security Deposit for the payment of any Rent or any other sum in default, or for the payment of any amount that Landlord may spend or become obligated to spend by reason of Tenant's default, or to compensate Landlord for any other loss or damage that Landlord may suffer by reason of Tenant's default. If any portion of the Security Deposit is so used or applied, Tenant shall, within five (5) days after written demand therefor, deposit cash with Landlord in amount sufficient to restore the Security Deposit to its original amount, and Tenant's failure to do so shall be a default under this Lease. If Tenant shall fully and faithfully perform every provision of this Lease to be performed by it, the Security Deposit, or any balance thereof, shall be returned to Tenant, or, at Landlord's option, to the last assignee of Tenant's interest hereunder, within sixty (60) days following the expiration of the Lease Term. Tenant shall not be entitled to any interest on the Security Deposit. Tenant hereby waives the provisions of Section 1950.7 of the California Civil Code, and all other provisions of law, now or hereafter in force, which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition, claim those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the act or omission of Tenant or any officer, employee, agent or invitee of Tenant.

ARTICLE XXII
SUBSTITUTION OF OTHER PREMISES

Landlord shall have the right at any time during the Lease Term, upon giving Tenant not less than sixty (60) days prior notice (the "Notice Period"), to substitute for the Premises other comparably finished space of approximately the same size in the Building (the "Substitute Space"), with Landlord to pay all reasonable and previously approved moving expenses incurred by Tenant as a result of such substitution. Within five (5) days after Tenant's receipt of a preliminary space plan for the Substitute Space, Tenant shall either (i) approve and initial the preliminary space plan, or (ii) notify Landlord in writing of any requested revisions necessary, in Tenant's reasonable opinion, in order for the improvements in the Substitute Space to be reasonably comparable to the improvements in the Premises. Landlord shall not be required to make any such requested revisions which, in Landlord's reasonable discretion, are not necessary in order for the improvements in the Substitute Space to be reasonably comparable to the improvements in the Premises. Within five (5) days after Tenant's receipt of a revised

preliminary space plan or a notice from Landlord that no further revisions are required for the improvements in the Substitute Space to be reasonably comparable to the improvements in the Premises, Tenant shall initial and return the preliminary space plan to Landlord. Tenant's initialing of the preliminary space plan shall constitute Tenant's acceptance of the improvements in the Substitute Space as being reasonably comparable to the improvements in the Premises and Tenant's waiver and disclaimer of any objection to, or claim based upon, the location, configuration, improvements or other elements of the Substitute Space described in said preliminary space plan. Upon Tenant's move into the Substitute Space, the terms and conditions of this Lease shall remain in full force and effect, except that the parties shall immediately execute an amendment to this Lease stating the relocation of the Premises, revising Exhibit A and, if the Substitute Space is larger or smaller than the Premises, proportionately adjusting Tenant's Share of Direct Expenses and the Base Rent. Should Tenant refuse to initial and return the preliminary space plan within the time limit provided herein or refuse to permit Landlord to move Tenant to the Substitute Space upon the substantial completion of the improvements in the Substitute Space, then Tenant shall be deemed to be in material default of this Lease and Landlord shall have the right to exercise all of its remedies under Article 19 of this Lease.

ARTICLE XXIII
SIGNS

Landlord shall provide Tenant with the following signage at Landlord's expense: (i) Tenant's name in the Building's lobby directory, and (ii) Building standard suite signage in location(s) reasonably acceptable to Landlord. Except as otherwise permitted by this Article 23, Tenant has no right to install Tenant identification signs in any other location in, on or about the Premises or the Real Property and shall not display or erect any other signs, displays or other advertising materials that are visible from the exterior of the Building or from within the Building in any interior or exterior common areas. The size, design, color and other physical aspects of any and all permitted sign(s) will be subject to (i) Landlord's written approval prior to installation, which approval shall not be unreasonably withheld, (ii) any recorded covenants, conditions or restrictions governing the Premises, and (iii) any applicable municipal or governmental permits and approvals.

Tenant will be solely responsible for all costs for installation, maintenance, repair and removal of all permitted sign(s). If Tenant fails to remove any such sign(s) upon termination of this Lease and repair any damage caused by such removal, Landlord may do so at Tenant's sole cost and expense. Tenant agrees to reimburse Landlord within ten (10) business days after demand for all costs incurred by Landlord to effect any removal on Tenant's account, which amount will be deemed Additional Rent.

ARTICLE XXIV
COMPLIANCE WITH LAW

Tenant shall not do anything or suffer anything to be done in or about the Premises which will in any way conflict with any law, statute, ordinance or other governmental rule, regulation or requirement now in force or which may hereafter be enacted or promulgated, including without limitation the Americans with Disabilities Act of 1990 and applicable building codes (collectively "Applicable Laws"). At its sole cost and expense, Tenant shall promptly comply

with all such Applicable Laws which relate to (i) Tenant's use of the Premises for non general office use, (ii) the Alterations in the Premises, or (iii) the Base Building, but, as to the Base Building, only to the extent such obligations are triggered by Tenant's Alterations or use of the Premises for non general office use. The "Base Building" shall include the structural portions of the Building, and the public restrooms and the systems and equipment located in the internal core of the Building on the floor or floors on which the Premises are located. Should any standard or regulation now or hereafter be imposed on Landlord or Tenant by a state, federal or local governmental body charged with the establishment, regulation and enforcement of occupational, health or safety standards for employers, employees, landlords or tenants, then Tenant and Landlord agree, as applicable, to comply promptly with such standards or regulations. The judgment of any court of competent jurisdiction or the admission of Tenant in any judicial action, regardless of whether Landlord is a party thereto, that Tenant has violated any governmental measures, shall be conclusive of that fact as between Landlord and Tenant. Subject to the foregoing, Landlord shall comply with all Applicable Laws which relate to the Base Building and the common areas of the Building.

ARTICLE XXV
LATE CHARGES

If any installment of Rent or any other sum due from Tenant shall not be received by Landlord or Landlord's designee within five (5) days after said amount was due, then Tenant shall pay to Landlord a late charge equal to five percent (5%) of the overdue amount, plus any attorneys' fees incurred by Landlord by reason of Tenant's failure to pay Rent and/or other charges when due hereunder. The late charge shall be deemed Additional Rent and the right to require it shall be in addition to all of Landlord's other rights and remedies hereunder or at law and shall not be construed as liquidated damages or as limiting Landlord's remedies in any manner. In addition to the late charge described above, any Rent or other amounts owing hereunder which are not paid on or before the date they are due shall thereafter bear interest until paid at a rate per annum equal to twelve percent (12%) per annum, provided that in no case shall such rate be higher than the highest rate permitted by applicable law.

ARTICLE XXVI
LANDLORD'S RIGHT TO CURE DEFAULT; PAYMENTS BY TENANT

26.1 Landlord's Cure. All covenants and agreements to be kept or performed by Tenant under this Lease shall be performed by Tenant at Tenant's sole cost and expense and without any reduction of Rent. If Tenant shall fail to perform any of its obligations under this Lease, within a reasonable time after such performance is required by the terms of this Lease, Landlord may, but shall not be obligated to, after reasonable prior notice to Tenant, make any such payment or perform any such act on Tenant's part without waiving its right based upon any default of Tenant and without releasing Tenant from any obligations hereunder.

26.2 Tenant's Reimbursement. Except as may be specifically provided to the contrary in this Lease, Tenant shall pay to Landlord, within fifteen (15) days after delivery by Landlord to Tenant of statements therefor: (i) sums equal to expenditures reasonably made and obligations incurred by Landlord in connection with the remedying by Landlord of Tenant's defaults pursuant to the provisions of Section 26.1; (ii) sums equal to all losses, costs, liabilities, damages

and expenses referred to in Article 10 of this Lease; and (iii) sums equal to all expenditures made and obligations incurred by Landlord in collecting or attempting to collect the Rent or in enforcing or attempting to enforce any rights of Landlord under this Lease or pursuant to law, including, without limitation, all legal fees and other amounts so expended. Tenant's obligations under this Section 26.2 shall survive the expiration or sooner termination of the Lease Term.

ARTICLE XXVII
ENTRY BY LANDLORD

Landlord reserves the right at all reasonable times and upon reasonable notice to Tenant to enter the Premises to (i) inspect them; (ii) show the Premises to prospective purchasers, mortgagees or ground or underlying lessors, or, during the last twelve (12) months of the Lease Term, prospective tenants; (iii) post notices of nonresponsibility; or (iv) alter, improve or repair the Premises or the Building if necessary to comply with Applicable Laws, or for structural alterations, repairs or improvements to the Building. Notwithstanding anything to the contrary contained in this Article 27, Landlord may enter the Premises at any time to (A) perform services required of Landlord; (B) take possession due to any breach of this Lease in the manner provided herein; and (C) perform any covenants of Tenant which Tenant fails to perform. Landlord may make any such entries without the abatement of Rent and may take such steps as required to accomplish the stated purposes; provided, however, that any such entry shall be accomplished as expeditiously as reasonably possible and in a manner so as to cause as little interference to Tenant as reasonably possible. Except as provided in Section 10.1 of this Lease, Tenant hereby waives any claims for damages or for any injuries or inconvenience to or interference with Tenant's business, lost profits, any loss of occupancy or quiet enjoyment of the Premises, and any other loss occasioned thereby. For each of the above purposes, Landlord shall at all times have a key with which to unlock all the doors in the Premises, excluding Tenant's vaults, safes and special security areas designated in advance by Tenant. In an emergency, Landlord shall have the right to use any means that Landlord may deem proper to open the doors in and to the Premises. Any entry into the Premises by Landlord in the manner hereinbefore described shall not be deemed to be a forcible or unlawful entry into, or a detainer of, the Premises, or an actual or constructive eviction of Tenant from any portion of the Premises.

ARTICLE XXVIII
TENANT PARKING

During the initial Lease Term and any Option Term, Tenant shall be entitled to use twenty-one (21) unreserved parking stalls in the Building's parking areas at an addition cost of Zero Dollars ($0.00) per stall per month. Should Tenant desire to use additional parking stalls, and Landlord has available parking spaces, Tenant shall be entitled to use such unreserved parking stalls at an additional cost of Twenty Dollars ($20.00) per stall per month. Tenant's unreserved spaces shall be used in common with other tenants in the Building. Tenant's continued right to use the parking spaces is conditioned upon Tenant's abiding by all rules and regulations which are prescribed from time to time for the orderly operation and use of the parking facility (including any agreements affecting offsite parking) and upon Tenant's cooperation in seeing that Tenant's employees and visitors also comply with such rules and regulations. Landlord specifically reserves the right to change the location, size, configuration, design, layout and all other aspects of the parking facility in question, and Tenant acknowledges

and agrees that Landlord may, without incurring any liability to Tenant and without any abatement of Rent under this Lease, from time to time, close off or restrict access to the parking facility in question for purposes of permitting or facilitating any such construction, alteration or improvements, provided, however, Landlord shall use commercially reasonable efforts to locate alternative parking for Tenant during such temporary period within a reasonable distance from the Real Property. In no event shall Tenant and its employees and invitees use more than the number of parking spaces allocated to Tenant pursuant to this Article 28.

ARTICLE XXIX
HAZARDOUS MATERIALS

29.1 Definitions. As used in this Article 29, the following words or phrases shall have the following meanings:

(a) "Agents" means Tenant's partners, officers, directors, shareholders, employees, agents, contractors, assignees, subtenants and any other third parties entering upon the Real Property at the request or invitation of Tenant.

(b) "Claims" means claims, liabilities, losses, actions, environmental suits, causes of action, legal or administrative proceedings, damages, fines, penalties, loss of rents, liens, judgments, costs and expenses (including, without limitation, attorneys' fees and costs of defense, and consultants', engineers' and other professionals' fees and costs).

(c) "Hazardous Materials" means any: (i) Substance which is regulated by any Hazardous Materials Law; (ii) asbestos and asbestos-containing materials; (iii) urea formaldehyde; (iv) radioactive substance; (v) flammable explosives; (vi) petroleum, including crude oil or any fraction thereof; (vii) polychlorinated biphenyls; and (viii) "hazardous substances," "hazardous materials" or "hazardous waste" under any Hazardous Materials Law.

(d) "Hazardous Materials Laws" mean: (i) any existing or future federal, state or local law, ordinance regulation or code which protects health, safety or welfare, or the environment; (ii) any existing or future administrative or legal decision interpreting any such law, ordinance, regulation or code; and (iii) any common law theory which may result in Claims against Landlord, the Premises or the Real Property.

(e) "Permits" means any permit, authorization, license or approval required by any applicable governmental agency.

(f) "Substance" means any substance, material, product, chemical, waste, contaminant or pollutant.

(g) "Use" means use, generate, manufacture, produce, store, release, discharge, allow to exist and transport to or from the Real Property.

29.2 Use of Hazardous Materials. Without limiting the generality of this Article 29, and except as provided hereinbelow, Tenant covenants and agrees that Tenant and its Agents shall not bring into, maintain upon, or Use in or about the Real Property, or transport to or from the Real Property, any Hazardous Materials, nor shall Tenant or its Agents release or dispose of

any Hazardous Materials in, on, under or about the Real Property in violation of any Hazardous Materials Law. Notwithstanding the foregoing provisions, Tenant may Use any Substance typically found or used in premises for the Permitted Use permitted by this Lease, so long as: (a) any such Substance is typically found only in such quantity as is reasonably necessary and customary for Tenant's Permitted Use; (b) a list of such Hazardous Materials is provided to Landlord in writing prior to any such Use; (c) any such Substance and all equipment necessary in connection with the Substance are Used strictly in accordance with the manufacturers' instructions therefore; (d) no such Substance is released or disposed of in or about the Real Property in violation of any Hazardous Materials Law; (e) any such Substance and all equipment necessary in connection with the Substance are removed from the Real Property and Premises and transported for Use or disposal by Tenant in compliance with any applicable Hazardous Materials Laws upon the expiration or earlier termination of this Lease; and (f) Tenant and its Agents comply with all applicable Hazardous Materials Laws. Tenant shall not use or install in or about the Premises any asbestos or asbestos-containing materials.

29.3 Delivery of Notices. Tenant shall furnish to Landlord copies of all notices, claims, reports, complaints, warnings, asserted violations, documents or other communications received or delivered by Tenant, as soon as possible and in any event within five (5) days after such receipt or delivery, with respect to any actual or alleged Use, disposal or transportation of Hazardous Materials in or about the Premises and the Real Property. Whether or not Tenant received any such notice, claim, report, complaint, warning, asserted violation, document or other communication, Tenant shall immediately notify Landlord, orally and in writing, if Tenant or any of its Agents knows or has reasonable cause to believe that any Hazardous Materials, or a condition involving or resulting from the same, is present, in Use, has been disposed of, or transported to or from the Premises or the Real Property.

29.4 Cleanup and Remediation. If Tenant or its Agents violate any provision of this Article 29, then Tenant shall immediately notify Landlord in writing and shall be obligated, at Tenant's sole cost, to abate, remediate, clean-up and/or remove from the Real Property, and dispose of, all in compliance with all applicable Hazardous Materials Laws, all Hazardous Materials Used by Tenant or its Agents. Such work shall include, but not be limited to, all testing and investigation required by Landlord, Landlord's lender and/or ground Lessor, if any, and any governmental authorities having jurisdiction, and preparation and implementation of any remedial action plan required by any governmental authorities having jurisdiction. Tenant's indemnification covenant set forth in Section 29.6 shall extend to any enforcement or other action instituted by any governmental authority with respect to any such alleged requirement and, Tenant shall promptly, at Tenant's cost, comply with any requirement determined to be applicable to Tenant. All such work shall, in each instance, be conducted (a) to the satisfaction of the governmental authority having jurisdiction, if a governmental authority has assumed jurisdiction of such work, (b) to Landlord's reasonable satisfaction if a governmental authority has but declines to assume jurisdiction of such work or (c) to Landlord's reasonable satisfaction if there is no applicable governmental requirement with respect to such work and no governmental authority takes jurisdiction of such work. If Tenant does not reasonably comply with the provisions of this Section 29.4, then Landlord may, without prejudicing, limiting, releasing or waiving Landlord's rights under this Article 29, separately undertake such work, but only after first giving Tenant notice of its intent to do so and the opportunity to cure such default and Tenant shall promptly reimburse all costs incurred by Landlord.

29.5 Entry. Landlord shall have the right to enter and inspect the Premises, and the right to inspect Tenant's books and records, to verify Tenant's compliance with, or violations of, the provisions of this Article 29. Furthermore, Landlord may conduct such investigations and tests as Landlord or Landlord's lender may require. If either (a) as a result of such inspections or tests, Tenant is found to be in material breach of the provisions of this Article 29 or (b) as to any test or investigation requested by any governmental authority or Landlord's lender there is reasonable cause to believe that Tenant is in material breach of the provisions of this Article 29, then, in either such instance, Tenant, in addition to its other obligations set forth in this Article 29, shall promptly reimburse Landlord for all costs incurred in connection with such test or inspection.

29.6 Indemnity. Tenant shall indemnify, defend and hold harmless Landlord, its members and its and their respective successors, assigns, partners, directors, officers, shareholders, employees, agents, lenders, ground lessors and attorneys, and the Real Property, from and against any and all Claims incurred by such indemnified persons, or any of them, in connection with or as the result of: (a) the presence, Use or disposal of any Hazardous Materials in or about the Premises or Real Property by Tenant or its Agents; (b) any injury to or death of persons or damage to or destruction of property resulting from the presence, Use or disposal of any Hazardous Materials in or about the Premises or Real Property by Tenant or its Agents; (c) any violation by Tenant or its Agents of any Hazardous Materials Laws; and (d) any failure of Tenant or its Agents to observe the provisions of this Article 29.6. Tenant's obligations hereunder shall include, without limitation, and whether foreseeable or unforeseeable, all costs of any required or necessary testing, investigation, studies, reports, repair, clean-up, detoxification or decontamination of the Premises or Real Property, and the preparation and implementation of any closure, removal, remedial action or other required plans in connection therewith, and shall survive the expiration or earlier termination of the Term. For purposes of this indemnification provision, any acts or omissions of Tenant and its Agents (regardless of whether they are negligent, intentional, willful, or unlawful) shall be strictly attributable to Tenant. If, at any time after the initiation of any suit, action, investigation or other proceeding which could create a right of indemnification under this Article 29.6, Tenant is not complying with the provisions of Article 29.4, then Landlord may, without prejudicing, limiting, releasing or waiving the right of indemnification provided herein, separately defend or retain separate counsel to represent and control the defense as to Landlord's interest in such suit, action, investigation or other proceeding. Tenant shall pay all costs of Landlord's separate defense or counsel upon demand.

ARTICLE XXX
MISCELLANEOUS PROVISIONS

30.1 Binding Effect. Each of the provisions of this Lease shall extend to and shall, as the case may require, bind or inure to the benefit not only of Landlord and of Tenant, but also their respective successors or assigns, provided this clause shall not permit any assignment by Tenant contrary to the provisions of Article 14 of this Lease.

30.2 No Air Rights. No rights to any view or to light or air over any property, whether belonging to Landlord or any other person, are granted to Tenant by this Lease. If at any time any windows of the Premises are temporarily darkened or the light or view therefrom is obstructed by reason of any repairs, improvements, maintenance or cleaning in or about the

Building, the same shall be without liability to Landlord and without any reduction or diminution of Tenant's obligations under this Lease.

30.3 Modification of Lease. Should any current or prospective mortgagee or ground lessor for the Building require a modification or modifications of this Lease, which modification or modifications will not cause an increased cost or expense to Tenant or in any other way materially and adversely change the rights and obligations of Tenant hereunder, then and in such event, Tenant agrees that this Lease may be so modified and agrees to execute whatever documents are required therefor and deliver the same to Landlord within ten (10) days following the request therefor. Should Landlord or any such prospective mortgagee or ground lessor require execution of a short form of Lease for recording, containing, among other customary provisions, the names of the parties, a description of the Premises and the Lease Term, Tenant agrees to execute such short form of Lease and to deliver the same to Landlord within ten (10) days following the request therefor.

30.4 Transfer of Landlord's Interest. Tenant acknowledges that Landlord has the right to transfer all or any portion of its interest in the Real Property and Building and in this Lease, and Tenant agrees that in the event of any such transfer and a transfer of the Security Deposit, and assumption by the transferee of Landlord's obligations under this Lease, Landlord shall automatically be released from all liability under this Lease and Tenant agrees to look solely to such transferee for the performance of Landlord's obligations hereunder after the date of transfer. Tenant further acknowledges that Landlord may assign its interest in this Lease to a mortgage lender as additional security and agrees that such an assignment shall not release Landlord from its obligations hereunder and that Tenant shall continue to look to Landlord for the performance of its obligations hereunder.

30.5 Prohibition Against Recording. Except as provided in Section 30.3 of this Lease, neither this Lease, nor any memorandum, affidavit or other writing with respect thereto, shall be recorded by Tenant or by anyone acting through, under or on behalf of Tenant, and the recording thereof in violation of this provision shall make this Lease null and void at Landlord's election.

30.6 Captions. The captions of Articles and Sections are for convenience only and shall not be deemed to limit, construe, affect or after the meaning of such Articles and Sections.

30.7 Relationship of Parties. Nothing contained in this Lease shall be deemed or construed by the parties hereto or by any third party to create the relationship of principal and agent, partnership, joint venturer or any association between Landlord and Tenant, it being expressly understood and agreed that neither the method of computation of Rent nor any act of the parties hereto shall be deemed to create any relationship between Landlord and Tenant other than the relationship of landlord and tenant.

30.8 Time of Essence. Time is of the essence of this Lease and each of its provisions.

30.9 Partial Invalidity. If any term, provision or condition contained in this Lease shall, to any extent, be invalid or unenforceable, the remainder of this Lease, or the application of such term, provision or condition to persons or circumstances other than those with respect to which it is invalid or unenforceable, shall not be affected thereby, and each and every other term,

provision and condition of this Lease shall be valid and enforceable to the fullest extent possible permitted by law.

30.10 Landlord Exculpation. It is expressly understood and agreed that notwithstanding anything in this Lease to the contrary, and notwithstanding any applicable law to the contrary, the liability of Landlord Parties hereunder (including any successor landlord) and any recourse by Tenant against Landlord shall be limited solely and exclusively to the interest of Landlord in the Real Property and the Building, and neither Landlord, nor any of its constituent partners, shall have any personal liability therefor, and Tenant hereby expressly waives and releases such personal liability on behalf of itself and all persons claiming by, through or under Tenant.

30.11 Entire Agreement. It is understood and acknowledged that there are no oral agreements between the parties hereto affecting this Lease and this Lease supersedes and cancels any and all previous negotiations, arrangements, brochures, agreements and understandings, if any, between the parties hereto or displayed by Landlord to Tenant with respect to the subject matter thereof, and none thereof shall be used to interpret or construe this Lease. This Lease, and the exhibits and schedules attached hereto, contain all of the terms, covenants, conditions, warranties and agreements of the parties relating in any manner to the rental, use and occupancy of the Premises, shall be considered to be the only agreement between the parties hereto and their representatives and agents, and none of the terms, covenants, conditions or provisions of this Lease can be modified, deleted or added to except in writing signed by the parties hereto.

30.12 Right to Lease. Landlord reserves the absolute right to effect such other tenancies in the Building as Landlord in the exercise of its sole business judgment shall determine to best promote the interests of the Building. Tenant does not rely on the fact, nor does Landlord represent, that any specific tenant or type or number of tenants shall, during the Lease Term, occupy any space in the Building.

30.13 Force Majeure. Any prevention, delay or stoppage due to strikes, lockouts, labor disputes, acts of God, inability to obtain services, labor, or materials or reasonable substitutes therefor, governmental actions, civil commotions, fire or other casualty, and other causes beyond the reasonable control of the party obligated to perform (collectively, the "Force Majeure"), except with respect to the obligations imposed with regard to Rent and other charges to be paid by Tenant pursuant to this Lease, and except as to Tenant's obligations under Articles 5 and 24 of this Lease notwithstanding anything to the contrary contained in this Lease, shall excuse the performance of such party for a period equal to any such prevention, delay or stoppage and, therefore, if this Lease specifies a time period for performance of an obligation of either party, that time period shall be extended by the period of any delay in such party's performance caused by a Force Majeure.

30.14 Notices.

30.14.1 General Notices. All notices, demands, statements, approvals or communications (collectively, "Notices") given or required to be given by either party to the other hereunder shall be in writing, shall be sent by United States certified or registered mail, postage prepaid, return receipt requested, by reputable overnight courier or delivered personally (i) to Tenant at the appropriate address set forth in Section 5 of the Summary, or to such other place as Tenant may from time to time designate in a Notice to Landlord; or (ii) to Landlord at

the addresses set forth in Section 3 of the Summary, or to such other firm or to such other place as Landlord may from time to time designate in a Notice to Tenant. Any Notice will be deemed given on the date it is mailed as provided in this Section 30.14 or upon the date personal delivery is made or attempted to be made. If Tenant is notified of the identity and address of Landlord's mortgagee or ground or underlying lessor, Tenant shall give to such mortgagee or ground or underlying lessor written notice of any default by Landlord under the terms of this Lease by registered or certified mail, and such mortgagee or ground or underlying lessor shall be given a reasonable opportunity to cure such default prior to Tenant's exercising any remedy available to Tenant.

30.14.2 Service of Legal Notices. In the event Landlord shall serve any Notice on Tenant or any Transferee in connection with the exercise by Landlord of any remedy afforded under Article 19, such Notice shall be delivered in accordance with the applicable requirements of California law.

30.15 Joint and Several. If there is more than one Tenant, the obligations imposed upon Tenant under this Lease shall be joint and several.

30.16 Authority. If Tenant is a corporation or partnership, each individual executing this Lease on behalf of Tenant hereby represents and warrants that Tenant is a duly formed and existing entity qualified to do business in California and that Tenant has full right and authority to execute and deliver this Lease and that each person signing on behalf of Tenant is authorized to do so.

30.17 Governing Law. This Lease shall be construed and enforced in accordance with the laws of the State of California.

30.18 Submission of Lease. Submission of this instrument for examination or signature by Tenant does not constitute a reservation of or an option for lease, and it is not effective as a lease or otherwise until execution and delivery by both Landlord and Tenant.

30.19 Brokers. Landlord and Tenant hereby warrant to each other that they have had no dealings with any real estate broker or agent in connection with the negotiation of this Lease, excepting only the real estate brokers or agents specified in Section 12 of the Summary (the "Brokers"), and that they know of no other real estate broker or agent who is entitled to a commission in connection with this Lease. Landlord shall pay the brokerage commissions owing to the Brokers in connection with the transaction contemplated by this Lease pursuant to the terms of a separate written agreement between Landlord and the Brokers. Each party agrees to indemnify and defend the other party against and hold the other party harmless from any and all claims, demands, losses, liabilities, lawsuits, judgments, and costs and expenses (including without limitation reasonable attorneys' fees) with respect to any leasing commission or equivalent compensation alleged to be owing on account of the indemnifying party's dealings with any real estate broker or agent other than the Brokers. The terms of this Section 30.19 shall survive the expiration or earlier termination of the Lease Term.

30.20 Independent Covenants. This Lease shall be construed as though the covenants herein between Landlord and Tenant are independent and not dependent and Tenant hereby expressly waives the benefit of any statute to the contrary and agrees that if Landlord fails to

perform its obligations set forth herein, Tenant shall not be entitled to make any repairs or perform any acts hereunder at Landlord's expense or to any setoff of the Rent or other amounts owing hereunder against Landlord; provided, however, that the foregoing shall in no way impair the right of Tenant to commence a separate action against Landlord for any violation by Landlord of the provisions hereof so long as notice is first given to Landlord and any holder of a mortgage or deed of trust covering the Building, Real Property or any portion thereof, of whose address Tenant has theretofore been notified, and an opportunity is granted to Landlord and such holder to correct such violations as provided above.

30.21 Building Name and Signage. Landlord shall have the right at any time to change the name of the Building and to install, affix and maintain any and all signs which are consistent with a first class office building on the exterior and on the interior of the Building as Landlord may, in Landlord's sole discretion, desire. Tenant shall not use the name of the Building or use pictures or illustrations of the Building in advertising or other publicity, without the prior written consent of Landlord.

30.22 Transportation Management. Tenant shall fully comply with all present or future governmentally mandated programs intended to manage parking, transportation or traffic in and around the Building, and in connection therewith, Tenant shall take responsible action for the transportation planning and management of all employees located at the Premises by working directly with Landlord, any governmental transportation management organization or any other transportation related committees or entities.

30.23 Successors. Except as otherwise expressly provided herein, the obligations of this Lease shall bind and benefit the successors and assigns of the parties hereto; provided, however, that no assignment, sublease or other transfer in violation of the provisions of Article 14 shall operate to vest any rights in any putative assignee, subtenant or transferee of Tenant.

30.24 Landlord Renovations. It is specifically understood and agreed that Landlord has no obligation and has made no promises to alter, remodel, improve, renovate, repair or decorate the Premises, Building, or any part thereof and that no representations respecting the condition of the Premises or the Building have been made by Landlord to Tenant except as specifically set forth herein. However, Tenant acknowledges that Landlord may during the Lease Term renovate, improve, alter, or modify (collectively, the "Renovations") the Building, Premises, and/or Real Property, including without limitation the parking structure, common areas, systems and equipment, roof, and structural portions of the same; provided, however, that such Renovations shall not substantially interfere with Tenant's ability to access the Premises or Tenant's Permitted Use of the Premises. Tenant hereby agrees that such Renovations and Landlord's actions in connection with such Renovations shall in no way constitute a constructive eviction of Tenant nor entitle Tenant to any abatement of Rent. Landlord shall have no responsibility or for any reason be liable to Tenant for any direct or indirect injury to or interference with Tenant's business arising from the Renovations, nor shall Tenant be entitled to any compensation or damages from Landlord for loss of the use of the whole or any part of the Premises or of Tenant's personal property or improvements resulting from the Renovations or Landlord's actions in connection with such Renovations, or for any inconvenience or annoyance occasioned by such Renovations or Landlord's actions in connection with such Renovations.

IN WITNESS WHEREOF, Landlord and Tenant have caused their duly authorized representatives to execute this Lease as of the day and date first above written.

"Landlord"	"Tenant"
HEALTH RESEARCH ASSOCIATION, INC. a California nonprofit public benefit corporation	RESPONSE GENETICS, INC., a Delaware corporation
By: _____ Its: Pres + CEO	By: _____ Its: PRESIDENT AND CEO

EXHIBIT A

OUTLINE OF PREMISES

1640 Marengo Street, Suites 600 and 620

Los Angeles, CA 90033

EXHIBIT B

RULES AND REGULATIONS

Tenant shall faithfully observe and comply with the following Rules and Regulations. Landlord shall not be responsible to Tenant for the nonperformance of any of said Rules and Regulations by or otherwise with respect to the acts or omissions of any other tenants or occupants of the Real Property. Landlord agrees that the Rules and Regulations shall be enforced in a non discriminatory manner.

1. Except as may be specifically provided in the Lease to which these Rules and Regulations are attached, no sign, placard, picture; advertisement, name or notice shall be installed or displayed on any part of the outside or inside of the Building without the prior written consent of Landlord, which consent shall not be unreasonably withheld or delayed. Notwithstanding the foregoing, Tenant shall be permitted to hang pictures, works of art and other decorations on the interior portions of the Premises without obtaining Landlord's prior consent; provided, however, that in no event shall any decorations, signage or other materials be installed upon wood doors within the Premises (the parties agreeing that any such decorations, signage or other materials which would otherwise have been installed on such wood doors shall be installed on walls adjacent to such doors). Landlord shall have the right to remove, at Tenant's expense and without notice, any sign installed or displayed in violation of this rule.

2. If Landlord objects in writing to any curtains, blinder, shades, screens or hanging plants or other similar objects attached to or used in connection with any window or door of the Premises, or placed on any windowsill, which are visible from the exterior of the Premises, Tenant shall immediately discontinue such use. Tenant shall not place anything against or near glass partitions or doors or windows which may appear unsightly from outside the Premises.

3. Tenant shall not obstruct any sidewalks, halls, passages, exit, entrances, elevators, escalators or stairways of the Building. The halls, passages, exits, entrances, elevators, escalators and stairways are not open to the general public, but are open, subject to reasonable regulations, to Tenant's business invitees. Landlord shall in all cases retain the right to control and prevent access thereto of all persons whose presence in the judgment of Landlord would be prejudicial to the safety, character, reputation and interest of the Building and its tenants. No tenant and no employee or invitee of any tenant shall go upon the roof of the Building. Notwithstanding anything to the contrary contained herein, authorized representatives of Tenant shall be permitted access to the roof of the Building for repairs, maintenance and service of any telecommunications equipment of Tenant as may be installed upon such roof pursuant to this Lease, subject to reasonable rules and regulations is connection therewith as may hereafter be established by Landlord.

4. Tenant shall cooperate with Landlord in maintaining the Premises.

5. Tenant, upon the termination of its tenancy, shall deliver to Landlord the keys of all doors in the Premises.

6. No deliveries shall be made which impede or interfere with the operation of the Building.

7. Landlord shall have the right to prescribe the weight, size and position of all equipment, materials, furniture or other property brought into the Building. Heavy objects shall, if considered necessary by Landlord, stand on such platforms as determined by Landlord to be necessary to properly distribute the weight, which platforms shall be provided at Tenant's expense. The persons employed to move such equipment in or out of the Building must be acceptable to Landlord. Landlord will not be responsible for loss of, or damage to, any such equipment or other property from any cause, and all damage done to the Building by maintaining or moving such equipment or other property shall be repaired at the expense of Tenant.

8. Tenant shall not use or keep in the Premises any kerosene, gasoline or inflammable or combustible fluid or material other than those limited quantities necessary for the operation or maintenance of office equipment or other items related specifically to Tenant's permitted use of, or business operations within, the Premises. Tenant shall not use or permit to be used in the Premises any foul or noxious gas or substance, or permit or allow the Premises to be occupied or used in a manner offensive or objectionable to Landlord or other occupants of the Building by reason of noise, odors or vibrations, nor shall Tenant bring into or keep in or about the Premises any birds, fish or animals.

9. Tenant shall not use any method of heating or air conditioning other than that supplied by Landlord.

10. Landlord reserves the right, exercisable without notice and without liability to Tenant, to change the name and street address of the Building, provided that in the event Landlord voluntarily changes the name and/or street address of the Building, Landlord shall reimburse Tenant for Tenant's actual and reasonable out-of-pocket costs of replacing its then current stock of stationery and business cards and any applicable changes to Tenant's signage.

11. Tenant shall close and lock the doors of its Premises and entirely shut off all water faucets or other water apparatus, and electricity, gas or air outlets before Tenant and its employees leave the Premises.

12. The toilet rooms, toilets, urinals, wash bowls and other apparatus shall not be used for any purpose other than that for which they were constructed and no foreign substance of any kind whatsoever shall be thrown therein. The expense of any breakage, stoppage or damage resulting frost the violation of this rule shall be borne by the tenant who, or whose employees or invitees, shall have caused it.

13. Tenant shall not use the Premises for any business or activity other than that specifically provided for in this Lease.

14. Canvassing, soliciting and distribution of handbills or any other written. material, and peddling in the Building are prohibited, and Tenant shall cooperate to prevent such activities.

15. Landlord reserves the right to exclude or expel from the Building any person who, in Landlord's judgment, is intoxicated or under the influence of liquor or drugs or who is in violation of any of the Rules and Regulations of the Building.

16. Except as otherwise permitted under this Lease, other than heating and re-heating in areas designated for such use, no cooking shall be permitted on the Premises.

17. Tenant shall comply with all safety, fire protection and evacuation procedures and regulations established by Landlord or any governmental agency.

18. Subject to the provisions of this Lease, Tenant's requirements will be attended to only upon appropriate application to the Building management office by an authorized individual. Employees of Landlord shall not perform any work or do anything outside of their regular duties unless under special instructions from Landlord, and no employee of Landlord will admit any person (Tenant or otherwise) to any office without specific instructions from Landlord.

19. There shall be no smoking within the Building or immediately adjacent to Building entrances (except in areas immediately adjacent to Building entrances, if any, designated therefor by Tenant, subject to Landlord's prior written approval, which approval shall not be unreasonably withheld or delayed).

20. These Rules and Regulations are in addition to, and shall not he construed to in any way modify or amend, in whole or in part, the terms, covenants, agreements and conditions of the Lease.

21. Tenant shall not make or permit any noise or odors that annoy or interfere with other Tenants or persons having business within the office Building.

22. Tenant shall not alter any lock or install new or additional locks or bolts without prior management approval.

23. Tenant shall not employ any service or contractor for services or work to be performed in the Building, except as approved by Lessor.

24. Tenant shall not install, maintain, or operate any vending machines upon the Premises without Lessor's written consent.

25. Tenant assumes all risks from theft or vandalism and agrees to keep it's Premises locked as may be required.

26. Lessor reserve the right to waive any one of these rules or regulations, and/or as to any particular Tenant, and any such waiver shall not constitute a waiver of any other rule or regulations or any subsequent applications thereof to such Lessee.

27. Lessee reserves the right to make such other reasonable rules and regulations as it may from time to time deem necessary for the appropriate operation and safety of the Office Building and its occupants. Tenant agrees to abide by these and such rules and regulations.

28. Tenant stall be responsible for the observance of all of the foregoing rules by Tenant's employees, agents, customers, invitees and guests.

PARKING RULES

1. Parking areas shall be used only for parking by vehicles no longer than full size, passenger automobiles herein called "Permitted Size Vehicles." Vehicles other than Permitted Size Vehicles are herein referred to as "Oversized Vehicles."

2. Lessee shall not permit or allow any vehicle that belongs to or are controlled by Lessee or lessee's employees, suppliers, shippers, customers or invitees to be loaded, unloaded, or parked in areas other than those designated by Lessor for such activities.

3. Parking stickers or identification devices shall be the property of Lessor and be returned to Lessor by the holder thereof upon termination of the holder's parking privileges. Lessee will pay such replacement charge as is reasonably established by Lessor for the loss of such devices.

4. Lessor reserves the right to refuse the sale of monthly identification devices to any person or entity that willfully refuses to comply with the applicable rules, regulations, laws and/or agreements.

5. Lessor reserves the right to relocate all or a part of parking spaces from floor to floor, within one floor, and/or to reasonably adjacent offsite location(s), and to reasonably allocate them between compact and standard size spaces, as long as the same complies with applicable laws, ordinances and regulations.

6. Users of the parking area will obey all posted signed and park only in the areas designated for vehicle parking.

7. Unless otherwise instructed, every person using the parking area is required to park and lock his own vehicle. Lessor will not be responsible for any damage to vehicles, injury to persons or loss of property, all of which risks are assumed by the party using the parking area.

8. Validation, if established, will be permissible only by such method or methods as Lessor and/or its licensee may establish at rates generally applicable to visitors parking.

9. The maintenance, washing, waxing or cleaning of vehicles in the parking structure or Common Areas is prohibited.

10. Lessee shall be responsible for seeing that all of its employees, agents and invitees comply with the applicable parking rules, regulations, laws and agreements.

11. Lessor reserves the right to modify these rules and/or adopt such other reasonable and non-discriminatory rules and regulations as it may deem necessary for the proper operation of the parking areas.

12. Such parking use as is herein provided is intended merely as a license only and no bailment is intended or shall be created hereby.

13. Parking Lot hours to coincide with Building Hours.

EXHIBIT C

NOTICE OF LEASE TERM DATES

To: Kathleen Danenberg

Re: Office Lease dated September 16, 2004 between Health Research Association, a California non-profit public benefit corporation ("Landlord"), and Response Genetics, Inc., a Delaware Corporation ("Tenant") concerning Suite 600 and 620 on floor six (6) of the office building located at 1640 Marengo Street , Los Angeles, California, 90033

Gentlemen:

In accordance with the Office Lease (the "Lease"), we wish to advise you and/or confirm as follows:

1. The Premises are Ready For Occupancy, and the Lease Term shall commence on January 25, 2005 for a term of five (5)years ending on January 31, 2010.

2. Rent will commence to accrue on January 25, 2005, in the amount of $19,101.90/month.

3. If the Lease Commencement Date is other than the first day of the month, the first billing will contain a pro rata adjustment. Each billing thereafter, with the exception of the final billing, shall be for the full amount of the monthly installment as provided for in the Lease.

4. Your rent checks should be made payable to Health Research Association at 1640 Marengo Street, 7th Floor, Los Angeles, California, 90033.

EXHIBIT D

TENANT WORK LETTER

[Not applicable]

EXHIBIT E

ESTOPPEL CERTIFICATE

_____
_____
_____

Re:	Lease Dated: Original Landlord: Current Landlord: Tenant: Property: Premises: Commencement Date: Termination Date: Current Monthly Rent: Security Deposit:

Ladies and Gentlemen:

The undersigned hereby states, declares, represents and warrants to _____ as follows:

1. Attached hereto as Exhibit "A" is a true, correct and complete copy of the above-referenced Lease including any amendments thereto. The Lease has not been amended (or further amended) or supplemented except to the extent set forth below:

_____
_____
_____

2. Tenant's only interest in the Property is the leasehold estate created under the Lease and Tenant has no option to purchase or right of first refusal with respect to the Property or any portion thereof except to the extent set forth below:

_____
_____
_____

3. All rent, any expense reimbursement charges and any other amounts required to be paid by Tenant under the Lease are current and have been paid in full through the current month, but not more than 30 days in advance of their due dates except as identified below:

_____
_____
_____

4. Tenant has not assigned or encumbered its interest in the Lease or sublet all or any portion of the Premises except to the extent set forth below:

_____
_____
_____

5. Tenant has accepted the Premises and all construction of improvements required to be performed or paid by Landlord under the Lease has been completed except to the extent set forth below:

_____
_____
_____

6. The Lease has been duly authorized, executed and delivered by Tenant, is in full force and effect, and contains the entire agreement between Landlord and Tenant with respect to the lease of the Premises.

7. The term of the Lease commenced as of the commencement date indicated above and shall expire on the termination date indicated above unless sooner terminated pursuant to the terms thereof.

8. Tenant has no right or option to renew or extend the term of the Lease or to enlarge the Premises except as set forth in the Lease.

9. The amount of monthly rent currently due and the security deposit (if any) paid by Tenant is as set forth above. No interest is due Tenant on such security deposit, and no other amount has been paid by Tenant to or for the account of Landlord, the return of which Tenant would be entitled to upon the expiration of the Lease.

10. Tenant has not received any written notice of any assignment, mortgage or pledge of Landlord's interest under the Lease or of the rents or other amounts payable thereunder.

11. No default, or any event or condition which with the passing of time or giving of notice, or both, would constitute a default on the part of either Tenant or, to the best of Tenant's knowledge, Landlord, exists under the Lease.

12. To the best of Tenant's knowledge, no claim against Tenant or dispute exists between Tenant and Landlord under the Lease. Tenant has no knowledge of any claim, offset or defense against Landlord under the Lease.

13. All insurance required of Tenant under the Lease, if any, has been obtained by Tenant and all premiums now due have been paid.

14. There has not been filed by or against Tenant, and Tenant is not aware of, any pending or threatened petition in bankruptcy (voluntary or otherwise) or any assignment for the benefit of creditors.

15. **[Tenant is aware that Landlord has obtained from _____ or applied to _____ for a loan (the "Loan") secured by, among other things, a Deed of Trust, Assignment of Leases and Rents, Security Agreement and Fixture Filing (the "Deed of Trust") in favor of _____ encumbering the Property and all improvements now or hereafter situated on the Property.]**

16. **[During the term of the Loan, Tenant will not enter into any agreement with Landlord to amend, modify or extend the Lease or any interest of Tenant thereunder without the prior written consent of _____ and any such purported agreement shall not be valid or effective against _____ without its prior written consent.]**

17. Tenant acknowledges that _____ is relying on this Tenant Estoppel Certificate **[in considering a Loan to Landlord]**. Tenant represents and warrants to _____ that this Tenant Estoppel Certificate is a valid and authorized certificate of Tenant and the person(s) executing this Tenant Estoppel Certificate on behalf of Tenant have the authority to do so. This Tenant Estoppel Certificate shall inure to the benefit of Bank and its successors and assigns.

Dated this _____ day of _____, 20__

TENANT: _____

By: _____
Name: _____
Title: _____

EXHIBIT A-1
EXPANSION COMMENCEMENT DATE CERTIFICATE
Suite 701

RE: Lease dated as of September 16, 2004, between Health Research Association, Inc., a non-profit benefit corporation (Landlord) and Response Genetics, Inc., a Delaware corporation ("Tenant"), as amended by that First Amendment to Lease ("Amendment") dated as of February 1, 2006, for premises located at 1640 Marengo Street, Los Angeles, California.

In accordance with the subject Lease, we wish to advise and confirm the following:

1. Tenant is in possession of Suite 701 ("Expansion Space"), and the Expansion Commencement Date as defined in the Amendment is March 15, 2006 and that the term ends on January 31, 2010, unless Tenant exercises its option to extend such term in accordance with 2.2 of the Existing Lease.
2. The Rentable Square Feet for Suite 701 is 848 square feet.
3. If the Expansion Commencement Date is other than the first day of the month, the first billing will contain a pro rata adjustment. Each billing thereafter shall be for the full amount of the monthly installment as provided for in said Lease.
4. Except as otherwise stated in the subject Lease, Rent is due and payable in advance on the first day of each and every month during the term of said Lease
5. Rent checks should be made payable to and addressed to:

   Health Research Association
   c/o Charles Dunn Real Estate Services
   800 West Sixth Street, 6th Floor
   Los Angeles, California 90017-2709

LANDLORD:	TENANT:
HEALTH RESEARCH ASSOCIATION, INC.	RESPONSE GENETICS, INC.
Kathleen Hurtado President & CEO	Kathleen Danenberg President & CEO

EXHIBIT A-2
EXPANSION COMMENCEMENT DATE CERTIFICATE
Suite 400(C)

RE: Lease dated as of September 16, 2004, between Health Research Association, Inc., a non-profit benefit corporation (Landlord) and Response Genetics, Inc., a Delaware corporation ("Tenant"), as amended by that First Amendment to Lease ("Amendment") dated as of February 1, 2006, for premises located at 1640 Marengo Street, Los Angeles, California.

In accordance with the subject Lease, we wish to advise and confirm the following:

1. Tenant is in possession of Suite 400(C) ("Expansion Space"), and the Expansion Commencement Date as defined in the Amendment is August 1, 2006 and that the term ends on January 31, 2010, unless Tenant exercises its option to extend such term in accordance with 2.2 of the Existing Lease.
2. The Rentable Square Feet for Suite 400C is 1,105 square feet.
3. If the Expansion Commencement Date is other than the first day of the month, the first billing will contain a pro rata adjustment. Each billing thereafter shall be for the full amount of the monthly installment as provided for in said Lease.
4. Except as otherwise stated in the subject Lease, Rent is due and payable in advance on the first day of each and every month during the term of said Lease
5. Rent checks should be made payable to and addressed to:

   Health Research Association
   c/o Charles Dunn Real Estate Services
   800 West Sixth Street, 6th Floor
   Los Angeles, California 90017-2709

LANDLORD:	TENANT:
HEALTH RESEARCH ASSOCIATION, INC.	RESPONSE GENETICS, INC.
Dennis M Lee Chief Financial Officer	Eric E Alcorn Chief Financial Officer

TENTH AMENDMENT TO LEASE AGREEMENT

This Tenth Amendment to Lease Agreement (this "**Tenth Amendment**"), dated as of June 20, 2015 (the "Amendment Date"), and effective as of June 30, 2015 (the "**Effective Date**"), for reference purposes only, is entered into by and between the University of Southern California, a California non-profit public benefit corporation ("**Landlord**") and Response Genetics, Inc., a Delaware corporation ("**Tenant**").

RECITALS

A. Health Research Association, Inc., a California non-profit public benefit corporation ("**Original Landlord**"), and Tenant entered into an Office Lease Agreement dated as of September 16, 2004, as amended by that certain First Amendment to Office Lease dated February 1, 2006, as further amended by that certain Second Amendment to Lease Agreement dated as of January 28, 2010, as further amended by that certain Third Amendment to Lease Agreement dated as of March 31, 2010, as further amended by that certain Fourth Amendment to Lease Agreement dated March 4, 2011, as further amended by that certain Fifth Amendment to Lease Agreement dated August 19, 2011, as further amended by that certain Sixth Amendment to Lease Agreement dated August 30, 2011, as further amended by that certain Seventh Amendment to Lease Agreement dated May 7, 2012, as further amended by that certain Eighth Amendment to Lease Agreement dated June 28, 2012, and as further amended by that certain Ninth Amendment to Lease Agreement dated February 3, 2014 (collectively, the "**Lease**"), for those certain premises known as Suites 400, 401, 402, 403, 404, 405, 406, 410, 600, and 700 (collectively, the "**Premises**"), located at 1640 Marengo Blvd., Los Angeles, California 90033, all as more particularly set forth in the Lease.

B. Landlord is successor in interest to that of Original Landlord;

C. Tenant wishes to exercise Tenant's right to extend t the duration of the Lease for a term commencing on July 1, 2015 and terminating on June 30, 2016.

NOW THEREFORE, for good and valuable consideration received to the full satisfaction of the parties hereto, Landlord and Tenant do hereby covenant and agree as follows:

1. Recitals. The foregoing recitals are hereby incorporated into and made a part of this Tenth Amendment by this reference.

2. Definitions. All capitalized terms in this Tenth Amendment (including the Recitals), shall have the same meanings ascribed thereto in the Lease, unless otherwise provided for herein.

3. Term. Pursuant to Tenant's right to extend the term of the Lease as provided in the Section 3 of the Ninth Amendment to Lease Agreement, the Term of the Premises is hereby extended to June 30, 2016.

4. Base Rent. The monthly Base Rent for the period commencing on July 1, 2015 and throughout the duration of the Term of this Lease shall be due and payable on the first day of each month and shall be in the sum of Sixty-Five Thousand and Forty-Seven Dollars and No Cents ($65,047).

5. Overstandard Tenant Use. Landlord acknowledges and consents to Tenant's installation of three additional transformers on the Premises (the "Transformers"). In lieu of the separate metering requirements in Section 6.2 of the Lease as it pertains to two of the three Transformers, Landlord and Tenant agree that Tenant shall pay Landlord a flat fee of $1,000.00 each month for such overstandard usage of power plus the actual cost of the third transformer per the monthly electrical reading (together the "Supplemental Power Fee"). Landlord shall have the right to require Tenant to remove the Transformer at Tenant's sole cost and expense; provided, however, upon removal of the Transformer, Tenant shall no longer be required to pay Landlord the Supplemental Power Fee.

6. Effect of Tenth Amendment. The Lease shall be deemed amended by this Tenth Amendment. Except as specifically modified by this Tenth Amendment, all of the terms and conditions of the Lease shall continue in full force and effect. In the event of any conflict between the terms of this Tenth Amendment and the terms of the Lease, the terms of this Tenth Amendment shall prevail.

7. Counterparts. This Tenth Amendment may be executed simultaneously in one (1) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one (1) and the same instrument. Each party may execute a facsimile counterpart signature page, which shall constitute a valid and binding obligation of the party signing such facsimile counterpart. Any party signing by facsimile agrees promptly to furnish to the other party, upon request, an original counterpart of this Tenth Amendment.

8. Entire Agreement. This Tenth Amendment and the Lease contains the entire understanding and agreement between the parties relating to the matters covered hereby and supersedes all prior or contemporaneous negotiations, arrangements, agreements, understandings, representations, and statements, whether oral or written, with respect to the matters covered hereby, all of which are merged herein and shall be of no further force or effect whatsoever.

[Signature Page to Follow]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Tenth Amendment as of the day and year first above written.

Landlord

UNIVERSITY OF SOUTHERN CALIFORNIA

a California non-profit public benefit corporation

By: _____
Name: Laurie Stone
Its: Associate Senior VP

Tenant

RESPONSE GENETICS, INC.,
a Delaware corporation

By: _____
Name: _____
Its: CFO

AMENDMENT TO LEASE OF PARKING SPACES

This Amendment to Lease of Parking Spaces (this "**Parking Amendment**"), dated and effective as of May [ ], 2015 (the "**Effective Date**"), for reference purposes only, is entered into by and between the University of Southern California, a California non-profit public benefit corporation ("**Landlord**") and Response Genetics, Inc., a Delaware corporation ("**Tenant**").

RECITALS

A. Landlord and Tenant are parties to that certain Lease of Parking Spaces Agreement dated as of February 3, 2014 (the "**Lease**"), pursuant to which Tenant leases from Landlord up to forty-four (44) parking spaces within that certain parking lot located at the corner of Mission Avenue and Zonal Avenue, Los Angeles, commonly referred to as "**Lot 71**".

B. Subject to the terms and conditions set forth in this Parking Amendment, Landlord and Tenant desire to amend the terms of the Lease.

NOW THEREFORE, for good and valuable consideration received to the full satisfaction of the parties hereto, Landlord and Tenant do hereby covenant and agree as follows:

1. Recitals. The foregoing recitals are hereby incorporated into and made a part of this Parking Amendment by this reference.

2. Definitions. All capitalized terms in this Parking Amendment (including the Recitals), shall have the same meanings ascribed thereto in the Lease, unless otherwise provided for herein.

3. Lease; Use. Effective as of the Effective Date, the first sentence in Section 1.1 of the Lease shall be deleted in its entirety and replaced with the following:

> "Subject to the terms and conditions set forth in this Lease, Landlord hereby leases to Tenant and Tenant hereby leases from Landlord a total of twenty-eight (28) unreserved parking spaces located in Lot 71 (collectively, the "**Lot 71 Parking Spaces**").

4. Rent. Effective as of the Effective Date, Rent shall be reduced to One Thousand Nine Hundred and Sixty Dollars ($1960.00) per month at a rate equal to Seventy Dollars ($70.00) per Lot 71 Parking Space.

5. Effect of Amendment. The Lease shall be deemed amended by this Parking Amendment. Except as specifically modified by this Parking Amendment, all of the terms and conditions of the Lease shall continue in full force and effect. In the event of any conflict

between the terms of this Parking Amendment and the terms of the Lease, the terms of this Parking Amendment shall prevail.

6. Counterparts. This Parking Amendment may be executed simultaneously in one (1) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one (1) and the same instrument. Each party may execute a facsimile counterpart signature page, which shall constitute a valid and binding obligation of the party signing such facsimile counterpart. Any party signing by facsimile agrees promptly to furnish to the other party, upon request, an original counterpart of this Parking Amendment.

7. Entire Agreement. This Parking Amendment and the Lease contains the entire understanding and agreement between the parties relating to the matters covered hereby and supersedes all prior or contemporaneous negotiations, arrangements, agreements, understandings, representations, and statements, whether oral or written, with respect to the matters covered hereby, all of which are merged herein and shall be of no further force or effect whatsoever.

[Signature Page to Follow]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Parking Amendment as of the day and year first above written.

Landlord

UNIVERSITY OF SOUTHERN CALIFORNIA
a California non-profit public benefit corporation

By: _____
Name: Laurie Stone
Its: Associate Senior VP

Tenant

RESPONSE GENETICS, INC.,
a Delaware corporation

By: _____
Name: Kevin R. Harris
Its: CFO

CONSENT AND FIRST AMENDMENT
TO
LOAN AND SECURITY AGREEMENT

This Consent and First Amendment to Loan and Security Agreement (this "**Amendment**") is entered into this 28th day of January, 2016 by and among (a) **SILICON VALLEY BANK** ("**Bank**") and (b) (i) **CANCER GENETICS, INC.**, a Delaware corporation, whose address is 201 Route 17 North, 2nd Floor, Rutherford, New Jersey 07070 ("**Parent**") and (ii) **GENTRIS, LLC**, a Delaware limited liability company, whose address is 133 Southcenter Court, Suite 400, Morrisville, North Carolina 27560 ("**Delaware Subsidiary**"; and together with Parent, individually and collectively, jointly and severally, "**Borrower**").

RECITALS

A. Bank and Borrower have entered into that certain Loan and Security Agreement dated as of May 7, 2015 (as the same may from time to time be further amended, modified, supplemented or restated, the "**Loan Agreement**").

B. Bank has extended credit to Borrower for the purposes permitted in the Loan Agreement.

C. Borrower has requested that Bank amend the Loan Agreement to (i) revise a financial covenant, (ii) waive existing Events of Default, and (iii) make certain other revisions to the Loan Agreement as more fully set forth herein.

D. Bank has agreed to so amend certain provisions of the Loan Agreement, but only to the extent, in accordance with the terms, subject to the conditions and in reliance upon the representations and warranties set forth below.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing recitals and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and intending to be legally bound, the parties hereto agree as follows:

1. Borrower acknowledges, confirms and agrees that no additional Credit Extensions shall be made under the Loan Agreement until the occurrence of the Equity Event. As used herein, "Equity Event" means confirmation by Bank that Borrower has received, on or after November 1, 2015, unrestricted and unencumbered net cash proceeds in an amount of at least Twenty Five Million Dollars ($25,000,000.00) from the issuance and sale by Borrower of its equity securities with investors acceptable to Bank.

2. Definitions. Capitalized terms used but not defined in this Amendment shall have the meanings given to them in the Loan Agreement.

3. Amendments to Loan Agreement.

3.1 Section 6.11 (Lockbox). The Loan Agreement shall be amended by deleting the last sentence of Section 6.11 thereof in its entirety.

3.2 Section 6.13 (Transfer of Accounts). The Loan Agreement shall be amended by interesting the following new Section 6.13 to appear following Section 6.12:

> **6.13 Transfer of Accounts.** Borrower shall deliver to Bank, on or before December 31, 2015, evidence satisfactory to Bank in its sole but reasonable discretion that Borrower and its Subsidiaries have closed all of their accounts at other financial institutions (other than the CD Accounts and deposit accounts used exclusively for payroll, payroll taxes and other employee wage and benefit payments to or for the benefit of Borrower's employees and identified to Bank by Borrower as such) and have transferred all balances therein to accounts with Bank and Bank's Affiliates. Any accounts not transferred to Bank on or prior to December 31, 2015, shall be subject to a Control Agreement in accordance with Section 6.6(b) hereof.

3.3 Section 8.2(a) (Covenant Default). Section 8.2(a) is amended in its entirety and replaced with the following:

> (a) Borrower fails or neglects to perform any obligation in Sections 6.2, 6.4, 6.5, 6.6, 6.7, 6.8(b), 6.10, or 6.13, or violates any covenant in Section 7; or

3.4 Section 13 (Definitions). The following term and its respective definition set forth in Section 13.1 is amended in its entirety and replaced with the following:

> **"Quick Assets"** is (a) for each testing period (other than the month ending October 31, 2015) Borrower's unrestricted cash and Cash Equivalents maintained with Bank plus net billed account receivables, determined according to GAAP, and (b) for the month ending October 31, 2015, Borrower's unrestricted cash and Cash Equivalents plus net billed account receivables, determined according to GAAP.

3.5 Schedule 1 to Compliance Certificate. Schedule 1 to the Compliance Certificate is amended in its entirety and replaced with the form of Schedule 1 attached as Exhibit A hereto.

4. Limitation of Amendments.

4.1 The amendments set forth in Section 3 above are effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right or remedy which Bank may now have or may have in the future under or in connection with any Loan Document.

4.2 This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, except as herein amended, are hereby ratified and confirmed and shall remain in full force and effect.

5. Waivers. Bank hereby waives Borrower's existing defaults under the Loan Agreement by virtue of Borrower's failure to comply with the Adjusted Quick Ratio financial

covenant set forth in Section 6.7(a) thereof as of the months ended May 31, 2015, June 30, 2015, July 31, 2015, August 31, 2015, September 30, 2015, and October 31, 2015 (the "**Existing Defaults**"). Bank's waiver of the Existing Defaults shall apply only to the foregoing specific periods. Borrower hereby acknowledges and agrees that except as specifically provided herein, nothing in this Section or anywhere in this Amendment shall be deemed or otherwise construed as a waiver by Bank of any of its rights and remedies pursuant to the Loan Documents, applicable law or otherwise.

6. Consent. Borrower has informed Bank that Borrower acquired certain assets of Response Genetics, Inc. pursuant to that certain Amended and Restated Asset Purchase Agreement (the "**Asset Purchase**"). Bank hereby consents to the Asset Purchase and agrees that the Asset Purchase shall not in and of itself constitute an Event of Default under Section 7.3 of the Loan Agreement; provided, however, that the Asset Purchase shall not otherwise result in an Event of Default under the Loan Agreement. The consent provided for herein is a one-time consent relating only to the Asset Purchase, and shall not be deemed to constitute an agreement by the Bank to any future consent or waiver of the terms and conditions of the Loan Agreement.

7. Representations and Warranties. To induce Bank to enter into this Amendment, Borrower hereby represents and warrants to Bank as follows:

7.1 Immediately after giving effect to this Amendment (a) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (b) no Event of Default has occurred and is continuing;

7.2 Borrower has the power and authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment;

7.3 The organizational documents of Borrower delivered to Bank on the Effective Date remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

7.4 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, have been duly authorized;

7.5 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not and will not contravene (a) any law or regulation binding on or affecting Borrower, (b) any contractual restriction with a Person binding on Borrower, (c) any order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (d) the organizational documents of Borrower;

7.6 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of,

or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower, except as already has been obtained or made; and

7.7 This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

8. Ratification of Perfection Certificates. Parent hereby ratifies, confirms and reaffirms, all and singular, the terms and disclosures contained in a certain Perfection Certificate dated as of the May 7, 2015 between Parent and Bank, and acknowledges, confirms and agrees the disclosures and information Parent provided to Bank in said Perfection Certificate have not changed, as of the date hereof. Delaware Subsidiary hereby ratifies, confirms and reaffirms, all and singular, the terms and disclosures contained in a certain Perfection Certificate dated as of May 7, 2015 between Delaware Subsidiary and Bank, and acknowledges, confirms and agrees the disclosures and information Delaware Subsidiary provided to Bank in said Perfection Certificate have not changed, as of the date hereof.

9. No Defenses of Borrower. Borrower hereby acknowledges and agrees that Borrower has no offsets, defenses, claims, or counterclaims against Bank with respect to the Obligations, or otherwise, and that if Borrower now has, or ever did have, any offsets, defenses, claims, or counterclaims against Bank, whether known or unknown, at law or in equity, all of them are hereby expressly WAIVED and Borrower hereby RELEASES Bank from any liability thereunder.

10. Integration. This Amendment and the Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of this Amendment and the Loan Documents merge into this Amendment and the Loan Documents.

11. Counterparts. This Amendment may be executed in any number of counterparts and all of such counterparts taken together shall be deemed to constitute one and the same instrument.

12. Effectiveness. This Amendment shall be deemed effective upon (a) the due execution and delivery to Bank of this Amendment by each party hereto, and (b) Borrower's payment of Bank's legal fees and expenses incurred in connection with this Amendment.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be duly executed and delivered as of the date first written above.

BANK

SILICON VALLEY BANK

By: _____

Name: THOMAS F. GORDON

Title: MANAGING DIRECTOR

BORROWER

CANCER GENETICS, INC.

By: _____

Name: Edward J. Sitar

Title: Chief Financial Officer

GENTRIS, LLC

By: _____

Name: Edward J. Sitar

Title: Chief Financial Officer

Exhibit A

Schedule 1 to Compliance Certificate

Financial Covenants of Borrower

In the event of a conflict between this Schedule and the Loan Agreement, the terms of the Loan Agreement shall govern.

Dated: _____

Maintain at all times, subject to periodic reporting as of the last day of each month, unless otherwise noted, computed with respect to the Borrower only, and not on a consolidated basis, either of the following milestones:

1. **Adjusted Quick Ratio** (Section 6.7(a)

Required: 1.50:1.00

Actual: _____

A.	Aggregate value of the unrestricted cash and Cash Equivalents of Borrower maintained with Bank (except for the month ending October 31, 2015, for which Borrower shall list the aggregate value of the unrestricted cash and Cash Equivalents of Borrower)	$
B.	Aggregate value of the net billed accounts receivable of Borrower	$
C.	Quick Assets (the sum of lines A and B)	$
D.	Aggregate value of obligations and liabilities of Borrower to Bank	$
E.	Aggregate value of obligations that should, under GAAP, be classified as liabilities on Borrower's balance sheet, including all Indebtedness and not otherwise reflected in line D above, that mature within one (1) year	$
F.	Current Liabilities (the sum of lines D and E)	$
G	Aggregate value of amounts received or invoiced in advance of performance under contracts and not yet recognized as revenue.	$
H.	Adjusted Quick Ratio (line D divided by (line F minus line G))	_____

Is line H equal to or greater than 1.50:1:00?

_____ No, not in compliance

_____ Yes, in compliance

_____ N/A (in compliance with Fixed Charge Coverage Ratio)

II. **Fixed Charge Coverage Ratio** (Section 6.7(b))

Required: 1.25:1.00

Actual: _____

A.	Net Income of Borrower	$
B.	Interest Expense of Borrower	$
C.	To the extent included in the determination of Net Income:	$
	1. depreciation expense of Borrower	$
	2. amortization expense of Borrower	$
	3. income tax expense of Borrower	$
	4. The sum of lines 1 through 3	$
D.	EBITDA (line A plus line B plus line C(4))	$
E.	unfunded capital expenditures of Borrower	$
F.	increases in capitalized development costs of Borrower (if any)	$
G.	cash taxes of Borrower	$
H.	cash dividends of Borrower	$
I.	Adjusted EBITDA (line D minus lines E through H)	$
J.	Borrower's Fixed Charges:	
	1. scheduled principal payments on all outstanding Indebtedness of Borrower for the following three (3) months	$
	2. actual interest payments on all outstanding Indebtedness of Borrower for the three (3) months then-ended	$
	3. Sum of lines J(1) and J(2)	$
K	Fixed Charge Coverage Ratio (line I divided by line J(3))	_____

Is line K equal to or greater than 1.25:1:00?

_____ No, not in compliance

_____ Yes, in compliance

_____ N/A (in compliance with Adjusted Quick Ratio)

1929059.2

Exhibit 21.1

Subsidiaries of Cancer Genetics, Inc.

Name	State of Incorporation or Organization
Cancer Genetics Italia, S.r.l.	Italy
Cancer Genetics (India) Private Limited	India
Gentris, LLC	Delaware
BioServe Biotechnologies (India) Private Limited	India

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statement Nos. 333-191520, 333-191521, 333-196198 and 333-205903 on Form S-8 and in Registration Statement No. 333-196374 on Form S-3 of Cancer Genetics, Inc. and subsidiaries of our report dated March 10, 2016, relating to our audits of the consolidated financial statements appearing in the Annual Report on Form 10-K of Cancer Genetics, Inc. and subsidiaries for the year ended December 31, 2015.

/s/ RSM US LLP

New York, New York
March 10, 2016

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Panna L. Sharma, certify that:

1. I have reviewed this annual report on Form 10-K of Cancer Genetics, Inc. (the "Registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Registrant as of, and for, the periods presented in this report;

4. The Registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Registrant and have:

a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c. evaluated the effectiveness of the Registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. disclosed in this report any change in the Registrant's internal control over financial reporting that occurred during the Registrant's most recent fiscal quarter (the Registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the Registrant's internal control over financial reporting; and

5. The Registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Registrant's auditors and the audit committee of the Registrant's board of directors (or persons performing the equivalent functions):

a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Registrant's ability to record, process, summarize and report financial information; and

b. any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant's internal control over financial reporting.

Date: March 10, 2016

/s/ Panna L. Sharma
Panna L. Sharma
President, Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Edward J. Sitar, certify that:

1. I have reviewed this annual report on Form 10-K of Cancer Genetics, Inc. (the "Registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Registrant as of, and for, the periods presented in this report;

4. The Registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Registrant and have:

a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c. evaluated the effectiveness of the Registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. disclosed in this report any change in the Registrant's internal control over financial reporting that occurred during the Registrant's most recent fiscal quarter (the Registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the Registrant's internal control over financial reporting; and

5. The Registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Registrant's auditors and the audit committee of the Registrant's board of directors (or persons performing the equivalent functions):

a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Registrant's ability to record, process, summarize and report financial information; and

b. any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant's internal control over financial reporting.

Date: March 10, 2016

/s/ Edward J. Sitar
Edward J. Sitar
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the annual report of Cancer Genetics, Inc. (the "Company") on Form 10-K for the year ended December 31, 2015 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Panna L. Sharma, President, Chief Executive Officer and Director of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 10, 2016

/s/ Panna L. Sharma

Panna L. Sharma
President, Chief Executive Officer and Director

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the annual report of Cancer Genetics, Inc. (the "Company") on Form 10-K for the year ended December 31, 2015 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Edward J. Sitar, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 10, 2016

/s/ Edward J. Sitar
Edward J. Sitar
Chief Financial Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.