COMBIMATRIX CORP

FORM 10-K
(Annual Report)

Filed 03/03/17 for the Period Ending 12/31/16

Address	310 GODDARD SUITE 150 IRVINE, CA 92618
Telephone	949-753-0624
CIK	0001383183
Symbol	CBMX
SIC Code	8090 - Miscellaneous Health And Allied Services, Not
Industry	Healthcare Facilities & Services
Sector	Healthcare
Fiscal Year	12/31

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-K

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2016

OR

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE TRANSITION PERIOD FROM TO .

Commission File Number 001-33523

COMBIMATRIX CORPORATION
(Exact name of registrant as specified in its charter)

DELAWARE	**47-0899439**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
310 GODDARD, SUITE 150, IRVINE, CA	**92618**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(949) 753-0624**

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

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, $0.001 par value	**The NASDAQ Stock Market LLC**

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

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

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 [X]

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

Indicate by check mark that 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. [X]

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

Large accelerated filer [ ]	Accelerated filer [ ]	Non-accelerated filer [ ] (Do not check if a smaller reporting company)	Smaller reporting company [X]

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

As of June 30, 2016, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the registrant's common stock held by non-affiliates was $4,708,000, based upon the last reported sale price of the registrant's common stock on that date as reported by NASDAQ. For the purposes of the foregoing calculation only, all of the registrant's directors, executive officers and persons known to the registrant to hold ten percent or greater of the registrant's outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not a determination for other purposes. The number of shares of the registrant's Common Stock, $0.001 par value, outstanding on February 28, 2017, was 2,864,633.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for its 2017 Annual Meeting of Stockholders (the "Proxy Statement"), to be filed with the Securities and Exchange Commission (the "SEC") pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K (the "Form 10-K"), are incorporated by reference into Part III, Items 10-14 of this Form 10-K. Except for the portions of the Proxy Statement specifically incorporated by reference in this Form 10-K, the Proxy Statement shall not be deemed to be filed as a part hereof.

FORM 10-K ANNUAL REPORT
FISCAL YEAR ENDED DECEMBER 31, 2016
COMBIMATRIX CORPORATION

PART I

CAUTIONARY STATEMENT

This report contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical fact included in this report, are forward-looking statements. Reference is made in particular to the description of our plans and objectives for future operations, assumptions underlying such plans and objectives, and other forward-looking statements included in this report. Such statements may be identified by the use of forward-looking terminology such as "may," "will," "should," "would," "could," "expect," "believe," "estimate," "anticipate," "intend," "plan," "predict," "seek," "potential," "more likely to," "with a view to," "our future success depends," "continue," "focus," "ongoing," or similar terms, variations of such terms or the negative of such terms, and include, but are not limited to, statements regarding projected results of operations, capital expenditures, earnings, management's future strategic plans, development of new technologies and services, litigation, regulatory matters, market acceptance and performance of our services, the success and effectiveness of our technologies and services, our ability to retain and hire key personnel, the competitive nature of and anticipated growth in our markets, market size, market position of our services, marketing efforts and partnerships, liquidity and capital resources, our accounting estimates, and our assumptions and judgments. Such statements are based on management's current expectations, estimates and projections about our industry, management's beliefs, and certain assumptions made by us, all of which are subject to change. These forward looking statements are not guarantees of future results and are subject to a number of risks, uncertainties and assumptions that are difficult to predict and that could cause actual results to differ materially and adversely from those described in the forward-looking statements. The risks and uncertainties referred to above include, but are not limited to, our ability to grow revenue and improve gross margin; delays in achieving cash flow-positive operating results; the risk that operating expenses are not reduced or increase; the risk that test volumes and reimbursements level off or decline; the risk that payors decide to not cover our tests or to reduce the amounts they are willing to pay for our tests; the risk that we will not be able to grow our business as quickly as we need to; our ability to successfully increase the volume of our existing tests, expand the number of tests offered by our laboratory, increase the number of customers and partners and improve reimbursement for our testing; market acceptance of chromosomal microarray analysis, or CMA, as a preferred method over karyotyping; the rate of transition to CMA from karyotyping; changes in consumer demand; third-party reimbursement of CMA; our ability to attract and retain a qualified sales force and key technical personnel; our ability to successfully develop and introduce new technologies and services; rapid technological change in our markets; supply availability; our ability to bill and obtain reimbursement for highly specialized tests; the rate of growth of the in vitro fertilization, or IVF, diagnostic testing market; our ability to comply with regulations to which our business is subject, including changes in coding and reimbursement methods; legislative, regulatory and competitive developments in markets in which we and our subsidiaries operate; our limited market capitalization; our ability to obtain additional financing for working capital on acceptable terms and in a timely manner; future economic conditions; other circumstances affecting anticipated revenues and costs; and other factors as more fully disclosed in our discussion of risk factors in Item 1A of Part II of this report. These forward-looking statements speak only as of the date of this report and we expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions, or circumstances on which any such statement is based, except as otherwise required by law. Additional factors that could cause such results to differ materially from those described in the forward-looking statements are set forth in connection with the forward-looking statements.

As used in this report, "the Company," "we," "us" and "our" refer to CombiMatrix Corporation and its majority-owned subsidiary companies.

Item 1. BUSINESS

Overview

We were originally incorporated in October 1995 as a California corporation. In September 2000, we were reincorporated as a Delaware corporation and in December 2002, we merged with, and became a wholly owned subsidiary of, Acacia Research Corporation, or Acacia. In August 2007, we split off from Acacia and became publicly traded on The NASDAQ Stock Market. As a result of the split off, we ceased to be a subsidiary of, or affiliated with Acacia.

We are a family health-focused clinical molecular diagnostic laboratory specializing in pre-implantation genetic screening, prenatal diagnosis, miscarriage analysis, and pediatric developmental disorders. We strive to provide best-in-class clinical laboratory support to healthcare professionals, allowing them to maximize the clinical utility of their patients' test results and to optimize patient care. Our testing focuses on advanced technologies, including single nucleotide polymorphism, or SNP, chromosomal microarray analysis, next-generation sequencing, fluorescent *in situ* hybridization, or FISH, and high resolution chromosome analysis (also referred to as karyotyping). Our approach to testing is to offer sophisticated technology along with high quality clinical support to our ordering physicians and their patients. Our laboratory facilities and corporate headquarters are located in Irvine, California.

We also own a one-third minority interest in Leuchemix, Inc., a private drug development company focused on developing a series of compounds to address a number of oncology-related diseases.

Market Overview

We believe the molecular diagnostics market is one of the fastest-growing segments within the overall diagnostics market. Molecular diagnostics, within the context of this report, refers to the use of an individual's genetic analysis to guide medical decision-making in the area of disease diagnosis and post-diagnostic management. Innovative approaches to re-sequencing of the human genome and a growing clinical appreciation and acceptance of the utility of genomic information in guiding clinical care have enabled the rapid growth of this market. We believe that the use of molecular diagnostics will continue to grow in the coming years and will have a significant impact on the way in which medicine is practiced.

Genes and Proteins

The human body is composed of billions of cells, each containing DNA that encodes the basic instructions for cellular function. The complete set of an individual's DNA is called the genome, and is organized into 23 pairs of chromosomes, which are further divided into smaller regions called genes. Each gene is comprised of a specific sequence involving four nucleotides (also called bases): adenine (A), thymine (T), guanine (G) and cytosine (C). These bases are complementary to one another in that A binds only with T and G binds only with C. This interaction forms base pairs, and is responsible for the double helix structure of DNA.

The human genome has approximately three billion nucleotides. The order of these nucleotides is known as the DNA sequence. When a gene is turned on, or expressed, the genetic information encoded in the DNA is transcribed (or copied) to an intermediate form, called messenger RNA, or mRNA. The mRNA code is then translated into a specific protein product. Proteins direct most cellular functions, some of which lead to the expression of individual traits, such as eye color or height. Some level of normal variability is seen throughout the genome; however, abnormal variations in the sequence of a gene or a region of the genome, such as deletions, duplications, or point mutations, can interfere with the normal physiology of the cells in which that gene is expressed. These abnormal variations may lead to disease, a predisposition to a disease, or an atypical response to certain types of drugs.

Genes and Molecular Diagnostics

There are a number of methods of genetic analysis that are used in diagnostic genetic testing. These methods broadly fall into three main categories: (i) sequencing of individual base pairs of DNA; (ii) assessing DNA copy number variation; and (iii) analyzing gene expression. In some diagnostic situations, it is only necessary to analyze either a single gene or a small number of genes. This diagnostic testing can be accomplished by a number of different techniques, depending on the situation. However, when a larger number of genetic factors need to be analyzed, one of the most efficient methods of analysis is to use a CMA, also referred to as microarray, which has the ability to measure millions of DNA variations in a single experiment.

Microarray Testing for DNA Copy Number Variation

Microarray testing assesses genome-wide copy number variation by comparing a patient's genomic DNA to a reference genome to evaluate for relative losses and gains. Some losses and gains of genomic information are known to cause genetic disorders or predispose a person to a genetic disorder. Other gains and losses are considered benign because they occur in regions of the genome that are known to show variability in the normal population and have not been associated with any disease or disease process. Microarray testing is a powerful tool because it allows for simultaneous analysis of copy number variation across the entire genome at a high resolution in a single assay, providing a comprehensive analysis of all 46 chromosomes in a single test. Unlike gene expression arrays, which evaluate mRNA levels to monitor the activity of specific genes, DNA-based microarray analysis identifies quantitative defects in the number of copies of distinct segments of genomic DNA in order to test for conditions that are known to be associated with gains and losses of chromosomal information. Throughout this report, the terms microarray and array are used interchangeably, but always refer to DNA-based microarray testing.

Our Solutions for Molecular Diagnostics and Microarray Testing

In our laboratory facilities, we use the Illumina Infinium CytoSNP-850K BeadChip genome-wide array for our prenatal diagnostics and postnatal developmental disorders markets. Illumina's CytoSNP-850K microarray is comprised of 50 nucleotide base, or 50-mer, probes attached to individual silica beads, which self-assemble into microwells on the array's surface. Each single nucleotide polymorphism, or SNP, probe is represented with a high degree of redundancy to improve sensitivity by increasing the signal-to-noise ratio. To test a patient's genomic DNA, it is first fragmented and then amplified. These fragments are allowed to hybridize with the complementary DNA on the 50-mer probes, and after hybridization, each fragment is extended by a fluorescently-labeled nucleotide (i.e., an A, T, C, or G). The fluorescent signal is subsequently amplified and detected by a scanner, which measures the intensity of each signal and the specific nucleotide detected for each SNP. This information is then compared to a control cluster, which is generated from pooling over 100 normal genomes tested using the same assay and is then evaluated for differences in copy number (i.e., deletions and duplications), as well as for genotypic information (i.e., homozygosity versus heterozygosity). For our miscarriage analysis testing, we utilize Illumina's HumanCytoSNP-12 BeadChip array. These two microarray platforms are similar in many respects. However, as miscarriage analysis is performed primarily to identify the incorrect number of chromosomes (or "aneuploidy"), the slightly lower-resolution CytoSNP-12 microarray provides a more cost-effective solution.

Next Generation Sequencing for DNA Copy Number Variation

For the IVF testing market, we utilize next generation sequencing, or NGS, technology by Illumina's VeriSeq™ preimplantation genetic screening, or PGS, assay to evaluate biopsied embryonic cells for whole chromosome and large segmental aneuploidies. DNA from one or more embryonic biopsied cells is amplified and then simultaneously fragmented and tagged with unique adapter sequences. Next, the samples undergo additional limited amplification, which utilizes the adapter sequences. This process also adds index sequences which is used to pool up to 24 samples in a single library for the sequencing process. The sequence data is de-multiplexed utilizing the index sequence information, aligned to the Human Genome Reference, and the copy number variances of these sequences are visualized using third-party analysis software.

Diagnostics Market Segmentation

In general, our diagnostic services and test menu are focused around our highly specialized genomic microarray and NGS technologies. While there are risks associated with billing and reimbursement of these highly specialized tests, we believe that our market position and test portfolio provide significant leverage in the rapidly growing personalized genomics/diagnostics space. Our test menu is further supplemented by what may be considered more routine tests, which allow us access to a broader, yet synergistic market. Our overall clinical market can be divided into four primary markets: (i) IVF testing, (ii) miscarriage analysis (also referred to as products of conception analysis or POC), (iii) prenatal diagnostic testing; and (iv) postnatal developmental disorder testing. Our research indicates that the global market for prenatal and newborn genetic testing is estimated to be valued at $8.4 billion by 2019. In addition, our market analysis indicates that our potential client base for these markets can be divided into multiple general customer groups, as detailed below. Our services are therefore tailored to meet the specific needs of each of these customer groups.

In Vitro Fertilization, or IVF, Diagnostic Testing

- This market segment consists of approximately 480 IVF clinics nationwide. Testing is focused on screening embryos for aneuploidy and is primarily referred to as PGS. A significant proportion of embryos created through IVF will have an abnormal chromosomal complement, and this percentage dramatically increases with age. The goal of PGS is to determine the chromosomal make-up of each embryo to help the IVF specialist identify the most suitable embryo(s) for transfer. Based on our market research, the majority of IVF clinics in the United States do not have an in-house laboratory capable of performing this high complexity testing, and therefore must send embryo biopsy samples out to reference laboratories. Commercial laboratories providing PGS utilize a variety of technology platforms, including: real-time polymerase chain reaction (RT-PCR), array comparative genomic hybridization (aCGH), SNP microarray, and next-generation sequencing (NGS). We believe this market segment is rapidly growing due to the impact of delayed childbearing, as well as the negative impact of increased obesity on fertility. As most insurers currently do not provide coverage benefits for PGS, our business model requires billing the patient up-front for our services, typically by credit card, or billing the fertility clinic providing the IVF services, both of which eliminate third-party reimbursement risks. We estimate that the current total U.S. market for diagnostic testing in this segment to be approximately $125 million per year.

Miscarriage Analysis

- *Community-based hospital pathology laboratories and regional reference laboratories:* This segment of the market is characterized by hospitals that provide basic laboratory services but do not offer complex genetic testing, such as SNP microarrays. Generally speaking, in the past decade, most community hospitals have relied on traditional methods of chromosomal analysis, such as karyotyping or FISH for miscarriage testing, which is typically sent out to a specialty laboratory. However, based on more recent, highly compelling data demonstrating the superiority of microarray testing to karyotyping, we believe significant growth opportunities exist in this segment. This segment of the market is characterized by a preponderance of clients that require us to bill the patients' insurers directly, as opposed to engaging in an institutional, direct-bill relationship. We estimate the current total U.S. market for diagnostic testing in this segment to be approximately $300 million per year.

- *Physician groups:* In the developmental genetics market, physician groups collectively constitute a significant market opportunity. This segment of the market typically outsources all of their genetic testing services, meaning they require a global level of service that necessitates processing all aspects of patient billing. The physicians that make up this market include reproductive endocrinologists, OB-GYNs and maternal fetal medicine specialists, or MFMs.

- *IVF Clinics:* In this market, miscarriage analysis is performed for patients who experience a successful implantation of the embryo, but end up being unable to sustain the pregnancy.

Prenatal Diagnostic Testing

- *Physician groups:* Prenatal diagnostic testing is performed on samples retrieved from specific diagnostic procedures performed during pregnancy. This testing can also be used as a confirmatory diagnostic analysis following maternal serum screening or non-invasive prenatal testing, or NIPT, or as a standalone diagnostic assay. There are two primary diagnostic procedures utilized to obtain a fetal sample: (i) chorionic villus sampling, in which a small sample of the placenta is biopsied; or (ii) amniocentesis, in which a small amount of amniotic fluid is collected. These procedures are performed by MFM specialists and some OB-GYNs. Typically, these physicians order testing directly from our laboratory. This market continues to be important as diagnostic testing during pregnancy is critical to ongoing maternal clinical care. We estimate that the current total U.S. market for diagnostic testing in this segment to be approximately $100 million per year.

Postnatal Diagnostic Testing

- *Pediatric geneticists, pediatric neurology clinics and Children's Hospitals:* This market segment, particularly the Children's Hospital sector, generally has relatively comprehensive laboratory capabilities and performs most basic genetic and chromosomal testing in-house, such as chromosome analysis, FISH and PCR-based tests. These facilities typically provide comprehensive genetic counseling to their patients, which is a key component in the clinical evaluation and utilization of complex genomic assays in the pediatric diagnostic arena. Due to economic conditions, some institutions find themselves in the untenable situation of having limited access to third-party manufactured kit components and being unable to internalize such highly specialized genomic testing platforms due to lack of expertise in this area. This segment of the market typically outsources the testing completely. From a billing perspective, many of the customers in this segment prefer the direct billing model, and individual test pricing is negotiated with each institution. We estimate that the current total U.S. market for diagnostic testing in this segment to be approximately $200 million per year.

Technologies

Our objective is to provide a suite of molecular diagnostic tests utilizing the following technologies:

SNP Microarrays

The Illumina microarray that we utilize was designed by a consortium of academic and commercial laboratories (including CombiMatrix), using content recommendations from the International Collaboration for Clinical Cytogenomics and the Sanger Institute. The resulting assay is a dense, high-resolution, whole-genome array that covers 3,262 dosage-sensitive genes that are known to be associated with genetic disorders and/or syndromes. Probe coverage is highly focused in regions of known clinical significance, with additional probes to provide coverage for the remainder of the genome, or the "genomic backbone". In addition to copy number evaluation, SNP probes provide genotypic information that can indicate imprinting disorders, regions of homozygosity that may contain a disease-causing gene, shared ancestry (which can lead to an increased risk for an autosomal recessive disorder in a child), and in the case of prenatal and miscarriage analysis, identification of partial and complete molar pregnancies and maternal cell contamination.

Meta-analyses and large prospective studies have demonstrated that microarray testing provides a significant increase in the detection rate of chromosomal abnormalities compared to standard cytogenetic testing (i.e., karyotyping and evaluation of the tips of chromosomes, called subtelomeres, by FISH). Although the percent increase varies based on the type of sample being tested (i.e., miscarriage tissue, pediatric sample, prenatal sample), the data has shown that standard chromosomal analysis misses many disorders that are easily identifiable by microarray testing. The ability to identify a specific cause for a disorder or the cause of a pregnancy loss assists not only with diagnostic management, but also with anticipatory care.

SNP Microarray Analysis on FFPE Tissue

Although fresh tissue from a miscarriage is ideal, in some cases, it is not available. In these situations, the tissue has typically been processed by a pathology laboratory using formalin to fix the tissue and embedding it in a paraffin block for storage (referred to as formalin fixed paraffin embedded or FFPE sample). One of the major benefits of using a microarray to evaluate the fetal chromosomes instead of karyotyping is that microarrays are DNA-based, meaning they can analyze DNA from tissue whether or not it is still living, unlike karyotyping which requires fresh, living tissue. To be a comprehensive service provider, it is critical that our microarray platform be able to evaluate genomic alterations not just in fresh miscarriage tissue, but also tissue from FFPE samples. Traditionally, working with FFPE samples has proven challenging because the fixation and storing process degrades the quality of the DNA. We believe we have successfully adapted our array protocol for the optimal analysis of FFPE specimens by using a specialized process, in which the fragmented DNA is restored to longer segments by ligating free DNA ends together prior to analysis. This restoration step makes the array particularly useful in analyzing DNA samples that are of poorer quality, such as older samples or tissue that has been strongly fixed in formalin. We believe this process developed by our laboratory has allowed us to successfully analyze this challenging sample type, which is not amenable to testing by other platforms.

Next Generation Sequencing for IVF Testing

The Illumina VeriSeq PGS kit has been stringently validated by clinical laboratories world-wide for the past four years. While aCGH technology (specifically, Illumina's 24sure microarray) was considered to be an acceptable platform for PGS testing in years past, NGS technology has since been repeatedly demonstrated to be at least as good, if not better than, aCGH in terms of sensitivity and specificity. VeriSeq PGS offers the added advantage of increased sensitivity for the presence of mosaic abnormalities (i.e. when more than one cell line is present). This is in large part due to the BlueFuse Multi Analysis software that we use, which is part of the VeriSeq PGS kit. With BlueFuse, the data processing algorithm has been optimized to create a smoother plot and a much larger dynamic range, making it easier to separate true abnormalities from noise. Not only is VeriSeq PGS able to accurately identify whole chromosome aneuploidies, it is also able to detect segmental aneuploidies of 20 Mb or greater. Segmental aneuploidies of this size are considered detrimental to embryo survival and targeted assays that are not capable of identifying segmental aneuploidies have been associated with worse outcomes compared to whole-genome assays such as VeriSeq PGS. These outcomes included: decreased implantation rates, increased miscarriage rates, and decreased ongoing pregnancy rates.

Our Services

Overview

We utilize the latest technologies to deliver molecular diagnostic services primarily in the area of reproductive health for the diagnosis of developmental disorders associated with intellectual disability, congenital anomalies, dysmorphic features, and autism spectrum disorders. Such disorders may be diagnosed in the prenatal period, the pediatric period, or as one of the factors leading to a miscarriage or stillbirth.

Miscarriage, Intrauterine Fetal Death and Stillbirth Analysis

As with prenatal and pediatric genetics, karyotyping has long been considered the standard of care for evaluating pregnancy losses for chromosomal disorders. However, tissue from miscarriages, fetal deaths and stillbirths is difficult to culture (grow) in the laboratory, and this culturing process is required in order to perform a karyotype. Microarray analysis is particularly useful in this arena, as it does not depend on the successful growth of a cell culture. Instead, it relies solely on the sample's DNA, which can be directly extracted from nearly any fetal tissue sample. While karyotyping fails to provide a result in between 20-40% of these cases, microarray testing is able to provide a result greater than 90% of the time. This is particularly beneficial in the analysis of first trimester pregnancy loss, as it is estimated that 50-60% of all first trimester losses are due to chromosomal abnormalities. Being able to identify the cause of the miscarriage in one out of every two women means that physicians are better able to provide personalized reproductive counseling and plan future pregnancy management for a much larger segment of their patient population.

IVF: Preimplantation Genetic Screening

In IVF testing, PGS was traditionally performed at cleavage stage (Day 3) embryos by biopsying one or two cells of the early stage embryos for testing. In recent years, there has been a marked shift toward biopsying multiple cells from the trophectoderm of blastocyst (Day 5) embryos after it was demonstrated that Day 3 biopsies were much more harmful to the embryo than Day 5 biopsies. PGS is most often utilized when there is a history of reproductive failure, recurrent pregnancy loss, a previous aneuploid pregnancy, family history of aneuploidy, or advanced maternal age. We believe that approximately 25% of IVF cycles in the United States involve the use of PGS. Throughout the years, a number of different technologies have been employed, including FISH, quantitative PCR, array CGH, SNP microarray, and NGS. At present, it is not clear which of these technologies will prove optimal for routine clinical use. There are a number of studies indicating that NGS may have the greatest accuracy and the most sensitivity with respect to the detection of mosaicism; however, the clinical relevance of this information remains to be determined.

Developmental Disorders: Prenatal and Pediatric Care

The focus of our prenatal and postnatal microarray is to assist in diagnosing genomic syndromes associated with intellectual disability, developmental delays, congenital anomalies, dysmorphic features and autism spectrum disorders.

Prenatal : In 2013, following the publication of a large, prospective, multicenter trial designed to compare karyotyping to microarray analysis in the prenatal population (Wapner et al.), the American College of Obstetricians and Gynecologists, or ACOG, which is the governing body for the practice of medicine in the area of obstetrics and gynecology, recommended that microarray analysis be performed *in lieu of* standard karyotyping when fetal anomalies are present on ultrasound, and any time there is a fetal death or stillbirth. The ACOG also recommended that microarray analysis be offered as an alternative to standard karyotyping for any patient undergoing a prenatal diagnostic procedure, given the increased sensitivity of microarray analysis to detect chromosomal abnormalities, even following a normal karyotype result.

CMA provides critical information for families and their physicians. In prenatal care, it allows the physician and patient to make better pregnancy management and care decisions, as well as allowing for the opportunity to provide anticipatory care with respect to abnormalities that may be associated with a specific disorder that may not yet be recognizable. Such knowledge can inform decisions about where to deliver (such as at a tertiary care center for an infant with complex abnormalities) and how aggressive to be with neonatal support in very severe cases. In pediatric care, the same is true. Once the cause of a child's development disorder and/or congenital anomalies has been identified, parents, teachers and physicians can work toward ensuring that appropriate medical and educational care decisions are made based on the child's condition. As with prenatal care, microarray analysis can assist in providing appropriate anticipatory care, such as initiating screening tests at an earlier age when the child's disorder is associated with an increased risk of a specific disorder or disease complication.

Postnatal : In 2014, the American Academy of Pediatrics, or AAP, released a clinical report in which it proclaimed microarray analysis as a first tier test for children with intellectual disability or global developmental delays. Prior to that, in 2010, the American College of Medical Genetics, or ACMG, which is the governing body for the utilization of genetic testing, recommended microarray testing *in lieu of* standard karyotyping children with intellectual disabilities, developmental disorders, congenital abnormalities, dysmorphic features, and autism/autism spectrum disorders based on the fact that microarray analysis *doubled* the detection rate of chromosomal abnormalities in these patients.

The Evolution of Our Clinical Microarray Testing

In 2006, we introduced our first developmental disorders microarray, which detected over 50 different genetic disorders in one multiplexed analysis. In October 2006, the U.S. Food and Drug Administration, or FDA, indicated that this test did not require approval under its guidance as it did not meet the definition of an *In Vitro* Diagnostics Multivariate Index Analysis, or IVDMIA. Following this determination, we launched our microarray test under the Clinical Laboratory Improvement Amendments of 1988, or CLIA, guidelines for use in the clinical care of patients. Since then, we have launched several upgrades of this test. Our current microarray offering is capable of identifying more than 500 recurrent syndromic and non-syndromic genetic disorders, ranging from common conditions, such as Down syndrome (trisomy 21) and DiGeorge syndrome (deletion 22q11.2), and many more rare disorders.

We actively monitor peer-reviewed publications for relevant information that allows us to analyze and modify our test reporting processes as necessary so as to include the most up-to-date clinical information for the benifit of our patients. We anticipate that these continuous improvement processess may result in either incremental improvement to our current array design, or significant changes for a new version of our arrays in the future. As an example of our publication-driven approach, as early as 2009, we began to include specific coverage of regions shown to be strongly associated with autism spectrum disorders, or ASDs, or predisposition to ASDs, long before the guidelines to testing children with autism/ASDs included microarray analysis. It is now recognized that approximately 7% of all children with an ASD have a genomic abnormality that is identifiable by microarray. This contributes to the clinical recommendation that chromosomal microarray analysis be offered to all individuals with an ASD as part of a first-tier diagnostic evaluation. Implementation and use of this high density whole-genome array provides valuable and clinically actionable information for over 10% of all pediatric patients evaluated for neurodevelopmental disorders. Significantly, recent studies from our group and others have enabled us to have a clearer appreciation of the extent and nature of structural variation in the human genome in health and disease. Additionally, the ability to identify recurrent and rare structural imbalances by microarray analysis is now allowing us to decipher potential mechanisms that result in complex chromosomal rearrangements with adverse phenotypic impact. Therefore, we believe that not only are we solving challenging diagnostic dilemmas for patients and their families, but also providing valuable long-term care and prognostic information.

More significantly, based upon an ongoing evaluation of current medical literature and critical evaluation of multiple microarray platforms available for clinical use, we adopted a microarray platform that analyzes SNPs across the genome at an extremely high resolution. In addition to assessing genomic copy number variations, analysis of SNPs enables detection of regions of heterozygosity involving single or multiple chromosomes, which may provide clues towards identifying possible genetic imprinting disorders and / or situations that increases the risk of autosomal recessive disorders due to shared ancestry. In the miscarriage analysis space, in addition to allowing identification of a whole spectrum of whole-chromosome and segmental genomic imbalances, SNPs readily enable detection of triploidy, molar pregnancies, and maternal cell contamination, thereby decreasing the number of additional ancillary testing often required for such samples.

Our Strategy

Our strategic intent is to become the preeminent diagnostic services laboratory for reproductive healthcare testing using the best technologies available. In our efforts to achieve this objective, we leverage our direct sales team to market our IVF testing, prenatal diagnostic testing, postnatal testing, and miscarriage analysis testing. In addition, we have established pathology partnerships and strategic alliances with industry partners to increase our commercial distribution footprint.

Direct Sales Efforts

Our sales and marketing representatives aggressively market our PGS, miscarriage analysis and prenatal diagnostic microarray testing to four primary physician groups: OB/GYNs, MFMs, reproductive endocrinologists in IVF clinics and the historically underserved Pathology community. It is primarily the OB/GYN and occasionally the MFM, who perform the surgical procedure to remove fetal and placental tissue from the uterus following a miscarriage or fetal death. Pathologists are the custodians of this tissue and are often charged with determining which reference lab to utilize for send-out testing on these specimens. Embryologists in the IVF clinics conduct the biopsies of embryos in the clinic. MFMs conduct the CVS and amnio procedures, often in clinic as well. For the miscarriage analysis market, our strategic sales approach is to engage with, and sell to, the multiple decision-makers in the laboratory and the clinic, culminating with the pathologist. We believe this pathology-centric approach to miscarriage analysis testing, where we leverage our expertise in the testing of FFPE, gives us a competitive edge. Whereas our competitors' primary sales call points are the medical office clinicians, and their primary test offerings focus on other product or service lines in developmental testing, we are very focused on the miscarriage analysis market and the unmet clinical need for this testing.

In December 2012, two studies by the National Institute of Health, which were published in the New England Journal of Medicine, demonstrated the diagnostic superiority of microarray analysis compared to traditional karyotyping for both stillbirths (Reddy, et al.) and prenatal diagnosis for ongoing pregnancies (Wapner, et al.). As mentioned above, in December 2013, ACOG issued a Committee Opinion not only recommending microarray analysis in lieu of karyotyping for fetal death and stillbirths (also referred to as POCs), but also as a superior test modality for prenatal diagnosis. In June 2016, our medical team and several thought leaders published the largest study of its kind regarding microarray analysis on POCs, *Genetics in Medicine* . In this study of 8,118 samples analyzed over a period of 44 moths, we found an overall success rate of 91.0% for all sample types including both fresh tissue (92.4%) and FFPE (86.4%). In addition to the detection of whole chromosome aneuploidies, we identified polyploidy, whole genome homozygosity (seen in molar pregnancies), segmental genomic imbalances, and cases affected by maternal cell contamination. Given the increased diagnostic power and significantly higher success rate for obtaining results compared to karyotyping, our data supported microarray analysis as the preferred testing modality for pregnancy losses of all gestational ages. We are leveraging our direct sales channel and our strategic partners' channels to capitalize on the prenatal diagnostic testing opportunity and the recommendations of ACOG, which we believe highlight the superiority of microarray testing compared to traditional testing, such as karyotyping and FISH.

Strategic Alliances

Strategic alliances with established industry partners allow us to round-out our test menu to offer complete testing solutions to MFM specialists, reproductive endocrinologists, and OB/GYNs, and to capitalize on the demand for complementary test options, such as NIPT, which remains a screening modality. We have established several key partnerships in the past and we will continue to consider accretive business relationships that add value to our customers.

In addition, we have focused our reimbursement efforts on maximizing collections for all of the tests that we perform. We internalized our billing and collections process in 2012 and continue to augment our billing and reimbursement department to secure future positive coverage decisions and optimize payer relations. In 2016, we observed that several third-party insurance plans altered their coverage decisions and determined that testing products of conception for recurrent pregnancy loss by microarray is indeed clinically valuable and medically necessary. We believe this change from non-coverage to coverage for products of conception testing by microarray is a positive trend. We are also focused on increasing our managed care relationships, and have previously announced payor contracts covering our suite of diagnostics services, and expec t to execute additional payor contracts in the future.

Scientific Advisory Board

In 2015 we initiated efforts to build our scientific advisory board (SAB), which as of the date of this filing currently is comprised of six members. We believe that our SAB adds significant intellectual and business expertise to CombiMatrix and to the direction of our current and future test offerings. Our SAB currently includes leaders in the areas of maternal fetal medicine, obstetrics/gynecology, reproductive endocrinology, clinical embryology and pediatric neurology.

Billing and Reimbursement

Payor Categories

Revenues from our clinical laboratory tests are generated primarily from the provision of test results to the referring healthcare provider. Reimbursement, however, can come from several different sources. Depending on the billing arrangement and applicable law, parties that reimburse us for our services include direct-bill customers, third-party payors and individual patients. 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 process.

Our direct-bill payors include healthcare institutions such as hospitals, clinics, physician offices and in some circumstances, patients themselves. For the direct-bill and individual patient categories, our diagnostic services are billed and revenues are recognized at established contractual rates, once the test results have been delivered to the ordering physician.

Third-party payors include organizations such as commercial insurance companies, as well as government payors including Medicare and Medicaid. We bill our tests to these payors using individual billing codes known as Common Procedural Terminology, or CPT, codes established for array-based laboratory diagnostic testing. For the non-governmental third-party payor category, our diagnostic services are billed at our list prices for the test(s) performed, but they are recognized for accounting and financial reporting purposes as diagnostic service revenues based upon the amounts expected to be collected. The difference between the amount billed to each payor and the amount expected to be collected is recorded as a contractual allowance. For governmental payors, we recognize revenues based upon published fee schedules established by the Centers for Medicare and Medicaid Services, or CMS, or various state Medicaid fee schedules.

CPT Coding

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, or AMA. In 2012, the AMA added over one hundred new CPT codes for specific molecular tests such as ours. These new codes replaced the more general "stacking" codes that were previously used to bill for these services, and they 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, or CLFS. Although the various Medicare Administrative Contractors, or MACs, established pricing based on a "gap filling" methodology, not all of the codes were priced by CMS, and were omitted from the 2014, 2015, 2016 and 2017 CLFS. Among these were molecular codes we use in billing for our microarray testing.

The omission of certain CPT codes utilized by us from the CLFS could have an adverse impact on our revenue and cash reimbursement going forward. We continue to work with industry advisory groups to determine what information and action is needed to ensure continued reimbursement. There is a possibility that other third-party payors will establish negative or inadequate coverage policies or reimbursement rates.

Reimbursement

For the years ended December 31, 2016 and 2015, approximately 21% and 27% of our diagnostic services revenues were derived from direct bill customers, 71% and 68% from third-party commercial insurance carriers, 2% and 3% from government payors, including Medicare and several state Medicaid plans, and 6% and 2% from private pay customers, respectively.

With respect to the third-party payors that we bill, we are considered an "out-of-network" provider with the majority of the carriers, resulting in varying expected reimbursement amounts, which we believe is not unusual for a company such as ours that offers highly specialized and/or unique testing. An "in-network" provider 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. During our operating history, we have been able to receive reimbursement for most of our tests from major commercial third-party payors based on their established policies. Our efforts in obtaining reimbursement are based on individual claims, include pursuing appeals or reconsiderations of claim denials, require a substantial amount of time and effort, and may still result in bills not being paid for many months, if at all. Furthermore, if a third-party payor denies coverage after final appeal, payment may not be received. We have implemented a revenue cycle management system and have expanded our billing and collections department to address these issues. We have also executed managed care contracts to become "in-network" with certain third-party payors, and continue to seek additional "in-network" contracts. However, we cannot predict whether, or under what circumstances, payors will reimburse our microarray tests. Payment amounts can also vary across individual policies. Denial of coverage by payors, or reimbursement at inadequate levels, will have a material adverse impact on market acceptance of our tests.

Governmental Regulation

Our business is subject to extensive laws and regulations as described below. It is impossible to predict what future changes will be made to federal, state and local laws and regulations and the impact that such changes may have on us.

The Patient Protection and Affordable Care Act

Comprehensive health care reform legislation passed in 2010 entitled The Patient Protection and Affordable Care Act, or ACA, instituted permanent cuts to the CLFS, which are in addition to the automatic sequestration reductions mandated by the Budget Control Act of 2011. However, due to new government leadership under President Donald Trump, executive orders designed to scale back the impact of the ACA have recently been enacted in 2017. Also, the U.S. Congress, in alliance with President Trump, is likely to propose sweeping legislation during 2017 to repeal and replace the ACA. We believe that a newly revised ACA will likely contain a number of provisions that are expected to impact our business and operations, albeit in ways we cannot currently predict. Provisions governing enrollment in federal healthcare programs, reimbursement changes, and the treatment of fraud and abuse will still impact existing government healthcare programs and will result in the development of new programs. Generally, the ACA and private payers may soon be faced with new legislation designed to contain costs or legislate different financial options for consumers who purchase health care insurance. These reforms present challenges and unpredictability to laboratories like ours.

Clinical Laboratory Improvement Amendments of 1988, or CLIA

As a clinical reference laboratory, we are required to hold certain federal, state and local licenses as well as certain certifications and permits to conduct our business. Under CLIA, we are required to hold a certificate applicable to the type of work we perform and to comply with standards covering personnel, facilities administration, quality systems and proficiency testing. We have a certificate of accreditation under CLIA to perform testing and are accredited by the College of American Pathologists, or CAP. To renew our CLIA certificate, we are subject to periodic inspection standards applicable to the testing we perform. Should regulatory compliance requirements become substantially more complex, operational costs at our lab might increase in the future. If our laboratory is out of compliance with CLIA requirements, we may be subject to certain sanctions including suspension or revocation of our CLIA certificate and various civil and/or criminal penalties. We must maintain CLIA compliance and certification to be eligible to bill for services provided to Medicare beneficiaries. If we were to be found out of compliance with CLIA program requirements and subjected to sanctions, our business could be harmed. We are not able to guarantee that we will pass all future license and/or certification inspections.

U.S. Food and Drug Administration, or FDA

Regulations by the FDA regarding genetic testing are in a state of flux and changes to these regulations could dramatically affect the molecular diagnostics industry in the near future. While the FDA has the authority to regulate laboratory developed tests, or LDTs, it has generally exercised enforcement discretion in the area of LDTs performed by CLIA-certified laboratories. However, with the advent of Direct-to-Consumer DNA testing (i.e., testing that is marketed directly to the public, does not require a physician's order, and provides risk factor information rather than diagnostic or prognostic information), genomic testing using microarray technology (particularly single nucleotide polymorphism arrays) has come under scrutiny. In July 2010, the FDA held a two-day public meeting to obtain input from key stakeholders, including physicians, laboratory directors, regulatory and accrediting body members and the general public, regarding the structuring of a regulatory framework for LDTs. During this meeting, we believe that it became clear that the FDA's primary concern had less to do with CLIA-certified laboratories (such as ours) performing clinical microarray testing (i.e., testing ordered by a physician for medically necessary reasons, including disease diagnosis, monitoring and treatment decisions) and more to do with Direct-to-Consumer laboratories performing non-clinical testing that relies on what the FDA has referred to as "black box" proprietary algorithms to interpret their microarray data. This meeting came on the heels of a U.S. Government Accountability Office report entitled "Direct-to-Consumer Genetic Tests: Misleading Test Results are Further Complicated By Deceptive Marketing and Other Questionable Practices."

On October 3, 2014, the FDA published two draft guidance documents regarding proposals for the regulation of LDTs in the Federal Register. The 120-day public comment period on the draft documents began at issuance and lasted until February 2, 2015. Since this time, industry stakeholders have responded to the FDA draft guidance document, both for and against, with the only certainty being that a change in how LDTs will be monitored and by what federal agency are on the horizon. In early January of 2017, the FDA announced it would not issue a final guidance on the oversight of LDTs at the request of various stakeholders, such as the AMA and the ACOG in order to allow for further public discussion on an appropriate oversight approach and to give Congressional authorizing committees the opportunity to develop a longer-term, legislative solution. There can be no assurance that changes to the FDA's involvement in LDTs will not negatively impact our business. Generally speaking, the FDA and the legislative branch frequently entertain proposals that would increase FDA oversight of laboratories like ours and the testing that we conduct. The outcome and impact of such proposals on our business is impossible to predict. The FDA may impose a range of penalties for non-compliance with any of its rules, including recalls, injunctions and sanctions, any of which would negatively impact our business.

Health Insurance Portability and Accountability Act, or HIPAA

Under HIPAA, the U.S. Department of Health and Human Services, or HHS, issued regulations to protect the privacy of individuals' personal medical and health information through the implementation of security measures that govern how such data is stored and maintained, and to limit the disclosure of this "protected health information" to only those who receive specific authorization from the individual. The federal Health Information Technology for Economic and Clinical Health Act, or HITECH, enacted in February 2009, expanded the HIPAA rules significantly, in particular HIPAA enforcement. For example, HITECH authorizes state attorneys general to bring civil actions on behalf of state residents and it requires HHS to conduct extensive auditing. Perhaps most importantly, HITECH renders HIPAA directly applicable to the "business associates" of covered entities, which in some cases may mean us. The omnibus regulation implementing most of the HITECH provisions was published in January 2013. In February 2014, CMS issued final rules amending HIPAA to provide individuals or their personal representatives with the right to receive copies of their test reports from laboratories covered by HIPAA and/or to request that such test reports be transmitted to certain third parties. This rule preempts many state laws that prohibit laboratories like ours from directly providing individuals with their test reports. Violations of HIPAA regulations include civil and criminal penalties, including up to ten years imprisonment. Consequently, our policies and procedures are designed to comply with such regulations. The requirements under these regulations may change periodically and we will continue to monitor such changes.

There are also a number of state laws governing confidentiality of health information that are applicable to our operations, and new laws governing privacy may be adopted in the future. Violation of such laws could affect our applicable state licensure and could also result in criminal and/or civil penalties.

In addition, HIPAA and many state laws would require that we provide a written notification to affected individuals, certain federal and state agencies, and possibly the media if we suffered a breach of personal medical or health information. While we believe that we comply with regulations currently, we can provide no assurance that we are or will remain in compliance with diverse privacy requirements as they develop.

We believe that we are in compliance with the current Transactions and Code Sets Rule. We have transitioned from use of ICD-9-CM to ICD-10-CM as of October 1, 2015. Experience to date with use of ICD-10-CM shows no negative effects on our receipts and net revenue. We also believe that we are in compliance with the Operating Rules for electronic funds transfers and remittance advice transactions. We will continue to assess our computer systems to ensure compliance with such requirements.

Federal and State Insurance Regulations, Self-referral Prohibitions and Anti-kickback Laws

We are subject to federal and state laws, such as the Federal False Claims Act, state false claims acts, the illegal remuneration provisions of the Social Security Act, the federal anti-kickback laws, state anti-kickback laws, and the federal "Stark" laws, that govern financial and other arrangements among healthcare providers, their owners, vendors and referral sources, and that are intended to prevent healthcare fraud and abuse. Among other things, these laws prohibit kickbacks, bribes and rebates, as well as other direct and indirect payments or fee splitting arrangements that are designed to induce the referral of patients to a particular provider for medical products or services payable by any federal healthcare program, and prohibit presenting a false or misleading claim for payment under a federal or state program. They also prohibit some physician self-referrals. These laws are liberally interpreted and aggressively enforced by multiple state and federal agencies and law enforcement (including individual "qui tam" plaintiffs) and such enforcement is increasing. For example, the ACA increased funding for federal enforcement actions and many states have established their own Medicare/Medicaid Fraud Units and require providers to conspicuously post the applicable Unit's hotline number. Possible sanctions for violation of any of these restrictions or prohibitions include loss of eligibility to participate in federal and state reimbursement programs and civil and criminal penalties. Changes in these laws at all levels of government are frequent and could increase our cost of doing business. If we fail to comply, even inadvertently, with any of these requirements, we could be required to alter our operations, refund payments to the government, lose our licensure or accreditation, enter into corporate integrity, deferred prosecution or similar agreements with state or federal government agencies, and become subject to significant civil and criminal penalties.

State Laboratory Licensing

In addition to federal certification requirements of laboratories under CLIA, licensure is required and maintained for our clinical reference laboratory under California law. We currently maintain a license in good standing with the California Department of Health Services, or DHS, but if our clinical reference laboratory is found to be out of compliance with California standards, our license may be suspended or revoked by the California DHS, and we may be subject to fines and penalties.

We must also satisfy various applications and provisional requirements for other states in which we desire to conduct business, and we have obtained licenses for Florida, Maryland, Pennsylvania and Rhode Island. We are licensed by the New York State Department of Health to perform prenatal and postnatal/pediatric cytogenetic testing, microarray analysis for pediatric care, prenatal, and miscarriage analysis, and our PGS test offering has conditional approval enabling us to offer PGS testing in the state of New York. We may become aware from time to time of additional states that require out-of-state laboratories to obtain licensure in order to accept patient specimens from those states, and it is possible that other states do have such requirements or will have such requirements in the future. If we identify any other state with such requirements or if we are contacted by any other states advising us of such requirements, we intend to strictly adhere to the instructions and guidelines from the state regulators as to how we should comply with such requirements. There can be no assurance, however, that our efforts to comply will be successful.

Commercial Operations

All services offered by us are performed in our CLIA certified, CAP accredited clinical laboratory in Irvine, California. Our commercial operations infrastructure includes sales, marketing, clinical support services and billing/reimbursement. We continue to build a nationally focused commercialization strategy by interacting directly with pathologists, medical geneticists, maternal fetal medicine specialists, reproductive endocrinologists, obstetrician and gynecologists, pediatric neurologists and genetic counselors. The market-specific experience of our direct sales force, coupled with regional and local territory experience, is expected to increase physician awareness and demand for our services. Our marketing and clinical support services teams work in tandem to increase awareness and appropriate utilization of our services by both physicians and patients. Our marketing initiatives include traditional marketing tactics such as physician education, professional medical society and advocacy tradeshows as well as web based initiatives. Our billing and reimbursement team works to facilitate access to our services by assisting ordering physicians and their patients with healthcare insurance billing, appeal processes, patient payment options, and securing managed care contracts with willing payers. In addition to our direct sales approach, we actively market our services to other laboratories through pathology partnerships and through strategic alliances with complementary industry partners.

Seasonality

Our business is subject to the impact of seasonality, particularly during the mid-summer months when patients tend to be less likely to visit their healthcare providers for diagnostic testing due to vacations, and in the latter part of December and early January when many IVF clinics close down for annual maintenance. In addition, during the winter months, disruptions in transportation due to inclement weather may affect not only patients' ability to visit their healthcare providers, but it may also prompt provider concerns about potential disruption or delay in sample processing, both of which negatively impact our business. Consequently, the demand for our services, in general, could be subject to declines in the summer and during periods of severe weather.

Patents, Trademarks and Licenses

As a part of our corporate restructuring that occurred in 2010, many of our issued patents and patent applications were licensed to a private company, CustomArray, Inc., for which we receive minimum royalties of $100,000 per year. The intellectual property rights that remain are not currently used in our molecular diagnostics services business.

We seek to protect our corporate identity and services with trademarks and service marks. In addition, our trademark strategy includes protecting the identity and goodwill associated with our technologies and services. Currently, our registered trademarks include COMBIMATRIX®.

We attempt to obtain licenses to the patent rights of others when required to meet our business objectives. For example, we purchase chemical reagents from suppliers who are licensed under appropriate patent rights. Further, our policy is to obtain licenses from patent holders for our services whenever such licenses are required. We evaluate if and when a license is needed or required depending upon the individual circumstance.

Competition

We believe that competition within our market is increasing. Our business competitors in the United States include regional clinical microarray laboratories, both commercial and academic, as well as large national companies such as LabCorp, Quest Diagnostics, Natera, Progenity, the Cooper Companies, and several others. Some of these competitors may possess greater financial, technical, human and other resources than we do. In addition, technological advances or entirely different approaches developed by one or more of our competitors could render our services obsolete or uneconomical. The existing approaches of competitors or new approaches or technology developed by competitors may be more effective than those developed by or currently utilized by us.

Our market is rapidly changing, and we expect to face additional competition from new market entrants, new product and service developments and consolidation of our existing competitors. As new competitors emerge, the intensity of competition may increase in the future. An example of this is the emergence of NIPT companies in the past several years. These companies offer a screening test based on the analysis of cell-free fetal DNA in the maternal blood stream as opposed to the analysis of pregnancy-related hormones and proteins, as has been the standard of care for several decades. Despite improvements to detection rates, NIPT remains a screening test, and as such, clinical guidelines recommend that all positive NIPT results be confirmed with diagnostic testing performed using an invasive technique, such as chorionic villus sampling or amniocentesis.

Research and Development

Our research and development activities primarily relate to the development and validation of diagnostic tests in connection with our specialized PGS, miscarriage analysis, prenatal and pediatric developmental disorder genetic tests. For the years ended December 31, 2016 and 2015, we incurred research and development expenses of $493,000 and $466,000, respectively.

Employees

As of December 31, 2016, we had 55 full-time-equivalent employees, one of whom is an M.D. and another of whom is a Ph.D. We believe that we maintain good relationships with our employees and are not subject to collective bargaining arrangements.

Environmental Matters

Our operations involve the use, transportation, storage and disposal of hazardous substances. As a result, we are subject to environmental and health and safety laws and regulations. The cost of complying with these and any future environmental regulations could be substantial, though historically such costs have not been significant. In addition, if we fail to comply with environmental laws and regulations, or release any hazardous substances into the environment, we could be exposed to substantial liability in the form of fines, penalties, remediation costs and other damages and could even suffer a curtailment or shut down of our operations.

Available Information

We are subject to the informational requirements of the Securities Exchange Act of 1934. Therefore, we file periodic reports, proxy statements and other information with the SEC. Such reports, proxy statements and other information may be obtained by visiting the Public Reference Room of the SEC at 100 F Street N.E., Washington, D.C. 20549 or by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet site (http://www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically.

Additional financial and company-related information can be found in the Investor Relations section of our website at www.combimatrix.com. Our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are made available free of charge on our website as soon as reasonably practicable after we electronically file them with or furnish them to the SEC. Information contained on our web site is not part of this Annual Report on Form 10-K or our other filings with the SEC.

The charters of our Audit Committee, our Compensation Committee and our Nominating and Governance Committee are available on the Investor Relations section of our website under “Corporate Governance.” Also available on that section of our website is our Code of Business Conduct and Ethics, which we expect every employee, officer and director to read, understand and abide by. This information is also available by writing to us at CombiMatrix Corporation, 310 Goddard, Suite 150, Irvine, CA 92618, Attn: Corporate Secretary.

Item 1A. RISK FACTORS

An investment in our securities involves a high degree of risk. Before making a decision to purchase our securities, you should carefully consider all of the risks described in this annual report. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business and results of operations. If any of these risks actually occur, our business, financial condition or results of operations could be seriously harmed. In that event, the market price for our common stock could decline and you may lose part or all of your investment.

Risks Related to Our Business

We may not be able to meet our cash requirements beyond the first quarter of 2018 without obtaining additional capital from external sources and our current outstanding private placement warrants may prevent us from issuing new securities. If we are unable to raise additional capital through future financings or from external sources, we may not be able to continue as a going concern.

As of December 31, 2016, we had $3.7 million in cash, cash equivalents and short-term investments, which we anticipate will meet our cash requirements through and beyond the fourth quarter of 2017. However, in order for us to continue as a going concern beyond that point, we will have to increase revenue and cash reimbursement, continue to control operating expenses and may be required to obtain capital from external sources. Our ability to continue as a going concern is dependent upon our ability to further implement our business plan, generate sufficient revenues and cash reimbursement and to control operating expenses, of which there can be no assurance.

In order to issue securities at a price below the exercise prices of our outstanding warrants issued in connection with our past preferred stock private placement financings, we must obtain the affirmative consent of holders of at least 67% of each series of such outstanding warrants. If we are unable to obtain the consent of these holders in connection with future financings, we may be unable to raise additional capital on acceptable terms, or at all. If external financing sources are not available in a timely manner or at all, or are inadequate to fund our operations, it could result in reduced revenues and cash flows from the sales of our diagnostic services and/or could jeopardize our ability to launch, market and sell additional services necessary to grow and sustain our operations.

We have a history of losses and expect to incur additional losses in the future.

We have sustained substantial losses since our inception. We may never become profitable, or if we do, we may not be able to sustain profitability. We expect to incur significant research and development, marketing, general and administrative expenses. As a result, we expect to incur losses for the foreseeable future.

To date, we have relied primarily upon selling convertible debt and equity securities to generate the funds needed to finance the implementation of our business strategies. We cannot assure you that we will not encounter unforeseen difficulties, including the outside influences identified below that may deplete our capital resources more rapidly than anticipated. We may be required to obtain additional financing through bank borrowings, debt or equity financings or otherwise, which would require us to make additional investments or face a dilution of our equity interests. We cannot be sure that additional funding will be available on favorable terms, if at all. In order to issue securities at a price below the exercise prices of our outstanding warrants issued in connection with our past preferred stock private placement financings, we must obtain the affirmative consent of holders of at least 67% of each series of such outstanding warrants. If we are unable to obtain the consent of these holders in connection with future financings, we may be unable to raise additional capital on acceptable terms, or at all. If external financing sources are not available in a timely manner or at all, or are inadequate to fund our operations, it could result in reduced revenues and cash flows from the sales of our diagnostic services and/or could jeopardize our ability to launch, market and sell additional products and services necessary to grow and sustain our operations. If we fail to obtain additional funding when needed, we may not be able to execute our business plans or continue operations, and our business may be materially adversely affected.

We began commercialization of our molecular diagnostics services in 2006. Accordingly, we have a limited operating history of generating revenues from services. In addition, we are still developing our technologies and service offerings and are subject to the risks, expenses and difficulties frequently encountered by companies with such limited operating histories. Since we have a limited operating history, we cannot assure you that our operations will become profitable or that we will generate sufficient revenues to meet our expenditures and support our activities.

Because our business operations are subject to many uncontrollable outside influences, we may not succeed.

Our business operations are subject to numerous risks from outside influences, including the following:

- *Technological advances may make our array-based technology less competitive or even obsolete, and as a result, our revenue and the value of our assets could materially decrease.*

Our services are dependent upon oligonucleotide and SNP array-based technologies. These technologies compete with conventional diagnostic technologies such as karyotyping, FISH and polymerase chain reaction, or PCR-based tests. Many newly developed tests rely on Next Generation Sequencing, or NGS, and there is a trend in the field toward increased usage of NGS-based testing. Our services are substantially dependent upon our ability to offer the latest in microarray technology in the cytogenomic market. We expect to face additional competition from new market entrants and consolidation of our existing competitors. Many of our competitors have existing strategic relationships with major pharmaceutical and biotechnology companies, greater commercial experience and substantially greater financial and personnel resources than we do. We expect new competitors to emerge and the intensity of competition to increase in the future. If these companies are able to offer technological advances, our services may become less valuable or even obsolete. We cannot provide any assurance that existing or new competitors will not enter the market with the same or similar technological advances before we are able to do so.

- *Our technologies face uncertain market value.*

  Our business includes many services, some of which were more recently introduced into the market. We cannot provide any assurance that the increase, if any, in market acceptance of these technologies and services will meet or exceed our expectations. Further, we are developing services, some of which have not yet been introduced into the market. A lack of or limited market acceptance of these technologies and services will have a material adverse effect upon our results of operations.

- *We obtain components and raw materials from a limited number of sources and, in some cases, a single source, and the loss or interruption of our supply sources may materially adversely impact our ability to provide testing services to meet our existing or future sales targets.*

  Substantially all of the components and raw materials used in providing our testing services, including microarray slides and reagents, are currently provided to us from a limited number of sources or in some cases from a single source. Any supply interruption in a sole-sourced component or raw material might result in up to a several-month delay and materially harm our ability to provide testing services until a new source of supply, if any, could be located and qualified. In addition, an uncorrected impurity or supplier's variation in a raw material, either unknown to us or incompatible with our process, could have a material adverse effect on our ability to provide testing services. We may be unable to find a sufficient alternative supply channel in a reasonable time period, or on commercially reasonable terms, if at all.

Any one of the foregoing outside influences may require us to seek additional financing to meet the challenges presented or to mitigate a loss in revenue, and we may not be able to obtain the needed financing in a timely manner on commercially reasonable terms or at all. Further, any one of the foregoing outside influences affecting our business could make it less likely that we will be able to gain acceptance of our array technology by researchers in the pharmaceutical, biotechnology and academic communities.

Our revenues will be unpredictable, and this may materially adversely affect our financial condition.

The amount and timing of revenues that we may realize from our business will be unpredictable because whether our services are commercialized and generate revenues depends, in part, on the efforts and timing of our potential customers. Also, our sales cycles may be lengthy. As a result, our revenues may vary significantly from quarter to quarter, which could make our business difficult to manage and cause our quarterly results to be below market expectations. If this happens, the price of our common stock may decline significantly. Our revenues are also subject to seasonality factors and can be impacted by circumstances outside of our control, such as patient and IVF clinic vacation schedules and severe weather conditions that hamper or otherwise restrict when a patient seeking genetic diagnostic services such as ours visits the ordering physician.

We face intense competition, and we cannot assure you that we will be successful competing in the market.

The diagnostics market is characterized by rapidly changing technology, evolving industry standards, changes in customer needs, emerging competition and new product and services introductions. One or more of our competitors may offer technology superior to ours and render our technology obsolete or uneconomical. Many of our competitors have greater financial and personnel resources and more experience in marketing, sales and research and development than we have. If we were not able to compete successfully, our business and financial condition would be materially harmed.

If our technology is not widely adopted by physicians and laboratories in the diagnostics market, our business will be materially adversely affected.

In order to be successful, our test offerings must meet the commercial requirements of hospitals and physicians and be considered the standard of care in order to be widely adopted. Market acceptance will depend on many factors, including:

- the benefits and cost-effectiveness of our services relative to others available in the market;

- our ability to provide testing services in sufficient quantities with acceptable quality and reliability and at an acceptable cost;
- our ability to develop and market additional tests and enhance existing tests that are responsive to the changing needs of our customers; and
- the willingness and ability of customers to adopt new technologies or the reluctance of customers to change technologies upon which they have previously relied.

Uncertainty regarding U.S. healthcare reform legislation may result in significant changes and our business could be adversely impacted if we fail to adapt.

Government oversight of and attention to the healthcare industry in the United States is significant and increasing. In March 2010, U.S. federal legislation known as the Affordable Care Act, or ACA, was enacted to reform healthcare. The legislation provides for reductions in the Medicare clinical laboratory fee schedule beginning in 2011 and also includes a productivity adjustment that reduces the CPI market basket update beginning in 2011. The legislation imposes an excise tax on the seller for the sale of certain medical devices in the United States, including those purchased and used by laboratories, beginning in 2013. The legislation establishes the Independent Payment Advisory Board, which is responsible for submitting proposals aimed at reducing Medicare cost growth while preserving quality. These proposals automatically will be implemented unless Congress enacts alternative proposals that achieve the same savings targets. Further, the legislation calls for the Center for Medicare and Medicaid Innovation to examine alternative payment methodologies and conduct demonstration programs. The legislation provides for extensive health insurance reforms, including the elimination of pre-existing condition exclusions and other limitations on coverage, fixed percentages on medical loss ratios, expansion in Medicaid and other programs, employer mandates, individual mandates, creation of state and regional health insurance exchanges, and tax subsidies for individuals to help cover the cost of individual insurance coverage. The legislation also permits the establishment of accountable care organizations, a new healthcare delivery model.

As sweeping as the ACA is, the recent leadership change by the election of Donald Trump as President of the United States creates significantly more uncertainty, as one of the main tenants of Mr. Trump's campaign was the repeal and replacement of the ACA early in his first term as President. While the ultimate impact of existing health reform and related legislation on the healthcare industry is unknown, it is likely to be extensive and may result in significant change, especially if the ACA is partially or fully repealed and replaced. Our failure to adapt to these changes could have a material adverse effect on our business.

A significant component of our revenue is dependent upon successful insurance claims. Our revenue will be diminished if payors do not adequately cover or reimburse us for our services.

Physicians and patients may decide not to order our high-complexity genomic microarray tests unless third-party payors, such as managed care organizations as well as government payors such as Medicare and Medicaid, pay a substantial portion of the test price. 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.

A substantial portion of the testing for which we bill our hospital and laboratory clients is ultimately paid by third-party payors. However, there is uncertainty concerning third-party payor reimbursement of any test, including our high-complexity genomic microarray tests. Several entities conduct technology assessments of medical tests and devices and provide the results of their assessments for informational purposes to other parties. These assessments may be used by third-party payors and health care providers as grounds to deny coverage for a test or procedure. It is possible that federal, state and third-party insurers may limit their coverage of our tests in the future.

Increasing emphasis on managed care in the United States is likely to put pressure on the pricing of healthcare services. Uncertainty exists as to the coverage and reimbursement status of new applications or services. Governmental payors and private payors are scrutinizing new medical products and services. Such third-parties may not cover, or may limit coverage and resulting reimbursement for our services.

Additionally, third-party insurance coverage may not be available to patients for any of our existing tests or tests we may add in the future. Any pricing pressure exerted by these third-party payors on our customers may, in turn, be exerted by our customers on us. If governmental payors, including their contracted administrators, and other third-party payors do not provide adequate coverage and/or timely reimbursement for our services, our operating results, cash flows, or financial condition may materially decline.

Our cash flows and financial condition may materially decline if payors do not reimburse us for our services in a timely manner.

A significant portion of our billings to third-party payors are concentrated within a relatively small number of payors. We depend on our payors to reimburse us for our services in timely manner. If our payors do not reimburse us in a timely manner, our cash flows and financial condition may materially decline.

Third-party billing is extremely complicated and could result in us incurring significant additional costs.

Billing for molecular laboratory services is extremely complicated. The client is the party that orders the tests and the payor is the party that pays for the tests, and the two are not typically the same. Depending on the billing arrangement and/or applicable law, we need to bill various payors, such as patients, health insurance companies, Medicare, Medicaid, doctors and employer groups, all of which have different billing requirements. Health insurance companies and governmental payors also generally require complete and correct billing information within certain filing deadlines. Additionally, our billing relationships require us to undertake internal audits to evaluate compliance with applicable laws and regulations as well as internal compliance policies and procedures. Health insurance companies also impose routine external audits to evaluate payments made. Additional factors complicating billing include:

- pricing differences between our fee schedules and the reimbursement rates of the payors;
- disputes with payors as to which party is responsible for payment; and
- disparity in coverage and information requirements among various carriers.

We incur significant additional costs as a result of our participation in the Medicare and Medicaid programs, as billing and reimbursement for laboratory testing are subject to considerable and complex federal and state regulations. The additional costs we expect to incur as a result of our participation in the Medicare and Medicaid programs include costs related to, among other factors: (1) complexity added to our billing processes; (2) training and education of our employees and customers; (3) implementing compliance procedures and oversight; (4) collections and legal costs; (5) challenging coverage and payment denials; and (6) providing patients with information regarding claims processing and services, such as advanced beneficiary notices. If these costs increase, our results of operations will be materially adversely affected.

Loss of or adverse changes to our accreditations or licenses could materially and adversely affect our business, prospects and results of operations.

The clinical laboratory testing industry is highly regulated. We are subject to the Clinical Laboratory Improvement Amendments of 1988, or CLIA, a federal law that regulates clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. 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 of accreditation under CLIA to perform testing. To renew this certificate, we are subject to survey and inspection every two years. Moreover, CLIA inspectors may make random inspections of our clinical reference laboratory. A failure to pass such inspections would result in suspension of our certificate of accreditation, which would have a material adverse effect on our business and results of operations.

We are also required to maintain a laboratory license to conduct testing in California. California laws establish standards for day-to-day operation of our clinical reference laboratory, including the training and skills required of personnel and quality control. Moreover, several 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. A failure to obtain and maintain these licenses would have a material adverse effect on our business and results of operations.

Complying with numerous regulations pertaining to our business is an expensive and time-consuming process, and failure to comply could result in significant penalties and suspension of one or more of our licenses.

Areas of the regulatory environment that may affect our ability to conduct business include, without limitation:

- Federal and state laws applicable to billing and claims payment and/or regulatory agencies enforcing those laws and regulations;
- Federal and state laboratory anti-mark-up laws;
- Federal and state anti-kickback laws;
- Federal and state false claims laws;
- Federal and state self-referral and financial inducement laws, including the federal physician anti-self-referral law, or the Stark Law;
- Coverage and reimbursement levels by Medicare, Medicaid, other governmental payors and private insurers;
- Restrictions on reimbursements for our services;
- Federal and state laws governing laboratory testing, including CLIA;
- Federal and state laws governing the development, use and distribution of diagnostic medical tests known as "home brews";
- Health Insurance Portability and Accountability Act of 1996, or HIPAA;
- Federal and state regulation of privacy, security and electronic transactions;
- State laws regarding prohibitions on the corporate practice of medicine;
- State laws regarding prohibitions on fee-splitting;
- Federal, state and local laws governing the handling and disposal of medical and hazardous waste; and
- Occupational Safety and Health Administration, or OSHA, rules and regulations.

The above-noted laws and regulations are extremely complex and, in many instances, there are no significant regulatory or judicial interpretations of such laws and regulations. We also may be subject to regulation in foreign jurisdictions as we seek to expand international distribution of our tests. Any determination that we have violated these laws, or the public announcement that we are being investigated for possible violations of these laws, would materially adversely affect our business, prospects, results of operations and financial condition. Violations could also result in extensive civil and/or criminal penalties, loss of licensure or accreditation (which could in turn affect our ability to operate or collect reimbursement), exclusion from government healthcare programs or private payer networks, and other materially adverse effects. In addition, a significant change in any of these laws may require us to change our business model in order to maintain compliance with these laws, which could reduce our revenue or increase our costs and materially adversely affect our business, prospects, results of operations, and financial condition.

We are subject to significant environmental, health and safety regulation.

We are subject to licensing and regulation under federal, state and local laws and regulations relating to the protection of the environment and human health and safety, including laws and regulations relating to the handling, transportation and disposal of medical specimens, infectious and hazardous waste and radioactive materials, as well as to the safety and health of laboratory employees. In addition, OSHA has established extensive requirements relating to workplace safety for health care employers, including clinical laboratories, whose workers may be exposed to blood-borne pathogens such as HIV and the hepatitis B virus. These regulations, among other things, require work practice controls, protective clothing and equipment, training, medical follow-up, vaccinations, and other measures designed to minimize exposure to, and transmission of, blood-borne pathogens. In addition, the federally enacted Needlestick Safety and Prevention Act requires, among other things, that we include in our safety programs the evaluation and use of engineering controls such as safety needles if found to be effective at reducing the risk of needlestick injuries in the workplace. If we are found in violation of any of these regulations, we could be subject to substantial penalties or discipline and our business, prospects and results of operations could be materially and adversely affected.

Our business is subject to stringent laws and regulations governing the privacy, security and transmission of medical information, and our failure to comply could subject us to criminal penalties and civil sanctions.

Governmental laws and regulations protect the privacy, security and transmission of medical information. Such laws and regulations restrict our ability to use or disclose patient identifiable laboratory data, without patient authorization, for purposes other than payment, treatment or healthcare operations (as defined by HIPAA), except for disclosures for various public policy purposes and other permitted purposes outlined in the privacy regulations. The privacy and security regulations provide for significant fines and other penalties for wrongful use or disclosure of patient identifiable laboratory data, including potential civil and criminal fines and penalties. Such regulations were expanded under the HITECH Act, including rules impacting the release of protected health information, patients' right to access such information, the content and manner of providing notice of a breach, and information system security requirements. We also could incur damages under state laws to private parties for the wrongful use or disclosure of confidential health information or other private personal information. In addition, the Secretary of the Department of Health and Human Services has published HIPAA regulations to protect the privacy of health information when it is exchanged electronically during certain financial and administrative transactions. These HIPAA transaction standards are complex and different payers interpret them differently. Complying with applicable transmission standards is costly and failure to comply could disrupt our receipts or subject us to penalties. Generally, any security breach of our information systems, including the theft of our patients' financial information due to our failure to comply with applicable security standards, would adversely impact our business and our reputation.

Our services development efforts may be hindered if we are unable to gain access to patients' tissue and blood samples.

The development of our diagnostic services requires access to tissue and blood samples from patients who may or may not have the diseases we are addressing. Our clinical development relies on our ability to secure access to these samples, as well as information pertaining to their associated clinical outcomes. Access to samples can be difficult since it may involve multiple levels of approval, complex usage rights and privacy rights, among other issues. Lack of or limited access to samples would harm our future services development efforts, which would have a material adverse effect on our business and results of operations.

If our current laboratory facility becomes inoperable or loses certification, we will be unable to perform our tests and our business will be materially adversely affected.

Our diagnostic tests are operated out of our CLIA-certified laboratory in Irvine, California. Currently, we do not have a second certified laboratory. Should our only CLIA-certified laboratory be unable to perform tests, for any reason, we may be unable to perform needed diagnostic tests in connection with our development of technologies services and our business will be materially adversely affected.

Our future success depends on the continued service from our scientific, technical and key management personnel and our ability to identify, hire and retain additional scientific, technical and key management personnel in the future.

There is intense competition for qualified personnel in our industry, particularly for laboratory technicians, scientific and medical experts and senior level management. Loss of the services of, or failure to recruit, these key personnel could be significantly detrimental to us and could materially adversely affect our business and operating results. We may not be able to continue to attract and retain scientific and medical experts or other qualified personnel necessary for the development of our business or to replace key personnel who may leave us in the future. If our business grows, it will place increased demands on our resources and likely will require the addition of new management personnel. An inability to recruit and retain qualified management and employees on commercially reasonable terms would adversely and materially affect our business.

As our operations expand, our costs to comply with environmental laws and regulations will increase, and failure to comply with these laws and regulations could materially harm our financial results.

Our operations involve the use, transportation, storage and disposal of hazardous substances and, as a result, we are subject to environmental and health and safety laws and regulations. As we expand our operations, our use of hazardous substances will increase and lead to additional and more stringent requirements. The cost to comply with these and any future environmental and health and safety regulations could be substantial. In addition, our failure to comply with laws and regulations, and any releases of hazardous substances into the environment or at our disposal sites, could expose us to substantial liability in the form of fines, penalties, remediation costs and other damages, or could lead to a curtailment or shut down of our operations. These types of events, if they occur, would materially adversely affect our financial results.

We could face substantial liabilities if we are sued for product liability.

Product liability claims could be filed by someone alleging that our tests failed to perform as claimed. We may also be subject to liability for errors in the performance of our tests. Such product liability and related claims could be substantial. Defense of such claims could be time consuming and expensive and could result in damages that are not covered by our insurance.

Failure to effectively manage our growth could place strains on our managerial, operational and financial resources and could materially adversely affect our business and operating results.

Our growth has placed, and is expected to continue to place, a strain on our managerial, operational and financial resources. In addition, any further growth by us or an increase in the number of our strategic relationships may constrain our ability to achieve the rapid execution necessary to successfully implement our business plan.

As a public company, we are subject to complex legal and accounting requirements that will require us to incur substantial expense and will expose us to risk of non-compliance.

As a public company, we are subject to numerous legal and accounting requirements that do not apply to private companies. The cost of compliance with many of these requirements is substantial, not only in absolute terms but, more importantly, in relation to the overall scope of the operations of a small company. Failure to comply with these requirements can have numerous material adverse consequences including, but not limited to, our inability to file required periodic reports on a timely basis, which would result in the loss of our eligibility to use Form S-3 for raising capital, loss of market confidence, delisting of our securities, governmental or private actions against us and/or liquidated damages payable to the holders of our Series A Warrants, Series C Warrants, our April 2015 private placement warrants, and our Series F Preferred Stock and Series F Warrants. We cannot assure you that we will be able to comply with all of these requirements or that the cost of such compliance will not prove to be a substantial competitive disadvantage compared to our privately held and larger public competitors.

Ethical, legal and social concerns surrounding the use of genetic information could reduce demand for our test offerings.

Genetic testing has raised ethical issues regarding privacy and the appropriate uses of the resulting information. For these reasons, governmental authorities may call for limits on or regulation of the use of genetic testing or prohibit testing for genetic predisposition to certain conditions, particularly for those that have no known cure. Similarly, such concerns may lead individuals to refuse to use genetics tests even if permissible. Any of these scenarios could reduce the potential markets for our molecular diagnostic services, which reduction could have a material adverse effect on our business.

Risks Related To Investment In Our Securities

Small company stock prices are especially volatile, and this volatility may depress the price of our stock.

The stock market has experienced significant price and volume fluctuations, and the market prices of small companies have been highly volatile. We believe that various factors may cause the market price of our stock to fluctuate, perhaps substantially, including, among others, announcements of:

- our or our competitors' technological innovations;
- supply, manufacturing, or distribution disruptions or other similar problems;
- proposed laws regulating participants in the laboratory services industry;
- developments in relationships with collaborative partners or customers;
- our failure to meet or exceed securities analysts' expectations of our financial results; or
- a change in financial estimates or securities analysts' recommendations.

In the past, companies that have experienced volatility in the market price of their stock have been the objects of securities class action litigation. If we become the object of securities class action litigation, it could result in substantial costs and a diversion of management's attention and resources, all of which could materially adversely affect the business and financial results of our business.

Future sales or the potential for future sales of our securities in the public markets may cause the trading price of our common stock to decline and could impair our ability to raise capital through subsequent equity offerings.

Sales of a substantial number of shares of our common stock or other securities in the public markets, or the perception that these sales may occur, could cause the market price of our common stock or other securities to decline and could materially impair our ability to raise capital through the sale of additional securities. The shares of common stock issuable upon conversion of our Series F preferred stock and upon exercise of our outstanding warrants are freely tradable, without restriction, in the public market. We have obligations to the investors in our 2012 private placement offering of Series A convertible preferred stock and warrants to purchase common stock and in our 2013 private placement offering of Series C convertible preferred stock and warrants to maintain the public registration of common stock underlying their issued and outstanding warrants. If we raise additional capital in the future through the use of our existing shelf registration statement or if we register existing, or agree to register future, privately placed shares for resale on a registration statement, such additional shares would be freely tradable, and, if significant in amount, such sales could further adversely affect the market price of our common stock. The sale of a large number of shares of our common stock also might make it more difficult for us to sell equity or equity-related securities in the future at a time and at the prices that we deem appropriate.

Our stock price could decline because of the potentially dilutive effect of future financings, the Series F preferred stock anti-dilution provision or exercises of warrants and common stock options.

As of December 31, 2016, we had approximately 2.7 million shares of common stock issued and outstanding. Assuming exercise in full of all options, warrants and convertible securities outstanding as of December 31, 2016 (not taking into account any price-based or anti-dilution adjustments related to the Series F preferred stock), approximately 5.8 million shares of our common stock would be outstanding. Any additional equity or convertible debt financings in the future could result in further dilution to our stockholders. Existing stockholders also will suffer significant dilution in ownership interests and voting rights and our stock price could decline as a result of potential future application of an anti-dilution feature of our Series F preferred stock.

Our capital structure could reduce the amount of consideration paid to common stockholders in the event of a change in control.

Although we entered into the Warrants Repurchase Agreement to repurchase, upon the occurrence of a Fundamental Transaction (as defined in such agreement), the Warrants that were issued in connection with our Series A, Series B, Series C and Series E financings, such Warrants Repurchase Agreement does not cover the warrants that were issued in connection with our Series F Warrants, or the Series F Preferred Stock. Depending on the circumstances, upon a change in control constituting a Fundamental Transaction, the holders of Series F Preferred Stock may be entitled to a 30% premium and the holders of Series F Warrants may have the right to require us to purchase the Series F Warrants for an amount in cash that is determined in accordance with a formula set forth in the Series F Warrants. Such provisions could reduce the amount of consideration paid to common stockholders in the event of a change in control by reducing the amount of proceeds available for common stockholders.

We may fail to meet market expectations because of fluctuations in our quarterly operating results, all of which could cause our stock price to decline.

Our revenues and operating results have fluctuated in the past and may continue to fluctuate significantly from quarter to quarter in the future. It is possible that, in future periods, our revenues could fall below the expectations of securities analysts or investors, all of which could cause the market price of our stock to decline. The following are among the factors that could cause our operating results to fluctuate significantly from period to period:

- our unpredictable revenue sources;
- the nature, pricing and timing of our and our competitors' products and/or services;
- changes in our and our competitors' research and development budgets;
- expenses related to, and our ability to comply with, governmental regulations of our services and processes; and
- expenses related to, and the results of, patent filings and other proceedings relating to intellectual property rights.

We anticipate significant fixed expenses due in part to our need to continue to invest in services development. We may be unable to adjust our expenditures if revenues in a particular period fail to meet our expectations, all of which would materially adversely affect our operating results for that period. As a result of these fluctuations, we believe that period-to-period comparisons of our financial results will not necessarily be meaningful, and you should not rely on these comparisons as an indication of our future performance.

Our common stock may be delisted from The NASDAQ Capital Market if we cannot maintain compliance with NASDAQ's continued listing requirements.

While we are currently in compliance with NASDAQ's stockholders' equity requirement and minimum bid price requirement, there are no assurances that we will be able to sustain long-term compliance with NASDAQ's stockholders' equity requirement or minimum bid price requirement. If we fail to maintain compliance with the applicable requirements, our stock may be delisted. Delisting from The NASDAQ Capital Market could make trading our common stock more difficult for investors, potentially leading to declines in our share price and liquidity. Without a NASDAQ Capital Market listing, stockholders may have a difficult time getting a quote for the sale or purchase of our stock, the sale or purchase of our stock would likely be made more difficult and the trading volume and liquidity of our stock could decline. Delisting from The NASDAQ Capital Market could also result in negative publicity and could also make it more difficult for us to raise additional capital. The absence of such a listing may adversely affect the acceptance of our common stock as currency or the value accorded by other parties. Further, if we are delisted, we would also incur additional costs under state blue sky laws in connection with any sales of our securities. These requirements could severely limit the market liquidity of our common stock and the ability of our stockholders to sell our common stock in the secondary market. If our common stock is delisted by NASDAQ, our common stock may be eligible to trade on an over-the-counter quotation system, such as the OTCQB market, where an investor may find it more difficult to sell our stock or obtain accurate quotations as to the market value of our common stock. We cannot assure you that our common stock, if delisted from The NASDAQ Capital Market, will be listed on another national securities exchange or quoted on an over-the counter quotation system.

If we are delisted from The NASDAQ Capital Market, your ability to sell your shares of our common stock would also be limited by the penny stock restrictions, which could further limit the marketability of your shares.

If our common stock is delisted, it would come within the definition of "penny stock" as defined in the Securities Exchange Act of 1934, or the Exchange Act, and would be covered by Rule 15g-9 of the Exchange Act. That Rule imposes additional sales practice requirements on broker-dealers who sell securities to persons other than established customers and accredited investors. For transactions covered by Rule 15g-9, the broker-dealer must make a special suitability determination for the purchaser and receive the purchaser's written agreement to the transaction prior to the sale. Consequently, Rule 15g-9, if it were to become applicable, would affect the ability or willingness of broker-dealers to sell our securities, and accordingly would affect the ability of stockholders to sell their securities in the public market. These additional procedures could also limit our ability to raise additional capital in the future.

Historically we have not paid dividends on our common stock, and we do not anticipate paying any cash dividends in the foreseeable future.

We have never paid cash dividends on our common stock. We intend to retain our future earnings, if any, to fund operational and capital expenditure needs of our business, and we do not anticipate paying any cash dividends in the foreseeable future. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for our common stockholders in the foreseeable future.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

We currently lease office and laboratory space of approximately 12,200 square feet in Irvine, California under a lease agreement that expires in January 2020.

Item 3. LEGAL PROCEEDINGS

From time to time, we are involved in other litigation arising in the normal course of business. Management believes that resolution of these other matters will not result in any payment that, in the aggregate, would be material to our financial position or results of operations.

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

Recent Market Prices

The following table sets forth, for the periods indicated, the high and low quarterly sales prices of our common stock as reported by The NASDAQ Capital Market under the symbol of "CBMX". These prices represent prices among dealers, do not include retail markups, markdowns or commissions, and may not represent actual transactions. The amounts reflected in the following table are also adjusted to reflect the impact of the reverse stock split, which became effective on January 29, 2016.

	2016				2015			
	Fourth Quarter	Third Quarter	Second Quarter	First Quarter	Fourth Quarter	Third Quarter	Second Quarter	First Quarter
High	$ 4.35	$ 5.19	$ 4.40	$ 11.55	$ 19.05	$ 26.40	$ 30.00	$ 32.40
Low	$ 2.15	$ 2.63	$ 2.62	$ 3.53	$ 9.75	$ 15.45	$ 21.00	$ 19.20

As of February 28, 2017, there were eight holders of record of our common stock, which was Cede & Co., a nominee for the Depository Trust Company, or DTC, as reported to us by our stock transfer agent. All of the shares of common stock held by brokerage firms, banks and other financial institutions as nominees for beneficial owners are deposited into participant accounts at DTC and therefore are considered to be held of record by Cede & Co. as one stockholder.

No dividends have been paid on our common stock. We currently intend to retain all future earnings, if any, for use in our business and do not anticipate paying any cash dividends on our common stock in the foreseeable future.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information with respect to our common shares issuable under our equity compensation plans as of December 31, 2016:

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options (2)	(b) Weighted average exercise price of outstanding options (3)	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (4)
Equity compensation plans approved by security holders:			
2006 CombiMatrix Stock Incentive Plan (1)	180,934	$ 92.87	2,152
Equity compensation plans not approved by security holders:			
None	-	-	-
TOTAL	180,934	$ 92.87	2,152

(1) Consists of our 2006 CombiMatrix Stock Incentive Plan, as amended, which allows for the granting of stock options and other awards to eligible individuals, which generally includes directors, officers, employees and consultants. Please refer to Note 12 to our consolidated financial statements included elsewhere in this report for additional information.

(2) Includes shares of common stock subject to restricted stock units, or RSUs, that entitle each holder to one share of common stock for each such unit that vests over the holder's period of continued service.

(3) Calculated without taking into account the 116,301 shares of common stock subject to outstanding RSUs that become issuable as those units vest, without any cash consideration or other payment required for such shares.

(4) Consists of shares available for future issuance under our 2006 CombiMatrix Stock Incentive Plan as of December 31, 2016.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer or Affiliated Purchasers

None.

Item 6. SELECTED FINANCIAL DATA

Not required for smaller reporting companies.

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with our consolidated financial statements included elsewhere in this report. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors including those set forth under the heading "Risk Factors" elsewhere in this report.

General

We are a family health-focused clinical molecular diagnostic laboratory specializing in pre-implantation genetic screening, prenatal diagnosis, miscarriage analysis, and pediatric developmental disorders. We strive to provide best-in-class clinical laboratory support to healthcare professionals, allowing them to maximize the clinical utility of their patients' test results and to optimize patient care. Our testing focuses on advanced technologies, including single nucleotide polymorphism chromosomal microarray analysis, next generation sequencing, fluorescent in situ hybridization and high resolution karyotyping. Our approach to testing is to offer sophisticated technology along with high quality clinical support to our ordering physicians and their patients. Our laboratory facilities and corporate headquarters are located in Irvine, California.

We also own a one-third minority interest in Leuchemix, Inc., a private drug development company focused on developing a series of compounds to address a number of oncology-related diseases.

Liquidity

As of December 31, 2016, the combination of cash, cash equivalents and short term investments totaled $3.7 million. We believe our year-end cash balances will be sufficient to meet our expected cash requirements for current operations through and beyond the fourth quarter of 2017. In order for us to continue as a going concern beyond this point and ultimately to achieve profitability, we may be required to obtain capital from external sources, increase revenues and reduce operating costs. However, there can be no assurances that our operations will become profitable or that external sources of financing, including the issuance of debt and/or equity securities, will be available at times and at terms acceptable to us, or at all. The issuance of additional equity or convertible debt securities will also cause dilution to our shareholders. If external financing sources are not available or are inadequate to fund our operations, we will be required to reduce operating costs, including research projects and personnel, which could jeopardize our future strategic initiatives and business plans. See the Liquidity and Capital Resources section below as well as Note 1 to our consolidated financial statements included elsewhere in this report for additional discussion of these matters.

Overview of Recent Business Activities

During 2016, our business activities were driven primarily by continued commercialization efforts for our suite of molecular diagnostic tests, expansion of our test menu and by the infusion of additional capital. For the year ended December 31, 2016, our operating activities included the recognition of $12.9 million of total revenues, which increased by $2.8 million from 2015, due primarily to increased volumes and improved pricing and reimbursement of our microarray diagnostic tests performed, particularly in the reproductive health testing market (defined as testing volumes from prenatal, miscarriage analysis and pre-implantation genetic screening, or PGS diagnostic tests). Revenues from our reproductive health testing services increased by 37% in 2016 compared to from 2015, and total diagnostic testing increased by 28% in 2016 compared to 2015. Our net loss from operations in 2016 decreased by $2.4 million over 2015 primarily due to increased revenues, improved gross margins and flat operating expenses.

In February, 2016, we entered into a repurchase agreement, or the Repurchase Agreement, with the investors of our Series E preferred stock and warrant financing, which closed in February 2015. Pursuant to the terms of the Repurchase Agreement, we agreed to pay each Series E investor $300 per share of Series E preferred stock, or approximately $656,000, in consideration for the right to repurchase the Series E investor's Series E preferred stock upon closing of a future equity financing. In March 2016, we closed an underwritten public offering for the issuance of Series F convertible preferred stock and warrants to purchase common stock (the "Series F Financing"), resulting in net proceeds to us of approximately $6.9 million. Substantially concurrently with the closing of the Series F Financing, we paid $2.2 million to the Series E investors to repurchase all of the outstanding Series E convertible preferred stock in accordance with the Repurchase Agreement.

Critical Accounting Policies

Our consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States of America. In preparing these financial statements, we make assumptions, judgments and estimates that can have a significant impact on amounts reported in our consolidated financial statements. We base our assumptions, judgments and estimates on historical experience and various other factors that we believe to be reasonable under the circumstances. Actual results could differ materially from these estimates under different assumptions or conditions. On a regular basis we evaluate our assumptions, judgments and estimates and make changes accordingly.

We believe that, of the significant accounting policies discussed in Note 2 to our consolidated financial statements, the following accounting policies require our most difficult, subjective or complex judgments:

- revenue recognition and estimates for contractual allowances;
- accounting for stock-based compensation;
- accounting for derivative financial instruments;
- fair value measurements; and
- accounting for income taxes.

We discuss below the critical accounting assumptions, judgments and estimates associated with these policies. Historically, our assumptions, judgments and estimates relative to our critical accounting policies have not differed materially from actual results. For further information on our critical accounting policies, refer to Note 2 to our consolidated financial statements included elsewhere in this report.

Revenue Recognition

As described below, significant management judgments must be made and used in connection with the revenue recognized in any accounting period. Material differences may result in the amount and timing of revenue recognized or deferred for any period if management made different judgments.

We recognize revenue when (i) persuasive evidence of an arrangement exists, (ii) delivery has occurred or services have been performed, (iii) amounts are fixed or determinable and (iv) collectability of amounts is reasonably assured. Service revenues from providing diagnostic tests are recognized when the testing process is complete and test results are reported to the ordering physician or clinic. These diagnostic services are billed to various payors, including third-party commercial insurance companies, healthcare institutions, government payors including various state Medicaid programs, and individuals. We report revenues from contracted payors based on a contractual rate, or in the case of state Medicaid contracts, published fee schedules for our tests. We report revenues from non-contracted payors based on the amounts expected to be collected. The differences between the amounts billed and the amounts expected to be collected from non-contracted payors are recorded as contractual allowances to arrive at net recognized revenues. The expected revenues from non-contracted payors are based on the historical collection experience of each payor or payor group, as appropriate, and also take into account recent collection trends. In each reporting period, we review our historical collection experience for non-contracted payors and adjust our expected revenues for current and subsequent periods accordingly. We also recognize additional revenue from actual cash payments that exceed amounts initially recognized, in the period the payments are received. Because a substantial portion of our revenues is from non-contracted third-party payors, it is likely that we will be required to make adjustments to accounting estimates with respect to contractual allowances in the future, which may positively or adversely affect our results of operations. In all cases described above, we report revenues net of any applicable statutory taxes collected from customers, as applicable.

Accounting for Stock-Based Compensation

The compensation cost for all employee stock-based awards is measured at the grant date, based on the fair value of the award, and is recognized as an expense, on a straight-line basis, over the employee's requisite service period (generally the vesting period of the equity award) which is generally four years. The fair value of each stock option award is estimated on the date of grant using a Black-Scholes option valuation model. The fair value of each restricted stock unit ("RSU") award is based on the number of shares granted and the closing price of our common stock as reported on the NASDAQ Capital Market on the date of grant. Stock-based compensation expense is recognized only for those awards that are expected to vest using an estimated forfeiture rate. We estimate pre-vesting option forfeitures at the time of grant and reflect the impact of estimated pre-vesting option forfeitures as a component of the expense recognized.

Accounting for Derivative Financial Instruments

We evaluate financial instruments for freestanding or embedded derivatives. Derivative instruments that do not qualify for permanent equity classification are recorded as liabilities at fair value, with changes in value recognized as other income (expense) in the consolidated statements of operations in the period of change. Derivative warrant liabilities are categorized as either short-term or long-term based upon management's estimates as to when the derivative instrument may be realized. Management judgment is required in identifying derivative instruments and whether or not such instruments should be classified as liabilities or as a component of permanent equity based upon interpretations of existing accounting literature. Also, management judgment is required in determining the assumptions and valuation methods to be used for valuing the derivatives. If actual results differ from these estimates, the future impact on our consolidated financial position and results of operations could be significant.

Fair Value Measurements

We measure fair value as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or liability. We utilize a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

- Level 1: Observable market inputs such as quoted prices in active markets;
- Level 2: Observable market inputs, other than the quoted prices in active markets, that are observable either directly or indirectly; and
- Level 3: Unobservable inputs where there is little or no market data, which require the reporting entity to develop its own assumptions

Accounting for Income Taxes

We recognize income taxes on an accrual basis based on tax positions taken or expected to be taken in our tax returns. A tax position is defined as a position in a previously filed tax return or a position expected to be taken in a future tax filing that is reflected in measuring current or deferred income tax assets and liabilities. Tax positions are recognized only when it is more likely than not (i.e., likelihood of greater than 50%), based on technical merits, that the position would be sustained upon examination by taxing authorities. Tax positions that meet the more likely than not threshold are measured using a probability-weighted approach as the largest amount of tax benefit that has a greater than 50% likelihood of being realized upon settlement. Income taxes are accounted for using an asset and liability approach that requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in our consolidated financial statements or tax returns. A valuation allowance is established to reduce deferred tax assets if all, or some portion, of such assets will more than likely not be realized. Should they occur, our policy is to classify interest and penalties related to tax positions as income tax expense. Since our inception, no such interest or penalties have been incurred, however.

Comparison of the Results of Operations

Revenues and Cost of Revenues (dollars in thousands):

	For the Years Ended December 31,		Change	
	2016	2015	$	%
Diagnostic services revenues	$ 12,696	$ 9,941	$ 2,755	28%
Royalty revenues	173	147	26	18%
Cost of services	(5,787)	(5,444)	(343)	(6%)

Diagnostic Services Revenues. Diagnostic services revenues are generated from providing DNA-based genomic testing services primarily in the areas of PGS, miscarriage analysis, prenatal diagnostics (collectively referred to as reproductive health testing) and postnatal development disorders in children. The key drivers and metrics relating to the change in diagnostic services revenues were as follows:

	For the Years Ended December 31,		Change	
	2016	2015	#	%
Total billable tests	11,033	10,002	1,031	10%
Total reproductive health tests(1)	5,824	5,126	698	14%
Reproductive health percentage of total tests	52.8%	51.2 %		
Revenue per test - total billable tests	$ 1,151	$ 994	$ 157	16%
Revenue per test - total reproductive health tests(1)	$ 1,587	$ 1,316	$ 271	21%

(1) includes PGS, prenatal and miscarriage analysis microarray tests

For the year ended December 31, 2016, total billable tests and total diagnostic services revenues increased by 10% and 28%, respectively, compared to the year ended December 31, 2015. Driving the increase in billable tests and diagnostic services revenues was the increase in reproductive health test volumes, which increased by 14% for the year ended December 31, 2016 compared to the year ended December 31, 2015. We believe this reflects the commercialization strategies and focus of our sales force, which have emphasized reproductive health microarray diagnostics testing over traditional genomics testing. In addition, improved reimbursement from third-party payors primarily for our miscarriage analysis microarray test drove higher revenues per test in our reproductive health segment, thereby resulting in a higher percentage increase in total diagnostic services revenues compared to the increase in billable testing volumes.

Diagnostic services revenues are recognized based on: i) contractual rates billed to our customers and third party payors; and ii) amounts that we expect to collect from non-contracted third-party payors, which include adjustments for changes in estimates of contractual allowances as well as from receiving cash payments in excess of amounts previously recognized. Because approximately 71% of our diagnostic revenues are billed to third-party payors, most of which are non-contracted, it is likely that we will be required to make adjustments to these accounting estimates in the future, which may positively or adversely affect our revenues and results of operations.

Royalties. In 2010, we entered into an exclusive licensing agreement with CustomArray, Inc., or CA, a private company located in Washington State, for certain of our patents and intellectual property developed as part of our prior microarray manufacturing business. This agreement requires CA to pay us royalties as a percentage of their gross revenues, not less than $25,000 per quarter. CA's actual sales increased in 2016 compared to 2015, thereby driving the increase in royalty revenues year-over-year. It is uncertain whether in future periods, CA's revenues will increase, continue at current levels or return to the minimum contractual amounts.

Cost of Services. Cost of services relating to our diagnostic tests performed include direct materials such as microarray slides, reagents and related laboratory materials, direct laboratory labor (wages and benefits), allocation of administrative overhead and stock-compensation expenses. Increases in cost of services were due primarily to the increased diagnostic testing volumes previously discussed. Non-cash stock compensation expenses were not significant for the years presented. See Note 2 to our consolidated financial statements included elsewhere in this report for a detailed description of the amounts of non-cash stock compensation expense recognized for the periods presented.

Operating Expenses (dollars in thousands):

	For the Years Ended December 31,		Change	
	2016	2015	$	%
Research and development	$ 493	$ 466	$ 27	6%
Sales and marketing	4,569	4,979	(410)	(8%)
General and administrative	6,013	5,540	473	9%
Impairment of cost-basis investment	-	97	(97)	(100%)

Research and Development. These expenses include labor (wages, benefits and non-cash stock compensation expenses) and laboratory supply costs associated with investigating and validating new tests and technology platforms, costs to maintain and improve our existing suite of diagnostic tests offered and process improvement projects. Prior to launching a new test or technology, or modifying an existing test, appropriate clinical trials and extensive laboratory validations, consistent with the various regulations that govern our industry, must be performed. These costs are classified as research and development for all periods presented. For the year ended December 31, 2016, research and development expenses increased from the comparable 2015 period due primarily to increased efforts during 2016 in launching a next generation sequencing platform for our PGS testing services.

Sales and Marketing. These expenses include salaries and wages associated with our sales force and marketing resources, sales commissions and other expenses associated with promotional and advertising efforts as well as non-cash stock compensation expenses. For the year ended December 31, 2016, sales and marketing expenses decreased from 2015 due primarily to reduced headcount in sales representatives and reduced travel and entertainment costs from fewer sales headcount compared to 2015. Non-cash stock compensation expenses were not significant for the years presented. See Note 2 to our consolidated financial statements included elsewhere in this report for a detailed description of the amounts of non-cash stock compensation expense recognized for the periods presented.

General and Administrative. These expenses include compensation and benefit costs of our administrative staff, client billing and collections, information technology, executive management, human resources and accounting personnel, as well as facilities-related costs, insurance, legal, audit and other professional services. General and administrative expenses increased from 2015 due primarily to increased salaries and bad debt expense, investor relations and consulting expenses, partially offset by decreased legal fees as a result of litigation which concluded in early 2015. Also included in general and administrative expenses are non-cash stock-based compensation expenses, which were $616,000 and $594,000 for the years ended December 31, 2016 and 2015, respectively. Changes to stock-based compensation expenses are driven by timing of when stock-based awards are granted compared to when older awards become fully vested or expire due to forfeitures, as well as by the valuations attributed to individual awards at the time they are granted. See Note 2 to our consolidated interim financial statements included elsewhere in this report for a detailed description of the amounts of non-cash stock compensation expense recognized for the periods presented.

Impairment of cost-basis investment. During the third quarter of 2015, management determined that the carrying value of a cost-basis investment in the stock of a privately held company was impaired, resulting in a one-time, non-cash impairment charge of $97,000 for the year ended December 31, 2015. There were no such charges in 2016.

Inflation

Inflation has not had a significant impact in the current or prior periods.

Liquidity and Capital Resources

At December 31, 2016, cash, cash equivalents and short-term investments totaled $3.7 million, compared to $3.9 million at December 31, 2015. Cash is held primarily in general checking accounts as well as in money market mutual funds backed by U.S. government securities. Short-term investments are comprised primarily of certificates of deposits issued by U.S. financial institutions and commercial paper. Working capital was $6.1 million and $5.4 million at December 31, 2016 and 2015, respectively. The primary reason for the increase in working capital was due to higher current asset balances including accounts receivable and laboratory supplies at December 31, 2016 compared to 2015.

The net change in cash and cash equivalents for the periods presented was comprised of the following (in thousands):

	For the Years Ended December 31,		
	2016	2015	Change
Net cash (used in) provided by:			
Operating activities	$ (3,900)	$ (5,730)	$ 1,830
Investing activities	2,093	908	1,185
Financing activities	3,881	4,465	(584)
Increase (decrease) in cash and cash equivalents	$ 2,074	$ (357)	$ 2,431

Operating Activities. Higher cash inflows from improved cash collections partially offset by slightly higher operating expenses during the year ended December 31, 2016 resulted in lower cash used in operating activities compared to 2015.

Investing Activities. The increase in net cash flows from investing activities was due to significant sales of available-for-sale short-term investments made during 2016 compared to 2015.

Financing Activities. The decrease in net cash flows from financing activities was due primarily to the $6.9 million of net proceeds received from the March 2016 Series F Financing partially offset by the $(2.8 million) repayment of and dividends paid to the Series E investors commensurate with the 2016 Series F Financing, compared to the $4.7 million of net proceeds from the February 2015 Series E Financing.

Future Liquidity. We have a history of incurring net losses and net operating cash flow deficits. We are also deploying new technologies and continue to develop commercial technologies and services. We believe that our cash, cash equivalents and short-term investments as of December 31, 2016, which totaled $3.7 million, will be sufficient to meet our expected cash requirements for current operations through and beyond the fourth quarter of 2017. In order for us to continue as a going concern beyond this point and to ultimately achieve profitability, we may be required to obtain capital from external sources, increase revenues and reduce operating costs. However, there can be no assurance that our operations will become profitable or that external sources of financing, including the issuance of debt and/or equity securities, will be available at times and at terms acceptable to us, or at all. The issuance of additional equity or convertible debt securities will also cause dilution to our stockholders. Also, in order to issue securities at a price below the exercise prices of our outstanding warrants issued in connection with our past preferred stock private placement financings, we must obtain the affirmative consent of holders of at least 67% of each series of such outstanding warrants. If we are unable to obtain the consent of these holders in connection with future financings, we may be unable to raise additional capital on acceptable terms, or at all. If external financing sources are not available or are inadequate to fund our operations, we will be required to reduce operating costs, including research projects and personnel, which could jeopardize our future strategic initiatives and business plans.

Capital Requirements. We may also encounter unforeseen difficulties that may deplete our capital resources more rapidly than anticipated. As a result, we may be required to seek additional funding through equity, debt or other external financing, and there can be no assurance that additional funding will be available on favorable terms, in a timely fashion or at all. At this time, we have no significant commitments for capital expenditures in 2017 or beyond. However, our long-term capital requirements could be substantial and the adequacy of available funds will depend upon many factors, including:

- the costs of commercialization activities, including sales and marketing costs and capital equipment;
- competing technological developments;
- the creation and formation of strategic partnerships;
- variability in third-party reimbursement for our diagnostic tests;
- the costs associated with leasing and improving our Irvine, California facility; and
- other factors that may not be within our control.

Off-Balance Sheet Arrangements

As of December 31, 2016, we did not have any significant off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K promulgated by the SEC. We have entered into an operating lease for our laboratory space and corporate offices, totaling approximately 12,200 square feet, expiring in early 2020. We have no significant commitments for capital expenditures for 2017 or beyond. We have executed nine capital leases totaling $219,000 for certain laboratory and IT-related equipment, with lease payments continuing through November 2019.

Recent Accounting Pronouncements

Refer to Note 2 to our consolidated financial statements included elsewhere in this report.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not required for smaller reporting companies.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The consolidated financial statements and related financial information required to be filed hereunder are indexed under Item 15 of this report and are incorporated herein by reference.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rules 13a-15(e) and 15d-15(e) promulgated under the Securities Exchange Act of 1934, as amended. Based on this evaluation, our principal executive officer and our principal financial officer concluded that, as of the end of the period covered by this annual report, our disclosure controls and procedures were effective to ensure that the information required to be disclosed by us in the reports that we file or submit under the Securities Exchange Act of 1934 is accumulated and communicated to management, including our chief executive officer and chief financial officer, to allow timely decisions regarding required disclosure, and that such information is recorded, processed, summarized and reported within the time periods prescribed by the SEC.

Management's Report on Internal Controls Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal controls over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal controls over financial reporting based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission, or COSO, in Internal Control-Integrated Framework (specifically, the 2013 Framework). Based on our evaluation under the framework in Internal Control – Integrated Framework, our management concluded that our internal controls over financial reporting were effective as of December 31, 2016.

There has been no change in our internal controls over financial reporting that occurred during the fiscal quarter ended December 31, 2016 that has materially affected, or is reasonably expected to materially affect, our internal controls over financial reporting.

Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as provided below, the information required by this Item is incorporated by reference from the information under the captions entitled "Board of Directors," "Executive Officers and Directors" and "Section 16(a) Beneficial Ownership Reporting Compliance" in our definitive proxy statement to be filed with the SEC no later than 120 days after our most recent fiscal year end, which is December 31, 2016.

Code of Business Conduct and Ethics

We have adopted a corporate Code of Business Conduct and Ethics, which may be viewed on our website at www.combimatrix.com . The Code of Business Conduct and Ethics applies to all our officers, directors and employees, including our principal executive officer, principal financial and accounting officer and controller, or persons performing similar functions. If we effect an amendment to, or waiver from, a provision of our Code of Business Conduct and Ethics, we intend to satisfy our disclosure requirements by posting a description of such amendment or waiver on the website above or via a current report on Form 8-K. The inclusion of our web site address in this report does not include or incorporate by reference the information on, or accessible through, our web site into this report.

Item 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated by reference from the information under the caption entitled "Executive Compensation and Other Information" in our definitive proxy statement to be filed with the SEC no later than 120 days after our most recent fiscal year end, which is December 31, 2016.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item is incorporated by reference from the information under the caption entitled "Security Ownership of Certain Beneficial Owners and Management" in our definitive proxy statement to be filed with the SEC no later than 120 days after our most recent fiscal year end, which is December 31, 2016.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item is incorporated by reference from the information under the caption entitled "Certain Transactions" and "Board of Directors" in our definitive proxy statement to be filed with the SEC no later than 120 days after our most recent fiscal year end, which is December 31, 2016.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item is incorporated by reference from the information under the caption entitled "Principal Accountants" in our definitive proxy statement to be filed with the SEC no later than 120 days after our most recent fiscal year end, which is December 31, 2016.

PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) (1) Financial Statements — See "Index to Consolidated Financial Statements" appearing on page F-1.

(2) Financial Statement Schedules

Schedules have been omitted, as they are not required for smaller reporting companies, not applicable or the information is otherwise included.

(3) Exhibits — Refer to Item 15(b) below.

(b) Exhibits. The following exhibits are either filed herewith or incorporated herein by reference:

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-1 (SEC File No. 333-139679) filed with the SEC on December 26, 2006.
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1A to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on August 14, 2008.
3.3	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 4, 2012.
3.4	Certificate of Designation of Preferences, Rights and Limitations of Series A 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
3.5	Certificate of Designation of Preferences, Rights and Limitations of Series B 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 20, 2013.
3.6	Certificate of Designation of Preferences, Rights and Limitations of Series C 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
3.7	Certificate of Designation of Preferences, Rights and Limitations of Series D Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 23, 2013.
3.8	Certificate of Designation of Preferences, Rights and Limitations of Series E 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
3.9	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 29, 2015
3.10	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on January 29, 2016.
3.11	Certificate of Designation of Preferences, Rights and Limitations of Series F Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 24, 2016.
3.12	Second Amended and Restated Bylaws. Incorporated by reference to Exhibit 3.2 to the Company's Annual Report on Form 10-K (File No. 001-33523) filed with the SEC on March 18, 2010.
4.1	Form of Common Stock Certificate. Incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1/A (File No. 333-208704) filed with the SEC on February 19, 2016.
4.2	Form of Series F Preferred Stock Certificate. Incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-1/A (File No. 333-208704) filed with the SEC on March 18, 2016.
4.3	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on May 10, 2016.
10.1†	Restated Executive Change in Control Severance Plan, as restated on December 7, 2015. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 7, 2015.
10.2	Amendment No. 3 to Lease dated as of January 11, 2010. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on January 15, 2010.
10.3	Amendment No. 4 to the Lease effective as of October 21, 2012. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 25, 2012.

Exhibit Number	Description
10.4†	2006 Stock Incentive Plan, as amended. Incorporated by reference to Exhibit 10.4 to the Company's Annual Report on Form 10-K (File No. 001-33523) filed with the SEC on February 18, 2016.
10.5†	Form of Stock Incentive Plan Agreement. Incorporated by reference to the Company's Registration Statement on Form S-1 (SEC File No. 333-139679), which became effective June 8, 2007.
10.6†	Employment Agreement for Mark McDonough. Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on November 13, 2012.
10.7	Form of Amended and Restated Indemnification Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on August 12, 2011.
10.8	Form of Securities Purchase Agreement dated as of April 1, 2011. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.9	Form of Investors Rights Agreement dated as of April 1, 2011. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.10	HLM Rights Agreement dated as of April 1, 2011. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.11	Form of Warrant to Purchase Common Stock issued on April 7, 2011. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.12	Form of Indemnity Agreement. Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.13	Form of Securities Purchase Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.14	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.15	Form of Registration Rights Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.16	Form of Lock-Up Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.17	Form of Voting Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.18	Consent and Waiver executed on December 4, 2012. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 7, 2012.
10.19	Form of Amendment No. 1 to Common Stock Purchase Warrant dated February 26, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 26, 2013.
10.20	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 20, 2013.
10.21	Form of Securities Purchase Agreement dated as of March 19, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 20, 2013.
10.22†	Mark McDonough Compensation Arrangement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 3, 2013.
10.23	Form of Waiver Regarding HLM Rights Agreement dated April 5, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 8, 2013.
10.24	Form of Securities Purchase Agreement dated as of May 3, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.25	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.26	Form of Registration Rights Agreement dated as of May 3, 2013. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.27	Form of Voting Agreement dated as of May 3, 2013. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.28†	Form of Stock Incentive Plan Agreement for Performance-Based Options. Incorporated by reference to Exhibit 10.11 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on May 13, 2013.
10.29†	Letter Agreement dated June 27, 2013 regarding Mark McDonough's bonus arrangement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on July 1, 2013.
10.30	Amendment No. 5 to Lease effective as of July 16, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on July 19, 2013.
10.31	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-1/A (File No. 333-191211) filed with the SEC on December 9, 2013.

Exhibit Number	Description
10.32†	2014 Executive Performance Bonus Plan, as amended. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 10, 2014.
10.33†	Form of Restricted Stock Unit Award Agreement under the Company's 2006 Stock Incentive Plan. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 24, 2014.
10.34	Form of Amendment No. 2 to Common Stock Purchase Warrant dated June 4, 2014. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on June 10, 2014.
10.35	Form of Additional Common Stock Purchase Warrant issued June 4, 2014. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on June 10, 2014.
10.36	Amendment No. 6 to the Lease effective as of October 24, 2014. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 28, 2014.
10.37	Form of Warrant to Purchase Common Stock (Series E Financing). Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.38	Form of Amendment of Outstanding Warrants. Incorporated by reference to Exhibit 4.5 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.39	Form of Securities Purchase Agreement dated as of February 13, 2015 (Series E Financing). Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.40	Form of Private Placement Securities Purchase Agreement dated as of February 13, 2015 (Warrant Financing). Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.41†	2015 Executive Performance Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 5, 2015.
10.42	Collaboration Agreement, effective May 23, 2013, between CombiMatrix and Sequenom Center for Molecular Medicine, LLC. Incorporated by reference to Exhibit 10.42 to the Company's Annual Report on Form 10-K (File No. 001-33523) filed with the SEC on March 17, 2015.
10.43	Agreement of Settlement and Release, dated April 23, 2015. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 28, 2015.
10.44	Form of Amendment No. 1 to February 2015 Common Stock Purchase Warrant dated October 12, 2015. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 13, 2015.
10.45	Form of Amendment No. 1 to April 2015 Common Stock Purchase Warrant dated October 12, 2015. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 13, 2015.
10.46	Form of Waiver of Cash Dividends dated October 12, 2015. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 13, 2015.
10.47†	Transaction Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 7, 2015.
10.48	Form of Series E 6% Convertible Preferred Stock Repurchase Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 5, 2016.
10.49	Form of Leak-Out Agreement. Incorporated by reference to Exhibit 10.49 to the Company's Registration Statement on Form S-1/A (File No. 333-208704) filed with the SEC on March 18, 2016.
10.50	Form of Common Stock Purchase Warrants Repurchase Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on July 11, 2016.
10.51†	2016 Executive Performance Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 27, 2016.
10.52†	2017 Executive Performance Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 3, 2017.
21.1	Subsidiaries of the Registrant(*)
23.1	Consent of Haskell & White LLP(*)
31.1	Certification of Chief Executive Officer pursuant to section 302 of the Sarbanes-Oxley Act of 2002 (*).
31.2	Certification of Chief Financial Officer pursuant to section 302 of the Sarbanes-Oxley Act of 2002 (*).
32.1	Certification of Chief Executive Officer pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).
32.2	Certification of Chief Financial Officer pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).
101.0	The following materials from CombiMatrix Corporation's Annual Report on Form 10-K for the year ended December 31, 2016, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Balance Sheets as of December 31, 2016 and December 31, 2015; (ii) Consolidated Statements of Operations for the Years ended December 31, 2016 and 2015; (iii) Consolidated Statements of Comprehensive Loss for the Years ended December 31, 2016 and 2015; (iv) Consolidated Statements of Stockholders' Equity for the Years ended December 31, 2016 and 2015 (v) Consolidated Statements of Cash Flows for the Years ended December 31, 2016 and 2015; and (vi) Notes to Consolidated Financial Statements.

(*) Included herewith.

† Denotes management contract or compensatory plan or arrangement.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

Dated: March 3, 2017

COMBIMATRIX CORPORATION

/s/ MARK MCDONOUGH

Mark McDonough
President and
Chief Executive Officer
(Authorized Signatory)

Pursuant to the requirements of the Securities and Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and the capacities and on the dates indicated.

Signature	Title	Date
/s/ MARK MCDONOUGH Mark McDonough	President and Chief Executive Officer, Director (Principal Executive Officer)	March 3, 2017
/s/ SCOTT R. BURELL Scott R. Burell	Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)	March 3, 2017
/s/ R. JUDD JESSUP R. Judd Jessup	Chairman of the Board	March 3, 2017
/s/ JEREMY M. JONES Jeremy M. Jones	Director	March 3, 2017
/s/ ROBERT E. HOFFMAN Robert E. Hoffman	Director	March 3, 2017
/s/ LÂLE WHITE Lâle White	Director	March 3, 2017
/s/ DIRK VAN DEN BOOM Dirk van den Boom, Ph.D.	Director	March 3, 2017

COMBIMATRIX CORPORATION
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
CombiMatrix Corporation
Irvine, California

We have audited the accompanying consolidated balance sheets of CombiMatrix Corporation (the "Company") as of December 31, 2016 and December 31, 2015, and the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years then ended. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. The Company has determined that it is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits 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 includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall consolidated 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 consolidated financial position of CombiMatrix Corporation as of December 31, 2016 and December 31, 2015, and the consolidated results of its operations and its cash flows for each of the years then ended, in conformity with accounting principles generally accepted in the United States.

/S/ HASKELL & WHITE LLP

Irvine, California
March 3, 2017

COMBIMATRIX CORPORATION
CONSOLIDATED BALANCE SHEETS
As of December 31, 2016 and 2015
(In thousands, except share and per share information)

	December 31, 2016	December 31, 2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 2,727	$ 653
Short-term investments	1,000	3,248
Accounts receivable, net of allowance for doubtful accounts of $232 and $235	3,351	2,682
Supplies	599	418
Prepaid expenses and other assets	174	200
Total current assets	7,851	7,201
Property and equipment, net	597	691
Other assets	30	30
Total assets	$ 8,478	$ 7,922
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable, accrued expenses and other	$ 1,689	$ 1,591
Current portion, long-term debt	100	193
Total current liabilities	1,789	1,784
Capital lease obligations, net of current portion	50	71
Secured promissory note payable, net of current portion	-	34
Deferred rent	145	177
Total liabilities	1,984	2,066
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Convertible preferred stock; $0.001 par value; 5,000,000 shares authorized;		
Series E - 2,202 shares authorized; none and 2,201.493 issued and outstanding	-	-
Series F - 8,000 shares authorized; 969 and none issued and outstanding	-	-
Common stock; $0.001 par value; 50,000,000 shares authorized; 2,673,756 and 845,374 shares issued and outstanding	15	13
Additional paid-in capital	109,068	102,651
Accumulated other comprehensive loss	-	(2)
Accumulated deficit	(102,589)	(96,806)
Total stockholders' equity	6,494	5,856
Total liabilities and stockholders' equity	$ 8,478	$ 7,922

The accompanying notes are an integral part of these consolidated financial statements.

COMBIMATRIX CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
For the Years Ended December 31, 2016 and 2015
(In thousands, except share and per share information)

	For the Years Ended December 31,	
	2016	**2015**
Revenues:		
Diagnostic services	$ 12,696	$ 9,941
Royalties	173	147
Total revenues	12,869	10,088
Operating expenses:		
Cost of services	5,787	5,444
Research and development	493	466
Sales and marketing	4,569	4,979
General and administrative	6,013	5,540
Patent amortization and royalties	100	100
Impairment of cost-basis investment	-	97
Total operating expenses	16,962	16,626
Operating loss	(4,093)	(6,538)
Other income (expenses):		
Interest income	22	16
Interest expense	(69)	(79)
Total other income (expense)	(47)	(63)
Net loss	$ (4,140)	$ (6,601)
Deemed dividend from issuing Series F convertible preferred stock and warrants	$ (1,877)	$ -
Deemed dividend paid for right to repurchase Series E convertible preferred stock	(656)	-
Deemed dividend from issuing and modifying Series E convertible preferred stock and warrants	890	(1,058)
Net loss attributable to common stockholders	$ (5,783)	$ (7,659)
Basic and diluted net loss per share	$ (2.34)	$ (7.95)
Deemed dividend from issuing Series F convertible preferred stock and warrants	(1.06)	-
Deemed dividend paid for right to repurchase Series E convertible preferred stock	(0.37)	-
Deemed dividend from issuing and modifying Series E convertible preferred stock and warrants	0.50	(1.27)
Basic and diluted net loss per share attributable to common stockholders	$ (3.27)	$ (9.22)
Basic and diluted weighted average common shares outstanding	1,768,090	830,835

The accompanying notes are an integral part of these consolidated financial statements.

COMBIMATRIX CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
For the Years Ended December 31, 2016 and 2015
(In thousands, except share and per share information)

	For the Years Ended December 31,	
	2016	**2015**
Net loss	$ (4,140)	$ (6,601)
Unrealized gain on available-for-sale investments	2	1
Total comprehensive loss	$ (4,138)	$ (6,600)

The accompanying notes are an integral part of these consolidated financial statements.

COMBIMATRIX CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the Years Ended December 31, 2016 and 2015
(In thousands, except share information)

	Series E Convertible Preferred Stock		Series F Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Shares	Amount				
Balances, December 31, 2014	-	$ -	-	$ -	737,528	$ 11	$ 96,259	$ (3)	$ (89,147)	$ 7,120
Issuance of Series E convertible preferred stock and common stock, net	2,201.493	-	-	-	102,800	2	4,681	-	-	4,683
Beneficial conversion feature of Series E convertible preferred stock	-	(890)	-	-	-	-	890	-	-	-
Deemed dividends from issuance of Series E convertible preferred stock	-	890	-	-	-	-	-	-	(890)	-
Deemed dividends from modification of Series E convertible preferred stock and warrants	-	-	-	-	-	-	168	-	(168)	-
Vesting of restricted stock units	-	-	-	-	5,046	-	-	-	-	-
Issuance costs from various securities filings	-	-	-	-	-	-	(34)	-	-	(34)
Non-cash stock compensation	-	-	-	-	-	-	687	-	-	687
Unrealized gain on available-for-sale investments	-	-	-	-	-	-	-	1	-	1
Net loss	-	-	-	-	-	-	-	-	(6,601)	(6,601)
Balances, December 31, 2015	2,201.493	-	-	-	845,374	13	102,651	(2)	(96,806)	5,856
Conversion of Series E convertible preferred stock	(16)	-	-	-	599	-	-	-	-	-
Premium paid to redeem Series E convertible preferred stock	-	-	-	-	-	-	-	-	(656)	(656)
Issuance of Series F convertible preferred stock and warrants, net	-	-	8,000.0	-	-	-	6,885	-	-	6,885
Beneficial conversion feature of Series F convertible preferred stock	-	-	-	(1,877)	-	-	1,877	-	-	-
Deemed dividends from issuance of Series F convertible preferred stock	-	-	-	1,877	-	-	-	-	(1,877)	-
Redemption of Series E convertible preferred stock	(2,185.769)	-	-	-	-	-	(2,186)	-	-	(2,186)
Reversal of Series E deemed dividend	-	-	-	-	-	-	(890)	-	890	-
Conversions of Series F convertible preferred stock	-	-	(7,031.0)	-	1,816,827	2	(2)	-	-	-
Vesting of restricted stock units	-	-	-	-	10,956	-	-	-	-	-
Non-cash stock compensation	-	-	-	-	-	-	733	-	-	733
Unrealized gain on available-for-sale investments	-	-	-	-	-	-	-	2	-	2
Net loss	-	-	-	-	-	-	-	-	(4,140)	(4,140)
Balances, December 31, 2016	-	$ -	969.0	$ -	2,673,756	$ 15	$ 109,068	$ -	$ (102,589)	$ 6,494

The accompanying notes are an integral part of these consolidated financial statements.

COMBIMATRIX CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2016 and 2015
(In thousands)

	For the Years Ended December 31,	
	2016	**2015**
Operating activities:		
Net loss	$ (4,140)	$ (6,601)
Adjustments to reconcile net loss to net cash flows from operating activities:		
Depreciation and amortization	258	297
Non-cash stock compensation	733	687
Provision for bad debts	465	277
Impairment of cost-basis investment	-	97
Changes in assets and liabilities:		
Accounts receivable	(1,134)	(823)
Supplies, prepaid expenses and other assets	(180)	(83)
Accounts payable, accrued expenses and other	98	419
Net cash flows from operating activities	(3,900)	(5,730)
Investing activities:		
Purchase of property and equipment	(157)	(72)
Purchase of available-for-sale investments	(8,497)	(4,000)
Sale of available-for-sale investments	10,747	4,980
Net cash flows from investing activities	2,093	908
Financing activities:		
Proceeds from issuance of Series F convertible preferred stock and common stock warrants	8,000	-
Costs from issuance of Series F convertible preferred stock and common stock warrants	(1,089)	(26)
Repurchase of Series E convertible preferred stock and dividends	(2,842)	-
Proceeds from issuance of Series E convertible preferred stock, common stock and warrants	-	4,900
Costs from issuance of Series E convertible preferred stock, common stock and warrants	-	(217)
Issuance costs from various securities filings	-	(8)
Repayments of long-term debt	(188)	(184)
Net cash flows from financing activities	3,881	4,465
Increase (decrease) in cash and cash equivalents	2,074	(357)
Cash and cash equivalents, beginning	653	1,010
Cash and cash equivalents, ending	$ 2,727	$ 653
Cash paid in interest expense	$ 26	$ 40
Non-cash investing and financing activities:		
Property and equipment purchased on capital leases	$ 40	$ 72
Deemed dividends from issuing Series F convertible preferred stock and warrants	$ 1,877	$ -
Deemed dividends from issuing and modifying Series E convertible preferred stock and warrants	$ (890)	$ 1,058
Warrant modifications recognized as non-cash Series E offering-related costs	$ -	$ 336
Tenant improvements recognized as deferred rent	$ -	$ 164

The accompanying notes are an integral part of these consolidated financial statements.

1. DESCRIPTION OF BUSINESS

CombiMatrix Corporation (the "Company," "we," "us" and "our") was originally incorporated in October 1995 as a California corporation and later reincorporated as a Delaware corporation in September 2000. In December 2002, we merged with, and became a wholly owned subsidiary of Acacia Research Corporation ("Acacia"), and in August 2007, we split-off from Acacia and became publicly traded on The NASDAQ Stock Market. As a result of the split-off, we ceased to be a subsidiary of, or affiliated with, Acacia.

Description of the Company

We are a family health-focused clinical molecular diagnostic laboratory specializing in pre-implantation genetic screening, prenatal diagnosis, miscarriage analysis, and pediatric developmental disorders. We strive to provide best-in-class clinical laboratory support to healthcare professionals, allowing them to maximize the clinical utility of their patients' test results and to optimize patient care. Our testing focuses on advanced technologies, including single nucleotide polymorphism, or SNP, chromosomal microarray analysis, next generation sequencing, fluorescent in situ hybridization and high resolution karyotyping. Our approach to testing is to offer sophisticated technology along with high-quality clinical support to our ordering physicians and their patients. Our laboratory facilities and corporate headquarters are located in Irvine, California.

We also own a one-third minority interest in Leuchemix, Inc. ("Leuchemix"), a private drug development company focused on developing a series of compounds to address a number of oncology-related diseases.

Reverse Stock Split

On January 29, 2016, we filed a Certificate of Amendment to our Certificate of Incorporation with the Secretary of State of the State of Delaware to effect a reverse split of our common stock at a ratio of one-for-fifteen (the "Reverse Stock Split"), which became effective at the close of business on that day. As a result, each share of CombiMatrix common stock outstanding as of January 29, 2016 was automatically changed into one-fifteenth of a share of common stock. No fractional shares were issued in connection with the Reverse Stock Split, and cash paid to stockholders for potential fractional shares was insignificant. The number of shares of common stock subject to outstanding options, warrants and convertible securities were also reduced by a factor of fifteen as of January 29, 2016. All historical share and per share amounts reflected throughout this document have been adjusted to reflect the Reverse Stock Split. The authorized number of shares and the par value per share of our common stock were not affected by the Reverse Stock Split.

Going Concern Analysis

We have a history of incurring net losses and net operating cash flow deficits. We are also deploying new technologies and continue to develop new and improve existing commercial diagnostic testing services and related technologies. As a result, these conditions raised substantial doubt regarding our ability to continue as a going concern beyond 2017. However, as of December 31, 2016, we had cash, cash equivalents and short-term investments of $3.7 million. Also, the combination of continued revenue and cash reimbursement growth as we have seen over the past several quarters, coupled with improved gross margins and cost containment of expenses leads management to believe that it is probable that the Company's cash resources will be sufficient to meet our cash requirements through and beyond the fourth quarter of 2017, where we anticipate to achieve cash flow break-even status. If necessary, management also believes that it is probable that external sources of debt and/or equity financing could be obtained based on management's history of being able to raise capital coupled with current favorable market conditions. As a result of both management's plans and current favorable trends in improving cash flow, we believe the initial conditions which raised substantial doubt regarding our ability to continue as a going concern have been alleviated. Therefore, the accompanying consolidated financial statements have been prepared assuming that we will continue as a going concern.

The consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from the matters discussed herein. While we believe in the viability of our strategy to generate sufficient revenue and cash reimbursement, control costs and our ability to raise additional funds if necessary, there can be no assurances to that effect. Our ability to continue as a going concern is dependent upon our ability to further implement our business plan, generate sufficient revenues and cash reimbursement and to control operating expenses.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Accounting Principles and Fiscal Year End . The consolidated financial statements and accompanying notes are prepared on the accrual basis of accounting in accordance with U.S. generally accepted accounting principles ("GAAP"). We have a December 31 year-end.

Use of Estimates . The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

Basis of Presentation and Principles of Consolidation . The accompanying consolidated financial statements include the accounts of the Company and our wholly owned subsidiaries. Investments for which we possess the power to direct or cause the direction of the management and policies, either through majority ownership or other means, are accounted for under the consolidation method. Material intercompany transactions and balances have been eliminated in consolidation. Investments in companies in which we maintain an ownership interest of 20% to 50% or exercise significant influence over operating and financial policies are accounted for under the equity method. The cost method is used where we maintain ownership interests of less than 20% and do not exercise significant influence over the investee.

Revenue Recognition . We recognize revenue when (i) persuasive evidence of an arrangement exists, (ii) delivery has occurred or services have been performed, (iii) amounts are fixed or determinable and (iv) collectability of amounts is reasonably assured.

Service revenues from providing diagnostic tests are recognized when the testing process is complete and test results are reported to the ordering physician or clinic. These diagnostic services are billed to various payors, including third-party commercial insurance companies, healthcare institutions, government payors including various state Medicaid programs, and individuals. We report revenues from contracted payors based on a contractual rate, or in the case of state Medicaid contracts, published fee schedules for our tests. We report revenues from non-contracted payors based on the amounts expected to be collected. The differences between the amounts billed and the amounts expected to be collected from non-contracted payors are recorded as contractual allowances to arrive at net recognized revenues. The expected revenues from non-contracted payors are based on the historical collection experience of each payor or payor group, as appropriate, and also take into account recent collection trends. In each reporting period, we review our historical collection experience for non-contracted payors and adjust our expected revenues for current and subsequent periods accordingly. We also recognize additional revenue from actual cash payments that exceed amounts initially recognized, in the period the payments are received. Because a substantial portion of our revenues is from non-contracted third-party payors, it is likely that we will be required to make adjustments to accounting estimates with respect to contractual allowances in the future, which may positively or adversely affect our results of operations. In all cases described above, we report revenues net of any applicable statutory taxes collected from customers, as applicable. For the years ended December 31, 2016 and 2015, no single customer represented 10% or more of our revenues.

Cash Equivalents and Short-Term Investments . We consider all highly liquid investments purchased with maturities of three months or less when purchased to be cash equivalents. Short-term investments consist of fixed income investments with maturities between three and 12 months and other highly liquid investments that can be readily purchased or sold using established markets. These investments are classified as available-for-sale and are reported at fair value on the Company's consolidated balance sheets. Unrealized holding gains and losses are reported within comprehensive loss in the consolidated statements of comprehensive loss. Fair value is based on available market information including quoted market prices, broker or dealer quotations or other observable inputs. If a decline in the fair value of a short-term investment below our cost basis is determined to be other than temporary, such investment is written down to its estimated fair value as a new cost basis and the amount of the write-down is included in earnings as an impairment charge. To date, no permanent impairment charges have been realized or recorded.

Fair Value Measurements. We measure fair value as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or liability. We utilize a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

- Level 1: Observable market inputs such as quoted prices in active markets;
- Level 2: Observable market inputs, other than the quoted prices in active markets, that are observable either directly or indirectly, such as quoted prices for similar assets or liabilities; and
- Level 3: Unobservable inputs where there is little or no market data, which require the reporting entity to develop its own assumptions.

We classify our cash equivalents within the fair value hierarchy as Level 1 as these assets are valued using quoted prices in active markets for identical assets at the measurement date. We classify short-term investments within the fair value hierarchy as Level 2, primarily utilizing broker quotes in a non-active market for valuation of these investments. Financial instruments that contain valuation inputs that are not readily determinable from active markets or from similar securities trading in active markets, such as derivative financial instruments, are classified within the fair value hierarchy as Level 3.

Impairment of Long-Lived Assets . Long-lived assets and intangible assets are reviewed for potential impairment when events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. In the event the sum of the expected undiscounted future cash flows resulting from the use of the asset is less than the carrying amount of the asset, an impairment loss equal to the excess of the asset's carrying value over its fair value is recorded. If an asset is determined to be impaired, the loss is measured based on quoted market prices in active markets, if available. If quoted market prices are not available, the estimate of fair value is based on various valuation techniques, including a discounted value of estimated future cash flows.

During 2015, management determined that the carrying value of a cost-basis investment in the stock of a privately held company was impaired, resulting in a one-time, non-cash impairment charge of $97,000 for the year ended December 31, 2015.

Derivative Financial Instruments. We evaluate financial instruments for freestanding or embedded derivatives. Derivative instruments that do not qualify for permanent equity classification are recorded as liabilities at fair value, with changes in value recognized as other income (expense) in the consolidated statements of operations in the period of change. Derivative liabilities are categorized as either short-term or long-term based upon management's estimates as to when the derivative instrument may be realized or based upon the holder's ability to realize the instrument.

Concentration of Credit Risks . Cash and cash equivalents are invested in deposits with certain financial institutions and may, at times, exceed federally insured limits. We have not experienced any significant losses on our deposits of cash and cash equivalents. We do not believe that we are exposed to significant credit risk on cash and cash equivalents or on our short-term investments. Accounts receivable from two commercial insurance carriers of $441,000 for Carrier A and $402,000 for Carrier B exceeded 10% of our total accounts receivable balance as of December 31, 2016, and accounts receivable from Carrier B of $316,000 exceeded 10% of our total accounts receivable balance as of December 31, 2015.

Substantially all of the components and raw materials used in providing our testing services, including array slides and reagents, are currently provided to us from a limited number of sources or in some cases from a single source. Although we believe that alternative sources for those components and raw materials are available, any supply interruption in a sole-sourced component or raw material might result in up to a several-month production delay and materially harm our ability to provide testing services until a new source of supply, if any, could be located and qualified.

Accounts Receivable and Allowance for Doubtful Accounts. For our contracted third-party payors, governmental payors or direct-bill customers, accounts receivable are stated at principal amounts and are primarily comprised of amounts contractually due from customers for services performed. For our non-contracted customers, accounts receivable are stated at amounts expected to be collected based on historical collection experience with the third-party payor. The payment realization cycle for certain governmental and commercial insurance payors can be lengthy, involving denial, appeal and adjudication processes, and is subject to periodic adjustments that may be significant. Accounts receivable are periodically written off when identified as uncollectible after appropriate collection efforts have been exhausted. Such write-offs increase the contractual allowances (which reduce revenues) for those accounts in the period of adjustment. Collection of governmental, private health insurer, and client receivables are generally a function of providing complete and correct billing information to the insurers and clients within the filing deadlines required by each payor.

Collection of receivables due from patients and private-pay clients is generally subject to increased credit risk due to credit-worthiness or inability to pay. For these customers, an allowance for doubtful accounts is recorded for estimated uncollectible amounts, and involves significant assumptions and judgments. Specifically, the allowance for doubtful accounts is adjusted periodically and is principally based upon specific identification of past due or disputed accounts. We also review the age of receivables to assess our allowance at each period end. Additions to the allowance for doubtful accounts are charged to bad debt expense as a component of general and administrative expenses in the consolidated statements of operations.

Supplies . Supplies inventory, which consists primarily of raw materials to be used in the production of the arrays we use for our tests, is stated at the lower of cost or net realizable value using the first-in, first-out method.

Property and Equipment . Property and equipment is recorded at cost. Additions and improvements that increase the value or extend the life of an asset are capitalized. Maintenance and repairs are expensed as incurred. Disposals are removed at cost less accumulated depreciation or amortization and any gain or loss from disposition is reflected in the consolidated statements of operations in the period of disposition. Depreciation is computed on a straight-line basis over the following estimated useful lives of the assets:

Laboratory equipment	3 to 5 years
Furniture and fixtures	5 to 7 years
Computer hardware and software	3 years
Leasehold improvements	Lesser of lease term or useful life of improvement

Certain leasehold improvements, furniture and equipment held under capital leases are classified as property and equipment and are amortized over their useful lives using the straight-line method. Lease amortization is included in depreciation expense.

Stock-Based Compensation . The compensation cost for all employee stock-based awards is measured at the grant date, based on the fair value of the award, and is recognized as an expense, on a straight-line basis, over the employee's requisite service period (generally the vesting period of the equity award) which is generally four years. The fair value of each stock option award is estimated on the date of grant using a Black-Scholes option valuation model. The fair value of each restricted stock unit ("RSU") award is based on the number of shares granted and the closing price of our common stock as reported on the NASDAQ Capital Market on the date of grant. Stock-based compensation expense is recognized only for those awards that are expected to vest using an estimated forfeiture rate. We estimate pre-vesting option forfeitures at the time of grant and reflect the impact of estimated pre-vesting option forfeitures in compensation expense recognized.

The weighted average assumptions used to estimate the fair value of stock option awards granted during the year-ended December 31, 2015 are noted in the table below. There were no stock option awards granted to our employees during 2016, however as noted in Note 12, there were 6,832 stock options granted to non-employee consultants. Expected volatility is based on the separate historical volatility of the market prices of our common stock. The risk-free rate for the expected term, using the simplified method, of the option is based on the U.S. Treasury yield curve in effect at the time of grant.

	For the Years Ended December 31,	
	2016	**2015**
Risk free interest rate	-	1.8%
Volatility	-	107.3%
Expected term	-	6.3
Expected dividends	-	0%

Stock-based compensation expense for 2016 and 2015 attributable to our functional expense categories from stock option and RSU awards vesting during the periods presented was as follows (in thousands):

	For the Years Ended December 31,	
	2016	**2015**
Cost of services	$ 41	$ 32
Research and development	-	-
Sales and marketing	76	61
General and administrative	616	594
Total non-cash stock compensation	$ 733	$ 687

Research and Development Expenses . Prior to launching a new test or modifying and upgrading an existing test, extensive laboratory validations consistent with the various regulations that govern our industry must be performed. As a result, research and development expenses include labor, laboratory supplies and other development costs required to maintain and improve our existing suite of diagnostic test offerings as well as to investigate and develop new tests. Costs to acquire technologies which are utilized in research and development and which have no alternative future use are expensed when incurred. Software developed for use in our services is expensed as incurred until both (i) technological feasibility for the software has been established and (ii) all research and development activities for the other components of the system have been completed. We believe these criteria are met after we have received evaluations from third-party test sites and completed any resulting modifications to the services. Expenditures to date have been classified as research and development expense.

Advertising. Costs associated with marketing and advertising of our services are expensed as incurred. For the years ended December 31, 2016 and 2015, we incurred marketing and advertising expenses of $220,000 and $366,000, respectively.

Income Taxes . We recognize income taxes on an accrual basis based on tax positions taken or expected to be taken in our tax returns. A tax position is defined as a position in a previously filed tax return or a position expected to be taken in a future tax filing that is reflected in measuring current or deferred income tax assets and liabilities. Tax positions are recognized only when it is more likely than not (i.e., likelihood of greater than 50%), based on technical merits, that the position would be sustained upon examination by taxing authorities. Tax positions that meet the more likely than not threshold are measured using a probability-weighted approach as the largest amount of tax benefit that is greater than 50% likely of being realized upon settlement. Income taxes are accounted for using an asset and liability approach that requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in our consolidated financial statements or tax returns. A valuation allowance is established to reduce deferred tax assets if all, or some portion, of such assets will more than likely not be realized. Should they occur, our policy is to classify interest and penalties related to tax positions as income tax expense. Since our inception, no such interest or penalties have been incurred, however.

Other Comprehensive Loss. Components of comprehensive loss include unrealized gains and losses on short-term investments and are included in the consolidated statements of comprehensive loss.

Segments. We have determined that we operate in one segment for financial reporting purposes.

Net Loss Per Share . Basic and diluted net loss per share has been computed by dividing the net loss by the weighted average number of common shares issued and outstanding during the periods presented. Options and warrants to purchase CombiMatrix stock as well as preferred stock convertible into shares of common stock are anti-dilutive and therefore are not included in the determination of the diluted net loss per share. The following table reflects the excluded dilutive securities:

	For the Years Ended December 31,	
	2016	**2015**
Common stock options	64,633	69,995
Restricted stock units	116,301	38,795
Common stock warrants	2,701,754	643,317
Series E preferred stock convertible into common stock	-	83,871
Series F preferred stock convertible into common stock	250,236	-
Excluded potentially dilutive securities	3,132,924	835,978

Recent Accounting Pronouncements. In November 2016, the Financial Accounting Standards Board ("FASB") issued new accounting guidance governing restricted cash, which requires entities to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in the statement of cash flows. As a result, entities will no longer present transfers between cash and cash equivalents and restricted cash and restricted cash equivalents in the statement of cash flows. The amendments in this guidance should be applied using a retrospective transition method to each period presented. This guidance is effective for annual periods beginning after December 15, 2017, and interim periods within those fiscal years with early adoption permitted, including adoption in an interim period. We do not expect the adoption of this guidance to have a material impact on our consolidated statements of cash flows.

In August 2016, the Financial Accounting Standards Board ("FASB") issued new accounting guidance aimed at reducing the existing diversity in GAAP regarding how certain cash receipts and cash payments are classified in the statement of cash flows. The new guidance is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Early adoption is also permitted. We do not expect the adoption of this guidance to have a material impact on our consolidated statements of cash flows.

In March 2016, the FASB issued guidance regarding employee share-based payment accounting. The guidance is intended to simplify several areas of accounting for share-based compensation arrangements, including the income tax impact, classification on the statement of cash flows and provides the choice for companies to estimate forfeitures during the vesting period of an award (which is required under current GAAP) or recognize forfeitures at the time an award is canceled and forfeited. The standard is effective for us on January 1, 2017. We have elected to change our policy regarding forfeitures to recognize if and when an award is canceled and forfeited rather than estimating forfeitures up front. We have implemented this policy change using the modified retrospective approach, on January 1, 2017. The impact from implementing this policy change was to reduce retained earnings and increase additional paid-in capital by $57,000.

In February 2016, the FASB issued guidance regarding leases, which requires lessees to recognize on the balance sheet a right-of-use asset, representing their right to use the underlying asset for the lease term, and a lease liability for all leases with terms greater than 12 months. The guidance also requires qualitative and quantitative disclosures designed to assess the amount, timing and uncertainty of cash flows arising from leases. The guidance requires the use of a modified retrospective transition approach, which includes a number of optional practical expedients that entities may elect to apply. The guidance is effective for us beginning January 1, 2019, and we are currently evaluating the impact that this guidance will have on our consolidated financial statements.

In January 2016, the FASB issued accounting guidance regarding recognition and measurement of financial assets and financial liabilities. This guidance enhances the reporting model for financial instruments, which includes amendments to address aspects of recognition, measurement, presentation and disclosure. The guidance is effective for annual reporting periods beginning after December 15, 2017, and interim periods within those annual periods. We do not expect the adoption of this guidance to have a significant impact on our consolidated financial statements.

In July 2015, the FASB issued accounting guidance regarding simplifying the measurement of inventory. The new guidance applies only to inventory for which cost is determined by methods other than last-in, first-out and the retail inventory method, which includes inventory that is measured using first-in, first-out or average cost. Inventory within the scope of this standard is required to be measured at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The new standard will be effective for us on January 1, 2017. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In May 2014, the FASB issued new accounting guidance regarding revenue recognition from contracts with customers, which when effective will supersede existing revenue recognition requirements and will eliminate most industry-specific guidance from GAAP. The core principle of the new guidance is to require an entity to recognize as revenue the amount that reflects the consideration to which it expects to be entitled in exchange for goods or services as it transfers control to its customers. The new guidance requires additional qualitative and quantitative disclosures about the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. An entity can apply the new guidance retrospectively to each prior reporting period presented (i.e., the full retrospective method) or retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial application in retained earnings. As originally issued, the new revenue recognition standard would be effective for us beginning January 1, 2017. However, in 2015, the FASB voted to defer the effective date of the new guidance for one year. We have begun a detailed assessment of the impact that this guidance will have on our consolidated financial statements, and our analysis is currently ongoing. We will adopt the new guidance beginning January 2018.

Reclassifications . Certain comparative figures in 2015 have been reclassified to conform to the current year's presentation. These reclassifications were immaterial, both individually and in the aggregate.

3. CASH AND SHORT-TERM INVESTMENTS

As of December 31, 2016 and 2015, we held $2.7 million and $653,000 in cash and cash equivalents and $1.0 million and $3.2 million of short-term investments, respectively, which are reported at fair value. Cash, cash equivalents and short-term investments consisted of the following as of December 31, 2016 and 2015 (in thousands):

	December 31, 2016				December 31, 2015			
		Unrealized		Fair		Unrealized		Fair
	Cost	Gain	Loss	Value	Cost	Gain	Loss	Value
Cash and money market securities	$ 2,727	$ -	$ -	$ 2,727	$ 653	$ -	$ -	$ 653
Commercial paper	500	-	-	500	-	-	-	-
Certificates of deposit	500	-	-	500	3,250	-	(2)	3,248
	$ 3,727	$ -	$ -	$ 3,727	$ 3,903	$ -	$ (2)	$ 3,901

There were no realized gains or losses for the years ended December 31, 2016 and 2015.

4. FAIR VALUE MEASUREMENTS

The following table summarizes, for each major category of financial assets or liabilities measured on a recurring basis, the respective fair value at December 31, 2016 and 2015, and the classification by level of input within the fair value hierarchy defined above (in thousands):

		Fair Value Measurements		
December 31, 2016	**Total**	**Level 1**	**Level 2**	**Level 3**
Cash equivalents	$ 1,735	$ 1,735	$ -	$ -
Short-term investments	1,000	-	1,000	-
Total	$ 2,735	$ 1,735	$ 1,000	$ -

		Fair Value Measurements		
December 31, 2015	**Total**	**Level 1**	**Level 2**	**Level 3**
Cash equivalents	$ 99	$ 99	$ -	$ -
Short-term investments	3,248	-	3,248	-
Total	$ 3,347	$ 99	$ 3,248	$ -

5. PROPERTY AND EQUIPMENT

Property and equipment consists of the following (in thousands):

	December 31,	
	2016	**2015**
Laboratory equipment	$ 1,677	$ 1,547
Computer hardware and software	265	261
Furniture and fixtures	47	45
Leasehold improvements	396	396
	2,385	2,249
Less - accumulated depreciation and amortization	(1,788)	(1,558)
	$ 597	$ 691

Depreciation and amortization expense was $290,000 and $276,000 for the years ended December 31, 2016 and 2015, respectively. The net book value of assets under capital lease obligations was $129,000 and $156,000 as of December 31, 2016 and 2015, respectively.

6. BALANCE SHEET COMPONENTS

Accounts payable, accrued expenses and other accrued expenses consist of the following (in thousands):

	December 31,	
	2016	**2015**
Accounts payable	$ 542	$ 713
Payroll and other employee benefits	540	324
Accrued paid time off	272	237
Royalties	322	285
Other accrued expenses	13	32
	$ 1,689	$ 1,591

7. INCOME TAXES

The tax effects of temporary differences and carryforwards that give rise to significant portions of deferred assets and liabilities consist of the following (in thousands):

	December 31,	
	2016	2015
Deferred tax assets:		
Deferred settlement costs	$ 180	$ 492
Stock-based compensation	674	543
Accrued liabilities and other	509	516
Net operating loss carryforwards and credits	68,186	67,350
Total deferred tax assets	69,549	68,901
Less: valuation allowance	(69,528)	(68,891)
Deferred tax assets, net of valuation allowance	21	10
Deferred tax liabilities:		
Depreciation and amortization	(21)	(10)
Net deferred tax liability	$ -	$ -

A reconciliation of the federal statutory income tax rate and the effective income tax rate is as follows:

	December 31,	
	2016	2015
Statutory federal tax rate	(34%)	(34%)
Impact on state tax rates	(2%)	(2%)
Stock compensation	3%	0%
Valuation allowance	32%	34%
Other non deductible permanent items	1%	2%
	0%	0%

At December 31, 2016 and 2015, we had net deferred tax assets totaling approximately $69.5 million and $68.9 million, respectively. These assets are offset by valuation allowances due to our determination that the criteria for asset recognition have not been met, as well as by deferred tax liabilities. At December 31, 2016, we had federal net operating loss carryforwards of approximately $180 million, which begin to expire in 2017 through 2035. In addition, we have tax credit carryforwards of approximately $5.2 million. Utilization of net operating loss carryforwards and tax credit carryforwards are subject to the “change of ownership” provisions under Section 382 of the Internal Revenue Code. The amount of such limitations has not been determined. Also, given that our net operating losses have yet to be utilized, all previous tax years remain open to examination by Federal authorities and other jurisdictions in which we operate. We have no unrecognized tax benefits as of December 31, 2016 and 2015.

8. SECURED PROMISSORY NOTE

On May 20, 2014 ("Execution Date"), we executed a secured promissory note (the "Note") with ACC Investment Ltd. in the amount of $350,000, payable in equal amortized payments over a thirty-six month period (the "Term") from the Execution Date. The Note bears an annual interest rate of 10% and is secured by certain laboratory equipment used in our microarray services business. Legal and other closing costs totaling $22,000 were capitalized with the Note and are being amortized over the Term as interest expense. As of December 31, 2016 and 2015, the fair value of the Note approximated its carrying value. As of December 31, 2016 and 2015, components of the Note were as follows (in thousands):

	December 31,	
	2016	2015
Carrying value	$ 44	$ 168
Unamortized legal and closing costs	(2)	(10)
	42	158
Less- current portion	(42)	(124)
Long-term portion	$ -	$ 34

9. COMMITMENTS AND CONTINGENCIES

Leases

On October 24, 2014, we entered into an Amendment No. 6 to the Lease (the "Amendment") with PPC Goddard Investment, LLC (the "Landlord"), concerning our existing building lease for laboratory space and corporate offices in Irvine, California. The Amendment, in part (i) extends the term of the Lease by five years until January 31, 2020; (ii) provides for monthly base rent (excluding allocated common area expenses) of $1.00 per square foot per month for the first year, increasing by $0.05 per year thereafter throughout the term of the lease to a maximum of $1.20 per square foot per month in the fifth year of the lease; (iii) provides for certain tenant improvements to be provided by the Landlord at no cost to us; (iv) at our choosing, provides for an early termination after thirty-six months upon payment by us of the Landlord's unamortized tenant improvement cost and unamortized brokerage commissions payable in connection with the Amendment at an interest rate of eight percent; and (v) provides for a period of abated rent for the first three months of the renewal period (or February 1, 2015 through April 30, 2015). Pursuant to the Amendment, the monthly base rent together with the current estimated monthly common area expense of $0.85 per square foot will result in an aggregate monthly expense of approximately $22,500 for the first year, assuming no increase in the monthly common area expense, and increasing to approximately $25,000 per month for the fifth year, assuming we do not exercise our option to terminate the lease after thirty-six months, and assuming no increase in the monthly common area expense.

At December 31, 2016, we had nine capital leases for laboratory equipment with original purchase amounts totaling $219,000 and with useful lives of five years. As of December 31, 2016, the remaining lease obligations (including interest charges) were $118,000 with minimum future lease payments shown below. The weighted average interest rate on the capital lease obligations was 7.8%, based on remaining lease obligations as of December 31, 2016. The fair value of the capital lease obligations was not significantly different from their carrying amounts for all periods presented.

Future minimum lease payments for all of our facilities and leased equipment are as follows (in thousands):

Years ending December 31:

	Operating Leases	Capital Leases	Total
2017	$ 160	$ 65	$ 225
2018	167	37	204
2019	175	16	191
2020	15	-	15
Total minimum lease payments	$ 517	118	$ 635
Less- imputed interest		(10)	
Present value of capital lease obligations		108	
Less- current portion		(58)	
Capital lease obligations, net of current portion		$ 50	

Rent expense for the years ended December 31, 2016 and 2015 was $256,000 and $258,000, respectively.

Executive Severance

We provide certain severance benefits such that if an executive officer of CombiMatrix Corporation is terminated for other than cause, death or disability, the executive will receive payments equal to three months' base salary plus medical and dental benefits. In addition, we have implemented a Restated Executive Change of Control Severance Plan (as amended, the "Severance Plan") that affects certain of our senior management-level employees who are classified as "Section 16 Officers" of the Company. Pursuant to the Severance Plan, if a participating employee is involuntarily terminated (other than for death, disability or for cause) or resigns for "good reason" (as defined in the Severance Plan) during the two-year period following a "change of control" (as defined in the Severance Plan) of the Company, then, subject to execution of a release of claims against the Company, the employee will be entitled to receive: (i) one-half times annual base salary (one times annual base salary for the CEO); (ii) immediate vesting of outstanding compensatory equity awards; and (iii) payment of COBRA premiums for the participating employee and eligible dependents for a pre-determined period of time. Payment of benefits under the Severance Plan will be limited by provisions contained in Section 409A of the U.S. Internal Revenue Code. The Severance Plan is administered by a plan administrator, which initially is the Compensation Committee of the Board of Directors. In order to participate in the Severance Plan, an eligible employee must waive any prior retention or severance agreements. The Severance Plan automatically renews annually unless terminated upon 12 months prior written notice.

On December 2, 2015, our Board of Directors adopted a Transaction Bonus Plan (the "Transaction Bonus Plan"). The Transaction Bonus Plan provides for certain bonus payments to be made, upon the consummation of a qualifying change of control transaction, to certain employees of the Company as shall be determined from time to time by the Compensation Committee of our Board of Directors. The aggregate value of the bonuses payable under the Transaction Bonus Plan shall be the greater of (i) $1,000,000 or (ii) ten percent of the net proceeds received in connection with a qualifying change of control transaction, and the percentage of such bonus pool awarded to each eligible participant shall be determined from time to time by our Compensation Committee.

Litigation

In 2002, we entered into a settlement agreement with Nanogen, Inc. ("Nanogen") to settle all pending litigation between the parties. Pursuant to the terms of the settlement agreement, we agreed to make quarterly payments to Nanogen equal to 12.5% of total sales of products developed by us and our affiliates based on the patents that had been in dispute in the litigation, up to an annual maximum amount of $1.5 million. The minimum quarterly payments under the settlement agreement are $25,000 per quarter until the patents expire in 2018. Royalty expenses recognized under the agreement were $100,000 in each of the years ended December 31, 2016 and 2015, and are included in patent amortization and royalties in the accompanying consolidated statements of operations.

From time to time, we are subject to other claims and legal actions that arise in the ordinary course of business. We believe that the ultimate liability with respect to these claims and legal actions, if any, will not have a material effect on our financial position, results of operations or cash flows. Any legal costs resulting from claims or legal actions are expensed as incurred.

10. RETIREMENT SAVINGS PLAN

We have an employee savings and retirement plan under section 401(k) of the Internal Revenue Code (the "Retirement Plan"). The Retirement Plan is a defined contribution plan in which eligible employees may elect to have a percentage of their compensation contributed to the Retirement Plan, subject to certain guidelines issued by the Internal Revenue Service. We may contribute to the Retirement Plan at the discretion of our board of directors. There were no contributions made by us during any of the years presented.

11. STOCKHOLDERS' EQUITY

On April 28, 2015, our stockholders approved all ballot measures of a special meeting proxy, which included the approval to increase our authorized capital stock from 25 million shares to 50 million shares. Our authorized capital was not affected by the Reverse Stock Split.

On June 17, 2015, our stockholders approved all ballot measures of our annual meeting proxy, which included an increase to the common stock share reserves under our 2006 Stock Incentive plan from 133,333 shares to 200,000 shares.

As previously discussed above, on January 29, 2016, we filed a Certificate of Amendment to our Certificate of Incorporation with the Secretary of State of the State of Delaware to effect the one-for-fifteen Reverse Stock Split. The following discussion regarding shares of common stock and per share amounts are reflective of the Reverse Stock Split.

Series A through E Convertible Preferred Stock and Warrant Financings

Between 2012 and 2015, we executed several financing transactions whereby we issued convertible preferred stock and warrants to purchase common stock to investors. As of December 31, 2016, none of the Series A through E convertible preferred stock remained outstanding. For as long as the Series A warrants remain unexercised through their expiration date, except under certain permitted circumstances, we may not issue, or enter into any agreement to issue, common stock or common stock equivalents at a price per share below the $73.65 exercise price of the Series A warrants, unless waivers from the Series A investors are obtained. Until the time that less than 7.5% of the Series B, C and E warrants remain unexercised through their expiration date, except under certain permitted circumstances, we may not issue, or enter into any agreement to issue, common stock or common stock equivalents at prices per share below the $29.55, $29.55 and $32.51 exercise prices of the Series B, C and E warrants, respectively, unless waivers from the Series B, C and E investors are obtained. In addition, until there are no longer Series A, C and E warrants outstanding we may not sell any variable rate securities except for certain exempt issuances.

Series E Convertible Preferred Stock Financing

On February 13, 2015, we and certain accredited institutional pre-existing investors (the "Series E Investors") entered into a securities purchase agreement (the "Series E Purchase Agreement"), pursuant to which we sold 102,800 shares of common stock at a price of $26.25 per share, 2,201.493 shares of Series E 6% Convertible Preferred Stock (the "Series E Preferred Stock") and warrants to purchase 46,676 shares of common stock initially at an exercise price of $29.55 per share, which was the consolidated closing bid price of our common stock on NASDAQ immediately prior to entering into the Series E Purchase Agreement (the "Series E Warrants", and the transactions contemplated by the Series E Purchase Agreement, the "Series E Financing"). The Series E Preferred Stock and Series E Warrants were sold in a fixed combination consisting of one share of Series E Preferred Stock and a Series E Warrant to purchase approximately 21.1977 shares of common stock. Each fixed combination of Series E Preferred Stock and Series E Warrants were sold at a price of $1,000. The Series E Preferred Stock sold was convertible into 83,871 shares of common stock at an initial conversion price of $26.25 per share. The closing under the Series E Purchase Agreement occurred on February 18, 2015 (the "Series E Closing Date"), where we received gross proceeds of $4.9 million from the Series E Investors. After closing-related costs and expenses, net proceeds from the Series E Financing were approximately $4.7 million. Given that the effective conversion price of the Series E Preferred Stock, inclusive of amounts allocated to common stock and Series E Warrants, was below the closing market price of our common stock at the time of the Series E Closing Date, we recognized a beneficial conversion feature in the amount of $890,000. Since the Series E Preferred Stock was immediately convertible into common stock, the beneficial conversion feature was treated as a deemed dividend charged to retained earnings.

The Series E Warrants issued have a 5 ½ year term and have a cashless exercise provision in the event there is no effective registration statement covering the common stock issuable upon exercise of the Series E Warrants. The Series E Warrants are not subject to price based anti-dilution protection. See below for modifications made to the Series E Preferred Stock and the Series E Warrants.

Private Placement Warrant Financing

Substantially concurrently with the closing of the Series E Financing, on February 13, 2015, we entered into a separate securities purchase agreement (the "Warrant Purchase Agreement") with selected accredited institutional pre-existing investors (the "Private Placement Investors"), pursuant to which we agreed to sell to the Private Placement Investors warrants to purchase 102,678 shares of Common Stock (the "Private Placement Warrants", and the transactions contemplated by the Warrant Purchase Agreement, the "Warrant Financing"). In consideration of an aggregate of $1,000, we had agreed to sell the Private Placement Warrants, which would not be issued unless and until our stockholders approved amending our Certificate of Incorporation to increase our authorized common stock to permit the issuance of the common stock issuable upon exercise of the Private Placement Warrants (the "Charter Amendment"). We estimated the fair value of the Private Placement Warrants using the Black-Scholes valuation model to be $1.82 million, which was classified as a warrant subscription payable within additional paid-in capital in our consolidated balance sheet using the following assumptions: (i) closing stock price and Private Placement Warrants contractual exercise price; (ii) 5.5 year term; (iii) historical volatilities commensurate with the term of the Private Placement Warrants of 113.2%; and (iv) risk-free interest rates commensurate with the term of the Private Placement Warrants of 1.5%. We allocated the proceeds received from the Series E Financing to the Private Placement Warrants based on the relative fair value of the instruments issued to the Series E Investors. As a result of the special stockholders meeting held on April 28 2015, we issued the Private Placement Warrants to the Private Placement Investors and the warrant subscription payable was reclassified to additional paid-in capital.

Each Private Placement Warrant initially had an exercise price of $32.505 per share of common stock (subject to adjustment for stock splits and the like), which was 110% of the consolidated closing bid price of our common stock on NASDAQ immediately prior to entering into the Warrant Purchase Agreement, and is exercisable at any time after the six month anniversary of entering into the Warrant Purchase Agreement and on or prior to the close of business on the five year anniversary of the initial exercise date, subject to a beneficial ownership limitation. The Private Placement Warrants are not subject to price based anti-dilution protection. If, at the time of exercise of a Private Placement Warrant, there is no effective registration statement registering for resale the shares of common stock issuable upon exercise of the Private Placement Warrant, the holder may exercise the Private Placement Warrant on a cashless basis. When exercised on a cashless basis, a portion of the Private Placement Warrant is canceled in payment of the purchase price payable in respect of the number of shares of common stock purchasable upon such exercise.

Modification of Certain Other Outstanding Warrants

In connection with the purchase of the Private Placement Warrants, we modified previously issued and outstanding warrants held by the Private Placement Investors that were issued in connection with the Series A, B and C financings described above, to (i) reduce the exercise prices thereunder to $29.55, which represents the consolidated closing bid price of our common stock on NASDAQ immediately prior to the date we entered into the Warrant Purchase Agreement; (ii) prohibit the exercise of such modified warrants for a period of six months after the date of the modification; and (iii) extend the exercise period of such modified warrants for an additional six months (such modifications, collectively, the "Warrant Price Modifications"). Separately, we also agreed to a Warrant Price Modification with a holder of Series C Warrants solely in consideration for such holder's waiver of certain preemptive rights. We estimated the change in fair value of these warrants immediately prior to and immediately subsequent to the Warrant Price Modification to be $336,000, and such amount was recorded as a non-cash equity offering cost.

Series E Modifications

On October 12, 2015, we entered into an Amendment No. 1 to Common Stock Purchase Warrants (the "Warrants Amendment") with each of the holders of the Series E Warrants and each of the holders of the Private Placement Warrants. Under the terms of the Warrants Amendment, all of the Series E Warrants and 100,847 of the Private Placement Warrants had their exercise prices reduced to $16.50 per share. Accordingly, with respect to the Private Placement Warrants, 100,847 of the Private Placement Warrants have an exercise price of $16.50 per share and 1,831 of the Private Placement Warrants retain their original exercise price of $32.505 per share. In consideration for entering into the Warrants Amendment, each Series E Investor agreed to irrevocably waive *ab initio* and for all time its right to receive cash dividends on its shares of our Series E Preferred Stock. We estimated the change in fair value of the Series E Warrants and the affected Private Placement Warrants prior to and immediately subsequent to the Warrants Amendment to be $168,000, which was recognized as a deemed dividend and as an increase to additional paid-in capital during the fourth quarter of 2015.

On February 4, 2016, we entered into a Series E 6% Convertible Preferred Stock Repurchase Agreement (the "Repurchase Agreement") with the Series E Investors. Pursuant to the terms of the Repurchase Agreement, we agreed to pay each Series E Investor $300 per share of Series E Preferred Stock, or approximately $656,000, in consideration for the right to repurchase the Series E Investor's Series E Preferred Stock at a price per share of $1,000 (the "Repurchase Price"), which was the original price per share paid by the Series E Investors for their Series E Preferred Stock in February 2015. We recognized the $656,000 payment as a deemed dividend paid to the Series E investors.

Immediately following the closing of our Series F public offering discussed below, we paid $2.2 million to the Series E Investors to repurchase all of the outstanding Series E Preferred Stock, in accordance with the terms of the Repurchase Agreement. Since almost none of the Series E Preferred Stock had converted by the time we repurchased the Series E Preferred Stock, the original $890,000 beneficial conversion feature that we recognized as a deemed dividend in 2015 was reversed as a return of capital from the Series E Preferred stockholders to the common stockholders.

Series F Convertible Preferred Stock and Warrants Financing

On March 24, 2016 (the "Series F Closing"), we closed an underwritten public offering (the "Series F Offering") and issued 8,000 immediately separable units of securities to investors, with each unit consisting of: (i) one share of Series F convertible preferred stock ("Series F Preferred Stock") convertible into shares of our common stock equal to 1,000 divided by the conversion price of $3.87, which was 75% of the consolidated closing bid price of our common stock on the NASDAQ Capital Market on March 18, 2016, the date we executed the underwriting agreement ("UA date"); and (ii) 258.397875 warrants, each to purchase one share of our common stock at an exercise price per share equal to $5.17 ("Series F Warrants"), which was 100% of the consolidated closing bid price of our common stock on the NASDAQ Capital Market on the UA date. The Series F Preferred Stock, the Series F Warrants, and the shares of common stock underlying the Series F Preferred Stock and Series F Warrants were registered on Form S-1, which was declared effective by the SEC on March 18, 2016. The Series F Preferred Stock was immediately convertible and the Series F Warrants were immediately exercisable for shares of common stock and have a term of five years. The Series F Warrants are exercisable for cash or, solely in the absence of an effective registration statement or prospectus, by cashless exercise. In total, there were 2,067,183 shares of common stock issuable upon conversion of the Series F Preferred Stock and up to 2,067,183 shares of common stock issuable upon exercise of the Series F Warrants. The units were sold for a purchase price equal to $1,000 per unit, resulting in gross proceeds received by us of $8.0 million. Total offering-related costs paid through December 31, 2016 were $1.1 million, resulting in net proceeds recognized of $6.9 million. Given that the effective conversion price of the Series F Preferred Stock was below the closing market price of our common stock at the time of the Series F Closing, we recognized a beneficial conversion feature in the amount of $1.9 million. Since the Series F Preferred Stock was immediately convertible into common stock, the beneficial conversion feature was treated as a deemed dividend charged to retained earnings at closing. Also, from the time of the Series F Closing through December 31, 2016, 7,031 shares of the Series F Preferred Stock have converted into 1,816,827 shares of common stock. Subsequent to December 31, 2016 through February 28, 2017, an additional 699 shares of Series F Preferred Stock converted into 180,622 shares of common stock, leaving 270 shares of Series F Preferred Stock (representing 69,734 shares of common stock) unconverted.

The Series F Preferred Stock is non-voting (except to the extent required by law and except for certain consent rights relating to amending the certificate of incorporation or bylaws, and the like), but ranks senior to our common stock with respect to distributions upon our dissolution, liquidation or winding-up. Until the volume weighted average price of our common stock on NASDAQ exceeds 200% of the conversion price of the Series F Preferred Stock for any 20 of 30 consecutive trading days, and the daily dollar trading volume during such period exceeds $200,000 per trading day, the Series F Preferred Stock is subject to full ratchet price based anti-dilution protection, subject to certain limitations. Also, the Company can force holders of Series F Preferred Stock to convert into our common stock if the volume-weighted average price of our common stock exceeds 200% of the Series F Preferred Stock conversion price for any 20 of 30 consecutive trading days, and the daily dollar trading volume during such period exceeds $200,000 per trading day, subject to certain other conditions. The Series F investors have agreed to be subject to a blocker that would prevent each of their respective common stock ownership at any given time from exceeding 4.99% of our outstanding common stock (which may be increased on 61 days' notice, but not above 9.99%).

The Series F Warrants have a 5-year term and have a cashless exercise provision in the event there is no effective registration statement covering the common stock issuable upon exercise of the Series F Warrants. The Series F Warrants are not subject to price based anti-dilution protection. The Series F Warrants are listed on the NASDAQ Capital Market under the trading symbol "CBMXW."

Depending on the circumstances, upon a change in control constituting a "Fundamental Transaction" (as defined in the Series F Warrants), the holders of Series F Preferred Stock may be entitled to a 30% premium and the holders of Series F Warrants may have the right to require the Company to purchase the Series F Warrants for an amount in cash that is determined in accordance with a formula set forth in the Series F Warrants.

Common Stock Purchase Warrants Repurchase Agreement

On July 11, 2016, we entered into a Common Stock Purchase Warrants Repurchase Agreement (the "Warrants Repurchase Agreement") with the holders (the "Holders") of our outstanding common stock purchase warrants issued in October 2012, March 2013, May 2013, June 2013, June 2014, February 2015 and April 2015 (collectively, the "Warrants") in connection with our Series A, Series B, Series C and Series E financings. Pursuant to the terms of the Warrants Repurchase Agreement, we have agreed to repurchase the Warrants from each Holder upon execution of a "Fundamental Transaction" (as defined in such Warrants) at various negotiated prices per Warrant share as set forth in the Warrants Repurchase Agreement. Under the terms of the Warrants Repurchase Agreement, we will repurchase half of such Warrants upon the announcement of a Fundamental Transaction and the remaining half of such Warrants upon the closing of a Fundamental Transaction. In addition, upon the closing of a Fundamental Transaction, all Securities Purchase Agreements and Registration Rights Agreements associated with the original issuances of such Warrants will be terminated and the various restrictions set forth therein will no longer be of any force or effect. In connection with entering into the Warrants Repurchase Agreement, we were granted certain consents and waivers relating to a Fundamental Transaction. In the event that a Fundamental Transaction is announced and consummated, we will be obligated to repurchase such Warrants for approximately $459,000 of cash consideration paid to the Holders. One half of this amount will be due within three business days of announcing the Fundamental Transaction, and the remaining half will be due within three business days of closing the Fundamental Transaction. In the event that we announce a Fundamental Transaction but never close, for whatever reason, then one-half of such Warrants will be repurchased and canceled and one-half will remain issued and outstanding. In the event that a Fundamental Transaction is never announced nor consummated, we will not be obligated to repurchase such Warrants, and the underlying terms and conditions of such Warrants will remain in effect.

Warrants

Outstanding warrants to purchase our common stock are as follows:

	Shares of Common Stock Issuable from Warrants Outstanding as of December 31,		Exercise	
	2016	2015	Price	Expiration
Equity-classified warrants:				
March 2016	2,067,183	-	$ 5.17	March 2021
April 2015	100,847	100,847	$ 16.50	August 2020
April 2015	1,831	1,831	$ 32.51	August 2020
February 2015	46,676	46,676	$ 16.50	August 2020
June 2014	1,690	1,690	$ 30.90	April 2018
December 2013	388,365	388,365	$ 46.80	December 2018
June 2013	32,788	32,788	$ 29.55	June 2019
May 2013	32,788	32,788	$ 29.55	May 2019
March 2013	18,334	18,334	$ 29.55	March 2019
October 2012	11,252	11,252	$ 29.55	September 2018
April 2011	-	8,746	$ 321.00	April 2016
Total	2,701,754	643,317		

12. EQUITY-BASED COMPENSATION

Our employees participate in the CombiMatrix Corporation 2006 Stock Incentive Plan (the "CombiMatrix Plan"), which was approved by our board of directors in 2006. In addition, during 2005, the board of directors of our wholly owned subsidiary, CombiMatrix Molecular Diagnostics, Inc. ("CMDX"), approved the CombiMatrix Molecular Diagnostics 2005 Stock Award Plan (the "CMDX Plan"). Our board of directors believes that granting employees stock-based awards from the CombiMatrix Plan is in the best interest of our Company and our stockholders. No awards have been granted to the CMDX Plan since 2010, and it is no longer being utilized.

CombiMatrix Corporation 2006 Stock Incentive Plan

The CombiMatrix Plan is administered by the Compensation Committee (the "Committee") of our Board of Directors. The Committee determines which eligible individuals are to receive option grants or stock issuances under the CombiMatrix Plan, the time or times when the grants or issuances are to be made, the number of shares subject to each grant or issuance, the status of any granted option as either an incentive stock option or a non-statutory stock option under the federal tax laws, the vesting schedule to be in effect for the option grant or stock issuance and the maximum term for which any granted option is to remain outstanding.

The CombiMatrix Plan is divided into two separate equity incentive programs: a discretionary option grant / stock appreciation right program and a stock issuance program. To date, the discretionary option grant program has been the primary program used in awarding stock-based compensation. Under the discretionary option grant program, the Committee may grant non-statutory options to purchase shares of CombiMatrix stock to eligible individuals in our employ (including employees, non-employee board members and consultants) at an exercise price not less than 100% of the fair market value of those shares on the grant date, and incentive stock options to purchase shares of CombiMatrix stock to eligible employees at an exercise price not less than 100% of the fair market value of those shares on the grant date. Options are generally exercisable over a three- or four-year vesting term following the date of grant and expire ten years after the grant date. The Committee may grant other forms of equity based compensation, such as restricted stock units ("RSU's"), which the Committee awarded to certain executives and directors of the Company for the first time during 2014. RSUs vest in equal annual installments over a four-year period following the date of grant. At December 31, 2016, there were 183,086 authorized shares under the CombiMatrix Plan, with 2,152 shares available for grant.

The following is a summary of the stock option activities under the CombiMatrix Plan for 2016 and 2015:

	Shares	Weighted Average Exercise Price	Weighted Average Contractual Term	Aggregate Intrinsic Value ('000s)
Balance at December 31, 2014	45,790	$ 147.30	8.0 years	$ -
Granted	42,149	$ 24.00		
Exercised	-	$ -		
Forfeited	(16,811)	$ 44.40		
Canceled	(1,133)	$ 45.30		
Balance at December 31, 2015	69,995	$ 99.19	8.2 years	$ -
Granted (non employees only)	6,832	$ 3.88		
Exercised	-	$ -		
Forfeited	(9,312)	$ 24.70		
Canceled	(2,882)	$ 255.66		
Balance at December 31, 2016	64,633	$ 92.87	7.3 years	$ -
Exercisable at December 31, 2015	17,372	$ 309.00	6.0 years	$ -
Exercisable at December 31, 2016	29,358	$ 175.30	6.2 years	$ -

Information related to options granted under the CombiMatrix Plan for 2016 and 2015 is as follows:

	December 31, 2016	December 31, 2015
Weighted average fair values of options granted	$ -	$ 18.47
Options granted with exercise prices:		
Greater than market price on the grant date	-	-
Equal to market price on the grant date	6,832	42,149
Less than market price on the grant date	-	-

The aggregate fair value of options vested during the years ended December 31, 2016 and 2015 was $424,000 and $321,000, respectively. As of December 31, 2016, the total unrecognized compensation expense related to non-vested stock option awards was $500,000, which is expected to be recognized over a weighted average term of approximately 1.9 years.

The following is a summary of the RSU activities under the CombiMatrix Plan for 2016 and 2015:

	Restricted Stock Units	Weighted Average Grant Date Fair Value
Nonvested RSU's at December 31, 2014	20,179	$ 42.45
Granted	26,447	$ 23.85
Vested	(5,041)	$ 42.45
Canceled	(2,784)	$ 19.67
Nonvested RSU's at December 31, 2015	38,801	$ 31.20
Granted	89,664	$ 2.88
Vested	(10,953)	$ 32.45
Canceled	(1,211)	$ 32.74
Nonvested RSU's at December 31, 2016	116,301	$ 9.21

As of December 31, 2016, the total unrecognized compensation expense related to RSUs was $751,000, which is expected to be recognized over a weighted-average period of approximately 2.3 years.

CombiMatrix Molecular Diagnostics 2005 Stock Award Plan

Our wholly owned subsidiary, CMDX, executed the CMDX Plan, with plan provisions and terms similar to that of the CombiMatrix Plan as described above. At December 31, 2016, there were 4.0 million authorized shares available under the CMDX Plan, with 4.0 million shares available for grant. However, our Board of Directors has no intention of utilizing this plan in the future.

The following is a summary of stock option activities for the CMDX Plan for 2016 and 2015:

	Shares	Weighted Average Exercise Price	Weighted Average Contractual Term	Aggregate Intrinsic Value ('000s)
Balance at December 31, 2014	291,000	$ 0.34	2.1 years	$ 51
Granted	-	$ -		
Exercised	-	$ -		
Canceled	(140,000)	$ 0.16		
Balance at December 31, 2015	151,000	$ 0.50	0.4 years	$ 36
Granted	-	$ -		
Exercised	-	$ -		
Canceled	(151,000)	$ 0.50		
Balance at December 31, 2016	-	$ -	-	$ -
Exercisable at December 31, 2015	101,000	$ 0.50	0.4 years	$ 24
Exercisable at December 31, 2016	-	$ -	-	$ -

There were no option grants during 2016 or 2015 under the CMDX Plan. The fair value of options vested during the years ended December 31, 2016 and 2015 was not significant.

Stock Option Awards Granted to Non-Employees

Stock option expense reflected in the consolidated statements of operations related to stock options issued to our non-employee scientific advisory board members and consultants are recognized at fair value using the Black-Scholes option-pricing model with weighted average assumptions as disclosed in Note 2 under "Stock-Based Compensation." For the years ended December 31, 2016 and 2015, non-cash charges recognized from stock option awards granted to non-employees was not significant.

EXHIBIT INDEX

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-1 (SEC File No. 333-139679) filed with the SEC on December 26, 2006.
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1A to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on August 14, 2008.
3.3	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 4, 2012.
3.4	Certificate of Designation of Preferences, Rights and Limitations of Series A 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
3.5	Certificate of Designation of Preferences, Rights and Limitations of Series B 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 20, 2013.
3.6	Certificate of Designation of Preferences, Rights and Limitations of Series C 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
3.7	Certificate of Designation of Preferences, Rights and Limitations of Series D Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 23, 2013.
3.8	Certificate of Designation of Preferences, Rights and Limitations of Series E 6% Convertible Preferred Stock. Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
3.9	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 29, 2015
3.10	Certificate of Amendment to Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on January 29, 2016.
3.11	Certificate of Designation of Preferences, Rights and Limitations of Series F Convertible Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 24, 2016.
3.12	Second Amended and Restated Bylaws. Incorporated by reference to Exhibit 3.2 to the Company's Annual Report on Form 10-K (File No. 001-33523) filed with the SEC on March 18, 2010.
4.1	Form of Common Stock Certificate. Incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1/A (File No. 333-208704) filed with the SEC on February 19, 2016.
4.2	Form of Series F Preferred Stock Certificate. Incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-1/A (File No. 333-208704) filed with the SEC on March 18, 2016.
4.3	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on May 10, 2016.
10.1†	Restated Executive Change in Control Severance Plan, as restated on December 7, 2015. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 7, 2015.
10.2	Amendment No. 3 to Lease dated as of January 11, 2010. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on January 15, 2010.
10.3	Amendment No. 4 to the Lease effective as of October 21, 2012. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 25, 2012.
10.4†	2006 Stock Incentive Plan, as amended. Incorporated by reference to Exhibit 10.4 to the Company's Annual Report on Form 10-K (File No. 001-33523) filed with the SEC on February 18, 2016.
10.5†	Form of Stock Incentive Plan Agreement. Incorporated by reference to the Company's Registration Statement on Form S-1 (SEC File No. 333-139679), which became effective June 8, 2007.
10.6†	Employment Agreement for Mark McDonough. Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on November 13, 2012.
10.7	Form of Amended and Restated Indemnification Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on August 12, 2011.

Exhibit Number	Description
10.8	Form of Securities Purchase Agreement dated as of April 1, 2011. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.9	Form of Investors Rights Agreement dated as of April 1, 2011. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.10	HLM Rights Agreement dated as of April 1, 2011. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.11	Form of Warrant to Purchase Common Stock issued on April 7, 2011. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.12	Form of Indemnity Agreement. Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 7, 2011.
10.13	Form of Securities Purchase Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.14	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.15	Form of Registration Rights Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.16	Form of Lock-Up Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.17	Form of Voting Agreement dated as of September 28, 2012. Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 1, 2012.
10.18	Consent and Waiver executed on December 4, 2012. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 7, 2012.
10.19	Form of Amendment No. 1 to Common Stock Purchase Warrant dated February 26, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 26, 2013.
10.20	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 20, 2013.
10.21	Form of Securities Purchase Agreement dated as of March 19, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 20, 2013.
10.22†	Mark McDonough Compensation Arrangement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 3, 2013.
10.23	Form of Waiver Regarding HLM Rights Agreement dated April 5, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 8, 2013.
10.24	Form of Securities Purchase Agreement dated as of May 3, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.25	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.26	Form of Registration Rights Agreement dated as of May 3, 2013. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.27	Form of Voting Agreement dated as of May 3, 2013. Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on May 6, 2013.
10.28†	Form of Stock Incentive Plan Agreement for Performance-Based Options. Incorporated by reference to Exhibit 10.11 to the Company's Quarterly Report on Form 10-Q (File No. 001-33523) filed with the SEC on May 13, 2013.
10.29†	Letter Agreement dated June 27, 2013 regarding Mark McDonough's bonus arrangement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on July 1, 2013.
10.30	Amendment No. 5 to Lease effective as of July 16, 2013. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on July 19, 2013.
10.31	Form of Warrant to Purchase Common Stock. Incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-1/A (File No. 333-191211) filed with the SEC on December 9, 2013.
10.32†	2014 Executive Performance Bonus Plan, as amended. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 10, 2014.

Exhibit Number	Description
10.33†	Form of Restricted Stock Unit Award Agreement under the Company's 2006 Stock Incentive Plan. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 24, 2014.
10.34	Form of Amendment No. 2 to Common Stock Purchase Warrant dated June 4, 2014. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on June 10, 2014.
10.35	Form of Additional Common Stock Purchase Warrant issued June 4, 2014. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on June 10, 2014.
10.36	Amendment No. 6 to the Lease effective as of October 24, 2014. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 28, 2014.
10.37	Form of Warrant to Purchase Common Stock (Series E Financing). Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.38	Form of Amendment of Outstanding Warrants. Incorporated by reference to Exhibit 4.5 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.39	Form of Securities Purchase Agreement dated as of February 13, 2015 (Series E Financing). Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.40	Form of Private Placement Securities Purchase Agreement dated as of February 13, 2015 (Warrant Financing). Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 13, 2015.
10.41†	2015 Executive Performance Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on March 5, 2015.
10.42	Collaboration Agreement, effective May 23, 2013, between CombiMatrix and Sequenom Center for Molecular Medicine, LLC. Incorporated by reference to Exhibit 10.42 to the Company's Annual Report on Form 10-K (File No. 001-33523) filed with the SEC on March 17, 2015.
10.43	Agreement of Settlement and Release, dated April 23, 2015. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 28, 2015.
10.44	Form of Amendment No. 1 to February 2015 Common Stock Purchase Warrant dated October 12, 2015. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 13, 2015.
10.45	Form of Amendment No. 1 to April 2015 Common Stock Purchase Warrant dated October 12, 2015. Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 13, 2015.
10.46	Form of Waiver of Cash Dividends dated October 12, 2015. Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on October 13, 2015.
10.47†	Transaction Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on December 7, 2015.
10.48	Form of Series E 6% Convertible Preferred Stock Repurchase Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 5, 2016.
10.49	Form of Leak-Out Agreement. Incorporated by reference to Exhibit 10.49 to the Company's Registration Statement on Form S-1/A (File No. 333-208704) filed with the SEC on March 18, 2016.
10.50	Form of Common Stock Purchase Warrants Repurchase Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on July 11, 2016.
10.51†	2016 Executive Performance Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on April 27, 2016.
10.52†	2017 Executive Performance Bonus Plan. Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33523) filed with the SEC on February 3, 2017.
21.1	Subsidiaries of the Registrant(*)
23.1	Consent of Haskell & White LLP(*)
31.1	Certification of Chief Executive Officer pursuant to section 302 of the Sarbanes-Oxley Act of 2002 (*).
31.2	Certification of Chief Financial Officer pursuant to section 302 of the Sarbanes-Oxley Act of 2002 (*).
32.1	Certification of Chief Executive Officer pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).
32.2	Certification of Chief Financial Officer pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).
101.0	The following materials from CombiMatrix Corporation's Annual Report on Form 10-K for the year ended December 31, 2016, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Balance Sheets as of December 31, 2016 and December 31, 2015; (ii) Consolidated Statements of Operations for the Years ended December 31, 2016 and 2015; (iii) Consolidated Statements of Comprehensive Loss for the Years ended December 31, 2016 and 2015; (iv) Consolidated Statements of Stockholders' Equity for the Years ended December 31, 2016 and 2015 (v) Consolidated Statements of Cash Flows for the Years ended December 31, 2016 and 2015; and (vi) Notes to Consolidated Financial Statements.

(*) Included herewith.

† Denotes management contract or compensatory plan or arrangement.

EXHIBIT 21.1

SUBSIDIARIES OF THE REGISTRANT

The following is a listing of the subsidiaries of CombiMatrix Corporation:

	Jurisdiction of Incorporation
CombiMatrix Molecular Diagnostics, Inc.	California

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-210298, 333-208704, 333-192897, 333-191211, and 333-139679 on Form S-1 and in Registration Statement Nos. 333-207642, 333-198848, 333-193148, 333-189759, 333-188682, 333-187945, 333-185585, 333-184359, 333-176372, 333-152483, 333-152970, 333-153434, and 333-151075 on Form S-3 and in Registration Statement Nos. 333-205580, 333-197322, 333-190534, 333-193302 and 333-145704 on Form S-8 of CombiMatrix Corporation of our report dated March 3, 2017, relating to our audits of the consolidated financial statements of CombiMatrix Corporation as of and for each of the years ended December 31, 2016 and 2015, included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016.

/S/ HASKELL & WHITE LLP

Irvine, California
March 3, 2017

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mark McDonough, certify that:

1. I have reviewed this Annual Report on Form 10-K of CombiMatrix Corporation;

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(s) 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(s) 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.

Dated: March 3, 2017

/s/ MARK MCDONOUGH

Mark McDonough
President and Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Scott R. Burell, certify that:

1. I have reviewed this Annual Report on Form 10-K of CombiMatrix Corporation;

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(s) 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(s) 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.

Dated: March 3, 2017

/s/ SCOTT R. BURELL

Scott R. Burell
Chief Financial Officer
(Principal Financial and Accounting Officer)

EXHIBIT 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

In connection with the Annual Report of CombiMatrix Corporation (the "Company") on Form 10-K for the annual period ended December 31, 2016, as filed with the Securities and Exchange Commission on March 3, 2017 (the "Report"), based on my knowledge, I, Mark McDonough, President and Chief Executive 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:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) 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.

By: */s/ MARK MCDONOUGH*
Mark McDonough
President and Chief Executive Officer
(Principal Executive Officer)
March 3, 2017

This certification accompanies this report and is being furnished pursuant to Item 601(b)(32) of Regulation S-K promulgated under the Securities Act of 1933, as amended (the "Securities Act") and the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. This certification shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed "filed" by the Registrant for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, or incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the Registrant specifically incorporates it by reference into such a filing.

EXHIBIT 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

In connection with the Annual Report of CombiMatrix Corporation (the "Company") on Form 10-K for the annual period ended December 31, 2016, as filed with the Securities and Exchange Commission on March 3, 2017, (the "Report"), based on my knowledge, I, Scott R. Burell, 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:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) 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.

By: */s/ SCOTT R. BURELL*

Scott R. Burell
Chief Financial Officer
(Principal Financial and Accounting Officer)
March 3, 2017

This certification accompanies this report and is being furnished pursuant to Item 601(b)(32) of Regulation S-K promulgated under the Securities Act of 1933, as amended (the "Securities Act") and the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. This certification shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed "filed" by the Registrant for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, or incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the Registrant specifically incorporates it by reference into such a filing.