INTERLEUKIN GENETICS INC
Form 10-K
April 17, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 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

.. **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: 001-32715

INTERLEUKIN GENETICS, INC.

(Name of Registrant in its Charter)

Delaware	**94-3123681**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
135 Beaver Street, Waltham, MA	**02452**
(Address of principal executive offices)	(Zip Code)

Registrant's Telephone Number: **(781) 398-0700**

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

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

Common Stock, $.001 par value per share

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 Exchange 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 Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES x NO ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K ¨.

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). YES ¨ NO x

The aggregate market value of the registrant's voting and non-voting common stock held by non-affiliates of the registrant (without admitting that any person whose shares are not included in such calculation is an affiliate) computed by reference to the price at which the common stock was last sold as of the last business day of the registrant's most recently completed second quarter was $5,284,540.

As of April 13, 2017, there were 229,471,392 shares of the registrant's Common Stock issued and outstanding.

Documents Incorporated By Reference

Portions of the registrant's Definitive Proxy Statement for the 2017 Annual Meeting of Shareholders are incorporated by reference in Part III hereof.

INTERLEUKIN GENETICS, INC.

FORM 10-K

FOR THE YEAR ENDED DECEMBER 31, 2016

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PART I

Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K and, in particular, the description of our Business set forth in Item 1, the Risk Factors set forth in Item 1A and Management's Discussion and Analysis of Financial Condition and Results of Operations set forth in Item 7, and the documents incorporated by reference into this report contain or incorporate certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Statements contained in this report that are not statements of historical fact may be deemed to be forward-looking statements. Words or phrases such as "may," "will," "could," "should," "potential," "continue," "expect," "intend," "plan," "estimate," "anticipate," "believe," "project," "likely," " words or expressions or the negatives of such words or expressions are intended to identify forward-looking statements. We base these statements on our beliefs as well as assumptions we made using information currently available to us. Such statements are subject to risks, uncertainties and assumptions, including those identified in Item 1A "Risk Factors" and elsewhere in this report, as well as other matters not yet known to us or not currently considered material by us. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those anticipated, estimated or projected. Given these risks and uncertainties, prospective investors are cautioned not to place undue reliance on such forward-looking statements. Forward-looking statements do not guarantee future performance and should not be considered as statements of fact. All information set forth in this Form 10-K is as of the date of filing this Form 10-K and should not be relied upon as representing our estimate as of any subsequent date. While we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so to reflect actual results, changes in assumptions or changes in other factors affecting such forward-looking statements.

Smaller Reporting Company – Scaled Disclosure

Pursuant to Item 10(f) of Regulation S-K promulgated under the Securities Act of 1933, as indicated herein, we have elected to comply with the scaled disclosure requirements applicable to "smaller reporting companies," including providing two years of audited financial statements.

Item 1. ***Business***

Overview

Interleukin Genetics, Inc. develops and markets proprietary genetic tests for chronic diseases and health-related conditions, and for informing lifestyle choices to facilitate wellness. Our tests provide information that is not

otherwise available to empower individuals and their healthcare providers to manage their health and wellness through genetics-based insights and actionable guidance. We leverage our research, intellectual property, and genetic test development expertise in inflammation and metabolism to identify individuals whose risk for certain chronic diseases may be increased due to variants in one or more genes, which can enable a more personalized approach to the individual's healthcare. We market our tests through healthcare professionals, partnerships with health and wellness companies, and through other distribution channels. Our lead products are our proprietary cardiovascular risk test and the ILUSTRA™ Inflammation Management Program (the "ILUSTRA Program"), which includes the ILUSTRA Genetic Risk Test (the "ILUSTRA Test", formerly referred to as the PerioPredict® Genetic Risk Test) that identifies individuals with a life-long predisposition to over-produce inflammation and our Inherent Health® line of genetic tests We continue to support the ILUSTRA Program deployments with customers and will advance new customer relationships that expand the evidence base of this program's effectiveness.

Our Platform

We have developed a scientific and commercial platform that we believe offers unique approaches to improving outcomes for individuals at high risk for elevated systemic inflammation. Our platform is characterized by:

- Our expertise in IL-1 biology. We have been at the forefront of understanding the role of IL-1 genetic variation in the clinical expression of inflammation in humans.

- Proprietary assays and algorithms. Our existing tests, led by our cardiovascular risk test and the ILUSTRA Test, are proprietary and provide unique insights that we believe enable individuals and their healthcare providers to better manage their health. We expect to develop and introduce more proprietary assays for specific inflammatory diseases.

- Unique test development approach. We identify and validate patterns of genetic variations with clinical utility for selected chronic inflammatory diseases. This approach uses our proprietary patterns of IL-1 gene variations or may use those proprietary variations to anchor a broader set of other, non-proprietary genetic factors that can be added to a test to capture risk for a specific health outcomes that are of high clinical value.

- Ability to support drug development. Our technology has been shown to also be useful in assessing differential drug outcomes in clinical trials, and may have similar value in the future.

- Highly automated CLIA lab. All our tests use customized genetic arrays that allow processing of clinical samples in our CLIA approved clinical genetics laboratory, located in Waltham, MA.

- Value-added commercial approach. We partner with health and wellness companies, employers and others to leverage the unique information provided by our tests to drive greater patient engagement, more effective disease management and improved outcomes.

Market Conditions and Trends

Until recently, physicians and dentists treated patients with physical symptoms, such as pain or altered function, based on how early the diseases were discovered and the severity of damage produced. Management of chronic diseases has largely focused on identifying factors that "cause" the disease and ways to alter or reverse the disease after it has been diagnosed. Some causes, such as elevation of "bad" cholesterol in heart disease, are used for public health awareness and for patient testing to draw attention to early management. Common examples of altering or reversing initiating factors include calorie reduction in the case of being overweight, reducing levels of LDL cholesterol in the case of heart disease, reduction of bacteria with reduction of inflammation in the case of periodontal disease, and increasing estrogen levels in the case of osteoporosis. However, it is now well established that while initiating factors are essential for disease, the severity of chronic diseases and their complications are mostly the result of modifying factors, such as smoking and genetics, that alter an individual's response to the disease initiator, and consequently the amount of damage produced.

The future of healthcare has been described as P4 medicine: Predictive, Preventive, Personalized, and Participatory. Predictive, can we identify that you are on the disease path prior to development of severe disease; Prevention, if we can identify early which path you are on, what can we do to tilt the curve down to extend the years of wellness or prevent the disease complications entirely; Personalization, which path are you on; and Participatory, to acknowledge the individual's responsibility in managing and preventing chronic diseases.

Many people have the mistaken impression that genetics dictates how an individual will look or feel and that there is nothing one can do to change that genetic destiny. While it is true that some genetics have a permanent effect on a

person's appearance or condition (referred to as a phenotype), the vast majority of genetic influences on one's phenotype can be modified. An active field of research in healthcare today is to better understand the interaction between our environment, behavior, and genes. The scientific community is learning more each day about the role and significance of genetic variations, such as single nucleotide polymorphisms, or SNPs, and haplotypes, on an individual's health. SNP and haplotype analysis, coupled with detailed knowledge of environmental factors, now is an important area of study aimed at improving human health. A SNP may cause a gene to make a different amount of a protein for a given condition, change the timing of protein synthesis or make a variant form of the protein; each of these changes may lead to a discernible biological impact. However, certain lifestyle changes can influence significantly whether a set of genes are activated or inactivated despite the variation in the gene. Thus, while the propensity for physiological impact is always present for a given set of genes and their variants, whether or not the condition manifests itself is often controlled by our environment and the lifestyle choices we make.

We have focused our research, development and commercialization efforts on identifying combinations of SNP variations that alter biology involved in inflammation or metabolic disease. We have worked with leading universities throughout the world to identify genetic variations that influence the body's inflammatory response. Our scientific advisory board includes Sir Gordon Duff, a pioneer in understanding the role that genetics plays in inflammatory disease pathways. In addition, we have conducted clinical studies for various indications throughout the world involving tens of thousands of individuals to demonstrate clinical value of our tests. To date, some of our clinical research collaborations include studies at: Stanford University; the University of North Carolina at Chapel Hill; the Mayo Clinic; Brigham & Women's Hospital (Harvard Medical School); University of California at San Francisco; University of California at San Diego; New York University Medical Center; University of Sheffield, (UK); Yonsei University Medical Center, (Korea); Tongji Medical College, (China); University Hospital of Ioannina, (Greece); and Tuft's University Medical Center.

Inflammation is one of the body's most basic protective mechanisms, and the understanding of the role of inflammation in disease has increased over the past few years. It is generally accepted that many chronic conditions begin with a challenge to the tissues of the body and that the inflammatory response system of an individual mediates the clinical manifestation. It is also now thought that SNP variations in the genes that influence the inflammatory process can have an important impact on the variation of disease progression among individuals who experience the same initiating events or conditions.

Chronic conditions that have traditionally been considered to be primarily inflammatory diseases include periodontitis and rheumatoid arthritis. In recent years, inflammation has been found to affect several other major diseases of aging that were not previously thought of as inflammatory diseases, including heart disease, diabetes and osteoarthritis. For example, an individual who has a strong inflammatory response may be more successful in clearing a bacterial infection than an individual with a less robust inflammatory response. However, that strong inflammatory response may actually cause that individual to be at increased risk for a more severe course in one or more of the chronic diseases that generally affect people in mid to later life, such as cardiovascular disease, osteoarthritis, and periodontal disease. There is growing evidence that genetic variants in IL-1 influence individual risk of developing these diseases and their severity and complications.

IL-1 is now recognized as a major driver of the inflammation involved in many of the chronic diseases, as evidenced by more than ten IL-1 blocking drugs now in active clinical development by pharmaceutical and biotechnology companies for major indications, including secondary cardiovascular events and type 2 diabetes mellitus.

Our proprietary IL-1 genetic patterns provide multiple access points to improve management of serious, highly prevalent conditions that are currently undermanaged. Our tests have shown significant value in predicting secondary heart attacks, severe and progressive periodontitis, and progression of knee osteoarthritis, and have the ability to differentiate clinical responses to IL-1 blocking drugs and preventive dental care. Since our IL-1 genetic tests identify individuals with a lifelong tendency to over produce IL-1, we are also engaged in projects to demonstrate how some of our tests may add value in the clinical management of the overall systemic inflammatory burden.

Our Product Focus

Cardiovascular Disease

Use of IL-1 pro-inflammatory genetic variations to guide drug development and use to prevent recurrent cardiovascular disease ("CVD") events

During late 2016 and early 2017 we redefined our strategy to add emphasis to our CVD program based on confirming evidence from a second 4-year prospective clinical study and increased interest from potential collaborators working on next-generation CVD drugs.

Inflammation is well documented to contribute to CVD events through biological effects on multiple components of the atherothrombotic cardiovascular disease process. Inflammatory biomarkers such as high-sensitivity C-reactive protein (hsCRP) identify individuals at high risk for both first and recurrent CVD events even in individuals without elevated lipid levels. We have previously reported that individuals with elevated oxidized phospholipids, as carried in the blood mostly by Lp(a), are at increased risk for coronary artery disease (Tsimikas et al. 2005). Following treatment for coronary artery disease the majority of individuals who developed recurrent CVD events in the subsequent four years were those who had elevated blood levels of Lp(a) and tested positive for our pro-inflammatory IL-1 genetic patterns (Tsimikas et al. 2014). The combination was significantly better than either factor alone and suggests that the bad lipids are working in part through the gene variations in our test that amplify inflammation. These results were corroborated in a second study population at the University Hospital of Ioannina, Greece (presented at the Annual Meeting of the American College of Cardiology, March 2017), which further established that the role of Lp(a) in determining patients at elevated risk for recurrent CVD events is conditional on our IL-1 genetic patterns. This finding suggests a potential pharmacogenomic relationship that could be important to companies developing therapeutics and to clinicians managing certain high risk CVD patients.

In 2015, we announced a collaboration with Ionis Pharmaceuticals to use our IL-1 genetic test in a Phase 2 study of their anti-sense drug that has been shown in Phase 1 trials to reduce Lp(a) levels as well as to use our genetic test in a new Phase 1 study. Additional companies are testing other drugs candidates to help treat high risk CVD patients by potentially lowering bad cholesterol such as LDL and Lp(a) or by blocking IL-1 production and are studying their impact on recurrent heart events. Amgen, Sanofi, Novartis and The Medicines Company have active development programs in this area. We believe that our proprietary IL-1 genetic patterns that identify patients who over-produce IL-1 may have value in guiding development and use of drugs that directly or indirectly target IL-1 effects on CVD events. We are currently seeking strategic interest in this program.

ILUSTRA™ Inflammation Management Program

On November 25, 2013 we announced the introduction of the PerioPredict Genetic Risk Test, and during 2016 our principal focus was on repositioning the test and commercializing the ILUSTRA Program. As part of our work force restructuring in March 2017, we are streamlining our commercial strategy for the ILUSTRA Program. We continue to support the ILUSTRA Program deployments with customers and will advance new customer relationships that expand the evidence base of this program's effectiveness. We will continue to refine our strategy for this program based on our financial resources and its commercial success.

Product Definition and Positioning

The ILUSTRA Test is a genetic risk test that analyzes genetic variations associated with inflammation and identifies individuals with a life-long predisposition to over-produce inflammation. The ILUSTRA Test identifies specific polymorphisms (genetic variations) in genes that regulate the production of interleukin-1 cytokines. Higher gingival levels of these proteins are associated with destruction of soft tissue attachment and bone, and increased severity of periodontitis in certain patient populations. Results from several clinical studies indicate that certain inflammatory cytokine levels in the gingival crevicular fluid were significantly higher in ILUSTRA Program/Test positive patients than in patients who were ILUSTRA Program/Test negative. ILUSTRA Program testing need only be done once in a lifetime and identifies "at risk" patients early on, often before the onset of clinical symptoms, to enable targeted treatment. This objective information allows the dentist and hygienist to better guide treatment to reduce complications and costs associated with chronic inflammatory disease, such as severe periodontitis. The test may also help to establish long-term patient relationships based on the patient's prevention and care plan guided by the individual's genetic predisposition. Sample collection requires only a simple, easy-to-use cheek swab, and the ILUSTRA Test has been validated for use in all major ethnic groups. The ILUSTRA Test identifies adults at increased risk for severe periodontal disease who would not have otherwise been identified by a history of smoking or diabetes.

We position the ILUSTRA Program as a tool to drive medical value; empowering individuals and healthcare professionals with actionable genetics data. The ILUSTRA Test serves as the central component in a program to identify individuals at high risk for elevated systemic inflammation, enabling a risk stratification framework to personalize care interventions and patient outreach. The ILUSTRA Program creates value through early identification of risk, elevated professional surveillance for disease detection, and enhanced patient engagement and compliance.

Elevated systemic inflammation levels are implicated in the development and complications of numerous chronic diseases, such as heart attack, stroke, and type 2 diabetes. Severe periodontitis is one of the most common causes of increased systemic inflammation and is implicated as a risk factor for several other diseases. Studies demonstrate that preventive dental care can lower a patient's systemic inflammatory burden and is a practical, low-cost intervention access point to help manage systemic health. Additional health economic studies document that treatment of

periodontitis is associated with substantial medical cost savings for patients with certain chronic diseases.

Leveraging this substantial clinical and health economics data, the ILUSTRA Program can be an essential element in an enhanced benefits design or employer-sponsored wellness initiative to identify individuals at high risk and to drive a risk stratification framework to personalize care interventions and patient outreach. The program integrates three components: 1) ILUSTRA genetic test, 2) professional education to dental offices and 3) outreach to high risk members to enhance engagement and compliance. The overall goal of the program is to target high-risk individuals for more proactive dental care and to provide the education and support to ensure compliance with a modified care-plan designed to reduce systemic inflammation.

Clinical Utility and Health Economics

The clinical utility of the ILUSTRA Test is supported by the large validation study conducted by the University of Michigan and referred to as the Michigan Personalized Prevention Study, or MPPS. The objective of the MPPS was to improve dental care by identifying and using certain risk factors to set preventative treatment regimens. On August 6, 2012, we announced that we had received top line results from the MPPS, and on June 10, 2013, we announced the publication of the MPPS results in the *Journal of Dental Research.* The study examined data from 5,117 patients monitored for 16 consecutive years. These results indicated that in low risk patients (those with none of three risk factors: smoking, diabetes, and a ILUSTRA Program/Test result indicating the individual was at high risk of contracting periodontitis) there was no significant difference between two dental preventive visits per year and one preventive visit per year in the percentage of patients who had tooth extractions over the 16 year monitoring period; 13.8% versus 16.4%, respectively. In addition, these results indicate that in high risk patients (those with any one of the three risk factors, with ILUSTRA being the most common of the three), two preventive visits per year significantly reduced the percentage of patients who had extractions over a 16 year monitoring period compared to one preventive visit per year; 16.9% vs. 22.1%. There was also a positive relationship between the number of risk factors and the percentage of patients with extractions. For patients with two or three risk factors, and smoking plus ILUSTRA Program/Test positive represented approximately 67% of those patients, two cleanings annually did not appear to be sufficient to control risk for tooth loss.

IL-1 genetic information may be used to target more intensive periodontitis management and prevention to those patients more likely to have a level of disease that influences the systemic inflammatory burden. In a recent analysis of insurance claims data from more than 300,000 patients, treatment of periodontitis was associated with subsequent reduced cost of medical care for those with selected chronic diseases, including type 2 diabetes, coronary artery disease, stroke, and adverse pregnancy outcomes. The annual per patient decrease in medical costs over the three years following periodontitis treatment were $2,840 for type 2 diabetes mellitus, $5,681 for stroke, and $1,090 for coronary artery disease (Jeffcoat et al. 2014).

The value of preventive dental care in reducing the cost of managing type 2 diabetes and its complications has been confirmed in a second study by United Healthcare and Optum, where claims data on more than 130,000 patients showed that regular preventive dental cleanings were associated with annual per patient cost decreases for diabetes management of $2,045, compared to irregular preventive dental care, an annual mean per patient cost reduction of 20%.

Commercial Strategy for ILUSTRA

We market the ILUSTRA Inflammation Management Program to employers and insurance carriers as a central component to an enhanced benefit design or wellness initiative that is intended to lower medical costs through disease avoidance and reduced disease progression and complications.

We target large employers, who are typically self-insured, that see value in the potential reduction of medical costs associated with the highly prevalent inflammatory diseases that our program can provide. Within this customer segment, initial targets tend to be progressive, wellness-minded companies that are engaged in other programs aimed at improving the overall health of their employees.

We also target insurance carriers, with a particular emphasis on companies with dental-medical integration (“DMI”) products, either in place or in development, and integrated delivery networks (“IDNs”), as these customers are best positioned to realize value from the reduction of medical costs associated with the highly prevalent inflammatory diseases that our program can provide.

This target customer segment represents a large market, as an estimated 170 million Americans have dental coverage through an insurance program. These customers are increasingly focused on DMI products, as the correlation between oral health and general health has become better understood. We believe the potential of our ILUSTRA Program to facilitate the realization of cost savings through reduced medical claims is well-aligned with this powerful trend in the insurance industry.

Our insurance carrier target customers are also seeking differentiation, and the opportunity to be seen as adding value to their customers through novel product offerings, such as benefit plans that include the ILUSTRA Program. For these customers, we typically establish demonstration projects aimed at providing evidence of the efficacy of our program in driving patient engagement, compliance and ultimately reduced costs. Once that demonstration is achieved, we believe the insurance carrier will be incentivized to incorporate our program broadly in their product offerings, thereby providing significant leverage to our commercialization efforts.

To create further leverage, we are creating partnerships with benefits consulting firms and employer benefits coalitions, to identify and facilitate initial interactions with potential customers.

The ILUSTRA Program is solely available through Interleukin Genetics. The web site for the ILUSTRA Program is *www.ILUSTRA.com*. The information contained on our websites are not incorporated by reference into this Form 10-K. We have included our website addresses only as an inactive textual reference and do not intend them to be active links to our websites.

Additional Products Marketed

We market additional genetic tests through our Inherent Heath brand:

- *Weight Management Genetic Test*: This test determines whether individuals will lose weight more predictably on a low fat, low carbohydrate or balanced diet and whether normal or vigorous exercise is needed to most efficiently lose existing body fat. The test results guide more effective long-term weight loss.
- *Bone Health Genetic Test*: This test is designed to identify whether an individual is more likely to be susceptible to spine fractures and low bone mineral density associated with osteoporosis.
- *Heart Health Genetic Test*: This test is designed to identify genetic predisposition to excess inflammation, which is a risk factor for heart attack.
- *Nutritional Needs Genetic Test*: This test is designed to identify DNA variations in genes crucial to B-vitamin metabolism and the ability to manage oxidative stress.
- *Wellness Select Genetic Test:* This allows buyers to purchase any combination of Inherent Health genetic tests at a discounted price.

Weight Management Genetic Test

Our Weight Management Genetic Test helps take the guesswork out of finding an effective diet and exercise solution by revealing actionable steps to achieve weight goals based on genetics. The test determines whether a low fat, low carbohydrate or balanced diet may be best, as well as whether normal or vigorous exercise is needed to most efficiently lose existing body fat. The test provides new information beyond traditional assessments, so that nutritional intake and fitness routines can be tailored for improved, sustainable results. This test identifies five SNPs in four human genes that are involved in certain physiological pathways relating to body weight. Certain patterns of markers are associated with differential response to certain diet and exercise regimens.

Bone Health Genetic Test

Our Bone Health Genetic Test is designed to identify whether an individual is more likely to develop spine fractures and low bone mineral density associated with osteoporosis. Although it typically starts later in life, early intervention can help prevent osteoporosis. Preventive measures can reduce the risk for bone loss and fractures, which in the case of vertebral fractures leads to a hunched over appearance. The test identifies a SNP in each of three genes involved in

processes that affect bone; estrogen receptor alpha (ER1 Xba1), vitamin D receptor (VDR), and interleukin-1 (IL-1). Certain patterns of variations are associated with increased risk of spine fracture and/or low bone mineral density. The test can be used as an aid to making diet, exercise, and other lifestyle choices to maintain and improve bone health.

Heart Health Genetic Test

Our Heart Health Genetic Test is designed to identify genetic predisposition to excess inflammation, which is a risk factor for heart attack. The genetic analysis identifies individuals that have a lifelong tendency to overproduce certain chemicals in the body that lead to inflammation. Overproduction of these chemicals may start a chain reaction that ultimately may lead to a heart attack. Knowing genetic risk will enable individuals to take specific actions to decrease overall risk. The test identifies three SNPs in two genes involved in inflammation, IL-1 alpha and IL-1 beta. Certain IL-1 variations are associated with increased inflammation, which is a risk factor for early heart attack. The test may be used as an aid to making diet, exercise, and other lifestyle choices to reduce inflammation-based risk.

Nutritional Needs Genetic Test

Our Nutritional Needs Genetics Test is designed to identify DNA variations in genes crucial to B-vitamin metabolism and the ability to manage oxidative stress. Individuals with certain variations in these genes may be at increased risk for ineffective utilization of B-vitamins and potential for cell damage caused by oxidative stress, both of which can in some cases lead to increased risk for certain diseases. The test identifies the presence or absence of human genotypic markers involved in vitamin B metabolism and markers in response to oxidative stress. Certain variations are associated with less efficient B-vitamin metabolism or reduced activity of endogenous anti-oxidant systems. The test may be used to aid individuals in deciding whether to supplement their diet with B vitamins and/or antioxidants.

Wellness Select Genetic Test

Our Wellness Select Genetic Test allows buyers to purchase any combination of Inherent Health genetic tests at a discounted price.

Marketing and Distribution of Inherent Health Tests

We market our Inherent Health Weight Management and Nutritional Needs Genetic tests using our e-commerce website and under contract with Amway-affiliated companies, which are affiliates of Alticor, Inc., the parent of Pyxis Innovations Inc., a significant stockholder ("Pyxis"), and several regional weight management focused organizations. The Bone Health and Heart Health tests are ordered by physicians for their patients. Amway sells the Inherent Health Weight Management test in the U.S. and fifteen countries in Europe. The European tests are processed through two European laboratories that have been validated for quality assurance purposes by Interleukin Genetics. We receive a royalty payment from each test processed in Europe but do not receive a test processing fee. We have developed a complete e-commerce solution for our Inherent Health brand of genetic tests. We have subcontracted with a fulfillment center to distribute tests to customers ordering via our online store. The e-commerce solution has provided a friendly and easy to use method for the purchase of our genetic tests. We are partnered with a number of websites that have established a link to our site in order to distribute tests. We pay these sites commissions for all orders made via a click through from their site to ours.

Laboratory Testing Procedure

To conduct a genetic risk assessment test, the customer collects cells from inside the cheek using a buccal swab brush and submits it by mail to our laboratory. Samples are processed only with a requisition signed by either a customer's physician, one provided by an Interleukin Genetics physician or a patient's dentist and a customer consent for the genetic test. Our CLIA-certified clinical laboratory performs the ordered genetic test using stringent standard operating protocols. Following state and country regulations the test results are provided directly to the customer and/or the designated health care provider.

We process test samples in our CLIA-certified genetic testing laboratory. The regulatory requirements associated with a CLIA-certified clinical laboratory are addressed under the section titled "Government Regulation." We have upgraded the systems and processes for the laboratory with the addition of high volume analytical equipment as well as updated protocols for all of the laboratory processes. We currently hold laboratory permits or licenses for all U.S. states that require a genetic test processing license and meet the regulatory requirements as needed for other countries.

Intellectual Property

Our intellectual property is focused on the discoveries that link variations in key inflammation and metabolic genes to various conditions or illnesses. We initially concentrated our efforts on variations in the genes for the interleukin family of cytokines, because these compounds appear to be one of the strongest control points for the development and severity of inflammation. Some of our tests may include our proprietary genetic variations plus other gene variations that may be publicly available or in-licensed by Interleukin Genetics.

We have and have been granted patents and pending applications directed to single SNPs and SNP patterns in gene clusters as they relate to use for identifying individuals on a rapid path to several medical conditions or for use in guiding the selection of diets, exercise, vitamin needs, preventive care and also therapeutic agents. Groups of SNPs are often inherited together as patterns called haplotypes. We have a U.S. patent issued on haplotypes in an interleukin gene cluster and their biological and clinical significance. We believe these patents are controlling relative to interleukin SNPs and haplotype patterns that would be used for genetic risk assessment tests.

Our patents are “use” patents that claim that a SNP, or set of SNPs in unique patterns can be used in a novel way to predict disease development or progression, predict responses to preventive or therapeutic interventions and identify specific actions that improve health outcomes. We currently own rights in nine issued U.S. patents that have expiration dates between 2017 and 2032, five U.S. patent applications and one U.S. Provisional patent application pending, that are based on novel associations between particular gene sequences and certain metabolic and inflammatory conditions and disorders. The nine issued U.S. patents relate to genetic tests for, periodontal disease, osteoporosis, coronary artery disease, and other diseases associated with interleukin inflammatory haplotypes. Our newest patent applications relate to the commercial use of SNP panels in the fields of weight management, periodontal disease, osteoarthritis and IL-1 blocking drug indications. If granted, we expect many of these patents are not likely to expire until between 2029 and 2037.

Our intellectual property and proprietary technology are subject to numerous risks, which we discuss in “Risk Factors” below in Part I, Item 1A of this Form 10-K. Our commercial success will depend at least in part on our ability to obtain appropriate patent protection on our therapeutic and diagnostic products and methods and our ability to avoid infringing on the intellectual property of others.

We have been granted a number of corresponding foreign patents and have a number of foreign counterparts of our U.S. patents and patent applications pending.

Competition

The competition in the field of personalized health is changing. The markets and customer base are not well established. There are a number of companies involved in identifying and commercializing genetic markers. The companies differ in product end points and target customers. There are companies that market individual condition genetic tests for complex diseases to consumers and those that sell only to physicians. There are companies that market testing services for rare monogenic diseases mainly to physicians. There are companies that sell genome-scanning services to provide customers (usually the consumer directly) reports on large numbers of SNPs or the person’s entire genome. There are also technology platform companies that sell SNP testing equipment.

The key competitive factors affecting the success of any genetic test is its perceived benefit by the user, price (potentially including availability of reimbursement) and the level of market acceptance. In the case of newly introduced products requiring “change of behavior” (such as genetic risk assessment tests), we believe the presence of multiple competitors may accelerate market acceptance and penetration through increasing awareness. Moreover, two different genetic risk assessment tests for the same disease may in fact test or measure different components, and thus, actually be complementary when given in parallel as an overall assessment of risk, rather than being competitive with each other. Furthermore, the primary focus of most companies in the field is performing gene-identification research for pharmaceutical companies for therapeutic purposes, with genetic risk assessment testing being a secondary goal. In contrast, our primary business focus is developing and commercializing genetic risk assessment tests for health risks and forward-integrating these tests with additional products and services.

For a discussion of the risks associated with competition, see “Risks Related to Our Business, Our Financial Results and Need for Financing - We could become subject to intense competition from other companies, which may damage our business.” under "Risk Factors" below in Part I, Item 1A of this Form 10-K.

Government Regulation

Federal and state governmental authorities regulate the testing services that we provide. Failure to comply with the applicable laws and regulations can subject us to civil and criminal penalties, loss of licensure, certification, or accreditation. We intend to comply with all applicable government regulations and believe that we are currently in compliance. We cannot predict what new legislation or regulations governing our operations will be enacted by legislative bodies or promulgated by agencies that regulate its activities, or what changes in interpretations of existing regulations may be adopted. In particular, the FDA's approach to regulating laboratory developed tests is evolving, including such tests that are made available directly to the consumer, and we are in discussions with the FDA about how our tests, primarily certain of our Inherent Health tests, may be impacted, as discussed further in the "Government Regulation - Food and Drug Administration" section below.

CLIA and Other Laboratory Licensure

Our clinical laboratory must hold certain licenses, certifications, and permits to conduct our business. Laboratories that perform testing on human specimens for the purpose of providing information for the diagnosis, prevention or treatment of disease or assessment of health are subject to the Clinical Laboratory Improvement Amendments of 1988 (CLIA). CLIA requires such a laboratory to be certified by the federal government and mandates compliance with various operational, personnel, facilities, administration, quality and proficiency testing requirements intended to ensure that testing services are accurate, reliable and timely. Requirements for testing under CLIA vary based on the level of complexity of the testing performed. Laboratories performing high complexity tests, such as genetic tests, must comply with more stringent requirements than laboratories performing moderate or waived testing.

As a condition of CLIA certification, our laboratory is subject to survey and inspection every other year, in addition to being subject to additional random inspections. The biennial survey is conducted by the Centers for Medicare & Medicaid Services, or CMS, a CMS agent (typically a state agency), or, if the laboratory is accredited, a CMS-approved accreditation organization.

CLIA provides that a state may adopt laboratory regulations that are more stringent than those under federal law. In some cases, state licensure programs actually substitute for the federal CLIA program. In other instances, the state's regulations may be in addition to the CLIA requirements. In addition, our laboratory holds multiple state licenses to the extent that we accept specimens from one or more of these states, each of which require out-of-state laboratories to obtain licensure. If a laboratory is out of compliance with state laws or regulations governing licensed laboratories, penalties for violation vary from state to state but may include suspension, limitation, revocation or annulment of the license, assessment of financial penalties or fines, or imprisonment. We believe that we are in material compliance with all applicable licensing laws and regulations.

We may become aware from time to time of other states that require out-of-state laboratories to obtain licensure to accept specimens from the state, and other states may impose such requirements in the future. If we identify any other state with such requirements, or if we are contacted by any other state advising us of such requirements, we intend to follow all instructions from the state regulators regarding compliance with such requirements.

Laboratories must renew certification every two years, which typically includes an inspection of the laboratory. Our laboratory was most recently inspected in September 2015 and no deficiencies or other issues were noted and our CLIA license was renewed.

Food and Drug Administration

Although the Food and Drug Administration (FDA) has consistently claimed that it has the authority to regulate laboratory-developed tests, or LDTs, that are validated by the developing laboratory and performed only by that laboratory, it has generally exercised enforcement discretion in not otherwise regulating most tests developed and performed by high complexity CLIA-certified laboratories.

In July 2010, FDA held a public meeting in which FDA officials including those from the Office of In Vitro Diagnostic Products (OIR), within the Center for Devices and Radiological Health (CDRH) announced their intention to develop a regulatory framework for LDTs that would be based on the risks posed by such tests. In particular, FDA officials stated that laboratory developed tests offered directly to consumers would no longer be subject to enforcement discretion. Concomitant with that meeting, FDA sent letters to more than a dozen companies offering direct-to-consumer, or DTC, genetic tests, including us, stating that their tests appeared to be subject to regulation as medical devices and requesting information on how the companies planned to come into compliance with FDA requirements. The FDA letter inquired about our Inherent Health brand of DTC genetic tests and stated that these tests appeared to meet the definition of a "device" under the Federal Food, Drug, and Cosmetic (FD&C) Act. The letter requested that the Company provide FDA with the clearance or approval number for the tests or with the basis for determination that the tests do not require FDA clearance or approval. In the letter, FDA offered to meet with us, "to discuss whether there are tests you are promoting that do not require review by FDA and what information you would

need to submit in order for your products to be legally marketed."

In March 2011, FDA convened an expert advisory panel to discuss and make recommendations on scientific issues concerning DTC genetic tests that make medical claims. The panel expressed a variety of concerns regarding DTC genetic testing and recommended that certain tests not be permitted to be sold DTC. We submitted a position paper to the FDA in advance of the meeting and presented testimony to the panel at a public meeting on March 8, 2011. After that meeting, the OIR director publicly stated that FDA would likely take a case-by-case approach with respect to which types of genetic tests may be offered DTC. He also stated that OIR planned to issue three guidance documents addressing oversight of laboratory-developed tests. However, he did not provide a timeframe for OIR's release of these documents. In March 2012, an FDA spokesperson stated that FDA's plan to adjust its enforcement discretion policy for LDT's is currently under "administrative review."

On July 31, 2014 the FDA provided 60-day notice to Congress of its plan to issue draft guidance on the regulation of laboratory developed tests. On September 30, 2014, the FDA posted two draft guidances on its website, followed by notice in the Federal Register on October 3, 2014 announcing their release and the opening of a 120-day public comment period. This comment period lasted until February 2, 2015. FDA has not to date issued final versions of either of these guidance documents. In a footnote to one of these draft guidance documents, FDA stated that laboratory tests offered directly to consumers were not considered LDTs and would not be subject to FDA enforcement discretion.

The FDA issued a Draft Guidance for Industry and Food and Drug Administrative Staff on In Vitro Companion Diagnostic Devices on July 14, 2011, which, if finalized, is intended to assist companies developing in vitro companion diagnostics and companies developing therapeutic products that depend on the use of a specific in vitro companion diagnostic for the safe and effective use of the product. The FDA defined an in vitro companion diagnostic device, or IVD Companion Diagnostic Device, as a device that provides information that is essential for the safe and effective use of a corresponding therapeutic product. This definition is much narrower than the commonly used term "companion diagnostic," which refers generally to tests that may be useful, but are not necessarily a determining factor in the safe and effective use of the therapeutic product. The FDA expects that the therapeutic sponsor will address the need for an approved or cleared IVD Companion Diagnostic Device in its therapeutic product development plan. The sponsor of the therapeutic product can decide to develop its own IVD Companion Diagnostic Device, partner with a diagnostic device sponsor to develop the appropriate IVD Companion Diagnostic Device, or explore modification of an existing IVD diagnostic device (its own or another sponsor's) to accommodate the appropriate intended use. The FDA has approved a number of drug/diagnostic device companions in accordance with the Draft Guidance. However, this guidance will not apply to the LDTs that are used as companion diagnostics that merely provide useful information and are not linked to a specific drug indication.

On November 1, 2010, we met with the director and staff members of the OIR to present information on our tests. At FDA's request, we submitted a plan for how our tests would be submitted to FDA in December 2010 and requested a follow-up meeting to obtain feedback on the plan from OIR personnel. We did not receive any substantive feedback on this plan from FDA.

In October and November 2015 the FDA sent a number of "Untitled Letters" to entities marketing genetic tests directly to consumers, including to us. Specifically, on November 2, we received an Untitled Letter from the FDA requesting information about whether certain specified tests had obtained FDA clearance. We submitted a written reply to this letter on December 16, 2015, in which we responded that (1) we do not currently offer an osteoarthritis test; (2) that the ILUSTRA Test is a LDT subject to FDA "enforcement discretion; and (3) that the Weight Management Genetic test is not a medical device subject to FDA's statutory jurisdiction or, if it is, should be subject to enforcement discretion because it is a low-risk wellness product. We requested a meeting with OIR to discuss the Inherent Health tests.

On February 3, 2016 we met with the director and staff members of OIR to further discuss our letter response. The FDA issued minutes of the meeting on February 16, 2016, which confirmed that we do not offer an Osteoarthritis test and that the ILUSTRA Test is currently offered only as an LDT and is therefore currently subject to FDA enforcement discretion. In addition, they confirmed their interest in obtaining further information on how we would come into compliance with respect to the Inherent Health tests, since those tests are offered DTC and therefore are not subject to FDA enforcement discretion. We are continuing to engage with OIR regarding the appropriate next steps for these tests.

On April 5, 2016, we announced the results of discussions with the U.S. Food and Drug Administration ("FDA") in response to an Untitled Letter issued by the FDA on November 4, 2015 and a meeting on February 3, 2016 with personnel within FDA's Office of In Vitro Diagnostics and Radiological Health (OIR) to discuss Interleukin's written response to OIR with respect to the Untitled Letter. OIR personnel confirmed that the ILUSTRA Test is a laboratory developed test (LDT) currently subject to FDA enforcement discretion and may continue to be marketed without prior marketing authorization at this time. Our Bone Health and Heart Health tests, which are part of the Inherent Health line of tests, will be transitioned from a direct-to-consumer (DTC) distribution channel to a distribution model under which a licensed healthcare provider orders tests and oversees any resulting change in care. These two tests were available through Interleukin Genetics' DTC retail channels until May 22, 2016, at which time they were no longer available unless requested by an authorized healthcare provider.

HIPAA and Other Privacy Laws

The Administrative Simplification provisions of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") established for the first time comprehensive federal protection for the privacy and security of health information. The Health Information Technology for Economic and Clinical Health Act ("HITECH"), part of the American Recovery and Reinvestment Act of 2009, significantly expanded the scope of HIPAA and increased penalties for violating HIPAA. The HIPAA standards apply to three types of organizations ("Covered Entities"): health plans, health care clearing houses, and health care providers who conduct certain health care transactions electronically. They also apply to vendors of Covered Entities called "Business Associates" that access protected health information to provide services to or perform functions on behalf of Covered Entities. Covered Entities and Business Associates must have in place administrative, physical and technical standards to guard against the misuse of individually identifiable health information. We are not currently a Covered Entity subject to the HIPAA privacy and security standard. It is possible that in the future we will become a Covered Entity (for example if any of the tests that we perform become reimbursable by insurers). Regardless of our own Covered Entity status, HIPAA may apply to our customers, such as health care providers and health plans. Even though we are not directly subject to HIPAA, we could be subject to penalties, lawsuits and experience other adverse consequences if we wrongfully acquire protected health information, aid and abet a HIPAA violation by a customer or if we obtain or disclose protected health information maintained by a Covered Entity without authorization in violation of HIPAA. In addition, some lawsuits, including class action lawsuits, have been pursued at the state level against both covered entities and entities that are not directly subject to HIPAA for breach of confidentiality and security violations.

Our activities must also comply with other applicable privacy laws, including state data security laws that apply to personal data of our employees as well as our customers. “Personal data” includes information such as name coupled with social security number, state issued identification number, or financial account number. State data security laws impose specific security measures for the protection of personal data and require notification to affected individuals and government authorities in the event of breach. Non-compliance may result in government investigations, fines and significant negative publicity for our company.

Many states protect health information with confidentiality laws that are more stringent than HIPAA and that are not preempted by HIPAA. Most states protect certain categories of sensitive health information, such as infectious disease status or behavioral health history. Genetic information, including genetic test results, is often a protected category of health information. We must comply with all of these state-imposed laws. There are also international privacy laws, such as the European Data Directive, that impose restrictions on the access, use, and disclosure of health information and personal data across national lines.

In addition to health care privacy and data security laws, many states have adopted laws governing genetic testing and the use and disclosure of genetic test results. These laws typically require a specific form of written consent in advance of genetic testing and require special protections for test results. Given the complexity of genetic testing and the variety of techniques available for evaluating similar clinical conditions, these laws can be difficult to apply, making compliance more complex and potentially delaying implementation of a testing program when parties disagree on interpretation. Our failure to comply with these laws may result in fines, government enforcement, privacy litigation and adverse publicity for our company.

If we become subject to HIPAA or other state or federal privacy and security laws, we will have to establish and maintain an active compliance program. We will be subject to audit and investigation and may also be audited in connection with a complaint. We would also be subject to prosecution and/or administrative enforcement and increased civil and criminal penalties for non-compliance, including a new, four-tiered system of monetary penalties adopted under HITECH. We would also subject to enforcement by state attorneys general who were given authority to enforce HIPAA under HITECH.

We are subject to laws and regulations related to the protection of the environment, the health and safety of employees and the handling, transportation and disposal of medical specimens, infectious and hazardous waste and radioactive materials. For example, the U.S. Occupational Safety and Health Administration, or OSHA, has established extensive requirements relating specifically to workplace safety for healthcare employers in the U.S. This includes requirements to develop and implement multi-faceted programs to protect workers from exposure to blood-borne pathogens, such as HIV and hepatitis B and C, including preventing or minimizing any exposure through needle stick injuries. For purposes of transportation, some biological materials and laboratory supplies are classified as hazardous materials and are subject to regulation by one or more of the following agencies: the U.S. Department of Transportation, the U.S. Public Health Service, the United States Postal Service and the International Air Transport Association. We generally use third-party vendors to dispose of regulated medical waste, hazardous waste and radioactive materials and

contractually require them to comply with applicable laws and regulations.

GINA Legislation

In 2008, the Congress passed and the President signed into law, the Genetic Information Non-discrimination Act or GINA. GINA prohibits certain entities from discriminating using genetic information, which includes information from genetic tests, genetic tests of family members and family medical history. It also includes information about an individual's or family member's request for or receipt of genetic services. This law generally prohibits health insurers or health benefit plans from:

- increasing the group premium or contribution amounts (such as co-payments) based on genetic information;
- requesting or requiring an individual or family member to undergo a genetic test; or
- requesting, requiring or purchasing genetic information prior to or in connection with enrollment, or at any time for underwriting purposes.

The law also prohibits employers and certain other entities, including employment agencies, from using genetic information in employment decision-making and from requesting, requiring, or purchasing genetic information. It also strictly limits such entities from disclosing genetic information.

In October 2009, the Department of Health and Human Services issued a proposed rule to modify the HIPAA Privacy Rule to implement Title I of GINA. Final regulations were adopted in January, 2013. Among other things, this rule revises the definition of health information under HIPAA to include genetic information.

GINA applies to some of our customers and to us as an employer. We could be subject to penalties, lawsuits or experience other adverse consequences if our operations violate GINA or cause another entity to violate GINA.

Federal Trade Commission

The Federal Trade Commission (FTC) has jurisdiction over the advertisements of many types of products, including most medical devices, and prohibits unfair or deceptive trade practices. Advertising for our tests, including statements made on our website, is subject to FTC requirements. In recent years, the FTC instituted enforcement actions against several dietary supplement companies for false and misleading marketing practices and advertising of certain products, including those intended for weight loss. These enforcement actions have resulted in consent decrees and monetary payments by the companies involved. Although the FTC has never threatened an enforcement action against us for the advertising of our products, there can be no assurance that the FTC will not question the advertising for our products in the future.

Other Information

Our executive offices are located at 135 Beaver Street, Waltham, Massachusetts 02452, and our telephone number is (781) 398-0700. We were incorporated in Texas in 1986 and we re-incorporated in Delaware in March 2000. We maintain websites at *www.ilgenetics.com*, *www.inherenthealth.com* and *www.ILUSTRA.com*. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all amendments to such reports are available to you free of charge through the Investor Relations Section of *www.ilgenetics.com* as soon as practicable after such materials have been electronically filed with, or furnished to, the Securities and Exchange Commission. The information contained on our websites are not incorporated by reference into this Form 10-K. We have included our website addresses only as an inactive textual reference and do not intend them to be active links to our websites.

Item 1A. ***Risk Factors***

Risks Related to Our Business, Our Financial Results and Need for Financing

If we fail to obtain additional capital or enter into a collaboration or strategic transaction by the second quarter of 2017, we may have to end our operations and seek protection under bankruptcy laws.

We expect that our current and anticipated financial resources will be adequate to maintain our current and planned operations through the second quarter of 2017. We need significant additional capital to fund our continued operations, including to capitalize on the opportunity in CVD testing, for the commercialization efforts for our ILUSTRA Program, continued research and development efforts, obtaining and protecting patents and administrative expenses. We are actively seeking additional funding, however, based on current economic conditions, additional financing may not be available, or, if available, it may not be available on favorable terms. In addition, the terms of any financing may adversely affect the holdings or the rights of our existing shareholders. For example, if we raise additional funds by issuing equity securities, further dilution to our then-existing shareholders will result. Debt financing, if available, may involve restrictive covenants that could limit our flexibility in conducting future business activities. We also could be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights to some of our technologies, tests or products in development. We have also been considering potential strategic alternatives. Such strategic alternatives include, but are not limited to, a sale of the company, a business combination or collaboration, and an orderly liquidation of the company. We do not know if we will be successful in pursuing any strategic alternative or that any transaction will occur. If we cannot obtain additional funding on acceptable terms or enter into a strategic transaction, we may have to discontinue operations and seek protection under U.S. bankruptcy laws.

There is substantial doubt concerning our ability to continue as a going concern.

Our financial statements have been prepared assuming that we will continue as a going concern which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. The financial statements do not include any adjustments that might result from the outcome of this uncertain realization. We expect to incur additional losses in 2017 and beyond and, accordingly, we are dependent on financings and potential revenue to fund our operations, to advance interest in our CVD program and support the market adoption of the ILUSTRA Program. The timing of any revenues that we may receive from the ILUSTRA Program is uncertain at this time, and is contingent upon a number of factors, including our ability to attract employer and insurance carriers as customers directly, to consummate arrangements with additional partners to promote the ILUSTRA Program, our partners' ability to attract customers for the ILUSTRA Program, and the timing of utilization of the ILUSTRA Program by customers, among other possible variables. We cannot assure you that we will ever receive substantial revenues from the ILUSTRA Program. We expect that our current cash will be sufficient to support our operations only through the second quarter of 2017.

Our ability to realize the carrying value of our fixed assets and intangible assets is especially dependent on management's ability to successfully execute on its plan. We need to generate additional funds in order to meet our financial obligations. If we are unsuccessful in doing so, we may not be able to realize the carrying value of its fixed assets and intangible assets.

The timing and amount of revenues, if any, that we may receive pursuant to any existing or future agreement we may enter into with insurance carriers or large employers is uncertain.

The timing of any revenues that we may receive under any agreement we have or may enter into with an insurance carrier, large employer or other customer is very uncertain at this time and is dependent on a number of variables that are or may be beyond our control. We continue to engage in discussions for the use of our technology for CVD testing and the ILUSTRA Program with insurance companies and large employers who might ultimately adopt enhanced benefits designs or employer-sponsored wellness initiatives that incorporate the ILUSTRA Test, or utilize the ILUSTRA Program through other arrangements, through the use of consultants, channel partners and our internal management team. However, we cannot assure you that we will be able to successfully enter into any such agreements or arrangements, or that if entered into, such agreements or arrangements will provide significant revenue. The failure to enter into any agreement with other insurance carriers or large employers and to receive significant