TRANSGENOMIC INC
Form 10-K
March 14, 2013

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

FORM 10-K
(Mark One)

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

For the fiscal year ended December 31, 2012
OR

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

For the transition period from to
Commission File Number 000-30975

TRANSGENOMIC, INC.
(Exact Name of Registrant as Specified in its Charter)

Delaware	91-1789357
(State or Other Jurisdiction of Incorporation or Organization)	(IRS Employer Identification Number)
12325 Emmet Street Omaha, NE	68164
(Address of Principal Executive Offices)	(Zip Code)

(402) 452-5400
(Registrant's Telephone Number, Including Area Code)

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

Title of Each Class	Name of Each Exchange On Which Registered
None	N/A

Securities registered pursuant to Section 12(g) of the Act:
Common Stock, par value $.01 per share
(Title of Class)

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 Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes 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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).
Yes X No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form10-K

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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 definition of “accelerated filer”, “large accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer ¨ Accelerated Filer ý Non-Accelerated Filer ¨ Smaller Reporting Company ¨

(Do not check if a smaller reporting company)

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 voting and non-voting common equity held by non-affiliates of the registrant based on the last reported closing price per share of Common Stock as reported on the OTC Bulletin Board on the last business day of the registrant’s most recently completed second quarter was approximately $64.4 million.

At March 13, 2013, the registrant had 88,225,725 shares of common stock outstanding.

TRANSGENOMIC, INC.
Index to Form 10-K for the Fiscal Year Ended December 31, 2012

This Annual Report on Form 10-K references the following registered trademarks which are the property of Transgenomic, Inc.: Transgenomic, WAVE, WAVEMAKER, MutationDiscovery.com, OPTIMASE, DNASEP, OLIGOSEP, RNASEP, WAVE OPTIMIZED, SURVEYOR, FAMILION and ScoliScore™. The following are

trademarks which are the property of Transgenomic, Inc.: Advancing Personalized Medicine, the helix logo, ProtocolWriter and Navigator. All other trademarks or trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

PART I

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this "Annual Report"), including Management's Discussion & Analysis, contains forward-looking statements. These statements are based on management's current views, assumptions or beliefs of future events and financial performance and are subject to uncertainty and changes in circumstances. Readers of this report should understand that these statements are not guarantees of performance or results. Many factors could affect our actual financial results and cause them to vary materially from the expectations contained in the forward-looking statements. These factors include, among other things: our expected revenue, income (loss), receivables, operating expenses, supplier pricing, availability and prices of raw materials, Medicare/Medicaid/Insurance reimbursements, product pricing, foreign currency exchange rates, sources of funding operations and acquisitions, our ability to raise funds, sufficiency of available liquidity, future interest costs, future economic circumstances, business strategy, industry conditions and key trends, our ability to execute our operating plans, the success of our cost savings initiatives, competitive environment and related market conditions, expected financial and other benefits from our organizational restructuring activities, actions of governments and regulatory factors affecting our business and other risks as described in our reports filed with the Securities and Exchange Commission (the "SEC"). In some cases these statements are identifiable through the use of words such as "anticipate," "believe," "estimate," "expect," "intend," "plan," "pro "target," "can," "could," "may," "should," "will," "would" or the negative of such terms and other similar expressions. You are cautioned not to place undue reliance on these forward-looking statements. The forward-looking statements we make are not guarantees of future performance and are subject to various assumptions, risks and other factors that could cause actual results to differ materially from those suggested by these forward-looking statements. Actual results may differ materially from those suggested by the forward-looking statements that we make for a number of reasons including those described in Item 1A, "Risk Factors," and other factors identified by cautionary language used elsewhere in this Annual Report.

We expressly disclaim any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

The following discussion should be read together with our financial statements and related notes contained in this Annual Report. Results for the year ended December 31, 2012 are not necessarily indicative of results that may be attained in the future.

Item 1. Our Business

Transgenomic, Inc.("we", "us","our Company" or "Transgenomic") is a global biotechnology company advancing personalized medicine in the detection and treatment of cancer and inherited diseases through its proprietary molecular technologies and world-class clinical and research services. Our operations are organized and reviewed by management along its product lines and presented in the following three complementary business segments.

- Clinical Laboratories. Our clinical laboratories specialize in genetic testing for cardiology, neurology, mitochondrial disorders, and oncology. Located in New Haven, Connecticut and Omaha, Nebraska the molecular clinical reference laboratories are certified under the Clinical Laboratory Improvement Amendment (CLIA) as high complexity labs and our Omaha facility is also accredited by the College of American Pathologists (CAP).
- Pharmacogenomics Services. Our Contract Research Organization located in Omaha, Nebraska provides pharmacogenomics research services supporting Phase II and Phase III clinical trials conducted by our pharmaceutical customers. This lab specializes in pharmacogenomic, biomarker and mutation discovery research serving the pharmaceutical and biomedical industries world-wide for disease research, drug and diagnostic development and clinical trial support.
- Diagnostic Tools. Our proprietary product is the WAVE® System which has broad applicability to genetic variation detection in both molecular genetic research and molecular diagnostics. We also distribute bioinstruments produced by other manufacturers ("OEM Equipment") through our sales and distribution network. Service contracts to maintain

installed systems are sold and supported by our technical support personnel. The installed WAVE base and some OEM Equipment platforms generate a demand for consumables that are required for the continued operation of the bioinstruments. We develop, manufacture and sell these consumable products. In addition, we manufacture and sell consumable products that can be used on multiple, independent platforms. These products include SURVEYOR® Nuclease and a range of chromatography columns.

Segment information related to revenues, a performance measure of profit, capital expenditures, and total assets is contained in Footnote 14 “Operating Segment and Geographic Information” to our accompanying consolidated financial statements.

Business Strategy

Our primary goal is to provide products and services to biomedical researchers, physicians, medical institutions, and diagnostic and pharmaceutical companies that are tied to advancements in the field of genomics and, increasingly, personalized medicine. Advances in genomics have fueled our efforts to understand individual differences in disease susceptibility, disease progression, and response to therapy.

The markets in which we compete require a wide variety of technologies, products, and capabilities. The combination of technological complexity and rapid change within our markets makes it difficult for a single company to develop all of the technological solutions that it desires to offer within its family of products and services. We work to broaden the range of products and services we deliver to customers in target markets through acquisitions, investments, and alliances. We employ the following strategies to address the need for new or enhanced products and services:

- Developing new technologies and products internally;
- Acquiring all or parts of other companies;
- Entering into joint-development efforts with other companies; and
- Reselling other companies' products.

Our strategy is to leverage the synergies of our three divisions, capitalizing on discoveries in our Research and Development ("R&D") and Pharmacogenomic Services labs to create “kits” or assays to distribute through our Tools division, as well as tests to conduct in our Clinical Laboratories.

We will continue to develop new technologies, such as our ICECOLD-PCR, and capitalize on our expertise and intellectual properties to develop new ground-breaking tests, such as our C-GAAP Panel. We also continue to cultivate new and expanded relationships with industry leaders across the globe, such as A. Menarini in our Tools business, and several medical research facilities working with our two laboratory divisions.

We continue to evaluate a range of acquisition targets, including smaller single-test labs as well as larger private and public entities, as well as divisions of entities. We acquired the FAMILION business in December 2010 and we acquired the ScoliScore™ assay technology in September 2012, and we have integrated both into our existing business. We believe that we are skilled at such acquisition integrations.

Products

Our highly specialized genetics service and expertise are delivered by our Pharmacogenomic Services Laboratory in Omaha, Nebraska and in our Clinical Laboratory Improvement Act (CLIA)-certified Clinical Laboratories in Omaha and New Haven, Connecticut. Our Pharmacogenomics Lab supports pharmaceutical companies in their clinical trials, primarily Phase II and Phase III trials. Our Clinical Laboratories division supports medical professionals in the diagnosis and treatment of patients, primarily in the specialties of Cardiology and Neurology with a range of tests within each medical specialty.

In cardiology, our FAMILION® family of tests focuses on detecting mutations that can cause cardiac channelopathies, cardiomyopathies and other rare, potentially lethal heart conditions. The specific diseases include Long QT Syndrome (LQTS), Familial Atrial Fibrillation (AF), Hypertrophic Cardiomyopathy (HCM) and Dilated Cardiomyopathy (DCM). By reducing uncertainty and finding the specific genetic causes of cardiac channelopathies and cardiomyopathies, the FAMILION tests can:

- Help diagnose a patient's disease;
- Guide treatment options; and
- Determine whether family members are at risk.

Also in cardiology, our C-GAAP Panel seeks to identify the approximately 50% of patients with a genetic deficiency that prevents them from receiving the expected pharmacological benefit from clopidogrel (Plavix®). Information from the C-GAAP Panel can be used by the health care provider to ensure the most appropriate anti-platelet therapy is being used in an effort to reduce adverse cardiac events.

In Neurology, we have a focus on mitochondrial disorders and epilepsy and epilepsy-like diseases. We employ a wide variety of technologies, including proprietary technologies such as the WAVE, and industry standards such as Sanger

sequencing. In 2011, we introduced the NuclearMitome test, which is based on next-generation sequencing, and which is currently run in a partner lab.

ScoliScore™ is the first clinically validated and commercially available saliva-based multi-gene test that provides a highly accurate assessment of the likelihood of spinal curve progression for individuals diagnosed with Adolescent Idiopathic Scoliosis (AIS), or an abnormal lateral curve of the spine. The ScoliScore™ Test identifies patients that will not progress to a severe curvature of the spine and reduces those patients' need for repeated doctor visits, physical examinations and, most importantly, years of exposure to radiation from frequent X-Rays.

Our oncology tests are focused heavily on genetic mutations commonly associated with the major cancer types - Lung, Colorectal, Breast and Prostate. We primarily test for mutations in the K-RAS, N-RAS, BRAF, and PIK3CA genes, all associated with the most common cancers. We also offer tests for hereditary cancer-predisposing syndromes.

Our lab expertise is leveraged into our Diagnostic Tools division, which focuses on assembly and delivery of highly sensitive mutation detection equipment, primarily our WAVE, WAVE MCE and Hanabi instruments, as well as the bioconsumables used in these instruments for molecular testing and cytogenetics. Transgenomic equipment systems offer discovery and detection of genetic variation at close to 100% sensitivity, making them among the most sensitive and accurate technologies for detection of known and unknown mutations and single nucleotide polymorphisms (SNPs). These equipment systems are used throughout the world to screen for a large variety of diseases. More than 350 human genes have been screened entirely or partly by Direct High Pressure Liquid Chromatography (DHPLC), the underlying technology used by our equipment systems. A multitude of other applications are being used with WAVE Systems in such diverse areas as plant genomics, microbial analysis and drug sensitivity.

We continue to leverage the synergies of the three divisions, capitalizing on discoveries in our R&D and Pharmacogenomic Services labs to create "kits" or test assays to distribute through our Tools division, as well as tests to conduct in our Clinical Laboratories.

Sales and Marketing

Our Sales and Support team consists of regionally based sales people, service engineers and applications scientists to support our sales and marketing activities worldwide. We have sold our products to customers in over 50 countries. We use a direct sales and support staff for sales in the U.S. and Europe. For the rest of the world, we sell our products through dealers and distributors within local markets. We have over 35 dealers and distributors.

Customers

Physicians requesting genetic tests for their patients are our primary source of laboratory services. Fees for laboratory testing services rendered for these physicians are billed either to the physician, the patient or the patient's third-party payer such as an insurance company, Medicare or Medicaid. Billings are typically on a fee-for-service basis. The patient or third-party payer is billed at our patient fee schedule. Commercial insurance providers are billed at contracted rates or other generally accepted market reimbursement rates. Revenues received from Medicare and Medicaid billings are based on government established fee schedules and reimbursement rules.

Our customers include a number of large, established pharmaceutical, biotech and commercial companies as well as leading academic and medical institutions both in the U.S. and abroad. No customer accounted for more than 10% of our consolidated net sales for the years ended December 31, 2012, 2011 or 2010. Information regarding the revenues attributable to U.S. and international markets is set forth in Note 14 "Operating Segment and Geographic Information" to our accompanying consolidated financial statements.

Research and Development

We continue to invest in research and development in order to remain competitive and to take advantage of new business opportunities as they arise. We maintain a program of research and development with respect to instruments and services, engaging existing and new technologies to create scientific and medical applications that will add value to patient care as well as significant commercial value. Major areas of focus include (i) development of SURVEYOR® Nuclease based oncology mutation detection kits utilizing multiple instrument platforms for aid in therapeutic treatment decisions for cancers such as colorectal, melanoma and non-small cell lung; (ii) development of a new strategy for mutation detection and sequence confirmation using microcapillary electrophoresis; (iii) development of ICE COLD-PCR applications for ultra-high sensitivity mutation detection in any tissue samples (fresh, frozen, FNA, FFPE, etc.) or body fluids (plasma, serum, ascites); (iv) the use of commercially available assays and the development of custom assays for detection of somatic mutations in cancer samples using Next Generation

Sequencing; and (v) development of a biomarker for FC Gamma receptor to aid in the selection of therapeutic options for monoclonal antibody cancer drugs. For the years ended December 31, 2012, 2011 and 2010, our research and development expenses were $2.5 million, $2.2 million and $2.3 million, respectively.

Manufacturing

We manufacture bioconsumable products including our separation columns, liquid reagents and enzymes. The major components of our WAVE Systems are manufactured for us by a third party. We integrate our hardware and software with these third party manufactured components. Our manufacturing facilities for WAVE Systems and bioconsumables are located in Omaha, Nebraska and San Jose, California.

Intellectual Property

To establish and protect our proprietary technologies and products, we rely on a combination of patent, copyright, trademark and trade-secret laws, license agreements' contractual provisions and confidentiality agreements. Our WAVE Systems and related consumables are protected by patents and in-licensed technologies that expire in various periods beginning in 2012 through 2030. As part of the FAMILION acquisition in 2010, we acquired exclusive rights to the FAMILION family of genetic tests for inherited disease, including the patents protecting this technology. As we expand our product offerings, we also extend our patent development efforts to protect such product offerings. Established competitors, as well as companies that purchase and enforce patents and other intellectual property, may already have patents covering similar products. There is no assurance that we will be able to obtain patents covering our products, or that we will be able to obtain licenses from such companies on favorable terms or at all. However, while patents are an important element of our success, our business as a whole is not significantly dependent on any one patent.

We will continue to file patent applications, seek new licenses, take advantage of available copyright and trademark protections and implement appropriate trade-secret protocols to protect our intellectual property. Despite these precautions, there can be no assurance that misappropriation of our products and proprietary technologies will not occur.

In addition to our own products, we distribute or act as a sales agent for OEM Equipment developed by third parties. Our rights to those third-party products and the associated intellectual property rights are limited by the terms of the contractual agreement between us and the respective third-party.

Although we believe that our developed and licensed intellectual property rights do not infringe upon the proprietary rights of third parties, there can be no assurance that third parties will not assert infringement claims against us. Further, there can be no assurance that intellectual property protection will be available for our products in all foreign countries.

Like many companies in the biotechnology and other high-tech industries, third parties have in the past and may in the future assert claims or initiate litigation related to patent, copyright, trademark or other intellectual property rights to business processes, technologies and related standards that are relevant to us and our customers. These assertions have increased over time as a result of the general increase in patent claims assertions, particularly in the United States. Third parties may also claim that their intellectual property rights are being infringed by our customers' use of a business process method that utilizes products in conjunction with other products, which could result in indemnification claims against us by our customers. Any claim against us, with or without merit, could be time-consuming, result in costly litigation, cause product delivery delays, require us to enter into royalty or licensing agreements or pay amounts in settlement, or require us to develop alternative non-infringing technology. We could also be required to defend or indemnify our customers against such claims. A successful claim by a third-party of intellectual property infringement by us or one of our customers could compel us to enter into costly royalty or license agreements, pay significant damages or even stop selling certain products and incur additional costs to develop alternative non-infringing technology.

Government Regulation

We are subject to a variety of federal, state and municipal environmental and safety laws based on our use of hazardous materials in both manufacturing and research and development operations. We believe that we are in material compliance with applicable environmental laws and regulations. If we cause contamination to the environment, intentionally or unintentionally, we could be responsible for damages related to the clean-up of such contamination or individual injury caused by such contamination. We cannot predict how changes in laws and regulations will impact how we conduct our business operations in the future or whether the costs of compliance will increase in the future.

Regulation by governmental authorities in the United States and other countries is not expected to be a significant factor in the manufacturing, labeling, distribution and marketing of our products and systems.

Competition

The markets in which we operate are highly competitive and characterized by rapidly changing technological advances. A number of our competitors possess greater resources than us and may be able to develop and offer a greater breadth of products

and/or services, coupled with significant marketing and distribution capabilities. We compete principally on the basis of uniquely enabling scientific technical advantages in specific but significant market segments.

Our Laboratory Services division faces competition from a number of companies offering contract DNA sequencing and other genomic analysis services, including SeqWright and others. In addition, several clinical diagnostics service providers, such as Labcorp, Quest, GeneDx and Baylor College of Medicine, also offer related laboratory services. Finally, additional competition arises from academic core laboratory facilities. Competition for our WAVE System arises primarily from DNA sequencing and genotyping technologies. Competitors in these areas, among others, include Applied Biosystems, Qiagen, Roche, Sequenom and others. Competition for some of our non-WAVE consumable products comes from numerous well-diversified life sciences reagents providers, including, among others, Invitrogen, Qiagen, Roche, Stratagene and Promega.

Employees

As of December 31, 2012 and 2011, we had employees focused in the following areas of operation:

	December 31,	
	2012	2011
Manufacturing and Laboratory	86	68
Sales, Marketing and Administration	105	92
Research and Development	11	9
	202	169

Our employees were employed in the following geographical locations:

	December 31,	
	2012	2011
United States	181	148
Europe (other than the United Kingdom)	10	10
United Kingdom	11	11
	202	169

General Information

We were incorporated in Delaware on March 6, 1997. Our principal office is located at 12325 Emmet Street, Omaha, Nebraska 68164 (telephone: 402-452-5400). This facility houses our administrative staff and laboratories. We maintain manufacturing facilities in Omaha, Nebraska and San Jose, California. We maintain research and development offices in Omaha, Nebraska. We maintain laboratories in Omaha, Nebraska and New Haven, Connecticut that have been certified under the Clinical Laboratory Improvement Amendments of 1988 ("CLIA"). Our New Haven facility also houses certain administrative and financial operations.

Our Internet website is located at http://www.transgenomic.com. The information on our website is not a part of this Annual Report. We make available free of charge on our website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the United States Securities and Exchange Commission ("SEC"). Our SEC reports can be accessed through the investor relations section of our Internet website.

The public may also read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the Securities and Exchange Commission at 1-800-SEC-0330. The SEC also maintains an Internet website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. The SEC's Internet website is located at http://www.sec.gov.

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Executive Officers of the Registrant

Craig J. Tuttle. Mr. Tuttle, age 60, has served as our President and Chief Executive Officer since 2006. From 2004 to 2005, Mr. Tuttle was President and Chief Operating Officer of Duke Scientific, a specialty chemical and diagnostic company which he sold to Fisher Healthcare. From 1999 to 2003, Mr. Tuttle served as Vice President of Business Development for Apogent Technologies, a $1.0 billion healthcare company that was acquired by Fisher Healthcare and subsequently became ThermoFisher, and President and Chief Executive Officer of Applied Biotech, Inc., an Apogent Technologies company. Prior to that, Mr. Tuttle was President and General manager of Seradyn, Inc. a diagnostic and genomic products company within the Apogent Technologies group of companies. Mr. Tuttle has also held senior management positions at Boehringer Mannheim, Bayer Diagnostics and Difco Laboratories. He began his career at Syva Company, a subsidiary of Syntex Pharmaceuticals and Cetus Corporation where he led the development of the first thermocycler system for automating PCR. Mr. Tuttle holds a B.S. in Biochemistry from UCLA, an M.S. in Biochemistry from the University of Colorado and an M.B.A. in Business and Marketing from St. Mary's College.

Mark P Colonnese. Mr. Colonnese, age 57, was appointed as our Executive Vice President and Chief Financial Officer by the Board in September 2012. Mr. Colonnese has nearly 30 years of experience in leading business growth and financial strategies for life sciences companies. He most recently served as Executive Vice President, Commercial Operations and Chief Financial Officer at Salutria Pharmaceuticals, LLC, a privately-held, development-stage pharmaceutical company from April 2009 to August 2012. Prior to that, Mr. Colonnese served as an executive in a number of capacities at AtheroGenics, Inc., a development-stage pharmaceutical company, from January 1999 to April 2009, including Executive Vice President, Commercial Operations and Chief Financial Officer from May 2006 to April 2009, as Senior Vice President of Finance and Administration and Chief Financial Officer since 2002, and as Vice President of Finance and Administration and Chief Financial Officer since 1999. Prior to joining AtheroGenics, Mr. Colonnese served as Senior Vice President and Chief Financial Officer at Medaphis Corporation and has also held executive positions at Applied Analytical Industries, Inc. and Schering-Plough Corporation. Mr. Colonnese is a Certified Public Accountant.

Chad M. Richards. Mr. Richards, age 43, joined our Company in October 2007 as Senior Vice President, Sales and Marketing and was promoted to Chief Commercial Officer in January 2011. Before joining our Company, Mr. Richards was the National Sales Director for Anatomic Pathology with Quest Diagnostics. During his career with Quest Diagnostics, Mr. Richards held a variety of sales management roles in both their physician and hospital business segments. Before joining Quest Diagnostics, Mr. Richards held different marketing and sales management roles with Roche Diagnostics Ventana Medical Systems Division, one of the world’s leading developers and manufacturers of immunohistochemistry and in-situ hybridization instruments and reagent systems. Before embarking on a career in diagnostics, Mr. Richards served in the United States Marine Corps.

Item 1A. Risk Factors

We have a history of operating losses and may incur losses in the future.

We have experienced annual losses from continuing operations since inception of our operations. Our operating loss for the years ended December 31, 2012, 2011 and 2010 was $9.5 million, $3.0 million and $3.6 million, respectively. These historical losses have been due principally to the expenses that we have incurred in order to develop and market our products, the fixed nature of our manufacturing costs, restructuring charges, impairment charges and merger and acquisition costs.

We might enter into new acquisitions that are difficult to integrate, disrupt our business, dilute stockholder value or divert management attention.

Our success will depend in part on our ability to continually enhance and broaden our product offerings in response to changing technologies, customer demands and competitive pressures. We expect to seek to acquire businesses, technologies or products that will complement or expand our existing business, including acquisitions that could be material in size and scope. Any acquisition we might make in the future might not provide us with the benefits we anticipated upon entering into the transaction. Any future acquisitions involve various risks, including:

- Difficulties in integrating the operations, technologies, products and personnel of the acquired entities;
- The risk of diverting management's attention from normal daily operations of the business;
- Potential difficulties in completing projects associated with in-process research and development;
- Risks of entering markets in which we have no or limited direct prior experience and where competitors in such markets have stronger market positions;
- Initial dependence on unfamiliar supply chains or relatively small supply partners;
- Unexpected expenses resulting from the acquisition;
- Potential unknown liabilities associated with acquired businesses;
- Insufficient revenues to offset increased expenses associated with the acquisition; and
- The potential loss of key employees of the acquired entities.

An acquisition could result in the incurrence of debt, restructuring charges or significant one-time write-offs. Acquisitions also could result in goodwill and other intangible assets that are subject to impairment tests, which might result in future impairment charges. Furthermore, if we finance acquisitions by issuing convertible debt or equity securities, our existing stockholders may be diluted.

From time to time, we might enter into negotiations for acquisitions that are not ultimately consummated. Those negotiations could result in diversion of management time and potentially significant out-of-pocket costs. If we fail to evaluate and execute acquisitions accurately, we could fail to achieve our anticipated level of growth and our business and operating results could be adversely affected.

Our future capital needs are uncertain and we may need to raise additional funds in the future.

Our future capital needs are uncertain and we may need to raise additional funds in the future through debt or equity offerings. Our future capital requirements will depend on many factors, including, but not limited to:

- revenue generated by sales of our products;
- expenses incurred in manufacturing and selling our products;
- costs of developing new products or technologies;
- costs associated with capital expenditures;
- the number and timing of acquisitions and other strategic transactions; or
- working capital requirements related to growing new acquisitions or existing business.

Continued weakness in U.S. or global economic conditions could have an adverse effect on our businesses.

The economies of the United States and other regions of the world in which we do business have experienced significant weakness, which, in the case of the U.S., has resulted in significant unemployment and slower growth in economic activity. A continued decline in economic conditions may adversely affect demand for our services and products, thus reducing our revenue. These conditions could also impair the ability of those with whom we do business to satisfy their obligations to us.

Sales have been variable.

Testing volumes in our Clinical Laboratory segment are dependent on patient visits to doctors' offices and other providers of health care and tend to fluctuate. Testing volume generally declines during the year-end holiday periods, other major holidays and the summer.

Our Pharmacogenomics Services segment depends on project-based work that changes from quarter to quarter. Therefore, comparison of the results of successive quarters may not accurately reflect trends or results for the full year.

Changes in payer mix could have a material adverse impact on our net sales and profitability.

Testing services are billed to physicians, patients, Medicare, Medicaid and insurance companies. Tests may be billed to different payers depending on a particular patient's medical insurance coverage. Increases in the percentage of services billed to government payers could have an adverse impact on our net sales.

We may experience temporary disruptions and delays in processing tissue samples at our facilities.

We may experience delays in processing biological samples caused by software and other errors. In early 2012, our laboratory information management system ("LIMS") installed in our New Haven, Connecticut laboratory testing facility experienced a software failure that resulted in reduced sample processing capacity. Although we have reviewed and improved our internal procedures to secure proper function of the LIMS and we believe that the full sample processing capacity has been restored, there are no assurances that we will not experience future temporary delays or disruptions in processing samples at our New Haven, Connecticut facility or at our other facilities. Any delay in processing samples could have an adverse effect on our business, financial condition and results of operations.

Governmental payers and health care plans have taken steps to control costs.

Medicare, Medicaid and private insurers have increased their efforts to control the costs of health care services, including clinical testing services. They may reduce fee schedules or limit/exclude coverage for types of tests that we perform. Medicaid reimbursement varies by state and is subject to administrative and billing requirements and budget pressures. We expect efforts to reduce reimbursements, impose more stringent cost controls and reduce utilization of testing services will continue. These efforts, including changes in law or regulations, may have a material adverse impact on our business.

Our Laboratory requires ongoing CLIA certification.

CLIA extended federal oversight to virtually all clinical laboratories by requiring that they be certified by the federal government or by a federally approved accreditation agency. CLIA requires that all clinical laboratories meet quality assurance, quality control and personnel standards. Laboratories must also undergo proficiency testing and are subject to inspections.

The sanctions for failure to comply with CLIA requirements include suspension, revocation or limitation of a laboratory's CLIA certificate, which is necessary to conduct business, cancellation or suspension of the laboratory's approval to receive Medicare and/or Medicaid reimbursement, as well as significant fines and/or criminal penalties. The loss or suspension of a CLIA certification, imposition of a fine or other penalties, or future changes in the CLIA law or regulations (or interpretation of the law or regulations) could have a material adverse effect on us.

We believe that we are in compliance with all applicable laboratory requirements, but no assurances can be given that our laboratories will pass all future certification inspections.

Failure to comply with HIPAA could be costly.

The Health Insurance Portability and Accountability Act ("HIPAA") and associated regulations protect the privacy and security of certain patient health information and establish standards for electronic health care transactions in the United States. These privacy regulations establish federal standards regarding the uses and disclosures of protected health information. Our Molecular Labs are subject to HIPAA and its associated regulations. If we fail to comply with these laws and regulations we could suffer civil and criminal penalties, fines, exclusion from participation in governmental health care programs and the loss of various licenses, certificates and authorizations necessary to operate our Laboratory Services business. We could also incur liabilities from third party claims.

Our business could be adversely impacted by health care reform.

Government attention to the health care industry in the United States is significant and may increase. The Patient Protection and Affordable Care Act passed by Congress and signed into law by the President in March 2010 could adversely impact our business. While certain portions of the legislation have already gone into effect, the ultimate impact of the legislation on the health care industry is still unknown, and the overall impact on our business is likely to be extensive and could result in significant changes to our business and our customers' businesses.

We may be subject to client lawsuits.

Providers of clinical testing services may be subject to lawsuits alleging negligence or other legal claims. Potential suits could involve claims for substantial damages. Litigation could also have an adverse impact on our client base and

reputation. We maintain liability insurance coverage for certain claims that could result from providing or failing to provide clinical testing

services, including inaccurate testing results and other exposures. Our insurance coverage limits our maximum recovery on individual claims and, therefore, there is no assurance that such coverage will be adequate.

Market demand is outside of our control.

There are many factors that affect the market demand for our products and services that we cannot control. Demand for our WAVE System is affected by the needs and budgetary resources of research institutions, universities, hospitals and others who use the WAVE System for genetic-variation research. The WAVE System represents a significant expenditure by these types of customers and often requires a long sales cycle. Similarly, the sales cycle for the OEM Equipment that we sell can be lengthy.

The sale of our products and business operations in international markets subjects us to additional risks.

During the past several years, international sales have represented a significant portion of our total net sales. As a result, a major portion of our net sales are subject to risks associated with international sales and operations. These risks include:

- payment cycles in foreign markets are typically longer than in the U.S., and capital spending budgets for research agencies can vary over time with foreign governments;
- changes in foreign currency exchange rates can make our products more costly in local currencies since our foreign sales are typically paid for in British Pounds or the Euro;
- the potential for changes in U.S. and foreign laws or regulations that result in additional import or export restrictions, higher tariffs or other taxes, more burdensome licensing requirements or similar impediments to our ability to sell products and services profitably in these markets; and
- the fluctuation of foreign currency to the U.S. Dollar and the Euro to the British Pound can cause our net sales and expenses to increase or decrease, which adds risk to our financial statements.

Our WAVE System includes hardware components and instrumentation manufactured by a single supplier and if we are no longer able to obtain these components and instrumentation our ability to manufacture our products could be impaired.

We rely on a single supplier, Hitachi High Technologies America, to provide the basic instrument modules used in our WAVE Systems. While other suppliers of instrumentation are available, we believe that our arrangement with Hitachi offers strategic advantages. We have successfully converted the latest model of WAVE Systems to utilize Hitachi's newest instrument line. If we were required to seek alternative sources of supply, it could be time consuming and may require significant and costly modification of our WAVE System. Also, if we were unable to obtain instruments from Hitachi in sufficient quantities or in a timely manner, our ability to manufacture our products could be impaired, which could limit our future net sales.

The current economy may cause suppliers of products to not be able to perform.

We rely on various suppliers for products and materials needed to produce our products. In the event that they would be unable to deliver those items due to product shortage or business closure, we may be unable to deliver our products to our customers timely or may need to increase our prices. The current economy poses additional risk of our suppliers' ability to continue their businesses as usual.

Our markets are very competitive.

Many of our competitors have greater resources than we do and may enjoy other competitive advantages. This may allow them to more effectively market their products to our customers or potential customers, to develop products that make our products obsolete or to produce and sell products less expensively than us. As a result of these competitive factors, demand for and pricing of our products and services could be negatively affected.

Our patents may not protect us from others using our technology which could harm our business and competitive position.

Patent law relating to the scope of claims in the technology fields in which we operate is still evolving. The degree of future protection for our proprietary rights is uncertain. Furthermore, we cannot be certain that others will not independently develop similar or alternative products or technology, duplicate any of our products, or, if patents are

issued to us, design around the patented products developed by us. Our patents or licenses could be challenged by litigation and, if the outcome of such litigation were adverse to us, our competitors could be free to use our technology. We may not be able to obtain additional patents for our technology, or if we are able to do so, patents may not provide us with adequate protection or be commercially beneficial. In addition, we could incur substantial costs in litigation if we are required to defend ourselves in patent suits brought by third parties or if we initiate such suits.

We cannot be certain that other measures taken to protect our intellectual property will be effective.

We rely upon trade secrets, copyright and trademark laws, non-disclosure agreements and other contractual provisions for some of our confidential and proprietary information that is not subject matter for which patent protection is being sought. Such measures, however, may not provide adequate protection for our trade secrets or other proprietary information. If such measures do not protect our rights, third parties could use our technology and our ability to compete in the market would be reduced.

We are dependent upon licensed technologies and may need to obtain additional licenses in the future to offer our products and remain competitive.

We have licensed key components of our technologies from third parties. If these agreements were to terminate prematurely due to our breach of the terms of these licenses or we otherwise fail to maintain our rights to such technology, we may lose the right to manufacture or sell a substantial portion of our products. In addition, we may need to obtain licenses to additional technologies in the future in order to keep our products competitive. If we fail to license or otherwise acquire necessary technologies, we may not be able to develop new products that we need to remain competitive.

The protection of intellectual property in foreign countries is uncertain.

A significant percentage of our sales are to customers located outside the U.S. Patent and other intellectual property laws of some foreign countries may not protect our intellectual property rights to the same extent as U.S. laws. We may need to bring proceedings to defend our patent rights or to determine the validity of our competitors' foreign patents. These proceedings could result in substantial cost and diversion of our efforts. Finally, some of our patent protection in the U.S. is not available to us in foreign countries due to the laws of those countries.

Our products could infringe on the intellectual property rights of others.

There are a significant number of U.S. and foreign patents and patent applications submitted for technologies in, or related to, our area of business. As a result, any application or exploitation of our technology by us could infringe patents or proprietary rights of others and any licenses that we might need as a result of such infringement might not be available to us on commercially reasonable terms, if at all. This may lead others to assert patent infringement or other intellectual property claims against us.

Our failure to comply with any applicable government regulations or otherwise respond to claims relating to improper handling, storage or disposal of hazardous chemicals that we use may adversely affect our results of operations.

Our research and development and manufacturing activities involve the controlled use of hazardous materials and chemicals. We are subject to federal, state, local and international laws and regulations governing the use, storage, handling and disposal of hazardous materials and waste products. If we fail to comply with applicable laws or regulations, we could be required to pay penalties or be held liable for any damages that result and this liability could exceed our financial resources. We cannot assure you that accidental contamination or injury will not occur. Any such accident could damage our research and manufacturing facilities and operations, resulting in delays and increased costs.

We may need additional capital to finance our growth or to compete, which may cause dilution to existing stockholders or limit our flexibility in conducting our business activities.

We currently anticipate that existing cash and cash equivalents and cash flow from operations will be sufficient to meet our anticipated needs for working capital, operating expenses and capital expenditures for at least the next twelve months. However, we may need to raise additional capital in the future to fund expansion, respond to competitive pressures or acquire complementary businesses, technologies or services. Such additional financing may not be available on terms acceptable to us or at all. To the extent that we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution, and to the extent we engage in additional debt financing, if available, we may become subject to additional restrictive covenants that could limit our flexibility in conducting future business activities. If additional financing is not available or not available on acceptable terms, we may not be able to fund our expansion, promote our brands, take advantage of acquisition opportunities, develop or enhance services or respond to competitive pressures.

Our common stock is deemed to be "penny stock" which may make it more difficult for investors to sell their shares due to suitability requirements.

Our common stock is classified as a “penny stock” under the rules of the SEC. The SEC has adopted Rule 3a51-1under the Exchange Act, which provides that the definition of a “penny stock” for the purposes relevant to us, is any equity security that has

a market price of less than $5.00 per share or with an exercise price of less than $5.00 per share, subject to certain exceptions. For any transaction involving a penny stock, unless exempt, Rule 15g-9 under the Exchange Act requires that:

- a broker or dealer approve a person's account for transactions in penny stocks; and
- the broker or dealer receives from the investor a written agreement to the transaction, setting forth the identity and quantity of the penny stock to be purchased.

In order to approve a person's account for transactions in penny stocks, the broker or dealer must:

- obtain financial information and investment experience objectives of the person; and
- make a reasonable determination that the transactions in penny stocks are suitable for that person and the person has sufficient knowledge and experience in financial matters to be capable of evaluating the risks of transactions in penny stocks.

The broker or dealer must also deliver, prior to any transaction in a penny stock, a disclosure schedule prescribed by the SEC relating to the penny stock market, which must, among other things:

- set forth the basis on which the broker or dealer made the suitability determination; and
- state that the broker or dealer received a signed, written agreement from the investor prior to the transaction.

Generally, brokers may be less willing to execute transactions in securities subject to "penny stock" rules. This may make it more difficult for investors to dispose of our common stock and cause a decline in the market value of our stock.

SEC rules also require disclosure about the risks of investing in penny stocks in both public offerings and in secondary trading and about the commissions payable to both the broker-dealer and the registered representative, current quotations for the securities and the rights and remedies available to an investor in cases of fraud in penny stock transactions. Finally, monthly statements have to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stocks.

We may issue a substantial amount of our common stock to holders of options and warrants and this could reduce the market price for our stock.

At December 31, 2012, we had obligations to issue 29,660,038 shares of common stock upon exercise of outstanding stock options, warrants or conversion rights. In January 2013, we completed a private placement, pursuant to which we issued warrants to purchase up to an aggregate of 8,300,000 shares of common stock and shares of our common stock. The issuance of these additional shares of common stock may be dilutive to our current shareholders and could negatively impact the market price of our common stock.

Our common stock is thinly traded and a large percentage of our shares are held by a small group of unrelated, institutional owners.

At December 31, 2012, we had 71,645,725 shares of common stock outstanding. The sale of a significant number of shares into the public market has the potential to cause significant downward pressure on the price of our common stock. This is particularly the case if the shares being placed into the market exceed the market's ability to absorb the stock. This presents an opportunity for short sellers to contribute to the further decline of our stock price. If there are significant short sales of our stock, the price decline that would result from this activity will cause the share price to decline more so, which, in turn, may cause long holders of the stock to sell their shares, thereby contributing to sales of stock in the market. In addition, the large concentration of our shares held by a small group of stockholders could result in increased volatility in our stock price due to the limited number of shares available in the market.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We currently lease facilities throughout the world under non-cancellable leases with various terms. The following table summarizes certain information regarding our leased facilities. Annual rent amounts presented in the table are reflected in thousands.

Location	Function	Square Footage	2013 Scheduled Rent	Lease Term Expires
Omaha, Nebraska	WAVE and Consumable Manufacturing	25,000	$141	July 2016
San Jose, California	Consumable Manufacturing	9,110	$58	February 2016
Glasgow, Scotland	Multi Functional (1)	5,059	$37	May 2017
Omaha, Nebraska	Multi Functional (1)	18,265	$208	July 2022
Omaha, Nebraska	Multi Functional (1)	4,410	$38	May 2017
New Haven, Connecticut	Multi Functional (1)	22,459	$432	June 2018

(1) Multi Functional facilities include functions related to manufacturing, services, sales and marketing, research and development and/or administration.

We believe that these facilities are adequate to meet our current and planned needs. We believe that if additional space is needed in the future, we could find alternate space at competitive market rates without a substantial increase in cost.

Item 3. Legal Proceedings.

We are subject to a number of claims of various amounts which arise out of the normal course of our business. In our opinion, the disposition of pending claims will not have a material adverse effect on our financial position, results of operations or cash flows.

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.

Market Information. Share price information for our common stock is available on the OTC Bulletin Board under the symbol TBIO.OB. The following table sets forth the high and low closing prices for our common stock during each of the quarters of 2012 and 2011. These prices reflect inter-dealer prices, without retail mark-up, mark-down or commission and may not necessarily represent actual transactions.

	High	Low
Year Ended December 31, 2012		
First Quarter	$1.35	$1.15
Second Quarter	$1.13	$0.78
Third Quarter	$1.06	$0.75
Fourth Quarter	$0.97	$0.54
Year Ended December 31, 2011		
First Quarter	$0.90	$0.61
Second Quarter	$1.75	$0.82
Third Quarter	$1.77	$1.00
Fourth Quarter	$1.44	$1.07

Company Stock Price Performance Graph. The following graph compares five-year cumulative total returns of the Company, the NASDAQ Composite Index and the NASDAQ Biotechnology Stock Index. The graph assumes $100 was invested in the common stock of Transgenomic, Inc. and each index as of December 31, 2007 and that all dividends were re-invested. The comparisons shown in the graph are based upon historical data and we caution that the stock price performance shown in the graph is neither indicative of, nor intended to forecast, the potential future performance of our stock.

The information contained in this Stock Performance Graph section shall not be deemed to be "soliciting material" or "filed" or incorporated by reference in future filings with the SEC, or subject to the liabilities of Section 18 of the Exchange Act,

except to the extent that we specifically incorporate it by reference into a document filed under the Securities Act of 1933, as amended (the "Securities Act"), or the Exchange Act.

Holders. At December 31, 2012, there were 71,645,725 shares of our common stock outstanding and approximately 3,200 holders of record.

Dividends. We have never declared or paid any cash dividends on our common stock and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. Dividends on our common stock will be paid only if and when declared by our Board of Directors. The Board's ability to declare a dividend is subject to limits imposed by Delaware corporate law. In determining whether to declare dividends, the Board may consider our financial condition, results of operations, working capital requirements, future prospects and other relevant factors. The holders of our Series A Convertible Preferred Stock (the "Series A Preferred Stock") are entitled to receive quarterly dividends.

Sale of Unregistered Securities.

Series A Preferred Shares and Series A Preferred Warrants: On December 29, 2010, we entered into a Series A Convertible Preferred Stock Purchase Agreement (the "Series A Purchase Agreement") with Third Security Senior Staff 2008 LLC, Third Security Staff 2010 LLC, and Third Security Incentive 2010 LLC (collectively, the "Third Security Investors"), pursuant to which we: (i) sold to the Third Security Investors an aggregate of 2,586,205 shares of our Series A Convertible Preferred Stock (the "Series A Preferred") at a price per share of $2.32 for aggregate gross proceeds of approximately $6,000,000; and (ii) issued to the Third Security Investors warrants (the "Series A Warrants") to purchase up to an aggregate of 1,293,102 shares of Series A Preferred with an exercise price of $2.32 per share (collectively, the "2010 Financing"). The Series A Preferred and Series A Warrants were offered and sold in reliance upon exemptions from registration pursuant to Section 4(2) under the Securities Act and Rule 506 promulgated thereunder. The agreements executed in connection with the 2010 Financing contained representations to support our reasonable belief that the Third Security Investors had access to information concerning our operations and financial condition, the Third Security Investors acquired the securities for their own account and not with a view to the distribution thereof in the absence of an effective registration statement or an applicable exemption from registration, and that the Third Security Investors are sophisticated within the meaning of Section 4(2) of the Securities Act and are "accredited investors" (as defined by Rule 501 under the Securities Act). The Series A Warrants may be exercised at any time from December 29, 2010 until December 28, 2015 and contain a "cashless exercise" feature. The shares of Series A Preferred issuable pursuant to the Series A Purchase Agreement and upon exercise of the Series A Warrants are initially convertible into shares of common stock at a rate of 4-for-1, which conversion rate is subject to further adjustment as set forth in the Certificate of Designation. We used the net proceeds from the 2010 Financing to acquire certain assets of Clinical Data, Inc. ("Clinical Data") and PGx Health, LLC, a wholly-owned subsidiary of Clinical Data.

In connection with the 2010 Financing, we also entered into a registration rights agreement with the Third Security Investors (the "2010 Registration Rights Agreement"). Pursuant to the terms of the 2010 Registration Rights Agreement, we have granted the Third Security Investors certain demand, "piggyback" and S-3 registration rights covering the resale of the shares of Common Stock underlying the Series A Preferred issued pursuant to the Series A Purchase Agreement and issuable upon exercise of the Series A Warrants and all shares of Common Stock issuable upon any dividend or other distribution with respect thereto.

On November 8, 2011, we entered into an Amendment Agreement with the Third Security Investors, which are the holders of all of the outstanding shares of our Series A Preferred. Pursuant to the Amendment Agreement, the Third Security Investors and we agreed to amend the Certificate of Designation to eliminate certain features of the Series A Preferred relating to (i) an anti-dilution adjustment to the conversion rate upon which the Series A Preferred is convertible into our common stock, and (ii) an optional redemption of the Series A Preferred by the Third Security Investors (the "Certificate Amendment"); subject to the requisite stockholder approval of the Certificate Amendment at the next annual meeting of our stockholders. Pursuant to the Amendment Agreement, the Third Security Investors agreed to vote the Series A Preferred and their common stock in favor of the Certificate Amendment and agreed to waive their rights to the features of the Series A Preferred being eliminated by the Certificate Amendment. In

exchange for the Third Security Investors entering into the Amendment Agreement, we agreed to issue to the holders an aggregate of $0.3 million market value of common stock or 245,903 shares of common stock. Our stockholders approved the Certificate Amendment at the 2012 Annual Meeting of Stockholders held on May 23, 2012, and we filed the Certificate Amendment with the Delaware Secretary of State on May 25, 2012.

Convertible Promissory Notes: On December 30, 2011, we entered into a Convertible Promissory Note Purchase Agreement (the “Note Purchase Agreement”) with the Third Security Investors in the aggregate amount of $3.0 million. Affiliates of the investors currently own all the outstanding shares of our Series A Preferred. Under the Note Purchase Agreement, we sold to each of the Third Security Investors a convertible note which had a March 31, 2012 maturity date. The Note Purchase Agreement and notes provided for conversion of any amount remaining due to the Third Security Investors under the notes into our equity securities of the same class(es) or series and at the same price as the equity securities sold in our first sale or issuance of our equity

securities after December 30, 2011, in the aggregate amount of at least $3.0 million. The notes and the equity securities into which the notes are convertible were offered and sold in reliance upon exemptions from registration pursuant to Section 4(2) under the Securities Act and Rule 506 promulgated thereunder. The Note Purchase Agreement contained representations to support our reasonable belief that the Third Security Investors had access to information concerning our operations and financial condition, the Third Security Investors acquired the securities for their own account and not with a view to the distribution thereof in the absence of an effective registration statement or an applicable exemption from registration, and that the Third Security Investors are sophisticated within the meaning of Section 4(2) of the Securities Act and are "accredited investors" (as defined by Rule 501 under the Securities Act). The Securities Purchase Agreement also required us to file a registration statement with the SEC covering all shares issued and issuable under such Securities Purchase Agreement and imposed significant penalties for the failure to file such registration statement by March 23, 2012. We used the net proceeds from the offering for general corporate and working capital purposes, primarily to accelerate development of several of our key initiatives. The common stock and warrants were issued pursuant to applicable exemptions from registration requirements under the Securities Act and applicable securities law.

2012 Private Placement and Note Conversion: On February 2, 2012, we entered into a Securities Purchase Agreement with certain institutional and other accredited investors pursuant to which we: (i) sold to the investors an aggregate of 19,000,000 shares of our common stock (the "2012 Financing Shares") at a price per share of $1.00 for aggregate gross proceeds of approximately $19.0 million; and (ii) issued to the investors warrants to purchase up to an aggregate of 9,500,000 shares of common stock with an exercise price of $1.25 per share (the "2012 Financing Warrants"). The 2012 Financing Warrants may be exercised, in whole or in part, at any time from February 7, 2012 until February 7, 2017 and contain both cash and "cashless exercise" features. The 2012 Financing Warrants also impose penalties on us for failure to deliver the shares of common stock issuable upon exercise. These warrants also contain certain anti-dilution provisions that provide for an adjustment to the exercise price and number of shares issuable upon exercise of the warrant in the event that we engage in certain issuances of shares of our common stock at a price lower than the exercise price of the warrant. We used the net proceeds from the offering for general corporate and working capital purposes, primarily to accelerate development of several of our key initiatives.

As part of the offering, in connection with the conversion of the convertible promissory notes in the aggregate amount of $3.0 million issued by us on December 30, 2011 to the Third Security Investors, the Third Security Investors collectively received 3,000,000 shares of common stock (the "Third Security Common Shares") and warrants to purchase up to 1,500,000 shares of common stock (the "Third Security Warrants") upon the same terms as the investors. We offered and sold the 2012 Financing Shares, 2012 Financing Warrants, Third Security Common Shares and Third Security Warrants to "accredited investors" as such term is defined in the Securities Act and in reliance on the exemption from registration afforded by Section 4(2) and Regulation D (Rule 506) under the Securities Act and corresponding provisions of state securities laws. Each investor represented that it was an "accredited investor," as defined in Regulation D, and acquired the 2012 Financing Shares, 2012 Financing Warrants, Third Security Common Shares, Third Security Warrants and shares of common stock issuable upon exercise of the 2012 Financing Warrants and Third Security Warrants for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof.

In connection with the offering, we also entered into a registration rights agreement with the investors and the Third Security Investors (the "2012 Registration Rights Agreement"). The 2012 Registration Rights Agreement required us to file a registration statement with the SEC within forty-five (45) days of the closing date of the offering for the resale by the investors and the Third Security Investors of all of the 2012 Financing Shares, the shares of common stock issuable upon exercise of the 2012 Financing Warrants, the Third Security Common Shares, the shares of Common Stock issuable upon exercise of the Third Security Warrants and all shares of common stock issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect thereto. Pursuant to and as required by the 2012 Registration Rights Agreement, on March 21, 2012, we filed a registration statement on Form S-1 registering for resale the 2012 Financing Shares, the shares of common stock issuable upon exercise of the 2012 Financing Warrants, the Third Security Common Shares, the shares of common stock issuable upon exercise of the

Third Security Warrants and all shares of common stock issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect thereto. The registration statement was declared effective by the SEC on April 4, 2012.

Craig-Hallum Capital Group LLC served as the sole placement agent for the offering. In consideration for services rendered as the placement agent in the offering, we agreed to (i) pay to the placement agent cash commissions equal to $1,330,000, or 7.0% of the gross proceeds received in the offering, (ii) issue to the placement agent a five-year warrant to purchase up to 380,000 shares of our common stock (representing 2% of the 2012 Financing Shares sold in the offering) with an exercise price of $1.25 per share and other terms that are the same as the terms of the 2012 Financing Warrants and the Third Security Warrants issued in connection with the offering; and (iii) reimburse the placement agent for reasonable out-of-pocket expenses, including fees paid to the placement agent's legal counsel, incurred in connection with the offering, which reimbursable expenses shall not exceed $125,000. The calculation of the placement agent's fees did not include the Third Security Common Shares and Third

Security Warrants issued to the Third Security Investors in connection with the conversion of the convertible promissory notes described above.

2013 Private Placement: On January 24, 2013, we entered into a Securities Purchase Agreement with certain institutional and other accredited investors pursuant to which we: (i) sold to the investors an aggregate of 16,600,000 shares of common stock at a price per share of $0.50 for aggregate gross proceeds of approximately $8.3 million; and (ii) issued to the investors warrants to purchase up to an aggregate of 8,300,000 shares of common stock with an exercise price of $0.75 per share. The warrants may be exercised, in whole or in part, at any time from January 30, 2013 until January 30, 2018 and contain both cash and "cashless exercise" features. The warrants also impose penalties on us for failure to deliver the shares of common stock issuable upon exercise. We currently intend to use the net proceeds from the offering for general corporate and working capital purposes, primarily to accelerate development of several of our key initiatives. The common stock and warrants were offered and sold in transactions exempt from registration under the Securities Act, in reliance on Section 4(2) thereof and Rule 506 of Regulation D thereunder. Each investor represented that it was an "accredited investor," as defined in Regulation D, and acquired the common stock, warrants and shares issuable upon exercise of the warrants for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof.

The above common stock transaction required the repricing and issuance of additional common stock warrants to the warrant holders of the February 2012 common stock sale. The exercise price decreased from $1.25 per share to $1.08 per share and the number of shares issuable upon exercise of the warrant increased from 11,380,000 to 13,171,268. In connection with the offering, we also entered into a Registration Rights Agreement with the investors. The Registration Rights Agreement requires us to file a registration statement with the Securities and Exchange Commission within forty-five (45) days of the closing date of the offering for the resale by the investors of all of the common shares, the shares of common stock issuable upon exercise of the warrants, and all shares of common stock issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect thereto. The initial registration statement must be declared effective by the SEC within ninety (90) days of the closing date of the offering subject to certain adjustments. Upon the occurrence of certain events, including, but not limited to, that the initial Registration Statement is not filed prior to the filing date, we will be required to pay liquidated damages to each of the investors upon the date of the event and then monthly thereafter until the earlier of the date that: (i) the event is cured, or (ii) the registrable shares are eligible for resale under Rule 144 without manner of sale or volume limitations. In no event shall the aggregate amount of liquidated damages payable to each of the investors exceed in the aggregate 10% of the aggregate purchase price paid by such investor for the registrable securities. Pursuant to this Registration Statement and as required by the Registration Rights Agreement, we are registering the resale of the common shares, the shares of common stock issuable upon exercise of the warrants and all shares of common stock issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect thereto.

Lazard Capital Markets LLC served as the lead placement agent for the offering, and Craig-Hallum Capital Group LLC acted as co-placement agent. In consideration for services rendered as the placement agents in the offering, we agreed to (i) pay to the placement agents cash commissions equal 7% of the gross proceeds received in the offering, and (ii) reimburse the placement agent for reasonable out-of-pocket expenses, including fees paid to the placement agents' legal counsel, incurred in connection with the offering, which reimbursable expenses shall not exceed $25,000. Information with respect to the securities as described above sold by us during the period covered by this Annual Report and thereafter through the date of the filing of this Annual Report with the SEC that were not registered under the Securities Act has previously been provided in our Current Reports on Form 8-K filed with the SEC on January 6, 2012, February 3, 2012, February 7, 2012, January 25, 2013 and January 30, 2013.

Issuer Purchases of Equity Securities. We made no purchases of our common stock during the year ended December 31, 2012. Therefore, tabular disclosure is not presented.

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Item 6. Selected Consolidated Financial Data.

The selected consolidated balance sheet data as of December 31, 2012 and 2011 and the selected consolidated statements of operations data for each year ended December 31, 2012, 2011 and 2010 have been derived from our audited consolidated financial statements that are included elsewhere in this Annual Report. The selected consolidated balance sheet data as of December 31, 2010, 2009 and 2008 and the selected consolidated statements of operations data for each year ended December 31, 2009 and 2008 have been derived from our audited consolidated financial statements that are not included in this Annual Report. Dollar amounts, except per share data, are presented in thousands.

This data should be read together with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations", and the consolidated financial statements and related notes included elsewhere in this Annual Report. The financial information below is not necessarily indicative of the results of future operations. Future results could differ materially from historical results due to many factors, including those discussed in Item 1A in the section entitled "Risk Factors."

	Year Ended December 31,				
	2012	2011	2010	2009	2008
Statement of Operations Data:					
Net sales	$31,480	$31,971	$20,048	$22,023	$23,993
Cost of goods sold	16,470	13,534	10,284	10,418	10,345
Gross profit	15,010	18,437	9,764	11,605	13,648
Selling, general and administrative	22,023	19,150	10,933	10,319	10,795
Research and development	2,491	2,218	2,305	3,182	2,465
Restructuring charges [1]	—	41	138	—	118
Impairment charges [2]	—	—	—	—	638
Operating expenses	24,514	21,409	13,376	13,501	14,016
Other income (expense) [3]	1,323	(6,765)	628	18	86
Loss before income taxes	(8,181)	(9,737)	(2,984)	(1,878)	(282)
Income tax expense	146	45	150	42	213
Net Loss	$(8,327)	$(9,782)	$(3,134)	$(1,920)	$(495)
Preferred stock dividends and accretion [4]	(660)	(1,010)	—	—	—
Net loss available to common stockholders	$(8,987)	$(10,792)	$(3,134)	$(1,920)	$(495)
Basic and diluted loss per share	$(0.13)	$(0.22)	$(0.06)	$(0.04)	$(0.01)
Basic and diluted weighted average shares outstanding	69,417	49,362	49,244	49,190	49,190
	As of December 31,				
	2012	2011	2010	2009	2008
Balance Sheet Data:					
Working capital	$2,189	$870	$6,781	$10,351	$11,350
Total assets	38,791	33,562	32,027	16,004	17,556
Total liabilities and mezzanine equity	18,517	22,514	23,527	4,342	4,351
Total stockholders' equity [5]	20,274	11,048	8,500	11,662	13,205

(1) Restructuring plans were implemented in 2011, 2010 and 2008 to reduce and align our expenses with current business prospects. The plans included employee terminations, office closures, termination of collaborations and write-offs of abandoned intellectual property. As a result, restructuring charges were recorded and are included in operating expenses.

(2) Impairment charges in 2008 relate to the impairment of goodwill related to our Tools segment.

(3)

Other income in 2012 includes $2.2 million associated with the change in fair value of the common stock warrants. The income related to the change in fair value of the common stock warrants is a non-cash item. Other expense for 2011 includes expense associated with the "Series A Preferred Stock" and warrants to purchase shares of Series A Preferred Stock (the "Series A Warrants") of $6.1 million, which is due to the change in fair value of the preferred stock conversion feature. The expense associated with the change in value of the preferred stock conversion feature is a non-cash item.

Other income in 2011 and 2010 includes $0.2 million and $0.6 million net of consulting fees, respectively, awarded in a federal grant under the Qualifying Therapeutic Discovery Project Program related to 2009 projects.

(4) 2012 includes accrued dividends on Series A Preferred Stock of $0.7 million. 2011 includes accrued dividends on Series A Preferred Stock of $0.6 million and Series A Preferred Stock accretion of $0.4 million.

(5) Please see Footnote 17. "Subsequent Events" to our accompanying consolidated financial statements for a pro forma analysis of our total stockholders' equity as of December 31, 2012 as the result of the private placement offering we completed in January 2013.

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

This Management Discussion and Analysis contains forward-looking statements that involve risks and uncertainties. Please see the section entitled "Forward-Looking Statements" at the beginning of Item 1 and the section entitled "Risk Factors" under Item 1A for important information to consider when evaluating such statements.

You are cautioned not to place undue reliance on these forward-looking statements. The forward-looking statements we make are not guarantees of future performance and are subject to various assumptions, risks and other factors that could cause actual results to differ materially from those suggested by these forward-looking statements.

We expressly disclaim any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Transgenomic, Inc.("we", "us","our Company" or "Transgenomic") is a global biotechnology company advancing personalized medicine in the detection and treatment of cancer and inherited diseases through its proprietary molecular technologies and world-class clinical and research services. Our operations are organized and reviewed by management along its product lines and presented in the following three complementary business segments.

- Clinical Laboratories. Our clinical laboratories specialize in genetic testing for cardiology, neurology, mitochondrial disorders, and oncology. Located in New Haven, Connecticut and Omaha, Nebraska the molecular clinical reference laboratories are certified under the Clinical Laboratory Improvement Amendment (CLIA) as high complexity labs and our Omaha facility is also accredited by the College of American Pathologists (CAP).
- Pharmacogenomics Services. Our Contract Research Organization located in Omaha, Nebraska provides pharmacogenomics research services supporting Phase II and Phase III clinical trials conducted by our pharmaceutical customers. This lab specializes in pharmacogenomic, biomarker and mutation discovery research serving the pharmaceutical and biomedical industries world-wide for disease research, drug and diagnostic development and clinical trial support.
- Diagnostic Tools. Our proprietary product is the WAVE® System which has broad applicability to genetic variation detection in both molecular genetic research and molecular diagnostics. We also distribute bioinstruments produced by other manufacturers (“OEM Equipment”) through our sales and distribution network. Service contracts to maintain installed systems are sold and supported by our technical support personnel. The installed WAVE base and some OEM Equipment platforms generate a demand for consumables that are required for the continued operation of the bioinstruments. We develop, manufacture and sell these consumable products. In addition, we manufacture and sell consumable products that can be used on multiple, independent platforms. These products include SURVEYOR® Nuclease and a range of chromatography columns.

The following discussion should be read together with our financial statements and related notes contained in this Annual Report. Results for the year ended December 31, 2012 are not necessarily indicative of results that may be attained in the future.

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Executive Summary
2012 Results
2012 vs. 2011 Dollars in Thousands

	Year Ended December 31,		Change	
	2012	2011	$	%
Net sales	$31,480	$31,971	$(491)	(2)%
Gross profit	15,010	18,437	(3,427)	(19)%
Preferred Stock and Common Stock Warrant income (expense)	2,200	(6,066)	8,266	(136)%
Net loss available to common stockholders	(8,987)	(10,792)	1,805	(17)%

Overall net sales for 2012 were consistent with net sales in 2011. During 2012, net sales from Clinical Laboratories increased by $1.4 million compared to 2011. Net sales from Pharmacogenomics Services decreased by $0.4 million for 2012 compared to 2011. Net sales in Diagnostic Tools were down 11%, or $1.5 million, for 2012 compared to 2011. Our gross profit margin decreased from 58% for 2011 to 48% for 2012. Clinical Laboratories gross margin decreased from 59% in 2011 to 49% for 2012. Loss from operations was $9.5 million for 2012 compared to $3.0 million for 2011.

During 2012, we recorded non-cash revenue of $2.2 million associated with our common stock warrants due to the change in the fair value of the common stock warrants. During 2011, we recorded non-cash expense of $6.1 million associated with our Series A Preferred Stock and Series A Warrants. Such expense is due to the change in fair value of the preferred stock warrants and conversion feature. Due to a change in terms we are no longer required to fair value the preferred stock warrants and conversion feature, therefore no income or expense was recorded in 2012 related to the preferred stock warrants and conversion feature.

2013 Outlook and 2012 Overview

We are advancing personalized medicine in cardiology, oncology, and inherited diseases through our proprietary molecular technologies and world-class clinical research services. Today, we are a global leader in cardiac genetic testing with a family of innovative products, including the C-GAAP test. We anticipate growth in all three of our business units, Clinical Laboratories, Pharmacogenomic Services, and Diagnostic Tools, as we commercialize new technologies and tests we have developed internally, in-licensed, or acquired, and as we expand into other markets and regions worldwide.

In the Clinical Labs business, we continue to provide increased sales and marketing support behind our proprietary C-GAAP (Clopidogrel Genetic Absorption Activation Panel) test. In July 2012, we successfully secured Medicare coverage for C-GAAP, which is a simple but comprehensive saliva test that accurately predicts a patient's response to Plavix® (clopidogrel). This innovative test analyzes markers in two important genes to identify patients who are at a genetically increased risk of major adverse cardiovascular events due to diminished effectiveness of Plavix®. As a result of this coverage, the 48 million Americans currently covered by Medicare will have access to this important genetic test.

Clopidogrel is the most widely prescribed antiplatelet drug used to reduce the risks of death, stroke and heart attack in heart disease patients. Patients with dysfunctional CYP2C19 and ABCB1 genes treated with clopidogrel exhibit a 50% increase in major adverse cardiovascular event rates than do patients with normal CYP2C19 and ABCB1 genetic function. Our C-GAAP is the only assay on the market that includes both genes in the test.

We also announced in September 2012, the acquisition of global rights to the ScoliScore™ Adolescent Idiopathic Scoliosis (AIS) Prognostic Test from Axial Biotech. This acquisition provides us with the ScoliScore™ assay technology and intellectual property, an established revenue and customer base, and access to a testing market estimated at 400,000 patients in the United States alone. ScoliScore™ is the first clinically validated and commercially available saliva-based multi-gene test that provides a highly accurate assessment of the likelihood of spinal curve progression for individuals diagnosed with AIS, or an abnormal lateral curve of the spine. ScoliScore™ has the ability to

identify patients that will not progress to a severe curvature of the spine and reduces those patients' need for repeated doctor visits, and more importantly, years of exposure to radiation from frequent X-Rays which significantly increases these patients' risk for cancer. The health economic benefits of the ScoliScore™ test are considerable for patients, physicians, and payers, when taking into account the time and expense associated with repeated

radiography and the costs related to treating AIS. ScoliScore™ is representative of the kind of value-added, proprietary genetic test on which we are built.

We continue to expand the global reach of our cardiology platform through the growth of our FAMILION franchise, which currently includes thirteen tests designed to detect for the vast number of genetic mutations that can cause cardiac disorders. The comprehensive nature of our FAMILION genetic tests demonstrates our commitment to setting the standard for cardiac genetic testing today.

In July 2012, we announced a new commercial collaboration with the Medical College of Wisconsin Laboratories, a world-renowned institution with a robust presence in genomics and genetic testing. In addition to traditional sequencing services, MCW is the first lab to offer our proprietary NuclearMitome Test which employs next-generation sequencing technology to identify mutations in 448 genes and, to date, represents the most comprehensive genetic test available for mitochondrial disorders. Mitochondrial disorders are notoriously difficult to diagnose because they affect multiple organ systems, including the liver, the brain and nervous system, kidneys, and cardiovascular system. This collaboration allows us to rapidly expand the commercial use of this innovative test in addition to building out our offerings in whole genome and exome testing.

In our Pharmacogenomics Services business, we continue to perform cancer pathway gene mutation analysis and other associated genomics service testing for a number of pharmaceutical companies: both for pre-clinical drug discovery projects and Phase II and III clinical trials.

In mid-2012, we launched the REVEAL Kit, a breakthrough technology that utilizes ICE COLD-PCR mutation detection technology, and enables unmatched sensitivity and complete DNA mutation detection using the standard sequencing equipment already installed in laboratories around the world. The extremely high sensitivity of ICE COLD-PCR enables detection of mutations from virtually any sample type including tissue biopsies, blood, and circulating tumor cells (CTCs). The broad use of this innovative technology has the potential to revolutionize cancer screening, diagnosis, monitoring, and therapy selection since it has the ability to perform safer, less invasive, and more frequent assessments of a cancer and its mutations, all through a simple blood draw.

The breakthrough ICE COLD-PCR technology, exclusively licensed by us for DNA sequencing analysis, was developed in collaboration with the Dana-Farber Cancer Institute and is supported by multiple validation studies confirming reproducible mutation detection up to 1,000 to 10,000 times more sensitive than traditional sequencing and PCR techniques. The technology is also being evaluated in an ongoing study with The University of Texas MD Anderson Cancer Center to characterize tumor-derived DNA in blood and DNA isolated from circulating tumor cells (CTCs) from patients with a variety of cancers to choose therapies shown to target specific mutations.

We have entered into a number of collaborations with key opinion leaders at leading cancer institutions to validate our ultra-sensitive ICE COLD-PCR technology and expand the evidence base for its clinical utility. Several prospective trials have begun and samples from patients with lung cancer will be collected to detect rare mutations in blood or in biopsy samples that are associated with disease recurrence, progression, or emergence of resistance to targeted drugs. Collaborating clinicians have also been able to supply blood samples from patients with cancers such as melanoma, pancreatic cancer, and colorectal cancer to see if mutations found in DNA circulating in the serum or derived from circulating tumor cells match those from the patients' primary tumors. The presence of certain mutations in the blood or other samples may indicate recurrence of disease prior to clinical signs, and help direct clinicians to initiate the best possible therapies, or change therapies if mutations associated with drug resistance are detected. We have also initiated a program of beta site testing to validate the performance of our REVEAL ICE COLD-PCR kits prior to full commercialization.

In June 2012, we announced that the U.S. Patent and Trademark Office issued patent number US 8,137,919 titled “Method of Determining the Sensitivity of Cancer Cells to EGFR Inhibitors including Cetuximab, Panitumumab and Erlotinib.” The patent inventors demonstrated that key mutations in the gene PIK3CA are powerful predictors for the efficacy of EGFR-targeted cancer therapies. The addition of this patent allows us to effectively apply high sensitivity mutation detection technologies, such as SURVEYOR® Scan, REVEAL ICE COLD-PCR and BLOCker™-Sequencing, to PIK3CA assays in order to be able to detect genetic variations in very low mutant load samples and is a valuable addition to our genetic biomarker intellectual property portfolio.

In the Diagnostic Tools business, we experienced an increase in the number of units sold as compared to a year ago albeit at lower, distributor prices. Our instrument sales translate into incremental revenue from consumables and service contract sales, providing compounded and repeating revenue. We believe that our collaboration with A. Menarini Diagnostics, our European distribution partner, offers the potential for revenue growth over the next several years.

We also achieved CE IVD Mark registration in Europe for the diagnostic use of our proprietary WAVE MCE System and SURVEYOR® Scan KRAS Kit. This kit contains a simple, yet highly sensitive test to identify mutations in the KRAS gene,

which are key determinants of the effectiveness of modern cancer drugs. Gaining the CE IVD Mark expands the market reach significantly by allowing product sales in the European Union.

In September 2012, we announced the appointment of Mark P. Colonnese as our Executive Vice President and Chief Financial Officer. Mr. Colonnese has nearly 30 years of experience in leading business growth and financial strategies for life sciences companies.

Results of Continuing Operations

Net Sales.

Net sales consisted of the following:

2012 vs. 2011	Dollars in Thousands				
	Year Ended December 31,		Change		
	2012	2011	$	%	
Clinical Laboratories	$17,453	$16,038	$1,415	9	%
Pharmacogenomic Services	1,876	2,280	(404)	(18)	%
Diagnostic Tools	12,151	13,653	(1,502)	(11)	%
Total net sales	$31,480	$31,971	$(491)	(2)	%

Clinical Laboratories net sales increased $1.4 million during the year ended December 31, 2012, compared to 2011. Revenue increased in 2012 compared to 2011 due to higher test volumes, and a modest shift towards higher priced tests driven by sales of our recently launched NuclearMitome, C-GAAP and ScoliScore™ tests.

Pharmacogenomic Services had net sales of $1.9 million during the year ended December 31, 2012, a decrease of $0.4 million compared to 2011. The decrease is due to the reduced volume of genetic testing performed in connection with various clinical trials by our pharmaceutical company clients. Pharmacogenomic Services net sales trends are more volatile than our other segments due to the nature of patient enrollment patterns and timing of clinical trials. While the revenue generated from genetic testing related to clinical trials can be significant, it is usually earned over the duration of the trial. Therefore, each period for Pharmacogenomics Services should be considered on a stand-alone basis and is not indicative of future net sales.

Diagnostic Tools net sales decreased $1.5 million, or 11%, during the year ended December 31, 2012, as compared to 2011. We sold more instruments in 2012 than in 2011, but there was a shift in sales to our distributor at lower distributor prices resulting in lower gross margins as well. We sold thirty-one WAVE Systems in 2012 compared to thirteen in 2011. Demand for WAVE Systems has been affected by significant competitive challenges from traditional (i.e., sequencing) and evolving technologies. We sold ten OEM Equipment instruments in the year ended December 31, 2012 compared to fourteen in the same period in 2011. Bioconsumables net sales were down $0.7 million, during the year ended December 31, 2012 compared to 2011 due to lower volume in our European market.

2011 vs. 2010	Dollars in Thousands				
	Year Ended December 31,		Change		
	2011	2010	$	%	
Clinical Laboratories	$16,038	$3,606	$12,432	345	%
Pharmacogenomic Services	2,280	1,373	907	66	%
Diagnostic Tools	13,653	15,069	(1,416)	(9)	%
Total net sales	$31,971	$20,048	$11,923	59	%

Clinical Laboratories net sales increased $12.4 million during the year ended December 31, 2011, compared to 2010. Of this increase in revenue, $11.1 million is due to revenue from the FAMILION family of genetic tests, which we acquired on December 29, 2010. In addition, our revenue increased by $1.3 million in our neurology family of tests due to the mix of tests performed and the average revenue per test.

Pharmacogenomic Services had net sales of $2.3 million during the year ended December 31, 2011, which increased $0.9 million compared to 2010. The increase is due to the completion of a significant project with a pharmaceutical company client. Pharmacogenomics Services net sales have peaks due to the nature of project-related services performed on behalf of our clients. Each period for Pharmacogenomics Services should be considered on a stand-alone basis and is not indicative of future net sales.

Diagnostic Tools net sales decreased $1.4 million, or 9%, during the year ended December 31, 2011, as compared to 2010. The decrease was due to fewer instruments sold in the year ended December 31, 2011. We sold thirteen WAVE instruments in 2011 compared to twenty-five WAVE instruments in 2010. Demand for WAVE Systems has been affected by significant competitive challenges from traditional (i.e. sequencing) and evolving technologies. Lower WAVE System sales are offset by slightly higher OEM Equipment sales in 2011. We sold fourteen OEM Equipment instruments in the year ended December 31, 2011 compared to ten in the same period in 2010. Bioconsumables net sales were down $0.6 million, during the year ended December 31, 2011 compared to 2010 due to lower volume in Europe.

Costs of Goods Sold.

Costs of goods sold include material costs for the products that we sell and substantially all other costs associated with our manufacturing facilities (primarily personnel costs, rent and depreciation) as well as the wholesale price we pay manufacturers of OEM Equipment that we distribute. It also includes direct costs (primarily personnel costs, rent, supplies and depreciation) associated with our Clinical Laboratories and Pharmacogenomics Services operations.

Gross Profit.

Gross profit and gross margins for each of our business segments were as follows:

2012 vs. 2011	Dollars in Thousands			
	Year Ended December 31,		Margin %	
	2012	2011	2012	2011
Clinical Laboratories	$8,487	$9,478	49 %	59 %
Pharmacogenomic Services	829	1,050	44 %	46 %
Diagnostic Tools	5,694	7,909	47 %	58 %
Gross profit	$15,010	$18,437	48 %	58 %

Gross profit was $15.0 million, or 48%, of total net sales during the year ended December 31, 2012, compared to $18.4 million, or 58%, during the same period of 2011. During the year ended December 31, 2012, the gross margin for Clinical Laboratories was $8.5 million, or 49%, as compared to $9.5 million, or 59%, in the same period of 2011. The change in the Clinical Laboratories gross margin for the year ended December 31, 2012 is attributable to a change in the mix of tests performed and higher operating supplies, wages and software costs as we increased capacity in our laboratories in anticipation of higher volume from our newly launched tests. Pharmacogenomics Services gross margin decreased to 44% for the year ended December 31, 2012 compared to 46% in the same period of 2011. Pharmacogenomics Services have a relatively fixed-cost base so any increase or decrease in revenue directly impacts gross margins. Diagnostic Tools gross margin decreased to 47% in the year ended December 31, 2012 from 58% in the same period of 2011 due to a shift to sales to our distributor at lower distributor prices resulting in lower gross margins.

2011 vs. 2010	Dollars in Thousands			
	Year Ended December 31,		Margin %	
	2011	2010	2011	2010
Clinical Laboratories	$9,478	$1,481	59 %	41 %
Pharmacogenomic Services	1,050	(43)	46 %	(3)%
Diagnostic Tools	7,909	8,326	58 %	55 %
Gross profit	$18,437	$9,764	58 %	49 %

Gross profit during the year ended December 31, 2011was $18.4 million, or 58%, of total net sales during the year ended December 31, 2011, compared to $9.8 million, or 49%, during the same period of 2010. During the year ended December 31, 2011, the gross margin for Clinical Laboratories was $9.5 million, or 59%, as compared to $1.5 million, or 41% in the same period of 2010. Results for the year ended December 31, 2011 includes gross profit from sales of the FAMILION family of genetic tests, which we acquired on December 29, 2010. During the year ended December 31, 2011, the gross margin for Pharmacogenomic Services was $1.1 million, or 46%, as compared to a loss of less than $0.1 million, or (3)%, in the same period of 2010. Pharmacogenomic Services have a relatively fixed cost base so any increase or decrease in revenue directly impacts gross margin. Diagnostic Tools gross margin increased to 58% in the year ended December 31, 2011 from 55% in the same period of 2010 due to the change in the mix of types of instruments sold.

Operating expenses.

The following table summarizes operating expenses further described below for the years ended December 31, 2012, 2011 and 2010:

	Dollars in Thousands		
	Year Ended December 31,		
	2012	2011	2010
Selling, general and administrative	$22,023	$19,150	$10,933
Research and development	2,491	2,218	2,305
Restructuring charges	—	41	138
Total	$24,514	$21,409	$13,376

Selling, General and Administrative Expenses.

Selling, general and administrative expenses consist primarily of personnel costs, marketing, travel costs, professional fees, and facility costs. In addition, the effect of foreign currency revaluation is included here. Our selling, general and administrative costs increased to $22.0 million during the year ended December 31, 2012 compared $19.2 million for the same period in 2011. The increase in selling, general and administrative costs included $1.2 million in additional employee related expenses which were incurred to increase the size of our sales force to support the launch of both C-GAAP and ScoliScore™, and higher marketing materials expenses. In addition, our bad debt provision of was $0.7 million higher during the year ended December 31, 2012 due to a higher level of past due receivables compared to 2011.

Our selling, general and administrative costs increased to $19.2 million, from $10.9 million, during the year ended December 31, 2011 compared to 2010. The increase in our selling, general and administrative costs is due primarily to $4.9 million in expenses related to the FAMILION family of genetic tests, which we acquired on December 29, 2010, $1.0 million in expense related to the vesting of the employee stock option grants, $1.2 million in amortization of the acquired intangibles and bad debt expense of $1.7 million. Losses from foreign currency revaluation for the year ended December 31, 2011 were less than $0.1 million compared to losses of $0.3 million for the same period in 2010.

Research and Development Expenses.

Research and development expenses include primarily personnel costs, legal fees, outside services, collaboration expenses, supplies, and facility costs and are expensed in the period in which they are incurred. During the year ended December 31, 2012 and 2011 these costs totaled $2.5 million and $2.2 million, respectively. Research and development expenses totaled 8% and 7% of net sales during the years ended December 31, 2012 and 2011,

respectively. The increase is due primarily to activities related

to our programs validating the use of ICE COLD-PCR and expanding our portfolio of tests and the platforms on which they are performed.

During the years ended December 31, 2011 and 2010 research and development costs totaled $2.2 million and $2.3 million, respectively. Research and development expenses totaled 7% and 11% of net sales during the years ended December 31, 2011 and 2010, respectively. The decrease is due primarily to the consolidation of our research and development activities in Omaha, Nebraska, the benefit of which is partially offset by legal costs to defend a patent.

Other Income (Expense).

The following table summarizes other income (expense) for the years ended December 31, 2012, 2011 and 2010:

	Dollars in Thousands		
	Year Ended December 31,		
	2012	2011	2010
Interest expense	$(888)	$(958)	$(4)
Preferred stock and warrants expenses	—	(6,066)	—
Income from change in fair value of warrants	2,200	—	—
Other, net	11	259	632
Total other income (expense), net	$1,323	$(6,765)	$628

Other income for the year ended December 31, 2012 totaled $1.3 million. Other income includes the income associated with the change in fair value of the common stock warrants, partially offset by interest expense. The income associated with the common stock warrants is a non-cash item.

Other expense for the year ended December 31, 2011 totaled $6.8 million. Other expense includes interest expense as well as the expense associated with the Series A Preferred Stock and Series A Warrants, which is due to the change in fair value of the preferred stock conversion feature and the consideration given to the owners of the Series A Convertible Preferred Stock in exchange for the Series A Preferred Stock Certificate Amendment. The expenses associated with the Series A Preferred Stock are non-cash items. Other, net includes an award of a federal grant under the Qualifying Therapeutic Discovery Project of $0.2 million, net of consulting fees.

Income Tax Expense.

Income tax expense recorded during the years ended December 31, 2012, 2011 and 2010 related to income taxes in states, foreign countries and other local jurisdictions and totaled $0.1 million, less than $0.1 million, and $0.2 million, respectively. The effective tax rate for the year ended December 31, 2012 is negative 1.8%, which is primarily the result of valuation allowances against net operating losses for the United States, partially adjusted by permanent differences related to inter-company foreign currency exchange of our subsidiary outside the United States. The effective tax rate for the years ended December 31, 2011 and 2010 were negative 0.5% and negative 5%, respectively. A net deferred tax liability was recorded during 2012 and 2011 relating to the UK income taxes of less than $0.1 million. We will continue to assess the recoverability of deferred tax assets and the related valuation allowance. To the extent we begin to generate taxable income in future periods and determine that such valuation allowance is no longer required, the tax benefit of the remaining deferred tax assets will be recognized at such time. Our net operating loss carry-forwards of $109.3 million will expire at various dates from 2018 through 2032, if not utilized. We also had state income tax loss carry-forwards of $46.0 million at December 31, 2012. These carry-forwards will also expire at various dates from 2018 to 2032 if not utilized.

Liquidity and Capital Resources

Our working capital positions at December 31, 2012 and 2011 were as follows (in thousands):

	December 31,		
	2012	2011	Change
Current assets (including cash and cash equivalents of $4,497 and $4,946 respectively)	$18,717	$17,198	$1,519
Current liabilities	16,528	16,328	(200)
Working capital	$2,189	$870	$1,319

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On January 24, 2013 we entered into definitive agreements with institutional and other accredited investors to raise approximately $8.3 million (before offering costs and selling agent commissions) in a private placement. The funding occurred in January 2013. Pursuant to the terms of the private placement, we issued an aggregate of 16,600,000 shares of our common stock at a price per share of $0.50 as well as five-year warrants to purchase up to an aggregate of 8,300,000 shares of common stock with an exercise price of $0.75 per share.

Please see the section entitled "Contractual Obligations and Other Commitments" that follows shortly in this document and Footnote 5 "Debt" to our accompanying consolidated financial statements for additional information regarding our outstanding debt and debt servicing obligations.

At December 31, 2012, we had cash and cash equivalents of $4.5 million and in January 2013 we received approximately $8.3 million in gross proceeds in connection with the private placement. We believe that existing sources of liquidity as of December 31, 2012 along with the net proceeds of the January 2013 private placement, are sufficient to meet expected cash needs. Accordingly, we believe we have sufficient liquidity to continue our operations for at least the next 12 months.

Analysis of Cash Flows

The following table presents a summary of our cash flows:

	(amounts in thousands)		
	2012	2011	2010
Net cash provided by (used in):			
Operating activities	$(10,204)	$220	$(1,718)
Investing activities	(4,878)	(508)	(6,226)
Financing activities	14,604	1,726	5,761
Effect of exchange rates on cash	29	54	(5)
Net increase (decrease) in cash and cash equivalents	$(449)	$1,492	$(2,188)

Net Change in Cash and Cash Equivalents. Cash and cash equivalents decreased by $0.4 million during 2012, increased by $1.5 million during 2011 and decreased by $2.2 million during 2010.

Cash Flows Provided By (Used In) Operating Activities. We used cash for operating activities of $10.2 million and $1.7 million during 2012 and 2010, respectively. We provided cash from operating activities of $0.2 million during 2011. During 2012, the cash flows used in operating activities include an increase of accounts receivable of $2.9 million related to the provision for higher levels of past due receivables and an increase in inventories of $1.4 million to purchase additional OEM instruments in anticipation of future sales. During 2012, we recorded non-cash income totaling $2.2 million associated with the fair valuation of the common stock warrants. During 2011, we recorded non-cash expense totaling $6.1 million associated with the fair valuation of the Series A Preferred Stock and Series A Warrants. We recorded non-cash, stock-based compensation expense of $0.7 million, $1.0 million and less than $0.1 million during 2012, 2011 and 2010, respectively. We recorded depreciation and amortization expense totaling $2.3 million, $2.1 million and $0.7 million during 2012, 2011 and 2010, respectively.

Cash Flows Used In Investing Activities. During 2012, we acquired the intangible assets of ScoliScore™ for $4.4 million, $3.6 million of which we paid in 2012. During 2010, we acquired the FAMILION family of genetic tests for consideration that included $6.0 million in cash. We recorded purchases of property and equipment totaling $0.9 million, $0.2 million and $0.2 million during 2012, 2011 and 2010, respectively.

Cash Flows Provided By Financing Activities. During 2012, we recorded net proceeds from a private placement with institutional and accredited investors of $17.5 million. During 2011, we recorded proceeds from short term notes payable totaling $3.0 million. During 2010, we raised $6.0 million in the issuance Series A Preferred Stock and Series A Warrants, which was used in the financing of the acquisition of FAMILION. We recorded principal payments on notes payable totaling $2.6 million, and $0.9 million during 2012 and 2011, respectively. We did not have debt in 2010.

Contractual Obligations and Other Commitments
At December 31, 2012, our contractual obligations and other commitments were as follows:

	(Amounts in thousands)						
	2013	2014	2015	2016	2017	After 2017	Total
Long term debt[1]	6,171	—	—	—	—	—	6,171
Interest[1]	461	—	—	—	—	—	461
Capital lease obligations[2]	377	170	43	3	1	—	594
Operating lease obligations[3]	1,126	1,079	980	875	763	1,348	6,171
Purchase obligations[4]	1,957	—	—	—	—	—	1,957
	$10,092	$1,249	$1,023	$878	$764	$1,348	$15,354

(1) See Footnote 5 - "Debt" to our accompanying consolidated financial statements.
(2) See Footnote 6 - "Capital Leases" to our accompanying consolidated financial statements.
(3) These amounts represent non-cancellable operating leases for equipment, vehicles and operating facilities
(4) These amounts represent purchase commitments, including all open purchase orders

Off Balance Sheet Arrangements
At December 31, 2012 and 2011, we did not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Critical Accounting Policies
Accounting policies used in the preparation of the consolidated financial statements may involve the use of management judgments and estimates. Certain of our accounting policies are considered critical as they are both important to the portrayal of our financial statements and they require significant or complex judgments on the part of management. The preparation of consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of net sales and expenses during the reported period. In addition, estimates and assumptions associated with the determination of the fair value of certain assets and related impairments require considerable judgment by management. Our judgments and estimates are based on experience and assumptions that we believe are reasonable under the circumstances. Further, we evaluate our judgments and estimates from time to time as circumstances change. Actual financial results based on judgment or estimates may vary under different assumptions or circumstances. The following are certain critical accounting policies that may involve the use of judgment or estimates.

Allowance for Doubtful Accounts and Contractual Allowances.
While payment terms are generally 30 days, we have also provided extended payment terms of up to 90 days in certain cases. We operate globally and some of the international payment terms can be greater than 90 days. Accounts receivable are carried at original invoice amount and shown net of allowance for doubtful accounts and contractual allowances. The estimate made for doubtful accounts is based on a review of all outstanding amounts on a quarterly basis. We determine the allowance for doubtful accounts and contractual allowances by regularly evaluating individual customer receivables and considering a customer’s financial condition, credit history and current economic conditions. Accounts receivable are written off when deemed uncollectible. Recoveries of accounts receivable previously written off are recorded as income when received.

Inventories.

Inventories are stated at the lower of cost or market net of allowance for obsolete inventory. Cost is computed using standard costs for finished goods and average or latest actual cost for raw materials and work in process, which approximates the first-in, first-out (FIFO) method. We write down slow-moving and obsolete inventory by the difference between the value of the inventory and our estimate of the reduced value based on potential future uses, the likelihood that overstocked inventory will be sold and

the expected selling prices of the inventory. If our ability to realize value on slow-moving or obsolete inventory is less favorable than assumed, additional write-downs of the inventory may be required.

Property and Equipment.
Property and equipment are carried at cost. Depreciation is computed by the straight-line method over the estimated useful lives of the related assets.

Goodwill.
Goodwill is the excess of the purchase price over fair value of assets acquired and is not amortized. Goodwill is tested for impairment annually. We perform this impairment analysis during the fourth quarter of each year or when a significant event occurs that may impact goodwill. Impairment occurs when the carrying value is determined to be not recoverable thereby causing the carrying value of the goodwill to exceed its fair value. If impaired, the asset's carrying value is reduced to its fair value. No impairment existed at December 31, 2012 and 2011.

Intangibles.
Intangibles include intellectual property, patents and acquired products.
1. Intellectual Property. Initial costs paid to license intellectual property from independent third parties are capitalized and amortized using the straight-line method over the license period. Ongoing royalties related to such licenses are expensed as incurred.
2. Patents. We capitalize legal costs, filing fees and other expenses associated with obtaining patents on new discoveries and amortize these costs using the straight-line method over the shorter of the legal life of the patent or its economic life beginning on the date the patent is issued.
3. Acquired Products. As a part of the FAMILION acquisition and acquisition of certain intangible assets from Axial, we acquired technology, in process technology, trademarks/tradenames, customer relationships, covenants not to compete and third party relationships. These costs will be amortized pursuant to the straight-line method over their estimated economic life of seven to eight years. See Footnote 4 "Intangibles and Other Assets" to our accompanying consolidated financial statements.
We review our amortizable long lived assets for impairment whenever events indicate that the carrying amount of the asset may not be recoverable. An impairment loss would be recorded if the sum of the future undiscounted cash flows is less than the carrying amount of the asset. The amount of the loss would be determined by comparing the fair market value of the asset to the carrying amount of the asset. No loss has been recorded during the years ended December 31, 2012, 2011 or 2010.

Common Stock Warrants.
Our issued and outstanding warrants to purchase common stock do not qualify to be treated as equity, and accordingly, are recorded as a liability ("Common Stock Warrant Liability"). The Common Stock Warrant Liability was initially recorded at fair value using a Monte Carlo simulation model. We are required to present these instruments at fair value at each reporting date and any changes in fair values are recorded as an adjustment to earnings. The Common Stock Warrant Liability is considered a level three financial instrument. See Footnote 12 "Fair Value" to our accompanying consolidated financial statements.

Preferred Stock.
Prior to the 2011 modification, the Series A Preferred Stock met the definition of mandatorily redeemable stock as it was preferred capital stock which was redeemable at the option of the holder and therefore was reported outside of equity. The Series A Preferred Stock was accreted to its redemption value. Prior to the 2011 modification, the Series A Warrants did not qualify to be treated as equity and, accordingly, were recorded as a liability. A preferred stock conversion feature was embedded within the Series A Preferred Stock that met the definition of a derivative. The Series A Preferred Stock, Series A Warrants liability and Series A Preferred Stock conversion feature were all recorded separately and were initially recorded at fair value using the Black-Scholes model. We were required to

record these instruments at fair value at each reporting date and changes were recorded as an adjustment to earnings. The Series A Warrant liability and Series A Preferred Stock conversion feature were considered level three financial instruments.

We entered into a transaction with the holders of the Series A Preferred Stock (the "Series A Holders"), pursuant to an Agreement Regarding Preferred Stock (the “Amendment Agreement”), in which the Series A Holders agreed to (i) waive their rights to enforce the anti-dilution and redemption features of the Series A Preferred Stock and (ii) at the next annual shareholder meeting, vote to amend the Certificate of Designation for the Series A Preferred Stock to remove the anti-dilution and redemption features of the Series A Preferred Stock. In exchange, we issued shares of common stock to the Series A Holders having an aggregate market value of $0.3 million. Our stockholders approved the amendments to the Certificate of Designation for the

Series A Preferred Stock at the 2012 Annual Meeting of Stockholders held on May 23, 2012, and we filed it with the Delaware Secretary of State on May 25, 2012.
As a result of the Amendment Agreement, the value of the Series A Preferred Stock and Series A Warrant, including the Series A Preferred Stock conversion feature and Series A Warrant liability, were reclassified into shareholders equity as of the date of the Amendment Agreement.

Stock Based Compensation.
All stock options awarded to date have exercise prices equal to the market price of our common stock on the date of grant and have ten-year contractual terms. Unvested options as of December 31, 2012 had vesting periods of one or three years from date of grant. None of the stock options outstanding at December 31, 2012 are subject to performance or market-based vesting conditions.
We measure and recognize compensation expense for all stock-based awards made to employees and directors, including stock options. Compensation expense is based on the calculated fair value of the awards as measured at the grant date and is expensed ratably over the service period of the awards (generally the vesting period).

Income Taxes.
Deferred tax assets and liabilities are determined based on the differences between the financial reporting and tax basis of assets and liabilities at each balance sheet date using tax rates expected to be in effect in the year the differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance to the extent that it is more likely than not that they will not be realized. Our liability for uncertain certain tax positions was $0.3 million and $0.2 million as of December 31, 2012 and 2011, respectively. We recorded less than $0.1 million of additional uncertain tax positions during the current year. We had no material interest or penalties during fiscal 2012 or fiscal 2011, and we do not anticipate any such items during the next twelve months. Our policy is to record interest and penalties directly related to income taxes as income tax expense in the Consolidated Statements of Operations.

Net Sales Recognition.
Revenue is realized and earned when all of the following criteria are met:
- Persuasive evidence of an arrangement exists;
- Delivery has occurred or services have been rendered;
- The seller’s price to the buyer is fixed or determinable; and
- Collectability is reasonably assured.

Net sales from our Clinical Laboratories are recognized on an individual test basis and take place when the test report is completed, reviewed and sent to the client less the reserve for insurance, Medicare and Medicaid contractual adjustments. There are no deferred net sales associated with our Clinical Laboratories. Adjustments to the allowances, based on actual receipts from third party payers, are recorded upon settlement.
In our Pharmacogenomics Services, we perform services on a project by project basis. When we receive payment in advance, we recognize revenue when we deliver the service. These projects typically do not extend beyond one year.
Net sales of Diagnostic Tools products are recognized in accordance with the terms of the sales arrangement. Such recognition is based on receipt of an unconditional customer order and transfer of title and risk of ownership to the customer, typically upon shipment of the product under a purchase order. Our sales terms do not provide for the right of return unless the product is damaged or defective. Net sales from certain services associated with the analytical instruments, to be performed subsequent to shipment of the products, is deferred and recognized when the services are provided. Such services, mainly limited to installation and training services that are not essential to the functionality of the instruments, typically are performed in a timely manner subsequent to shipment of the instrument. We also enter into various service contracts that cover installed instruments. These contracts cover specific time periods and net sales associated with these contracts are deferred and recognized ratably over the service period.
Taxes collected from customers and remitted to government agencies for specific net sales producing transactions are recorded net with no effect on the income statement.

Research and Development.
Research and development and various collaboration costs are charged to expense when incurred.

Translation of Foreign Currency.
Our foreign subsidiary uses the local currency of the country in which it is located as its functional currency. Its assets and liabilities are translated into U.S. dollars at the exchange rates in effect at the balance sheet date. Revenues and expenses are translated at the average rates during the period.

Comprehensive Income.
Accumulated other comprehensive income at December 31, 2012, 2011 and 2010 consisted of foreign currency translation adjustments, net of applicable tax of zero. We deem our foreign investments to be permanent in nature and do not provide for taxes on currency translation adjustments arising from converting investments in a foreign currency to U.S. dollars. During 2011, we reclassified $1.3 million from accumulated other comprehensive income (loss) to accumulated deficit with no effect on total stockholders' equity or net loss.

Loss Per Share.
Basic earnings per share is calculated based on the weighted-average number of common shares outstanding during each period. Diluted earnings per share include shares issuable upon exercise of outstanding stock options, warrants or conversion rights that have exercise or conversion prices below the market value of our common stock.

Recent Accounting Pronouncements
In May 2011, the Financial Accounting Standards Board "FASB" issued Accounting Standards Update No. 2011-04, “Fair Value Measurement” (“ASU 2011-04”). ASU 2011-04 amends ASC 820 to achieve common fair value measurement and disclosure requirements in U.S. Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS). The amended guidance requires information disclosure regarding transfers between Level 1 and Level 2 of the fair value hierarchy, information disclosure regarding sensitivity of a fair value measurement categorized within Level 3 of the fair value hierarchy to changes in unobservable inputs and any interrelationships between those unobservable inputs, and the categorization by level of the fair value hierarchy for items that are not measured at fair value. The amended guidance was effective for financial periods beginning after December 15, 2011. ASU 2011-04 did not have a material effect on our consolidated financial position or results of operations.
In June 2011, the FASB issued guidance on the presentation of comprehensive income. The new guidance eliminates the current option to report other comprehensive income and its components in the statement of changes in equity. Instead, an entity will be required to present either a continuous statement of net income and other comprehensive income or in two separate but consecutive statements of net income and other comprehensive income. The new guidance is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2011 and will have presentation changes only. We elected to report other comprehensive income and its components in a separate statement of comprehensive income for the year ended December 31, 2012.
In July 2011, the FASB issued guidance on the presentation of net patient service revenue. The new guidance requires a change in presentation of the statement of operations by reclassifying the provision for bad debts associated with patient service revenue from an operating expense to a deduction from patient service revenue (net of contractual allowances and discounts). Additionally, enhanced disclosure about policies for recognizing revenue and assessing bad debts are required. Disclosures of patient service revenue (net of contractual allowances and discounts) as well as qualitative and quantitative information about changes in the allowance for doubtful accounts will be required. The new guidance is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2011. Our adoption of this guidance did not have a material impact on our consolidated financial statements.
In September 2011, the FASB issued guidance on intangibles including goodwill and other intangibles. The new guidance will allow an entity to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test. The new guidance is effective for fiscal years beginning after December 15, 2011. We adopted this guidance in the fourth quarter of 2012.
In February 2013, the FASB issued Accounting Standards Update No. 2013-02, Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income, to improve the transparency

of reporting reclassifications out of accumulated other comprehensive income. The amendments in the Update do not change the current requirements for reporting net income or other comprehensive income in financial statements. The new amendments will require an organization to present (either on the face of the statement where net income is presented or in the notes) the effects on the line items of net income of significant amounts reclassified out of accumulated other comprehensive income if the item reclassified is required under U.S. GAAP to be reclassified to net income in its entirety in the same reporting period. Additionally, for other amounts that are not required under U.S. GAAP to be reclassified in their entirety to net income in the same reporting period, an

entity is required to cross-reference other disclosures required under U.S. GAAP to provide additional detail about those amounts. For public companies, the amendments are effective for reporting periods beginning after December 15, 2012. We do not expect that the adoption of this guidance will have a material impact on our consolidated financial statements.

Impact of Inflation

We do not believe that inflation has had a material effect on our current business, financial condition or results of operations. If our costs were to become subject to significant inflationary pressures, for example, if the cost of our materials or the cost of shipping our products to customers were to incur substantial increases as a result of the rapid rise in the cost of oil, we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, financial condition and results of operations.

Item 7A. Quantitative and Qualitative Disclosure about Market Risk.

Foreign Currency Translation Risk. Sales of products in foreign countries are mainly completed in either British Pounds Sterling or the Euro. Additionally, the British Pound Sterling is the functional currency of our wholly owned subsidiary, Transgenomic Limited. Results of operations and the balance sheet are translated from the functional currency of the subsidiary to our reporting currency of the U.S. dollar. Results of operations for our foreign subsidiary is translated using the average exchange rate during the period. Assets and liabilities are translated at the exchange rate in effect at the balance sheet date. In addition, we have revaluation risk which occurs when the transaction is consummated in a currency other than the British Pound Sterling. This transaction must be revalued within the Transgenomic Limited ledger, whose functional currency is the British Pound Sterling. The majority of the transactions on this ledger are in Euros. As a result we are subject to exchange rate risk. Additionally, we do not currently engage in foreign currency hedging activities nor use derivative financial instruments for trading or speculative purposes.

Based on our overall foreign currency exchange rate exposures at December 31, 2012, we believe that a 10% change in foreign currency exchange rates would not be expected to have a material effect on our future operating results or cash flows, depending on which foreign currency exchange rates change and depending on the directional change (either a strengthening or weakening against the U.S. Dollar). If our foreign operations grow, our exposure to foreign currency exchange rate risk may become more significant.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders
Transgenomic, Inc.

We have audited the accompanying consolidated balance sheets of Transgenomic, Inc. and Subsidiary (the Company) as of December 31, 2012 and 2011, and the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2012. We also have audited the Company's internal control over financial reporting as of December 31, 2012, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Company's internal control over financial reporting 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 financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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

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

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Transgenomic, Inc. and Subsidiary as of December 31, 2012 and 2011, and the results of their

operations and their cash flows for each of the years in the three-year period ended December 31, 2012, in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, Transgenomic, Inc. and Subsidiary maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ McGladrey LLP

Omaha, Nebraska
March 14, 2013

TRANSGENOMIC, INC. AND SUBSIDIARY
CONSOLIDATED BALANCE SHEETS
December 31, 2012 and 2011
(Dollars in thousands except per share data)

	2012	2011
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$4,497	$4,946
Accounts receivable (net of allowances for doubtful accounts of $2,171and $1,088, respectively)	8,081	7,573
Inventories (net of allowances for obsolescence of $616 and $511, respectively)	5,092	3,859
Other current assets	1,047	820
Total current assets	18,717	17,198
PROPERTY AND EQUIPMENT:		
Equipment	10,682	10,143
Furniture, fixtures & leasehold improvements	3,848	3,682
	14,530	13,825
Less: accumulated depreciation	(12,340)	(11,969)
	2,190	1,856
OTHER ASSETS:		
Goodwill	6,918	6,440
Intangibles (net of accumulated amortization of $2,805 and $1,437, respectively)	10,764	7,966
Other assets	202	102
	$38,791	$33,562
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$2,052	$2,609
Accrued compensation	1,121	1,133
Short term debt	—	3,082
Current maturities of long term debt	6,171	3,703
Accrued expenses	3,686	2,782
Deferred revenue	1,171	1,377
Other current liabilities	1,067	1,042
Accrued preferred stock dividend	1,260	600
Total current liabilities	16,528	16,328
LONG TERM LIABILITIES:		
Long term debt less current maturities	—	4,937
Common stock warrant liability	900	—
Other long-term liabilities	1,089	1,249
Total liabilities	18,517	22,514
STOCKHOLDERS' EQUITY:		
Series A preferred stock, $.01 par value, 15,000,000 shares authorized, 2,586,205 shares issued and outstanding, respectively	26	26
Common stock, $.01 par value, 150,000,000 and 100,000,000 shares authorized, respectively 71,645,725 and 49,625,725 shares issued and outstanding, respectively	721	501
Additional paid-in capital	170,881	152,987
Accumulated other comprehensive income	435	336
Accumulated deficit	(151,789)	(142,802)

Total stockholders' equity	20,274	11,048
	$38,791	$33,562

See notes to consolidated financial statements.

TRANSGENOMIC, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF OPERATIONS
Years Ended December 31, 2012, 2011 and 2010
(Dollars in thousands except per share data)

	2012	2011	2010
NET SALES	$31,480	$31,971	$20,048
COST OF GOODS SOLD	16,470	13,534	10,284
Gross profit	15,010	18,437	9,764
OPERATING EXPENSES:			
Selling, general and administrative	22,023	19,150	10,933
Research and development	2,491	2,218	2,305
Restructuring charges	—	41	138
	24,514	21,409	13,376
LOSS FROM OPERATIONS	(9,504)	(2,972)	(3,612)
OTHER INCOME (EXPENSE):			
Interest income (expense), net	(888)	(958)	(4)
Expense on preferred stock	—	(6,066)	—
Warrant revaluation	2,200	—	—
Other, net	11	259	632
	1,323	(6,765)	628
LOSS BEFORE INCOME TAXES	(8,181)	(9,737)	(2,984)
INCOME TAX EXPENSE	146	45	150
NET LOSS	$(8,327)	$(9,782)	$(3,134)
PREFERRED STOCK DIVIDENDS AND ACCRETION	(660)	(1,010)	—
NET LOSS AVAILABLE TO COMMON STOCKHOLDERS	$(8,987)	$(10,792)	$(3,134)
BASIC AND DILUTED LOSS PER COMMON SHARE	$(0.13)	$(0.22)	$(0.06)
BASIC AND DILUTED WEIGHTED AVERAGE SHARES OF COMMON STOCK OUTSTANDING	69,417,419	49,361,632	49,243,839

See notes to consolidated financial statements.

TRANSGENOMIC, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
Years Ended December 31, 2012, 2011 and 2010
(Dollars in thousands)

	2012	2011	2010
Net Loss	$(8,327)	$(9,782)	$(3,134)
Other Comprehensive Loss; foreign currency translation adjustment, net of tax	99	54	(56)
Comprehensive Loss	$(8,228)	$(9,728)	$(3,190)

See notes to consolidated financial statements.

TRANSGENOMIC, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
Years Ended December 31, 2012, 2011 and 2010
(Dollars in thousands except share data)

	Preferred Stock		Common Stock					
	Outstanding Shares	Par Value	Outstanding Shares	Par Value	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total
Balance, December 31, 2009	—	—	49,189,672	$497	$139,703	$ (130,183)	$ 1,645	$11,662
Net loss	—	—	—	$—	$—	$ (3,134)		$(3,134)
Foreign currency translation adjustment, net of tax	—	—	—	—	—	—	(56)	(56)
Non-cash stock-based compensation	—	—	—	—	(14)	—	—	(14)
Issuance of shares of stock	—	—	100,000	1	41	—	—	42
Balance, December 31, 2010	—	—	49,289,672	$498	$139,730	$ (133,317)	$ 1,589	$8,500
Net loss	—	—	—	—	—	(9,782)		(9,782)
Foreign currency translation adjustment, net of tax	—	—	—	—	—	—	54	54
Non-cash stock-based compensation	—	—	—	—	1,010	—	—	1,010
Issuance of shares of common stock	—	—	90,150	1	23	—	—	24
Preferred stock accretion	—	—	—	—	—	(410)	—	(410)
Amendment of preferred stock agreement	2,586,205	26	245,903	2	12,224	—	—	12,252
Reclassification of other comprehensive income (loss)	—	—	—	—	—	1,307	(1,307)	—
Dividends on preferred stock	—	—	—	—	—	(600)	—	(600)
Balance, December 31, 2011	2,586,205	$26	49,625,725	$501	$152,987	$ (142,802)	$ 336	$11,048
Net loss	—	—	—	—	$—	(8,327)		(8,327)
Foreign currency translation	—	—	—	—	—	—	99	99

adjustment, net of tax								
Non-cash stock-based compensation	—	—	—	—	731	—	—	731
Issuance of shares of common stock	—	—	20,000	—	10	—	—	10
Private Placement, net	—		22,000,000	220	17,153			17,373
Dividends on preferred stock	—	—	—	—	—	(660)	—	(660)
Balance, December 31, 2012	2,586,205	$26	71,645,725	$721	$170,881	$ (151,789)	$ 435	$20,274

See notes to consolidated financial statements.

TRANSGENOMIC, INC. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF CASH FLOWS
Years Ended December 31, 2012, 2011 and 2010
(Dollars in thousands)

	2012	2011	2010
CASH FLOWS PROVIDED BY (USED IN) OPERATING ACTIVITIES:			
Net loss	$(8,327)	$(9,782)	$(3,134)
Adjustments to reconcile net loss to net cash flows provided by (used in) operating activities:			
Depreciation and amortization	2,278	2,101	708
Non-cash, stock based compensation	731	1,010	(14)
Provision for losses on doubtful accounts	2,468	1,738	28
Provision for losses on inventory obsolescence	129	48	100
Preferred stock revaluation	—	6,066	—
Warrant revaluation	(2,200)	—	—
Loss on sale of fixed assets	23	—	—
Long term deferred income taxes	(25)	(133)	26
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable	(2,913)	(2,212)	44
Inventories	(1,373)	(620)	(3)
Prepaid expenses and other current assets	(209)	243	95
Accounts payable	(576)	1,028	364
Accrued liabilities	96	332	92
Other long term liabilities	(306)	401	(24)
Net cash flows provided by (used in) operating activities	(10,204)	220	(1,718)
CASH FLOWS USED IN INVESTING ACTIVITIES:			
Acquisitions	(3,551)	—	(6,000)
Purchase of property and equipment	(882)	(231)	(192)
Purchase of short term investments	(8,994)	—	—
Proceeds from the sale of short term investments	8,994	—	—
Change in other assets	(445)	(277)	(34)
Net cash flows used in investing activities	(4,878)	(508)	(6,226)
CASH FLOWS PROVIDED BY FINANCING ACTIVITIES:			
Issuance of preferred stock and related warrants, net	—	—	5,791
Proceeds from note payable	—	3,000	—
Principal payments on capital lease obligations	(328)	(391)	(72)
Issuance of common stock and related warrants, net	17,483	24	42
Principal payments on note payable	(2,551)	(907)	—
Net cash flows provided by financing activities	14,604	1,726	5,761
EFFECT OF FOREIGN CURRENCY EXCHANGE RATE CHANGES ON CASH	29	54	(5)
NET CHANGE IN CASH AND CASH EQUIVALENTS	(449)	1,492	(2,188)
CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD	4,946	3,454	5,642
CASH AND CASH EQUIVALENTS AT END OF PERIOD	$4,497	$4,946	$3,454
SUPPLEMENTAL CASH FLOW INFORMATION			
Cash paid during the period for:			
Interest	$964	$732	$7
Income taxes, net	123	108	29
SUPPLEMENTAL DISCLOSURE OF NON-CASH INFORMATION			

Acquisition of equipment through capital leases	$175	$756	$394
Dividends accrued on preferred stock	660	600	—

Note payable converted to Equity	3,000	—	—
Acquisition of intangibles	849	—	—
Common stock issued for elimination of derivatives on preferred stock	—	300	—
Goodwill purchase price adjustment	—	165	—

See notes to consolidated financial statements.

TRANSGENOMIC, INC. AND SUBSIDIARY
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
Years Ended December 31, 2012, 2011 and 2010

1. BUSINESS DESCRIPTION

Business Description.

Transgenomic, Inc.("we", "us","our Company" or "Transgenomic") is a global biotechnology company advancing personalized medicine in the detection and treatment of cancer and inherited diseases through its proprietary molecular technologies and world-class clinical and research services. Our operations are organized and reviewed by management along its product lines and presented in the following three complementary business segments.

- Clinical Laboratories. Our clinical laboratories specialize in genetic testing for cardiology, neurology, mitochondrial disorders, and oncology. Located in New Haven, Connecticut and Omaha, Nebraska the molecular clinical reference laboratories are certified under the Clinical Laboratory Improvement Amendment (CLIA) as high complexity labs and our Omaha facility is also accredited by the College of American Pathologists (CAP).
- Pharmacogenomics Services. Our Contract Research Organization located in Omaha, Nebraska provides pharmacogenomics research services supporting Phase II and Phase III clinical trials conducted by our pharmaceutical customers. This lab specializes in pharmacogenomic, biomarker and mutation discovery research serving the pharmaceutical and biomedical industries world-wide for disease research, drug and diagnostic development and clinical trial support.
- Diagnostic Tools. Our proprietary product is the WAVE® System which has broad applicability to genetic variation detection in both molecular genetic research and molecular diagnostics. We also distribute bioinstruments produced by other manufacturers (“OEM Equipment”) through our sales and distribution network. Service contracts to maintain installed systems are sold and supported by our technical support personnel. The installed WAVE base and some OEM Equipment platforms generate a demand for consumables that are required for the continued operation of the bioinstruments. We develop, manufacture and sell these consumable products. In addition, we manufacture and sell consumable products that can be used on multiple, independent platforms. These products include SURVEYOR® Nuclease and a range of chromatography columns.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation.

The consolidated financial statements include the accounts of Transgenomic, Inc. and its wholly owned subsidiary. All inter-company balances and transactions have been eliminated in consolidation.

Risks and Uncertainties.

Certain risks and uncertainties are inherent in our day-to-day operations and to the process of preparing our financial statements. The more significant of those risks are presented below and throughout the notes to the financial statements.

Use of Estimates.

The preparation of consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of net sales and expenses during the reporting period. In addition, estimates and assumptions associated with the determination of the fair value of certain assets and related impairments require considerable judgment by management. Actual results could differ from the estimates and assumptions used in preparing these consolidated financial statements.

Reclassifications.

Certain prior year amounts have been reclassified in order to conform to the current year presentation.

Fair Value.

Unless otherwise specified, book value approximates fair market value. The Company's Level 1 financial instruments include cash and cash equivalents. The Company's Level 2 financial instruments include accounts receivable, accounts payable, other current liabilities and other long-term liabilities. The Company's Level 3 financial instruments include the common stock warrant liability, preferred stock warrant liability and conversion feature, and debt. The Company is also unable to estimate the

TRANSGENOMIC, INC. AND SUBSIDIARY
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
Years Ended December 31, 2012, 2011 and 2010

fair value of the debt due to the lack of comparable available credit facilities. The common stock warrant liability and Series A Preferred Stock warrant liability and conversion feature are recorded at fair value. See Footnote 12 Fair Value.

Cash and Cash Equivalents.

Cash and cash equivalents include cash and investments with original maturities at the date of acquisition of three months or less. Such investments presently consist of temporary overnight investments

Concentrations of Cash.

From time to time, we may maintain a cash position with financial institutions in amounts that exceed federally insured limits. We have not experienced any losses on such accounts as of December 31, 2012.

Accounts Receivable.

The following is a summary of activity for the allowance for doubtful accounts during the years ended December 31, 2012, 2011 and 2010:

	Dollars in Thousands			
	Beginning Balance	Provision	Write Offs	Ending Balance
Year ended December 31, 2012	$1,088	$2,468	$(1,385)	$2,171
Year ended December 31, 2011	$334	$1,738	$(984)	$1,088
Year ended December 31, 2010	$310	$28	$(4)	$334

While payment terms are generally 30 days, we have also provided extended payment terms in certain cases. We operate globally and some of the international payment terms can be greater than 90 days. Accounts receivable are carried at original invoice amount and shown net of allowance for doubtful accounts and contractual allowances. The estimate made for doubtful accounts is based on a review of all outstanding amounts on a quarterly basis. We determine the allowance for doubtful accounts and contractual allowances by regularly evaluating individual customer receivables and considering a customer's financial condition, credit history and current economic conditions. Accounts receivable are written off when deemed uncollectible. Recoveries of accounts receivable previously written off are recorded when received.

Inventories.

Inventories are stated at the lower of cost or market net of allowance for obsolete inventory. Cost is computed using standard costs for finished goods and average or latest actual cost for raw materials and work in process, which approximates the first-in, first-out (FIFO) method. We write down slow-moving and obsolete inventory by the difference between the value of the inventory and our estimate of the reduced value based on potential future uses, the likelihood that overstocked inventory will be sold and the expected selling prices of the inventory. If our ability to realize value on slow-moving or obsolete inventory is less favorable than assumed, additional write-downs of the inventory may be required.

The following is a summary of activity for the allowance for obsolete inventory during the year ended December 31, 2012, 2011 and 2010:

	Dollars in Thousands			
	Beginning Balance	Provision	Write Offs	Ending Balance
Year ended December 31, 2012	$511	$129	$(24)	$616
Year ended December 31, 2011	$518	$48	$(55)	$511

Year ended December 31, 2010	$507	$100	$(89)	$518

We determine the allowance for obsolescence by evaluating inventory quarterly for items deemed to be slow moving or obsolete.

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Property and Equipment.
Property and equipment are carried at cost. Depreciation is computed by the straight-line method over the estimated useful lives of the related assets as follows:

Leasehold improvements	1 to 10 years
Furniture and fixtures	3 to 7 years
Production equipment	3 to 7 years
Computer equipment	3 to 7 years
Research and development equipment	2 to 7 years

Depreciation expense related to property and equipment during the years ended December 31, 2012, 2011 and 2010 was $0.8 million, $0.6 million and $0.4 million, respectively. Included in depreciation for the years ended December 31, 2012, 2011 and 2010 was $0.3 million, $0.2 million and less than $0.1 million, respectively, related to equipment acquired under capital leases.
Goodwill.
Goodwill is the excess of the purchase price over fair value of assets acquired and is not amortized. Goodwill is tested for impairment annually. We perform this impairment analysis during the fourth quarter of each year or when a significant event occurs that may impact goodwill. Impairment occurs when the carrying value is determined to be not recoverable thereby causing the carrying value of the goodwill to exceed its fair value. If impaired, the asset’s carrying value is reduced to its fair value. No impairment existed at December 31, 2012 and 2011.
Intangibles.
Intangibles include intellectual property, patents and acquired products.
1. Intellectual Property. Initial costs paid to license intellectual property from independent third parties are capitalized and amortized using the straight-line method over the license period. Ongoing royalties related to such licenses are expensed as incurred.
2. Patents. We capitalize legal costs, filing fees and other expenses associated with obtaining patents on new discoveries and amortize these costs using the straight-line method over the shorter of the legal life of the patent or its economic life beginning on the date the patent is issued.
3. Acquired Products. As a part of the FAMILION acquisition and acquisition of certain intangible assets from Axial we acquired technology, in process technology, trademarks/tradenames, customer relationships, covenants not to compete and third party relationships. These costs will be amortized using the straight-line method over their estimated economic life of seven to eight years. See Footnote 4 Intangibles and Other Assets.
We review our amortizable long lived assets for impairment whenever events indicate that the carrying amount of the asset may not be recoverable. An impairment loss would be recorded if the sum of the future undiscounted cash flows is less than the carrying amount of the asset. The amount of the loss would be determined by comparing the fair market value of the asset to the carrying amount of the asset. No loss has been recorded during the years ended December 31, 2012 or 2011.
Common Stock Warrants.
Our issued and outstanding warrants to purchase common stock do not qualify to be treated as equity, and accordingly, are recorded as a liability ("Common Stock Warrant Liability"). The Common Stock Warrant Liability was initially recorded at fair value using a Monte Carlo simulation model. We are required to present these instruments at fair value at each reporting date and any changes in fair values are recorded as an adjustment to earnings. The Common Stock Warrant Liability is considered a level three financial instrument. See Footnote 12 -Fair Value.
Preferred Stock. Prior to the 2011 modification, the Series A Preferred Stock met the definition of mandatorily redeemable stock as it was preferred capital stock which was redeemable at the option of the holder and therefore was reported outside of equity. The Series A Preferred Stock was accreted to its redemption value. Prior to the 2011

modification, the Series A Warrants did not qualify to be treated as equity, and accordingly, was recorded as a liability. A preferred stock conversion feature

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was embedded within the Series A Preferred Stock that met the definition of a derivative. The Series A Preferred Stock, Series A Warrants liability and Series A Preferred Stock conversion feature were all recorded separately and were initially recorded at fair value using the Black-Scholes model. We were required to record these instruments at fair value at each reporting date and changes were recorded as an adjustment to earnings. The Series A Warrant liability and Series A Preferred Stock conversion feature were considered level three financial instruments.

In November 2011, we entered into a transaction with the holders of the Series A Preferred Stock (the "Series A Holders"), pursuant to an Agreement Regarding Preferred Stock (the “Amendment Agreement”), in which the Series A Holders agreed to (i) waive their rights to enforce the anti-dilution and redemption features of the Series A Preferred Stock and (ii) at the next annual shareholder meeting, vote to amend the Certificate of Designation for the Series A Preferred Stock to remove the anti-dilution and redemption features of the Series A Preferred Stock. In exchange, the Company issued shares of common stock to the Series A Holders having an aggregate market value of $0.3 million. As a result of the Amendment Agreement, the value of the Series A Preferred Stock and Series A Warrant, including the Series A Preferred Stock conversion feature and Series A Warrant liability, were reclassified into shareholders equity as of the date of the Amendment Agreement.

Stock Based Compensation.

All stock options awarded to date have exercise prices equal to the market price of our common stock on the date of grant and have ten-year contractual terms. Unvested options as of December 31, 2012 had vesting periods of one or three years from date of grant. None of the stock options outstanding at December 31, 2012 are subject to performance or market-based vesting conditions.

We measure and recognize compensation expense for all stock-based awards made to employees and directors, including stock options. Compensation expense is based on the calculated fair value of the awards as measured at the grant date and is expensed ratably over the service period of the awards (generally the vesting period).

Income Taxes.

Deferred tax assets and liabilities are determined based on the differences between the financial reporting and tax basis of assets and liabilities at each balance sheet date using tax rates expected to be in effect in the year the differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance to the extent that it is more likely than not that they will not be realized. Our policy is to record interest and penalties directly related to income taxes as income tax expense in the Consolidated Statements of Operations.

Net Sales Recognition.

Revenue is realized and earned when all of the following criteria are met:

- Persuasive evidence of an arrangement exists;
- Delivery has occurred or services have been rendered;
- The seller’s price to the buyer is fixed or determinable; and
- Collectability is reasonably assured.

Net sales from our Clinical Laboratories are recognized on an individual test basis and takes place when the test report is completed, reviewed and sent to the client less the reserve for insurance, Medicare and Medicaid contractual adjustments. There are no deferred net sales associated with our Clinical Laboratories. Adjustments to the allowances, based on actual receipts from third party payers, are recorded upon settlement.

In our Pharmacogenomics Services, we perform services on a project by project basis. When we receive payment in advance, we recognize revenue when we deliver the service. These projects typically do not extend beyond one year. At December 31, 2012 and 2011, deferred net sales associated with pharmacogenomics research projects, included in the balance sheet in deferred revenue, was $0.2 million and $0.1 million, respectively.

Net sales of Diagnostic Tools products are recognized in accordance with the terms of the sales arrangement. Such recognition is based on receipt of an unconditional customer order and transfer of title and risk of ownership to the

customer, typically upon shipment of the product under a purchase order. Our sales terms do not provide for the right of return unless the product is damaged or defective. Net sales from certain services associated with the analytical instruments, to be performed subsequent to shipment of the products, is deferred and recognized when the services are provided. Such services, mainly limited to installation and training

services that are not essential to the functionality of the instruments, typically are performed in a timely manner subsequent to shipment of the instrument. We also enter into various service contracts that cover installed instruments. These contracts cover specific time periods and net sales associated with these contracts are deferred and recognized ratably over the service period. At December 31, 2012 and 2011, deferred net sales, mainly associated with our service contracts, included in the balance sheet in deferred revenue was approximately $1.0 million and $1.3 million, respectively.

Taxes collected from customers and remitted to government agencies for specific net sales producing transactions are recorded net with no effect on the income statement.

Research and Development.

Research and development and various collaboration costs are charged to expense when incurred.

Translation of Foreign Currency.

Our foreign subsidiary uses the local currency of the country in which it is located as its functional currency. Its assets and liabilities are translated into U.S. dollars at the exchange rates in effect at the balance sheet date. A translation gain of $0.1 million is reported in other comprehensive income on the accompanying consolidated balance sheet as of December 31, 2012. A translation gain of $0.1 million was reported in other comprehensive income on the accompanying consolidated balance sheet as of December 31, 2011. Revenues and expenses are translated at the average rates during the period. For transactions that are not denominated in the functional currency, we recognized $0.1 million, less than $0.1 million, and $0.3 million as foreign currency transaction loss in the determination of net loss for the years ending December 31, 2012, 2011 and 2010, respectively.

Common Stock Warrants.

Our issued and outstanding warrants to purchase common stock do not qualify to be treated as equity, and accordingly, are recorded as a liability. The Common Stock Warrant liability was initially recorded at fair value using a Monte Carlo simulation model. We are required to present these instruments at fair value at each reporting date and any changes in fair values are recorded as an adjustment to earnings. The Common Stock Warrant liability is considered a level three financial instrument. See Footnote 12 -Fair Value.

Expense on Preferred Stock.

For 2011, we recorded expense associated with the Series A Preferred Stock and Series A Warrants of $6.1 million, which is due to the change in fair value of the Series A Preferred Stock conversion feature and Series A Warrants liability of $5.8 million and the issuance of $0.3 million in common stock to the Series A Investors. The expense associated with the change in value of the Series A Preferred Stock conversion feature is a non-cash item. There was no expense on preferred stock in 2012 or 2010.

Other Income.

Other income in the years ended December 31, 2011 and 2010 includes an award of a federal grant under the Qualifying Therapeutic Discovery Project related to COLD-PCR, Surveyor Scan kit development for detecting key cancer pathway gene mutations and mtDNA damage assays. Income related to this federal grant net of consulting fees was $0.2 million and $0.6 million, respectively. There was no other income in the year ended December 31, 2012.

Comprehensive Income.

Accumulated other comprehensive income at December 31, 2012, 2011 and 2010 consisted of foreign currency translation adjustments, net of applicable tax of zero. We deem our foreign investments to be permanent in nature and do not provide for taxes on currency translation adjustments arising from converting investments in a foreign currency to U.S. dollars. During 2011, we reclassified $1.3 million from accumulated other comprehensive income (loss) to accumulated deficit with no effect on total stockholders' equity or net loss.

Earnings Per Share.

Basic earnings per share is calculated based on the weighted-average number of common shares outstanding during each period. Diluted earnings per share include shares issuable upon exercise of outstanding stock options, warrants or

conversion rights that have exercise or conversion prices below the market value of our common stock, as long as the effect is not anti-dilutive. Options, warrants and conversion rights pertaining to 29,660,038, 17,648,273 and 18,607,229 shares of our common stock have been excluded from the computation of diluted earnings per share at December 31, 2012, 2011 and 2010, respectively. The options,

warrants and conversion rights that were exercisable in 2012, 2011 and 2010 were not included because the effect would be anti-dilutive due to the net loss.

Recently Issued Accounting Pronouncements.

In May 2011, the FASB issued Accounting Standards Update No. 2011-04, “Fair Value Measurement” (“ASU 2011-04”). ASU 2011-04 amends ASC 820 to achieve common fair value measurement and disclosure requirements in U.S. Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS). The amended guidance requires information disclosure regarding transfers between Level 1 and Level 2 of the fair value hierarchy, information disclosure regarding sensitivity of a fair value measurement categorized within Level 3 of the fair value hierarchy to changes in unobservable inputs and any interrelationships between those unobservable inputs, and the categorization by level of the fair value hierarchy for items that are not measured at fair value. The amended guidance was effective for financial periods beginning after December 15, 2011. ASU 2011-04 did not have a material effect on our consolidated financial position or results of operations.

In June 2011, the FASB issued guidance on the presentation of comprehensive income. The new guidance eliminates the current option to report other comprehensive income and its components in the statement of changes in equity. Instead, an entity will be required to present either a continuous statement of net income and other comprehensive income or in two separate but consecutive statements. The new guidance is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2011 and will have presentation changes only. We elected to report other comprehensive income and its components in a separate statement of comprehensive income for the year ended December 31, 2012.

In July 2011, the FASB issued guidance on the presentation of net patient service revenue. The new guidance requires a change in presentation of the statement of operations by reclassifying the provision for bad debts associated with patient service revenue from an operating expense to a deduction from patient service revenue (net of contractual allowances and discounts). Additionally, enhanced disclosure about policies for recognizing revenue and assessing bad debts are required. Disclosures of patient service revenue (net of contractual allowances and discounts) as well as qualitative and quantitative information about changes in the allowance for doubtful accounts will be required. The new guidance is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2011. Our adoption of this guidance did not have a material impact on our consolidated financial statements.

In September 2011, the FASB issued guidance on intangibles including goodwill and other intangibles. The new guidance will allow an entity to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test. The new guidance is effective for fiscal years beginning after December 15, 2011. We adopted this guidance in the fourth quarter of 2012.

In February 2013, the FASB issued Accounting Standards Update No. 2013-02, Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income, to improve the transparency of reporting reclassifications out of accumulated other comprehensive income. The amendments in the Update do not change the current requirements for reporting net income or other comprehensive income in financial statements. The new amendments will require an organization to present (either on the face of the statement where net income is presented or in the notes) the effects on the line items of net income of significant amounts reclassified out of accumulated other comprehensive income if the item reclassified is required under U.S. GAAP to be reclassified to net income in its entirety in the same reporting period. Additionally, for other amounts that are not required under U.S. GAAP to be reclassified in their entirety to net income in the same reporting period, an entity is required to cross-reference other disclosures required under U.S. GAAP to provide additional detail about those amounts. For public companies, the amendments are effective for reporting periods beginning after December 15, 2012. We do not expect that the adoption of this guidance will have a material impact on our consolidated financial statements.

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3. INVENTORIES

Inventories (net of allowance for obsolescence) consisted of the following:

	Dollars in Thousands	
	December 31, 2012	December 31, 2011
Finished goods	$4,057	$2,608
Raw materials and work in process	1,547	1,485
Demonstration inventory	104	277
	$5,708	$4,370
Less allowance for obsolescence	(616)	(511)
Total	$5,092	$3,859

4. INTANGIBLES AND OTHER ASSETS

Long-lived intangible assets and other assets consisted of the following:

	Dollars in Thousands					
	December 31, 2012			December 31, 2011		
	Cost	Accumulated Amortization	Net Book Value	Cost	Accumulated Amortization	Net Book Value
Acquired technology	$9,009	$1,910	$7,099	$6,535	$911	$5,624
Assay royalties	1,434	410	1,024	1,434	205	1,229
Third party payor relationships	367	49	318	367	—	367
Tradenames and trademarks	824	115	709	344	49	295
Customer relationships	652	11	641	—	—	—
Covenants not to compete	184	15	169	—	—	—
Patents	929	280	649	703	267	436
Intellectual property	170	15	155	20	5	15
	$13,569	$2,805	$10,764	$9,403	$1,437	$7,966

	Estimated Useful Life
Acquired technology	7 – 8 years
Assay royalties	7 years
Third party payor relationships	15 years
Tradenames and trademarks	7 years
Customer relationships	15 years
Covenants not to compete	3 years
Patents	Life of the patent
Intellectual property	7 years

Other assets include U.S. security deposits and deferred tax assets, net of applicable valuation allowances.

Amortization expense for intangible assets was $1.4 million, $1.3 million and less than $0.1 million during the years ended December 31, 2012, 2011 and 2010. Amortization expense for intangible assets is expected to be $1.7 million in each of the years 2013 through 2017.

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5. DEBT

	Dollars in Thousands Year Ended December 31,	
	2012	2011
PGxHealth note payable (the "First Note") [1]	$6,171	$8,640
PGxHealth note payable (the "Second Note") [2]	—	82
Third Security Convertible Promissory Notes [3]	—	3,000
Total debt, including short term debt	6,171	11,722
Short term debt	—	(3,082)
Current maturities of long term debt	(6,171)	(3,703)
Long-term debt, net of current maturities	$—	$4,937

(1) The First Note is a three year senior secured promissory note to PGxHealth, LLC entered into on December 29, 2010 in conjunction with our acquisition of the FAMILION family of genetic tests from PGxHealth. Interest is payable at 10% per year with quarterly interest payments through March 29, 2012. Thereafter, quarterly installments will include both principal and interest through December 30, 2013.

On February 7, 2013, we entered into a Forbearance Agreement with Dogwood Pharmaceuticals, Inc. (the “Lender”), a wholly owned subsidiary of Forest Laboratories, Inc. and successor-in-interest to PGxHealth, LLC (“PGX”), with an effective date of December 31, 2012 (the “Forbearance Agreement”). In December 2012, we commenced discussions with the Lender to defer the payment due on December 31, 2012 until March 31, 2013. As of December 31, 2012, an aggregate of $1.4 million was due and payable under the Note by Transgenomic, and non-payment would constitute an event of default (the “Event of Default”) under the Note and that certain Security Agreement, dated as of December 29, 2010, entered into between Transgenomic and PGX (the “Security Agreement”). Pursuant to the Forbearance Agreement, the Lender agreed, among other things, to forbear from exercising its rights and remedies under the Note and the Security Agreement as a result of the Event of Default, effective as of December 31, 2012.

The entire unpaid balance of the First Note will become immediately due and payable if: (i) we fail to make timely payments under the Notes; (ii) we make an assignment for the benefit of creditors; (iii) we file for bankruptcy; or (iv) upon any event of default under the Security Agreement. Additionally, under the terms of the First Note, if we consummate an equity financing that involves the receipt by us of net proceeds of not less than $6,000,000, then we shall, upon the consummation of such equity financing, pay to PGxHealth the lesser of: (i) 25% of the gross proceeds received from such financing; and (ii) the then-outstanding balance under the First Note.
The First Note is secured by the assets of Transgenomic.

(2) The Second Note was a one year senior secured promissory note to PGxHealth, LLC entered into on December 31, 2010 for facility improvements made to the CLIA certified laboratory in New Haven, Connecticut. Interest is payable at 6.5% per year with the principal and interest payable in twelve monthly installments with the final payment made on January 3, 2012.

(3) The Third Security Promissory Notes were convertible promissory notes to Third Security Senior Staff 2008 LLC, Third Security Staff 2010 LLC and Third Security Incentive 2010 LLC entered into on December 30, 2011 with a maturity date of March 31, 2012. Interest was payable at 16% per year. The Third Security Promissory Notes automatically convert into the same class(es) or series and at the same price as the equity securities of the Company sold upon the first sale or issuance of its equity securities, after December 30, 2011, in the aggregate

amount of at least $3.0 million, and provide that it shall be due and payable if it has not been converted prior to March 31, 2012. In connection with a private placement conducted by the Company in February 2012, the Third Security Promissory Notes converted into equity securities of the Company on the same terms as issued to investors in the private placement.

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The aggregate minimum principal maturities of the debt for the fiscal year following December 31, 2012 are as follows:

2013	$6,171
	$6,171

6. CAPITAL LEASES

The following is an analysis of the property acquired under capital leases.

	Dollars in Thousands Asset Balances at	
Classes of Property	December 31, 2012	December 31, 2011
Equipment	$1,323	$1,052
Less: Accumulated amortization	(420)	(164)
Total	$903	$888

The following is a schedule by years of future minimum lease payments under capital leases together with the present value of the net minimum lease payments as of December 31, 2012.

Year ending December 31:

	Dollars in Thousands
2013	$ 377
2014	170
2015	43
2016	3
2017	1
Total minimum lease payments	$ 594
Less: Amount representing interest	(63)
Present value of net minimum lease payments	$ 531

The short term portion of our capital leases is included in accrued expenses and the long term portion is included in other long-term liabilities on the Balance Sheet. Included in depreciation for the year ended December 31, 2012, 2011 and 2010 was $0.3 million, $0.2 million and less than $0.1 million, respectively, related to equipment acquired under capital leases.

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7. COMMITMENTS AND CONTINGENCIES

We are subject to a number of claims of various amounts, which arise out of the normal course of business. In the opinion of management, the disposition of pending claims will not have a material adverse effect on our financial position, results of operations or cash flows.

Rent expense under all operating leases, was $1.0 million, $0.9 million and $0.8 million in 2012, 2011 and 2010, respectively. We lease certain equipment, vehicles and operating facilities under non-cancellable operating leases that expire on various dates through 2022. Future minimum lease payments under noncancelable operating leases are as follows (in millions):

2013	1,126
2014	1,079
2015	980
2016	875
2017	763
thereafter	1,348
	6,171

At December 31, 2012, firm commitments to vendors totaled $2.0 million.

8. INCOME TAXES

The Company’s provision for income taxes for the years ended December 31, 2012, 2011 and 2010 relates to income taxes in states, foreign countries and other local jurisdictions and differs from the amounts determined by applying the statutory Federal income tax rate to loss before income taxes for the following reasons:

	Dollars in Thousands		
	2012	2011	2010
Benefit at federal rate	$(2,781)	$(3,311)	$(1,015)
Increase (decrease) resulting from:			
State income taxes—net of federal benefit	2	2	20
Foreign subsidiary tax rate difference	(27)	(94)	(27)
Tax contingency	22	28	45
Expiring net operating loss carryforwards	1,472	988	—
Earnings repatriation	582	—	1,479
Miscellaneous permanent differences	284	332	60
Liability warrants	(748)	2,062	—
Tax credits	215	—	—
Other—net	15	(53)	86
Valuation allowance	1,110	91	(498)
Current income tax expense	$146	$45	$150

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	Dollars in Thousands		
	2012	2011	2010
Federal:			
Current	$—	$16	$4
Deferred	—	—	—
Total Federal	$—	$16	$4
State:			
Current	$3	$3	$29
Deferred	—	—	—
Total State	$3	$3	$29
Foreign:			
Current	$46	$159	$111
Deferred	97	(133)	6
Total Foreign	$143	$26	$117
Total Tax Provision	$146	$45	$150

The Company’s deferred income tax asset at December 31, 2012 and 2011 is comprised of the following temporary differences:

	Dollars in Thousands	
	2012	2011
Deferred Tax Asset:		
Net operating loss carryforward	$39,481	$38,154
Research and development credit carryforwards	1,017	1,232
Deferred revenue	188	190
Inventory	224	184
Other	432	552
	41,342	40,312
Less valuation allowance	(41,342)	(40,232)
Deferred Tax Asset	$—	$80
Deferred Tax Liability:		
Other miscellaneous	$19	$2
Deferred Tax Liability	$19	$2
Net Deferred Asset (Liability)	$(19)	$78

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At December 31, 2012, we had total unused federal tax net operating loss carryforwards of $109.3 million. The expiration dates are as follows (amounts in thousands):

2018	$1,838
2019	8,181
2020	9,662
2021	8,228
2022	16,862
2023	16,173
2024	17,390
2025	8,153
2026	6,792
2027	3,238
2028	1,272
2029	591
2031	2,784
2032	8,126
	$109,290

Of these federal net operating loss carryforwards, $1.2 million were obtained in the acquisition of Annovis, Inc. and may be subject to certain restrictions. Remaining net operating loss carryforwards could be subject to limitations under section 382 of the Internal Revenue Code. At December 31, 2012, we had unused state tax net operating loss carryforwards of approximately $46.0 million that expire at various times beginning in 2013. At December 31, 2012, we had unused research and development credit carry-forwards of $1.0 million that expire at various times between 2013 and 2024. A net deferred tax liability was recorded during 2012 related to the UK income taxes for less than $0.1 million. A valuation allowance has been provided for the remaining deferred tax assets, due to the cumulative losses in recent years and an inability to utilize any additional losses as carrybacks. We will continue to assess the recoverability of deferred tax assets and the related valuation allowance. To the extent we begin to generate income in future years and it is determined that such valuation allowance is no longer required, the tax benefit of the remaining deferred tax assets will be recognized at such time.

Our liability for uncertain certain tax positions, which was included in other long term liabilities, was $0.3 million and $0.2 million as of December 31, 2012 and 2011, respectively. We recorded less than $0.1 million of additional uncertain tax positions during each of the years ended 2012 and 2011. We had no material interest or penalties during fiscal 2012 or fiscal 2011, and we do not anticipate any such items during the next twelve months. Our policy is to record interest and penalties directly related to income taxes as income tax expense in the Consolidated Statements of Operations. We file income tax returns in the U.S. federal jurisdiction, various U.S. state jurisdictions and various foreign jurisdictions. We have statutes of limitation open for Federal income tax returns related to tax years 2009 through 2012. We have state income tax returns subject to examination primarily for tax years 2009 through 2012. Open tax years related to foreign jurisdictions remain subject to examination. Our primary foreign jurisdiction is the United Kingdom, which has open tax years for 2009 through 2012.

During the years ended December 31, 2012 and 2011, there were no material changes to the liability for uncertain tax positions. The liability for uncertain tax positions of $0.3 million which is recorded in other long liabilities on the Balance Sheet relates to potential uncertain tax positions in foreign jurisdictions.

9. EMPLOYEE BENEFIT PLAN

We maintain an employee 401(k) retirement savings plan that allows for voluntary contributions into designated investment funds by eligible employees. Prior to October 1, 2010 we matched the employee's contributions at the rate of 50% on the first 6% of contributions. Effective October 1, 2010, Transgenomic discontinued matching employee 401(k) contributions. Beginning January 1, 2012, we reinstated matching employee 401(k) contributions. We may, at the discretion of our Board of

Directors, make additional contributions on behalf of the Plan's participants. Contributions to the 401(k) plan were $0.3 million, zero and $0.1 million for the years ended December 31, 2012, 2011 and 2010, respectively.

10. STOCKHOLDERS' EQUITY

Common Stock.

At our Annual Meeting of Stockholders, held on May 23, 2012, our stockholders approved an amendment to our certificate of incorporation to increase the authorized number of shares of our common stock from 100,000,000 to 150,000,000.

On February 7, 2012 we entered into definitive agreements with institutional and other accredited investors and raised approximately $22.0 million in a private placement financing ("Private Placement"), which includes an aggregate of $3.0 million in convertible notes issued in December 2011 to entities associated with Third Security, LLC, a related party, that automatically convert into shares of our common stock and warrants to purchase such common stock on the same terms as all investors in the Private Placement. Pursuant to the purchase agreement, we issued an aggregate of 19,000,000 shares of our common stock at a price per share of $1.00, as well as five-year warrants to purchase up to an aggregate of 9,880,000 shares of common stock with an exercise price of $1.25 per share. In connection with the conversion of the convertible notes issued by us to the entities associated with Third Security, LLC, the entities received an aggregate of 3,000,000 shares of common stock and 1,500,000 warrants on the same terms as all investors in the Private Placement. The costs incurred to complete the Private Placement were recorded as a reduction in equity in the amount of $1.5 million. Net proceeds from this offering have been used for general corporate and working capital purposes, primarily to accelerate development of several of our key initiatives.

In connection with the Private Placement the investors have a Registration Rights Agreement which required the Company to maintain an effective registration statement with the SEC. Pursuant to and as required by the Registration Rights Agreement, on March 21, 2012, the Company filed a registration statement on Form S-1 registering the securities for resale. The registration statement was declared effective by the SEC on April 4, 2012.

Common Stock Warrants.

Common stock warrants issued during the year ended December 31, 2012 were 11,380,000, and none of the issued warrants were exercised. No common stock warrants were issued during the year ended December 31, 2011. Laurus Master Fund, Ltd. exercised its warrants during 2011 in a cashless exercise for 60,150 shares of common stock. Warrants to purchase an aggregate of 16,552,408 shares of common stock were outstanding at December 31, 2012.

Warrant Holder	Issue Year	Expiration	Underlying Shares	Exercise Price
Affiliates of Third Security, LLC[1]	2010	December 2015	5,172,408	$0.58
Various Institutional Holders[2]	2012	February 2017	9,880,000	$1.25
Affiliates of Third Security, LLC[2]	2012	February 2017	1,500,000	$1.25
			16,552,408	

(1) This Warrant was issued in connection with the issuance of warrants to purchase shares of our Series A Preferred Stock to affiliates of Third Security, LLC in December 2010. The number of underlying shares shown reflects the number of shares of common stock issuable upon conversion of the shares of Series A Preferred Stock for which this Warrant is currently exercisable.

(2) These Warrants were issued in connection with the Private Placement completed in February 2012 and are classified as a liability in our financial statements. See Note 12 Fair Value. These warrants also contain certain anti-dilution provisions that provide for an adjustment to the exercise price and number of shares issuable upon exercise of the warrant in the event that we engage in certain issuances of shares of our common stock at a price lower than the exercise price of the warrant.

Preferred Stock.

The Company's Board of Directors is authorized to issue up to 15,000,000 shares of preferred stock in one or more series, from time to time, with such designations, powers, preferences and rights and such qualifications, limitations

and restrictions as

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may be provided in a resolution or resolutions adopted by the Board of Directors. The authority of the Board of Directors includes, but is not limited to, the determination or fixing of the following with respect to shares of such class or any series thereof: (i) the number of shares; (ii) the dividend rate, whether dividends shall be cumulative and, if so, from which date; (iii) whether shares are to be redeemable and, if so, the terms and amount of any sinking fund providing for the purchase or redemption of such shares; (iv) whether shares shall be convertible and, if so, the terms and provisions thereof; (v) what restrictions are to apply, if any, on the issue or reissue of any additional preferred stock; and (vi) whether shares have voting rights. The preferred stock may be issued with a preference over the common stock as to the payment of dividends. We have no current plans to issue any additional preferred stock. Classes of stock such as the preferred stock may be used, in certain circumstances, to create voting impediments on extraordinary corporate transactions or to frustrate persons seeking to effect a merger or otherwise to gain control of the Company. For the foregoing reasons, any additional preferred stock issued by the Company could have an adverse effect on the rights of the holders of the common stock.

On December 29, 2010, we entered into a transaction with the Third Security Investors, pursuant to the terms of Series A Convertible Preferred Stock Purchase Agreement (“Series A Purchase Agreement”), in which we: (i) sold an aggregate of 2,586,205 shares of Series A Preferred Stock at a price of $2.32 per share; and (ii) issued Series A Warrants to purchase up to an aggregate of 1,293,102 shares of Series A Preferred having an exercise price of $2.32 per share (the sale of Series A Preferred Stock and issuance of the Series A Warrants hereafter referred to as the “Financing”). The Series A Warrants may be exercised at any time from December 29, 2010 until December 28, 2015 and contain a “cashless exercise” feature. The gross proceeds from the Financing were $6.0 million. The $0.2 million of costs incurred to complete the Financing were recorded as a reduction in the value of the Series A Preferred Stock. We used the net proceeds from the financing to acquire the FAMILION family of genetic tests from PGxHealth, a subsidiary of Clinical Data, Inc. Until the November 2011 modifications, the Series A Preferred Stock met the definition of mandatorily redeemable stock as it is preferred capital stock that is redeemable at the option of the holder through December 2015 and was reported outside of equity. The Series A Preferred Stock was to be accreted to its redemption value of $6.0 million. Until the November 2011 modifications, the Series A Warrants did not qualify to be treated as equity and, accordingly, were recorded as a liability. A preferred stock anti-dilution feature is embedded within the Series A Preferred Stock that met the definition of a derivative.

In connection with the Financing, we filed a Certificate of Designation of Series A Convertible Preferred Stock (the “Certificate of Designation”) with the Secretary of State of the State of Delaware, designating 3,879,307 shares of our preferred stock as Series A Preferred Stock. The Series A Preferred Stock, including the Series A Preferred Stock issuable upon exercise of the Series A Warrants, is convertible into shares of our common stock at a rate of 4-for-1, which conversion rate is subject to further adjustment as set forth in the Certificate of Designation. Certain rights of the holders of the Series A Preferred Stock are senior to the rights of the holders of common stock. The Series A Preferred Stock has a liquidation preference equal to its original price per share, plus any accrued and unpaid dividends thereon. The holders of the Series A Preferred Stock are entitled to receive quarterly dividends, which accrue at the rate of 10% of the original price per share per annum, whether or not declared, shall compound annually and shall be cumulative. In any calendar quarter, we are required to pay from funds legally available a cash dividend in the amount of 50% of the distributable cash flow as defined in the Series A Purchase Agreement or the aggregate amount of dividends accrued on the Series A Preferred Stock. During the years ended December 31, 2012 and 2011, we recorded $0.7 million and $0.6 million in accrued dividends, respectively.
Generally, the holders of the Series A Preferred Stock are entitled to vote together with the holders of common stock, as a single group, on an as-converted basis. However, the Certificate of Designation provides that we shall not perform some activities, subject to certain exceptions, without the affirmative vote of a majority of the holders of the outstanding shares of Series A Preferred Stock. The holders of the Series A Preferred Stock also are entitled to elect or

appoint, as a single group, two of the five directors of the Company.

In connection with the Financing, we also entered into a registration rights agreement with the Third Security Investors (the "Registration Rights Agreement"). Pursuant to the terms of the Registration Rights Agreement, the Company has granted the Third Security Investors certain demand, "piggyback" and S-3 registration rights covering the resale of the shares of common stock underlying the Series A Preferred Stock issued pursuant to the Series A Purchase Agreement and issuable upon exercise of the Series A Warrants and all shares of common stock issuable upon any dividend or other distribution with respect thereto.

In November 2011, we entered into a transaction with the Third Security Investors, pursuant to an Agreement Regarding Preferred Stock (the "Amendment Agreement"), in which the Third Security Investors agreed to (i) waive their rights to enforce the anti-dilution and redemption features of the Series A Preferred Stock and (ii) at the next annual shareholder meeting, vote to amend the Certificate of Designation to remove the anti-dilution and redemption features of the Series A Preferred Stock. In

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exchange, the Company issued shares of common stock to the Third Security Investors having an aggregate market value of $0.3 million

As a result of the Amendment Agreement, the values of the Series A Preferred Stock and Series A Warrants, including the Series A Preferred Stock conversion feature and Series A Warrant liability, were reclassified into shareholders equity as of the date of the Amendment Agreement.

11. EQUITY INCENTIVE PLAN

The Company's 2006 Equity Incentive Plan (the "Plan") allows the Company to make awards of various types of equity-based compensation, including stock options, dividend equivalent rights ("DERs"), stock appreciation rights ("SARs"), restricted stock, restricted stock units, performance units, performance shares and other awards, to employees and directors of the Company. The Company may issue 10,000,000 shares under the Plan; provided, that no more than 5,000,000 of such shares may be used for grants of restricted stock, restricted stock units, performance units, performance shares and other awards.

The Plan is administered by the Compensation Committee of the Board of Directors (the "Committee") which has the authority to set the number, exercise price, term and vesting provisions of the awards granted under the Plan, subject to the terms thereof. Either incentive or non-qualified stock options may be granted to employees of the Company, but only non-qualified stock options may be granted to non-employee directors and advisors. However, in either case, the Plan requires that stock options must be granted at exercise prices not less than the fair market value of the common stock on the date of the grant. Options issued under the plan vest over periods as determined by the Compensation Committee and expire 10 years after the date the option was granted. To date, the only awards made under the Plan have been non-incentive stock options.

For the year ended December 31, 2012, we recorded compensation expense of $0.7 million within selling, general and administrative expense as a result of the vesting of options exercisable for the purchase of 3.9 million options. For the year ended December 31, 2011, we recorded compensation expense of $1.0 million within selling, general and administrative expense as a result of the vesting of options exercisable for the purchase of 3.0 million options. For the year ended December 31, 2010, we recorded compensation expense recovery of less than $0.1 million within selling, general and administrative expense. Two executive officers departed during the second quarter of 2010. All stock options that were unvested were forfeited at the time of their departure as their requisite services periods were not completed. The vesting of options exercisable for the purchase of 1.3 million shares was offset by the expense recovery for stock options that were forfeited due to the requisite service not being rendered. As of December 31, 2012, there was $0.6 million of unrecognized compensation expense related to unvested stock options, which is expected to be recognized over a weighted average period of nearly three years.

The fair value of the options granted during 2012 was estimated on their respective grant dates using the Black-Scholes option pricing model. The Black-Scholes model was used with the following assumptions: risk-free interest rates of 0.62% to 1.03%, based on the U.S. Treasury yield in effect at the time of grant; dividend yields of zero percent; expected lives of five to eight years, based on historical exercise activity; and volatility of 101% to 114% for grants made during the year ended December 31, 2012 based on the historical volatility of our stock over a time that is consistent with the expected life of the option. A small group of senior executives hold the majority of the stock options and are expected to hold the options until they are vested. Forfeitures of 2% to 4% have been assumed in the calculation.

The fair value of the options granted during 2011 was estimated on their respective grant dates using the Black-Scholes option-pricing model. The Black-Scholes model was used with the following assumptions: risk-free interest rates of 0.92% to 2.16%, based on the U.S. Treasury yield in effect at the time of grant; dividend yields of zero percent; expected lives of three to five years, based on historical exercise activity; and volatility of 105% to 107% for grants made during the year ended December 31, 2011 based on the historical volatility of our stock over a time that is consistent with the expected life of the option. A small group of senior executives hold the majority of the

stock options and are expected to hold the options until they are vested. Forfeitures of 1% to 4% have been assumed in the calculation.

The fair value of the options granted during 2010 was estimated on their respective grant dates using the Black-Scholes option-pricing model. The Black-Scholes model was used with the following assumptions: risk-free interest rates of 1.17% to 1.98%, based on the U.S. Treasury yield in effect at the time of grant; dividend yields of zero percent; expected lives of five years, based on historical exercise activity; and volatility of 103% to 105% for grants made during the year ended December 31, 2010 based on the historical volatility of our stock over a time that is consistent with the expected life of the option. A small group of senior executives hold the majority of the stock options and are expected to hold the options until they are vested. Forfeitures of 2% to 3% have been assumed in the calculation.

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The following table summarizes activity under the Plan during the year ended December 31, 2012:

	Number of Options	Weighted Average Exercise Price
Balance at January 1, 2012:	4,172,000	$1.10
Granted	781,000	$1.01
Exercised	(20,000)	(0.50)
Forfeited	(554,333)	(1.15)
Expired	(25,500)	(5.42)
Balance at December 31, 2012:	4,353,167	$1.05
Exercisable at December 31, 2012	2,762,810	$1.02

The following table summarizes activity under the Plan during the year ended December 31, 2011:

	Number of Options	Weighted Average Exercise Price
Balance at January 1, 2011:	2,565,001	$2.08
Granted	2,440,500	1.17
Exercised	(30,000)	(0.76)
Forfeited	(353,501)	(1.64)
Expired	(450,000)	(6.69)
Balance at December 31, 2011:	4,172,000	$1.10
Exercisable at December 31, 2011	2,131,045	$1.05

The following table summarizes activity under the Plan during the year ended December 31, 2010:

	Number of Options	Weighted Average Exercise Price
Balance at January 1, 2010:	3,331,731	$2.39
Granted	125,000	0.50
Exercised	(100,000)	(0.42)
Forfeited	(593,499)	(0.73)
Expired	(198,231)	(11.07)
Balance at December 31, 2010:	2,565,001	$2.08
Exercisable at December 31, 2010	2,358,334	$2.22

The following table summarizes the stock options that were issued during the year ended December 31, 2012:

	Number of Options	Exercise Price
February 15, 2012	100,000	$1.45
April 2, 2012	49,000	$1.19
July 2, 2012	227,500	$0.86
September 12, 2012	250,000	$0.98
October 1, 2012	154,500	$0.94
	781,000	

The weighted average grant date fair value per share of options granted during the years ended December 31, 2012, 2011 and 2010 was $0.81, $0.83 and $0.38 respectively.

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The following summarizes all stock options outstanding at December 31, 2012:

Exercise Price Range	Number of Options Outstanding	Remaining Weighted-Average Contractual Life	Weighted–Average Exercise Price	Number of Options Exercisable
$ 0.00—$ 0.50	40,000	5.8 years	$0.48	40,000
$ 0.51—$ 1.00	1,622,000	6.6 years	$0.78	1,043,333
$ 1.01—$ 1.50	2,492,834	7.0 years	$1.18	1,481,144
$ 1.50—$2.00	198,333	0.6 years	$1.90	198,333
	4,353,167			2,762,810

All stock options outstanding were issued to employees, officers or outside directors.
The aggregate intrinsic value of stock options exercisable was less than $0.1 million at December 31, 2012. The aggregate intrinsic value of stock options outstanding was less than $0.1 million at December 31, 2012. The aggregate intrinsic value of options exercised at December 31, 2012, 2011 and 2010 was less than $0.1 million in each year.

12. FAIR VALUE

FASB guidance on fair value measurements, which defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements for our financial assets and liabilities, as well as for other assets and liabilities that are carried at fair value on a recurring basis in our consolidated financial statements. FASB guidance establishes a three-level fair value hierarchy based upon the assumptions (inputs) used to price assets or liabilities. The three levels of inputs used to measure fair value are as follows:
Level 1—Unadjusted quoted prices in active markets for identical assets or liabilities;
Level 2—Observable inputs other than those included in Level 1, such as quoted prices for similar assets and liabilities in active markets or quoted prices for identical assets or liabilities in inactive markets; and
Level 3—Unobservable inputs reflecting our own assumptions and best estimate of what inputs market participants would use in pricing the asset or liability.

Common Stock Warrant Liability
Our issued and outstanding warrants to purchase common stock do not qualify to be treated as equity, and accordingly are recorded as a liability. The Common Stock Warrant Liability represents the fair value of the 11.4 million warrants issued in February 2012. We are required to record these instruments at fair value at each reporting date and changes are recorded as a non-cash adjustment to earnings. The gains or losses included in earnings are reported in other income (expense) in our Statement of Operations. Management does not believe that this liability will be settled by a use of cash.
The Common Stock Warrant Liability is considered a Level 3 financial instrument and is valued using a Monte Carlo simulation. This method is well suited to value options with non-standard features, such as anti-dilution protection. A Monte Carlo simulation model uses repeated random sampling to simulate significant uncertainty in inputs. Assumptions and inputs used in the valuation of the common stock warrants are broken down into four sections: Static Business Inputs; Static Technical Inputs; Simulated Business Inputs: and Simulated Technical Inputs.
Static Business Inputs include: Our equity value, which was estimated using our stock price of $0.61 as of December 31, 2012; the amount of the down-round financing, the timing of the down-round financing, the expected exercise period of 4.10 years from the valuation date and the fact that no other potential fundamental transactions are expected during the term of the common stock warrants.

Static Technical Inputs include: volatility of 57.5% and the risk-free interest rate of 0.63% based on the 4.5-year U.S. Treasury yield interpolated from the 3 year and 5 year U.S. Treasury bonds.

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Simulated Business Inputs include: the probability of down-round financing which was estimated to be 10% for simulated equity values below the down-round financing cut-off point.
Simulated Technical Inputs include: our equity value in periods 1-10 follows a geometric Brownian motion and is simulated over 10 independent six-month periods; a down-round financing event was randomly simulated in an iteration based on the 10% discrete probability of a down-round financing for those iterations where our simulated equity value at the expected timing of down-round financing was below the down-round financing cut-off point.

During the year ended December 31, 2012, the changes in the fair value of the liability measured using significant unobservable inputs (Level 3) was comprised of the following:

	Dollars in Thousands For the Year Ended December 31, 2012
Beginning balance	$—
Additions	3,100
Total gains or losses:	
Recognized in earnings	(2,200)
Balance at December 31, 2012	$900

Preferred Stock Warrant Liability and Conversion Feature
Prior to November 2011, we were required to record our 5.2 million of preferred stock warrants and the preferred stock's conversion feature at their respective fair values at each reporting date and changes were recorded as an adjustment to earnings. The gains or losses included in earnings were reported in other income (expense) in our Statement of Operations.
Due to a change in terms we are no longer required to recognize the preferred stock warrant and preferred stock conversion feature as liabilities. They were reclassified into stockholders' equity as of the date of the amended agreement.
The preferred stock warrant liability and preferred stock conversion feature were considered Level 3 financial instruments and were valued using the Black-Scholes call option pricing formula, which approximates a binomial model for the preferred stock conversion feature. This method is among the most common and widely used valuation approaches for call options. The model relates an option's value to five variables: the current price of the underlying asset, the strike price of the option, the time to expiration or exercise of the option, a risk free interest rate, and the volatility of the underlying asset.
The following assumptions were used in the November 8, 2011 valuation of the preferred stock conversion feature: the closing share price of our common stock on November 8, 2011 discounted 15% due to the lack of marketability and liquidity, an exercise price of $0.39, expected term of 4.00 years, risk-free interest rate of 0.65% based on a linear interpolation of 3 year and five year U.S. Treasury rates and volatility of 50%.
The following assumptions were used in the November 8, 2011 valuation of the preferred stock warrants: an exercise price of $2.32, expected term of 1.0 years, risk-free interest rate of 0.25% based on a one year U.S. Treasury and volatility of 50%.

During the year ended December 31, 2011, the changes in the fair value of the liabilities measured using significant unobservable inputs (Level 3) were comprised of the following:

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	Dollars in Thousands For the year ended December 31, 2011		
	Preferred Stock Conversion Feature	Preferred Stock Warrant Liability	Total
Beginning balance at January 1, 2011	$1,983	$2,351	$4,334
Total gains or losses:			
Recognized in earnings	5,317	449	5,766
Balance at November 8, 2011	7,300	2,800	10,100
Reclassification to stockholders' equity due to Amendment Agreement	(7,300)	(2,800)	(10,100)
Balance as of December 31, 2011	$—	$—	$—

The change in unrealized gains or losses of Level 3 liabilities is included in earnings and is reported in other income (expense) in our Statement of Operations.

13. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

	In thousands except per share data			
	March 31	June 30	September 30	December 31
2012				
Net Sales	$7,206	$9,093	$7,889	$7,292
Gross Profit	3,104	4,562	3,800	3,544
Net Loss	(2,696)	(563)	(2,754)	(2,314)
Basic and diluted loss per common share	$(0.05)	$(0.01)	$(0.04)	$(0.03)
2011				
Net Sales	$7,480	$7,667	$8,253	$8,571
Gross Profit	4,154	4,555	4,445	5,283
Net Income (Loss)	(2,778)	(5,998)	(1,270)	264
Basic and diluted loss per common share	$(0.06)	$(0.13)	$(0.03)	$0.00

14. OPERATING SEGMENT AND GEOGRAPHIC INFORMATION

Our company’s chief operating decision-maker is the Chief Executive Officer, who regularly evaluates our performance based on net sales and gross profit. The preparation of this segment analysis requires management to make estimates and assumptions around expenses below the gross profit level. While we believe the segment information to be directionally correct, actual results could differ from the estimates and assumptions used in preparing this information.

We have three reportable operating segments, Clinical Laboratories, Pharmacogenomic Services and Diagnostic Tools. These lines of business are complementary with the Pharmacogenomics Services driving innovation and leading to kit production in our Diagnostic Tools segment and new tests in our Clinical Laboratories.

The accounting policies of the segments are the same as the policies discussed in Footnote 2 – Summary of Significant Accounting Policies.

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Segment information for the years ended December 31, 2012, 2011 and 2010 is as follows:

	Dollars in Thousands			
	2012			
	Clinical Laboratories	Pharmacogenomic Services	Diagnostic Tools	Total
Net Sales	$17,453	$1,876	$12,151	$31,480
Gross Profit	8,487	829	5,694	15,010
Net Loss before Taxes	(6,564)	(310)	(1,307)	(8,181)
Income Tax Expense	—	—	146	146
Net Loss	$(6,564)	$(310)	$(1,453)	$(8,327)
Depreciation/Amortization	$1,727	$233	$318	$2,278
Interest Expense	(840)	(11)	(37)	(888)
	December 31, 2012			
Total Assets	$26,902	$2,294	$9,595	$38,791
Goodwill	6,918	$—	$—	6,918

	Dollars in Thousands			
	2011			
	Clinical Laboratories	Pharmacogenomic Services	Diagnostic Tools	Total
Net Sales	$16,038	$2,280	$13,653	$31,971
Gross Profit	9,478	1,050	7,909	18,437
Net Income (Loss) before Taxes	(11,016)	(354)	1,633	(9,737)
Income Tax Expense	—	—	45	45
Net Income (Loss)	$(11,016)	$(354)	$1,588	$(9,782)
Depreciation/Amortization	$1,568	$242	$291	$2,101
Restructure	29	—	12	41
Interest Expense	(958)	—	—	(958)
	December 31, 2011			
Total Assets	$22,032	$1,636	$9,894	$33,562
Goodwill	6,440	—	—	6,440

	Dollars in Thousands			
	2010			
	Clinical Laboratories	Pharmacogenomic Services	Diagnostic Tools	Total
Net Sales	$3,606	$1,373	$15,069	$20,048
Gross Profit	1,481	(43)	8,326	9,764
Net Loss before Taxes	(1,829)	(696)	(459)	(2,984)
Income Tax Expense	—	—	150	150
Net Loss	$(1,829)	$(696)	$(609)	$(3,134)
Depreciation/Amortization	$119	$186	$403	$708
Restructure	65	—	73	138
Interest Expense	(1)	—	(3)	(4)

	December 31, 2010			
Total Assets	$22,945	$1,686	$7,396	$32,027
Goodwill	6,275	—	—	6,275

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Net sales for the year ended December 31, 2012, 2011 and 2010 by country were as follows:

	Dollars in Thousands Years Ended December 31,		
	2012	2011	2010
United States	$22,727	$22,626	$8,729
Italy	2,524	3,152	3,294
United Kingdom	1,703	778	1,412
Germany	907	750	1,366
France	679	758	1,160
All Other Countries	2,940	3,907	4,087
Total	$31,480	$31,971	$20,048

No other country accounted for more than 5% of total net sales.

More than 95% of our long-lived assets are located within the United States. Substantially all of the remaining long-lived assets are located within Europe.

15. ACQUISITIONS

ScoliScore™
On September 21, 2012, we acquired certain intangible assets from Axial Biotech, Inc. ("Axial") related to the ScoliScore™ assay. In consideration for the purchase of the intangible assets, we made a cash payment of approximately $3.4 million to Axial and certain of its creditors. In addition, following the transfer of all of the assets related to the ScoliScore™ assay and confirmation that the ScoliScore™ assay operates, within our laboratories pursuant to protocol agreed upon by us and Axial, we paid an additional $0.2 million to Axial and certain of its creditors and have an additional $0.8 million payable to the sellers, $0.1 million which will be placed into escrow for a period of one year from the closing of the transaction to secure Axial's indemnification obligations for, among other things, any breach of, or default under, any of Axial's representations, warranties, covenants or agreements contained in the asset purchase agreement. The total consideration paid was $4.4 million. This acquisition provides us with the ScoliScore™ assay technology and intellectual property, and an established revenue and customer base.
The following intangible assets were each valued separately using valuation approaches most appropriate for each specific asset.

Acquired technology	Relief from Royalty Method
Tradenames	Relief from Royalty Method
Customer relationships	Multi-Period Excess Earnings Method
Covenants not to compete	With and Without Method
Patents	Relief from Royalty Method

The Income Approach uses valuation techniques to convert future amounts, cash flows or earnings, to a single, discounted amount. The fair value measure is based on the value that is indicated by market expectations about the present value of those future amounts.

The Relief from Royalty Method assumes that if the Company did not have proprietary ownership of the genetic testing processes on which its revenues depend, it might elect to lease the rights or licenses from another company. The fair value is measured as the estimated discounted cash flows of the royalty payments avoided by ownership.

The Multi Period Excess Earnings Method measures the fair value as the estimated discounted cash flows of the existing customer relationships over a period during which revenues from existing customer relationships are assumed to have been substantially replaced by revenues from future customers.

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The With and Without Method measures the fair value of the non-competition agreements as the probability adjusted difference between the estimated discounted cash flows with and without the effect of competition. The model that includes competition includes lost revenues as well as increased expenses required to rebuild the lost revenues.

The acquired intangibles have the following useful lives; acquired technology - 7 years; third party payor relationships - 15 years; assay royalties 7 years; tradenames and trademarks - 7 years.

The assets acquired were $3.9 million in identifiable intangible assets and $0.5 million in goodwill. No liabilities were assumed. The acquired assets are reported as a component of our laboratory services segment.

The goodwill arising from the acquisition has been assigned to our Laboratory Services segment and is expected to be deductible for tax purposes.

FAMILION
In December 2010, we acquired the FAMILION family of genetic tests from PGxHealth, then a subsidiary of Clinical Data, Inc. with a sales price of $18.8 million. We secured $6.0 million of financing from Third Security Senior Staff 2008 LLC, Third Security Staff 2010 LLC, and Third Security Incentive 2010 LLC (the "Third Security Investors", affiliates of Third Security, LLC, a leading life sciences investment firm), to fund the cash portion of our acquisition. This strategic acquisition provided us with proprietary genetic commercial tests that have an established revenue base, proprietary biomarker assays, an additional CLIA-certified laboratory operation and established test reimbursement and coverage policies that offer access to testing. The acquired assets and liabilities assumed are reported as a component of our laboratory services segment.
Under the terms of the financing with the Third Security Investors, we issued an aggregate of 2,586,205 shares of the Company’s Series A Preferred Stock to the Third Security Investors. Additionally we issued to the Third Security Investors, Series A Warrants to purchase an aggregate of up to 1,293,102 shares of Series A Preferred Stock at an exercise price of $2.32 per share. The shares of Series A Preferred Stock issuable pursuant to the purchase agreement and upon exercise of the Series A Warrants are convertible into shares of our common stock at a conversion price of $0.58 per share, for an aggregate of 15,517,228 million shares of common stock. Upon full exercise of the Series A Warrants, we will receive approximately $3.0 million. These securities were issued for an aggregate purchase price of $6.0 million.
We entered into two notes payable with PGxHealth as a part of the acquisition. The first note is a three year secured promissory note in the amount of $8.6 million with interest accruing at 10%. The second note is a one year secured promissory note for facility improvements of $1.0 million with interest payable at 6.5%. See further information in Note 5 to the financial statements. Certain liabilities were assumed and various contingent liabilities recorded. The contingent liabilities include payments owed upon the collection of certain accounts receivable, retention bonuses for certain employees and royalties due to vendors based on milestone considerations.

The following table summarizes the consideration for the acquired assets and liabilities assumed at the acquisition date.

Consideration	Dollars in Thousands
Cash	$6,000
Notes payable	9,628
Assumed liabilities	452
Contingent liabilities	2,736

Fair value of consideration transferred	$18,816

Acquisition related costs included in selling, general and administrative expenses in our Statement of Operations for the year ended December 31, 2010 were $0.8 million. We incurred $0.2 million in acquisition related costs to issue Series A Preferred Stock which were recorded against the proceeds received upon the issuance of such Series A Preferred Stock.

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Recognized Amounts of Identifiable Assets Acquired and Liabilities Assumed	Dollars in Thousands
Working capital, net	$3,222
Property and Equipment	639
Identifiable intangible assets	8,680
Total identifiable net assets	12,541
Goodwill	6,275
Total purchase price	$18,816

The fair value of the financial assets acquired includes accounts receivable with a fair value of $3.1 million. The gross amount due is $7.0 million, of which $3.9 million is expected to be uncollectible.
The goodwill arising from the acquisition primarily relates to synergies of the combined companies. The goodwill has been assigned to our Laboratory Services segment and is expected to be deductible for tax purposes.

The intangible assets were each valued separately using valuation approaches most appropriate for each specific asset.

Intangibles—acquired technology	Income Approach - Multi-period Excess Earnings Method
Intangibles—third party payor relationships	Cost Approach - Replacement Cost Method
Intangibles—assay royalties	Income Approach - Multi-period Excess Earnings Method
Intangibles—tradenames and trademarks	Income Approach - Relief from Royalty Method

Income Approach
The income approach is based upon the economic principle of anticipation. In this approach, the value of the subject intangible asset is the present value of the expected economic income to be earned from that intangible asset. This expectation is then converted into a present value through the selection of an investor's required rate of return given the risk and/or uncertainty associated with the subject intangible asset. In valuing an intangible asset using the income approach, the following elements should be considered: (i) remaining useful life, (ii) legal rights, (iii) position of the intangible asset in its respective life cycle, (iv) appropriate capital charges, (v) allocations of income, and (vi) whether any tax amortization benefit should be included in the analysis.

Cost Approach
The cost approach to intangible asset analysis is based upon the economic principles of substitution and price equilibrium. These basic economic principles assert that an investor pay no more for an investment than the cost to obtain an investment of equal utility. Within the cost approach there are several related analytical methods. Two of the most common and widely accepted include the reproduction cost and replacement cost methods. All cost based approaches typically involve a comprehensive analysis of the relevant cost components, which typically include: (i) materials, (ii) labor, (iii) overhead, (iv) intangible asset developer's profit, and (v) an adequate return on the asset developer's capital.

Reproduction cost contemplates the construction of an exact replica of the subject intangible asset. Before appropriate adjustments are made for the purposes of deriving an indication of value, reproduction cost does not consider either the market demand for or the market acceptance of the subject intangible. Therefore, before the requisite adjustments, the reproduction cost estimate does not answer the question of whether anyone would be interested in an exact replica

of the subject interest.

Unlike the reproduction cost method, the replacement cost method does consider market demand and market acceptance for the subject intangible. In other words, if there are elements or components of the subject intangible that generate little or no demand, they are not included in the subject intangible.

Excess Earnings Method
The Excess Earnings Method, a form of the Income Approach, reflects the present value of the projected cash flows that are expected to be generated by the intangible asset, less charges representing the contribution of other assets to those cash flows. As

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part of our analysis, we determined individual rates of return applicable to each acquired asset and estimate the effective “capital charge” to be applied to the earnings of the identified intangibles.

Relief-from-Royalty Method
The Relief-from-Royalty method, a form of the Income Approach, estimates the cost of licensing the acquired intangible asset from an independent third party using a royalty rate. Since the company owns the intangible asset, it is relieved from making royalty payments. The resulting cash flow savings attributed to the owned intangible asset are estimated over the intangible asset's remaining useful life and discounted to present value.
The fair value of the Series A Preferred Stock and related securities issued as a part of the consideration paid was determined on the basis of the closing market price of our common stock on the acquisition date, December 29, 2010. During 2011, we recorded a net purchase price adjustment of $0.2 million, increasing the amount of goodwill recorded for the purchase transaction, related to the adjustment in valuation of certain working capital accounts acquired.
The following table sets forth the pro-forma revenue and earnings of the combined entity if the acquisition had occurred as of the beginning of our prior fiscal year. No revenue or net income was included in our actual results for the year ended December 31, 2010 or 2009. These pro-forma amounts do not purport to be indicative of the actual results that would have been obtained had the acquisition occurred at that time.

	Dollars in Thousands Year Ended December 31, 2010
Revenue—Supplemental pro-forma results	$33,733
Net loss—Supplemental pro-forma results	(7,716)

16. RESTRUCTURING CHARGES
In the third quarter of 2010 we made a decision to consolidate our research and development activities in Omaha, Nebraska. We substantially completed the transition at December 31, 2010. We have recognized expenses for restructuring, including but not limited to, severance, facility costs and costs to move equipment from Gaithersburg, Maryland to Omaha, Nebraska. These restructuring charges are attributable to our Clinical Laboratories and Diagnostic Tools segments.
In the fourth quarter of 2010 we had a reduction in workforce of five employees with severance payments of less than $0.1 million which was attributable to our Diagnostic Tools segment.
Restructuring charges include:

	Dollars in Thousands Costs Incurred in the year ended December 31, 2011	Cumulative Costs Incurred at December 31, 2011	Total Expected Costs
Severance and related costs	$—	$53	$53
Facility closure costs	28	74	74
Other	13	52	52
Restructuring charges	$41	$179	$179

17. SUBSEQUENT EVENTS

Common Stock Issued

On January 24, 2013, the Company entered into a Securities Purchase Agreement with certain institutional and other accredited investors pursuant to which the Company: (i) sold to the investors an aggregate of 16,600,000 shares of the Company's

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common stock at a price per share of $0.50 for aggregate gross proceeds of approximately $8.3 million; and (ii) issued to the investors warrants to purchase up to an aggregate of 8,300,000 shares of common stock with an exercise price of $0.75 per share. The warrants may be exercised, in whole or in part, at any time from January 30, 2013 until January 30, 2018 and contain both cash and “cashless exercise” features. The Company currently intends to use the net proceeds from the offering for general corporate and working capital purposes, primarily to accelerate development of several of the Company's key initiatives.

In connection with the Offering, the Company also entered into a registration rights agreement with the investors (the “Registration Rights Agreement”). The Registration Rights Agreement requires that the Company file with the Securities and Exchange Commission a registration statement to register for resale the shares and the shares of common stock issuable upon exercise of the warrants (the “Warrant Shares”) by March 16, 2013. The Company will be required to pay liquidated damages of 2.0% of the aggregate purchase price of the shares per month (up to a cap of 10.0%) if it does not meet certain obligations with respect to the registration of the shares and the Warrant Shares.

The following table set forth a summary of the balance sheet as reported and pro-forma as if the private placement financing had occurred on December 31, 2012:

	Actual Dollars in Thousands December 31, 2012	Pro-Forma December 31, 2012
Total Assets	$38,791	$46,476
Total Liabilities	18,517	20,094
Total Stockholders' Equity	20,274	26,382
	$38,791	$46,476

The above common stock transaction required the repricing and issuance of additional common stock warrants to the warrant holders of the February 2012 common stock sale. The exercise price decreased from $1.25 per share to $1.08 per share and the number of shares issuable upon exercise of the warrant increased from 11,380,000 to 13,171,268.

On March 13, 2013 (the “Effective Date”), the Company entered into a Loan and Security Agreement with Third Security, LLC and its affiliates (the “Lenders”) for (a) a revolving line of credit (the “Revolving Line”) with borrowing availability of up to $4 million, subject to reduction based on the Company's eligible accounts receivable, and (b) a term loan (the “Term Loan”) of $4 million (the “Loan Agreement”). Proceeds will be used to refinance the Company's outstanding debt and to help with working capital requirements.

Revolving Line of Credit

Amounts advanced under the Revolving Line bear interest at an annual rate equal to the greater of (a) 4.25% or (b) the Wall Street Journal prime rate plus 1%. Interest is payable on a monthly basis, with the balance payable at the maturity of the Revolving Line. Under the Loan Agreement, the Compnay paid the Lenders an upfront fee of $20,000, and will pay the Lenders an additional commitment fee of $20,000 on each anniversary of the Effective Date during the term of the Revolving Line. In addition, a fee of 0.5% per year is payable quarterly on the unused portion of the Revolving Line. The Revolving Line matures on September 1, 2016.

Term Loan

The Company received $4 million under the Term Loan on the Effective Date. The Company is required to make interest-only payments under the Term Loan through December 31, 2013 and principal and interest payments on a monthly basis, beginning on January 1, 2014, over 33 months using a straight-line amortization rate. Interest under the Term Loan will accrue at the annual rate of one month LIBOR plus 6.1%, subject to a LIBOR floor of 3%.

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The Company paid the Lenders an upfront fee of $40,000 for the Term Loan, and will pay the Lenders an additional final payment of $120,000 at maturity or prepayment of the Term Loan. In addition, if the Company repays the Term Loan prior to maturity, it will pay the Lenders a prepayment penalty of 5% of the total outstanding balance under the Term Loan if the prepayment occurs within one year after the Effective Date, 2.5% of the total outstanding balance under the Term Loan if the prepayment occurs between one and two years after the Effective Date, and 1% of the total outstanding balance under the Term Loan if the prepayment occurs thereafter.

Additional Terms

The Loan Agreement contains affirmative and negative covenants reasonably customary for similar credit facilities. Under the Term Loan, the Company is required to maintain a minimum liquidity ratio and achieve a minimum amount of revenue, and the Company also agreed not to (i) pledge or otherwise encumber its assets other than to the Lenders, (ii) enter into additional borrowings or guarantees, (iii) repurchase its capital stock, or (iv) enter into certain mergers or acquisitions without the Lenders' consent.

To secure the repayment of any amounts borrowed under the Revolving Line and the Term Loan, the Company granted the Lenders a security interest in all of the Company's assets. The occurrence of an event of default under the Loan Agreement could result in the acceleration of the Company's obligations under the agreement and would increase the applicable interest rate under the Revolving Line or the Term Loan (or both) by 5%, and permit the Lenders to exercise remedies with respect to the collateral under the Loan Agreement.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosures.
None.

Item 9A. Controls and Procedures.

(a) Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this Annual Report, management performed, with the participation of our Chief Executive Officer and Chief Financial Officer, an evaluation of the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Our disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management including our Chief Executive Officer and our Chief Financial Officer, to allow timely decisions regarding required disclosures. Based on the evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2012, our disclosure controls and procedures were effective.

(b) Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining an adequate system of internal control over financial reporting. Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets;
- provide reasonable assurance that our transactions are recorded as necessary to permit preparation of our financial statements in accordance with accounting principles generally accepted in the United States of America, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Further, because of changes in conditions, effectiveness of internal controls over financial reporting may vary over time. Our system contains self-monitoring mechanisms, and actions are taken to correct deficiencies as they are identified.

Management has conducted, with the participation of our Chief Executive Officer and our Chief Financial Officer, an assessment, including testing of the effectiveness of our internal control over financial reporting as defined in Rule 13(a)-15(f) under the Exchange Act as of December 31, 2012. Management's assessment of internal control over financial reporting was conducted using the criteria in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on that assessment, management has concluded that our internal control over financial reporting was effective as of December 31, 2012.

McGladrey LLP, an independent registered public accounting firm, has audited our financial statements included in this report on Form 10-K and issued its report on the effectiveness of our internal control over financial reporting as of December 31, 2012, which is included herein.

(c) Changes in internal control over financial reporting

There have been no changes in internal control over financial reporting that occurred during the quarter ended December 31, 2012 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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Item 9B. Other Information.

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance.

Our Board of Directors

Our Board of Directors ("Board") consists of five (5) directors. The Board is divided into three classes with directors in each class serving for a term of three years. The terms of office of the current Class I, Class II and Class III directors will expire in 2013, 2014 and 2015, respectively. The holders of our Preferred Stock (the "Preferred Stockholders") are entitled, as a separate voting group, to elect two (2) of the five (5) directors ("Preferred Stock Directors"). The common stockholders are entitled, as a separate voting group, to elect the three (3) remaining directors ("Common Stock Directors"). There is one Common Stock Director in each class of directors. There is one Preferred Stock Director in each of Class I and Class II, but not in Class III.

Robert M. Patzig is the current Preferred Stock Director in the Class I directors and Doit L. Koppler II is the current Preferred Stock Director in the Class II directors.

Certain biographical information regarding our directors, including their ages and the dates that they were first elected to our Board, is set forth below. In each individual's biography we have highlighted specific experience, qualifications, and skills that led the Board to conclude that each individual should serve as a director of our Board. In addition to these specific attributes, all of our directors have significant expertise in one or more areas of importance to our business and have high-level managerial experience in relatively complex organizations or are accustomed to dealing with complex problems. We believe all of our directors are individuals of high character and integrity, are able to work well with others, and have sufficient time to devote to the affairs of our Company.

Name	Age	Principal Occupation	Director Since	Term to Expire
CLASS I DIRECTORS				
Robert M. Patzig, Preferred Stock Director	44	Senior Managing Director and Chief Investment Officer, Third Security, LLC	2010	2013
Craig J. Tuttle, Common Stock Director	60	President and Chief Executive Officer of Transgenomic, Inc.	1997	2013
CLASS II DIRECTORS				
Doit L. Koppler II, Preferred Stock Director	49	Managing Director and Treasurer, Third Security, LLC	2010	2014
Antonius P Schuh, Ph.D., Common Stock Director	49	Chief Executive Officer of Trovagene, Inc.	2009	2014
CLASS III DIRECTORS				
Rodney S. Markin, M.D., Ph.D., Common Stock Director	56	Chairman of the Board, Transgenomic Inc., Chief Technology Officer, University of Nebraska Medical Center	2007	2015

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Robert M. Patzig. Mr. Patzig is a Senior Managing Director and the Chief Investment Officer for Third Security, LLC. Mr. Patzig joined Third Security upon the company's inception in 1998. Mr. Patzig's responsibilities include identifying and researching investment opportunities for Third Security and its funds, securities valuation and portfolio management. Mr. Patzig was a Director of Cyntellect Inc., a privately held scientific instrumentation company. Mr. Patzig has served as Chairman of the Board of Intrexon Corporation and Cyntellect, Inc. and served as a member of the Board of Directors of Synchrony, Inc. He previously served as a Director of the Virginia Biotechnology Association, a non-profit industry advocacy group, from 2006-2011. Mr. Patzig served as the head of the Investment Committee for Howe and Rusling, Inc., a registered investment advisor, from 2001 until its sale in 2006. Mr. Patzig served as the Chief Executive Officer and Chief Compliance Officer of New River Advisors LLC from June of 2003 until August of 2007. Prior to the formation of Third Security, Mr. Patzig served as Director of Market Research and Analysis at GIV Holdings, Inc. and Director of Research Services at General Injectables & Vaccines, Inc. Mr. Patzig received a B.A. in Philosophy and English from Virginia Tech, where he taught as an instructor for several years prior to 1996. The Board selected Mr. Patzig as a director because of his substantial biotech industry experience as well as his securities and investment expertise.

Craig J. Tuttle. Mr. Tuttle has served as our President and Chief Executive Officer since 2006. From 2004 to 2005, Mr. Tuttle was President and Chief Operating Officer of Duke Scientific. From 1999 to 2003, Mr. Tuttle served as President and Chief Executive Officer of Applied Biotech, Inc. The Board selected Mr. Tuttle to serve as a director because he is our Chief Executive Officer. He has expansive knowledge and experience in the biotech industry, as well as relationships with chief executives and other senior management at biotech companies.

Doit L. Koppler, II. Mr. Koppler joined Third Security as Managing Director and Treasurer in 2001 and manages the finance function of Third Security and is involved with several portfolio companies of Third Security's managed investment funds. Mr. Koppler served as Vice President, Treasurer and a member of the Board of Directors of Vital Diagnostics Holding Corp., a global supplier of products and services for the clinical laboratory in the traditional in vitro diagnostics market with a focus on the physician's office, hospital and small-to-medium sized laboratory segments from its inception in 2006 through 2012. Mr. Koppler served as Chairman and Chief Executive Officer of New River Funds, a family of no-load mutual funds, from its inception in 2003 through 2008 and as the Chief Investment Officer of New River Advisers, LLC, the investment adviser to New River Small Cap Fund, predecessor to Southern Sun Small Cap Fund. Mr. Koppler served as a member of the Board of Directors of IntelliMat, Inc. from November 2006 to July 2008. Prior to joining Third Security, Mr. Koppler served as Vice President and Controller of General Injectables & Vaccines, Inc., a $120 million distributor of injectable biologics and vaccines primarily to outpatient physician offices, from 1992-2000. From 1987-1992, he was a Manager in the audit practice of Ernst & Young LLP. Mr. Koppler is a Certified Public Accountant, Chartered Global Management Accountant and a Member of the American Institute of Certified Public Accountants. He has also held Series 7 and Series 66 securities registrations. Mr. Koppler received a B.S. in Accounting from Salem International University. The Board selected Mr. Koppler to serve as a director because of his valuable financial expertise, including his public accounting and financial reporting experience.

Antonius P. Schuh, Ph.D. Dr. Schuh was appointed Chief Executive Officer of Trovagene,Inc. (NASDAQ: TROV), a molecular diagnostics company, in October 2011, and has served as a director of Trovagene since December 2011. Since March 2009, he has also served as a director of Diogenix, Inc., a privately held molecular diagnostic company. Dr. Schuh co-founded Sorrento Therapeutics, Inc. (NASDAQ: SRNE), a biopharmaceutical company developing monoclonal antibodies, in January 2006. From such time until April 2011, he served as Chairman of the Board, and he served as the company's Chief Executive Officer from November 2008 to April 2011. From April 2006 to September 2008, he was the founding Chief Executive Officer of AviaraDx, Inc., a molecular diagnostic testing company focused on clinical applications in oncology. In 2008, Dr. Schuh led the sale of AviaraDx to bioMerieux, Inc., which continues to operate AviaraDx under the name bioTheranostics. From March 2005 to April 2006, Dr. Schuh served as Chief Executive Officer of Arcturus Bioscience, Inc., a developer of laser capture microdissection and reagent systems for microgenomics, where he led the sale of Arcturus' life science business to Molecular Devices, Inc., now part of Life

Technologies. From December 1996 to February 2005, Dr. Schuh was employed by Sequenom Inc., a publicly traded diagnostic testing and genetics analysis company. He joined Sequenom as a Managing Director of the company's German operations, Sequenom GmbH, and was promoted to Executive Vice President, Business Development and Marketing, and from May 2000 to February 2005, served as Sequenom's President and Chief Executive Officer. He also previously served as the Head of Business Development of the Pharmaceutical Division and the associated Technical and Regulatory Affairs department at Helm AG, an international trading and distribution corporation for chemical and pharmaceutical products. Prior to Helm, Dr. Schuh was with Fisons Pharmaceuticals (now part of Sanofi Aventis), where he held medical and regulatory affairs positions and served as a member of the management teams of Fisons AG, Switzerland, and Fisons Ges.m.b.H, Austria. Dr. Schuh holds a degree in pharmaceutics and earned his Ph.D. in medicinal chemistry from the University of Bonn, Germany. The Board selected Dr. Schuh to serve as a director because it believes he possesses valuable biotech experience and extensive executive management experience in the industry, which brings a unique and valuable perspective to the Board.

Rodney S. Markin, M.D., Ph.D. Dr. Markin is Chief Technology Officer and Associate Vice Chancellor for Business Development at the University of Nebraska Medical Center and a Professor of Pathology and Microbiology; David T. Purtilo Distinguished Professor Pathology and Microbiology and Courtesy Professor of Surgery. Dr. Markin is also a director on the Board of Children's Hospital and Medical Center Foundation and on the Board of Trustees for Keck Graduate Institute. The Board selected Dr. Markin to serve as a director because he has valuable executive experience in the healthcare business. Dr. Markin also has extensive experience serving on other boards. His ability to communicate and encourage discussion makes him an effective Chairman of the Board.

Our Executive Officers

Information regarding our executive officers is set forth in Item 1 "Our Business" of this Annual Report under the caption "Executive Officers of the Registrant:, provided that information regarding Craig J. Tuttle, our President and Chief Executive Officer, is set forth in the section above entitled “Our Board of Directors.”
There is no family relationship between any of the directors or executive officers and any other of our directors or executive officers.

Business Ethics Policy

Our Board has adopted a code of ethical conduct that applies to our principal executive officer, principal financial officer and senior financial officers. This code of ethical conduct is embodied within our Business Ethics Policy, which applies to all persons associated with our Company, including our directors, officers, and employees (including our principal executive officer, principal financial officer, principal accounting officer and controller). The Business Ethics Policy is available in the investor -relations section of our website at www.transgenomic.com. In order to satisfy our disclosure requirements under Item 5.05 of Form 8-K, we will disclose amendments to, or waivers of, certain provisions of our Business Ethics Policy relating to our chief executive officer, chief financial officer, chief accounting officer, controller or persons performing similar functions on our website promptly following the adoption of any such amendment or waiver.

Corporate Governance

Board Leadership Structure

Our Board has determined that having an independent director serve as the Chairman of the Board is in the best interests of our stockholders. Our Chairman of the Board is Rodney S. Markin, Ph.D. Our President and CEO, Mr. Tuttle, is the only member of our Board who is not an independent director. We believe that this leadership structure enhances the accountability of our President and CEO to the Board and strengthens the Board's independence from management. While both leaders are actively engaged in significant matters affecting our Company, such as long-term strategy, we believe splitting these leadership positions enables Mr. Tuttle to focus his efforts on running our business and managing our Company while permitting Dr. Markin to focus more on the governance of our Company, including oversight of our Board.

Director Attendance at Meetings

Our Board conducts its business through meetings of the Board, both in person and telephonic, and actions taken by written consent in lieu of meetings. During the year ended December 31, 2012, the Board of Directors held seven meetings and acted by written consent in lieu of a meeting seven times. All directors attended at least 75% of the meetings of the Board of Directors and of the committees of the Board on which they served during 2012.

Our Board strongly encourages all directors to attend our annual meetings of stockholders unless it is not reasonably practicable for a director to do so. All of our directors, with the exception of Dr. Schuh, attended our 2012 Annual Meeting of Stockholders.

Committees of our Board of Directors

Our Board has established and delegated certain responsibilities to its standing Audit Committee and Compensation Committee. We do not have a standing nominating committee.

Audit Committee

We have a separately designated Audit Committee established in accordance with Section 3(a)(58)(A) of the Exchange Act. The Audit Committee's primary duties and responsibilities include monitoring the integrity of our financial statements, monitoring the independence and performance of our external auditors, and monitoring our compliance with applicable legal and regulatory requirements. The functions of the Audit Committee also include reviewing periodically with independent auditors the performance of the services for which they are engaged, including reviewing the scope of the annual audit and its results, reviewing with management and the auditors the adequacy of our internal accounting controls, reviewing with management and the auditors the financial results prior to the filing of quarterly and annual reports, reviewing fees charged by our independent auditors and reviewing any transactions between our Company and related parties. Our independent auditors report directly and are accountable solely to the Audit Committee. The Audit Committee has the sole authority to hire and fire the independent auditors and is responsible for the oversight of the performance of their duties, including ensuring the independence of the independent auditors. The Audit Committee also approves in advance the retention of, and all fees to be paid to, the independent auditors. The rendering of any auditing services and all non-auditing services by the independent auditors is subject to prior approval of the Audit Committee.

The Audit Committee operates under a written charter which is available in the investor relations section of our website at www.transgenomic.com. The Audit Committee is required to be composed of directors who are independent under the rules of the SEC and the NASDAQ listing standards.

The current members of the Audit Committee are directors Dr. Markin and Dr. Schuh each of whom has been determined by the Board to be independent under the rules adopted by the SEC and NASDAQ listing standards. The Board has determined that Dr. Markin qualifies as an “audit committee financial expert” under the rules adopted by the SEC and the Sarbanes Oxley Act of 2002. The Audit Committee met six times during 2012.

Compensation Committee

The Compensation Committee reviews and approves our compensation policy, changes in salary levels and bonus payments to our executive officers and other management and determines the timing and terms of equity awards under our equity incentive plans. The Compensation Committee operates under a written charter which is available in the investor relations section of our website at www.transgenomic.com.

The Compensation Committee currently consists of directors Dr. Schuh, Dr. Markin and Mr. Patzig each of whom has been determined by the Board to be independent under NASDAQ listing standards. The Compensation Committee met seven times during 2012.

Oversight of Risk Management

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including economic risks, financial risks, legal and regulatory risks, and others, such as the impact of competition. Management is responsible for the day-to-day management of the risks that we face, while the Board, as a whole and through its committees, has responsibility for the oversight of risk management. In its risk oversight role, our Board is responsible for satisfying itself that the risk management processes designed and implemented by management are adequate and functioning as designed. Our Board assesses major risks facing our Company and options for their mitigation in order to promote our stockholders' interests in the long-term health and our overall success and financial strength. A fundamental part of risk management is not only understanding the risks a company faces and what steps management is taking to manage those risks, but also understanding what level of risk is appropriate for us. The involvement of our full Board in the risk oversight process allows our Board to assess management's appetite for risk and also determine what constitutes an appropriate level of risk for our Company. Our Board regularly includes agenda items at its meetings relating to its risk oversight role and meets with various

members of management on a range of topics, including corporate governance and regulatory obligations, operations and significant transactions, risk management, insurance, pending and threatened litigation and significant commercial disputes.

While our Board is ultimately responsible for risk oversight, various committees of the Board oversee risk management in their respective areas and regularly report on their activities to our entire Board. In particular, the Audit Committee has the primary responsibility for the oversight of financial risks facing our Company. The Audit Committee's charter provides that it will discuss our major financial risk exposures and the steps we have taken to monitor and control such exposures. The Board has also delegated primary responsibility of the oversight of all executive compensation and our employee benefit programs to the Compensation Committee. The Compensation Committee strives to create incentives that encourage a level of risk-taking behavior consistent with our business strategy.

We believe the division of risk management responsibilities described above is an effective approach for addressing the risks facing our Company and that our Board leadership structure provides appropriate checks and balances against undue risk taking.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act and the rules of the SEC require our directors, certain officers and beneficial owners of more than 10% of our outstanding common stock to file reports of their ownership and changes in ownership of our common stock with the SEC. We believe all Section 16 reports were filed in a timely manner during 2012, except that one Form 4 to report a stock purchase made on June 25, 2012 was not filed timely by Mr. Richards and one Form 4 to report an option grant made on September 12, 2012 was not filed timely by Mr. Colonnese.

Item 11. Executive Compensation.

COMPENSATION DISCUSSION AND ANALYSIS

Our compensation philosophy is designed to support our key objective of creating value for our stockholders by growing our revenues, growing our earnings, increasing our total market capitalization and growing our share price.

This Compensation Discussion and Analysis explains our compensation objectives, policies and practices with respect to Craig Tuttle, President and Chief Executive Officer; Mark P. Colonnese, Executive Vice President and Chief Financial Officer; Brett L. Frevert, our former Chief Financial Officer; and Chad Richards, Chief Commercial Officer, whom are collectively referred to as the "named executive officers" or, in this “Compensation Discussion and Analysis” section, our executives.

Objectives of Our Executive Compensation Programs

Our compensation programs for our named executive officers are designed to achieve the following objectives:

- attract and retain high performing and experienced executives;
- motivate and reward executives whose knowledge, skills and performance are critical to our success;
- align the interests of our executives and stockholders by motivating executives to increase stockholder value and rewarding executives when stockholder value increases;
- foster a shared commitment among executives by coordinating their goals; and
- motivate our executives to manage our business to meet our short and long-term objectives, and reward them for meeting these objectives.

Role of our Compensation Committee

We have a Compensation Committee that has the primary purpose of providing oversight of all executive compensation and our employee benefit programs. The Compensation Committee's responsibilities include, but are not limited to, the direct responsibility for the following:

- Review, modify and approve individual and corporate performance goals and objectives relevant to CEO and other executive officers' compensation, evaluate performance in light of these goals and objectives, and determine and approve the compensation level for the CEO and other executive officers based on this evaluation.
- Evaluate and approve incentive compensation plans and equity-based plans.
- Adoption of stock option and other long-term incentive plans and approval of individual grants and awards.

- Adoption of equity compensation arrangements and policies with respect to the timing and pricing of equity awards for newly hired employees, promotions and annual grants for executives and non-executive employees and directors.

- Review compensation practices and trends to assess the proprietary, adequacy and the competitiveness of our executive compensation programs among comparable companies in our industry.

- Adoption of benefit plans, including profit sharing and supplemental retirement plans.

- Adoption of executive annual incentive plans, benefit plans, including profit sharing and supplemental retirement plans, and executive perquisite programs.

- Annual evaluation and appraisal of President and CEO performance.

- Approval of all employment agreements, severance agreements, change-of-control protections and any other compensatory arrangements for the President, CEO and other executive officers.

- Annual review of non-employee director compensation programs and recommendation of changes to the Board when appropriate.

- Review and establish appropriate insurance coverage for our directors and executive officers.

Our Chief Executive Officer makes recommendations to our Compensation Committee regarding the compensation of all executive officers, excluding his own, but our Compensation Committee is ultimately responsible for approving the compensation of our executive officers.

At our 2012 Annual Meeting of Stockholders, we held our first stockholder advisory vote on the compensation of our named executive officers, commonly referred to as a say-on-pay vote. Our stockholders overwhelmingly approved the compensation of our named executive officers, with 97% of stockholder votes cast in favor of our say-on-pay resolution. As a result of this strong support from our stockholders, our Compensation Committee continued to apply the same effective principles and philosophy it has used in previous years in determining executive compensation. Our Compensation Committee will continue to consider stockholder feedback in the future.

Role of Our CEO and Executive Management

Our CEO annually evaluates the performance of each executive and, based on that review, may recommend changes in the executive's compensation to the Compensation Committee. This review includes a performance appraisal that takes into consideration various factors, including, without limitation, the following:

- the ability of the executive to drive results for our Company;

- the executive's understanding of our business and his/her organizational savvy;

- the ability of the executive to make complex decisions and his/her strategic abilities;

- the executive's ability to manage work process;

- the communication skills of the executive; and

- the executive's ability to manage diversity and ethics.

The CEO's review also includes a determination of each executive's leadership attributes along with other key accomplishments during the review period. Our Company is an evolving company, and executives' roles and scope of work, and the size and geographical diversity of the groups they manage, are subject to change. As an executive's role changes, our CEO may recommend changes to the executive's compensation to the Compensation Committee.

The CEO's compensation recommendations may include changes in base salary and incentive bonus, additional equity grants or modifications to standard vesting schedules that are deemed to be in the best interest of our Company.

Peer Group Information and Benchmarking

In connection with compensation decisions in 2012, our Compensation Committee, with the assistance of the Chief Executive Officer and other Company employees, reviewed market compensation data paid by companies in the biopharmaceutical industry as reported by Top 5 Data Services, Inc. (the "2011 Competitive Analysis"). The 2011 Competitive Analysis contained data from 342 publicly traded companies within the biopharmaceutical industry covering the details of compensation for 1,249 top executives. Our Chief Executive Officer, in consultation with the Chairman of the Compensation Committee, reviewed all of the data contained in the 2011 Competitive Analysis and then selected companies with annual revenue of between $25 million and $149.9 million and between 100 and 500 employees to be used as peer group companies for purposes of benchmarking.

In 2012, the Compensation Committee and management used the peer group compensation data selected from the 2011 Competitive Analysis primarily to ensure that the total direct compensation for our executives and senior management is within a reasonable range of comparative pay of our peer group companies. While this market data provides a useful starting point for compensation decisions, our Compensation Committee also takes into account factors such as level of individual responsibility, prior experience and performance in arriving at final compensation decisions. See "Analysis of Named Executive Officer Compensation" below for a further discussion of how our Chief Executive Officer and the Compensation Committee utilized the 2011 Competitive Analysis in connection with establishing 2012 compensation for our named executive officers.

Generally, neither management nor the Compensation Committee utilizes the services of independent compensation consultants in connection with the establishment of executive compensation other than to obtain independent third-party benchmarking surveys similar to the 2011 Competitive Analysis discussed above.

Elements of 2012 Executive Compensation

Our executive compensation program is comprised of the following principal elements, each of which is described in more detail below:

Element of Compensation	Purpose	Pay-for-Performance Considerations
Cash and Short-Term Variable Compensation:		
Base Compensation	Provides competitive, fixed compensation to attract and retain exceptional executive talent	Adjustments to base salary consider the individual's overall performance, contribution to the business and internal and external comparisons
Cash Bonus	Encourages and rewards achievement of strong financial, operational and our strategic performance	The amount of any discretionary bonus received by an executive officer, if any, depends on the degree we achieve strong annual financial, operational or strategic performance and the extent to which the executive officer contributes to the achievement
Long-Term Compensation:		
Stock Options	Encourages executive officers to focus on our long-term performance, links an executive officer's incentives to our stockholders' interests in increasing our stockholder value, encourages significant ownership of our common stock and promotes long-term retention of our executive officers	The potential appreciation in our stock price above the exercise price for stock options motivates our executives to build stockholder value as the executive officer only realizes value from the stock option if the stock price appreciates
Other Elements:		
Health, Retirement and Other Benefits	Provides broad-based market competitive employee benefit programs such as participation in benefit plans generally available to our employees, including, employee stock purchase plan, 401(k) retirement plan, life, health and dental insurance and short-term and long-term disability plans	Not applicable

Base Compensation

We pay our Chief Executive Officer, Chief Financial Officer and Chief Commercial Officer a base salary, which we review and determine annually. We believe that a competitive base salary is a necessary element of any compensation program that is designed to attract and retain talented and experienced executives. We also believe that attractive base salaries can motivate and reward executives for their overall performance. Although base salaries are established in part based on the individual experience, skills and expected contributions during the coming year as well as each executive's performance during the prior year, we do not view base salaries as primarily serving our objective of paying for performance.

It is our goal to maintain a base compensation structure among our executives that, in our judgment, appropriately reflects their respective roles and responsibilities. Our executives' base compensation reflects the initial amounts that we negotiated with each of our executives at the time of his or her initial employment or promotion and our

subsequent adjustments to these amounts, to reflect market increases, our growth, the individual executives' performance and increased experience, any changes in the individual executives' roles and responsibilities and other factors. Generally, the base compensation of our executives is based on our understanding of compensation for comparable positions at similarly situated companies at the time, the individual experience and skills of, and expected contribution from each executive, the roles and responsibilities of the executive, the base compensation of our existing executives and other factors.

2012 Bonus Plan

In 2012, the Compensation Committee established an incentive bonus plan (the “2012 Bonus Plan”), which provided variable incentive compensation to our executives, including our named executive officers, and senior management. The 2012

Bonus Plan provided bonus opportunities tied to specific corporate-level and individual goals for payments ranging from 0% of the applicable bonus opportunity, if the threshold performance levels were not attained, to 225% of the applicable bonus opportunity, if all performance was above the levels established to qualify for maximum payouts. Performance attainment levels of the targeted performance objectives ranged from 5% to 60% and correspond to payment levels ranging from 0% to 225% of the target bonus opportunity.

The 2012 Bonus Plan provided that payments to senior management, excluding our named executive officers, was to be paid as cash bonuses. However, with respect to our named executive officers, the plan provided that our named executive officers would be paid as follows:

Target Attainment Percentage	Form of Payment
100%	Cash
Above 100%	50% Cash 50% Restricted Stock

The Compensation Committee believes that providing for payment of a portion of the incentive compensation earned by our named executive officers links the executives' incentives to our stockholders' interests in increasing stockholder value and provides executive officers with incentives to stay. We also believe that the payment of on-target performance, and a portion of above-target performance as a cash incentive supports our pay- for-performance philosophy and encourages an executive officer's contribution to, and rewards an executive officer for, Company-wide performance and the attainment of specific operational and financial goals that are controlled by or can be directly impacted by the executive officer.

Individualized bonus plans are established for each participant, including our named executive officers, with performance metrics and related targets that include a mix of company-level financial metrics and business unit or individual metrics tailored to include the important factors under the executive's control. The company-level metrics consist of net revenue, MEBITDA and a p/s multiple. The individual performance metrics are specific operational and financial goals that are controlled by or can be directly impacted by the individual and include, for instance, objectives-related implementation of investment relations, product initiatives and other corporate strategies, organizational development and targeted product revenues as well as other objectives tailored to the individual. The objective of the 2012 Bonus Plan was to encourage executives to contribute toward the attainment of our consolidated financial and performance goals for fiscal year 2012. See “Analysis of Named Executive Officer Compensation” below for the on-target bonus amounts that our named executive officers were eligible to receive under the 2012 Bonus Plan. None of our named executive officers were awarded bonuses under the 2012 Bonus Plan for fiscal year 2012.

Long-Term Equity Incentive Compensation

We grant long-term equity incentive awards in the form of stock options to executives as part of our total compensation package. We place a significant emphasis on performance-based incentive compensation. These awards generally represent a significant portion of total executive compensation. We use long-term equity incentive awards in order to align the interests of our executives and our stockholders by providing our executives with strong incentives to increase stockholder value and a significant reward for doing so. Our decisions regarding the amount and type of long-term equity incentive compensation and relative weighting of these awards among total executive compensation have also been based on our understanding of market practices and take into account additional factors such as level of individual responsibility, experience and performance.

Stock option awards provide our executive officers with the right to purchase shares of our common stock at a fixed exercise price typically for a period of up to ten years, subject to continued employment with our Company. Stock options are earned based on continued service to us and generally vest over three years, with one-third vesting on each anniversary of the grant date.

All our stock options awards are granted pursuant to our 2006 Equity Incentive Plan (the “2006 Incentive Plan”) and the exercise price of each stock option granted under our 2006 Incentive Plan is based on the fair market value of our common stock on the grant date. Under the terms of the 2006 Incentive Plan, when our common stock is not listed on a national stock exchange but traded on an over-the-counter market, fair market value is defined as the average of the bid and ask price of our common stock on the trading date immediately preceding the grant date. See “Equity Incentive

Plan and Other Compensation Plans - 2006 Equity Incentive Plan" for additional information on the 2006 Incentive Plan.

Broad-Based Benefits Programs

All full-time employees in the United States, including our named executive officers, may participate in our health and welfare benefit programs, including medical coverage, dental coverage, disability insurance, life insurance and our 401(k) plan. We offer similar plans in foreign countries.

Equity Incentive Plan and Other Compensation Plans

2006 Equity Incentive Plan

Our 2006 Incentive Plan allows us to make awards of various types of equity-based compensation, including stock options, dividend equivalent rights ("DERs"), stock appreciation rights, restricted stock, restricted stock units, performance units, performance shares and other awards, to our employees and directors. The 2006 Incentive Plan provides that the total number of shares of common stock that we may issue is 10,000,000 shares under the 2006 Incentive Plan; provided, that no more than 5,000,000 of such shares may be used for grants of restricted stock, restricted stock units, performance units, performance shares and other awards. As of March 7, 2013, there were 4,643,167 outstanding options granted under the 2006 Incentive Plan, of which 2,862,810 may be exercised at this time.

The 2006 Incentive Plan is administered by the Compensation Committee of the Board, which has the authority to set the number, exercise price, term and vesting provisions of the awards granted under the 2006 Incentive Plan, subject to the terms thereof. Either incentive or non-qualified stock options may be granted to our employees, but only non-qualified stock options may be granted to non-employee directors and advisors. However, in either case, the 2006 Incentive Plan requires that stock options must be granted at exercise prices not less than the fair market value of the common stock on the date of the grant. Options issued under the 2006 Incentive Plan vest over periods as determined by the Compensation Committee and expire ten years after the date the option was granted. Compensation expense is based on the calculated fair value of the awards as measured at the grant date and is expensed ratably over the service period of the awards (generally the vesting period).

Employee Savings Plan

We maintain an employee savings plan that is intended to qualify as a tax-qualified plan under Section 401(k) of the Internal Revenue Code of 1986, as amended (the "Code"). This plan allows for voluntary contributions up to statutory maximums by eligible employees. Historically, we matched a specific proportion of these contributions, subject to limitations imposed by law. We may make additional contributions to the savings plan on behalf of our employees if our Board decides to do so. We provided matching 401(k) contributions for the first three quarters of 2010; however, effective October 1, 2010, we discontinued matching 401(k) contributions. We reinstated matching 401(k) contributions effective January 1, 2012. Our named executive officers are eligible to participate in the 401(k) retirement plan.

Analysis of Named Executive Officer Compensation

In connection with establishment of 2012 compensation for our named executive officers, our Chief Executive Officer and the Compensation Committee reviewed the market compensation data contained in the 2011 Competitive Analysis. Our Chief Executive Officer, in consultation with the Chairman of our Compensation Committee, identified the comparable positions for each of our named executive officers in the 2011 Competitive Analysis based on their positions and responsibilities. Our Chief Executive Officer then made compensation recommendations for our executives, excluding his own, and senior management. Although our Chief Executive Officer makes executive compensation recommendations to the Compensation Committee, the Compensation Committee is ultimately responsible for approving all executive compensation.

The Compensation Committee considered the Chief Executive Officer recommendations and also reviewed the 2011 Competitive Analysis to ensure that the compensation programs for our key senior managers, including our named executive officers, are consistent with our compensation philosophy and remain within broadly competitive norms.

In addition to reviewing competitive market data, the Compensation Committee also believes that individual compensation should reflect an executive officer's position and value to our organization considering individual contribution to business results, knowledge and skills, and market value and that individual compensation should also take into consideration long-term potential of the executive officer to contribute to our financial position and retention concerns, if any, for individual executives.

In determining our Chief Executive Officer's compensation, in addition to a review of the 2011 Competitive Analysis, the Compensation Committee specifically considers the Board's evaluation of his performance.

After reviewing the 2011 Competitive Analysis and considering the recommendations made by our Chief Executive Officer, the Compensation Committee determined the terms and amount of compensation to pay to each of our executive officers.

Set forth below is a summary of the decisions related to 2012 executive compensation for each of our named executive officers made during 2012 as well as additional information regarding decisions made related to the 2013 executive compensation for our named executive officers.

Craig J. Tuttle, President and Chief Executive Officer

The Compensation Committee reviews our Chief Executive Officer's compensation and the terms of his employment agreement on an annual basis in connection with the review of all other executive officers' compensation. See "Agreements with Our Named Executive Officers - CEO Employment Agreement" for additional information on Mr. Tuttle's employment agreement. In 2012, based on a review of the performance of Mr. Tuttle during 2011 and the first quarter of 2012 which included the cost effective management and the successful completion of a private placement offering, the Compensation Committee increased Mr. Tuttle's base salary from $325,000 to $350,000, a 7.7% increase, effective March 1, 2012, which reflects the first increase in Mr. Tuttle's base salary since 2008. Under the 2012 Bonus Plan, Mr. Tuttle's annual on-target bonus opportunity was $175,000. Mr. Tuttle was not eligible for a bonus under the 2012 Bonus Plan because the corporate goals were not met. It was necessary to meet company-wide corporate goals before he was eligible for compensation tied to personal goals.

Mark P. Colonnese, Executive Vice President and Chief Financial Officer

We entered into an employment agreement with Mr. Colonnese dated September 12, 2012, which provided an initial base salary of $275,000 per year and an annual on-target bonus opportunity for 2012 of $137,500. Mr. Colonnese was not eligible for a bonus under the 2012 Bonus Plan in 2012 because the corporate goals were not met. It was necessary to meet company -wide corporate goals before he was eligible for compensation tied to personal goals.

Brett L. Frevert, Former Chief Financial Officer

Mr. Frevert served as our Chief Financial Officer pursuant to the terms a letter agreement with CFO Systems and therefore, Mr. Frevert did not receive a base salary; rather, payments for Mr. Frevert's services were paid directly to CFO Systems. See "Agreements with Our Named Executive Officers - CFO Systems Letter Agreement" for additional information on the terms of this letter agreement. During 2012, we paid CFO Systems $92,475 for Mr. Frevert's services. Under the 2012 Bonus Plan, Mr. Frevert's annual on-target bonus opportunity was $125,000. Mr. Frevert did not receive any compensation under this plan. Effective June 3, 2012, we terminated our contract with CFO Systems and Mr. Frevert's services as our Chief Financial Officer terminated on such date.

Chad M. Richards, Chief Commercial Officer

Mr. Richards received a base salary of $202,792 in 2012. During 2012, Mr. Richards participated in the 2012 Bonus Plan. Under the 2012 Bonus Plan, Mr. Richards' annual on-target bonus opportunity was $125,000. Because we did not meet our corporate objectives for 2012, Mr. Richards was not eligible to receive a bonus under the 2012 Bonus Plan. It was necessary to meet company-wide corporate goals before he was eligible for compensation tied to personal goals.

Tax and Accounting Implications

Deductibility of Executive Compensation

Section 162(m) of the Code, limits the deductibility of compensation in excess of $1 million paid to our named executive officers, other than our Chief Financial Officer unless the compensation qualifies as "performance-based compensation." Among other things, in order to be deemed performance-based compensation, the compensation must be based on the achievement of pre-established, objective performance criteria and must be pursuant to a plan that has been approved by our stockholders. It is intended that all performance-based compensation paid in 2012 to our named executive officers under the plans and programs described above will qualify for deductibility, either because the compensation is below the threshold for non-deductibility provided in Section 162(m) of the Code, or because the payment of amounts in excess of $1 million qualify as performance-based compensation under the provisions of Section 162(m) of the Code.

We believe that it is important to continue to be able to take all available company tax deductions with respect to the compensation paid to our named executive officers. Therefore, we believe we have taken all actions that may be necessary under Section 162(m) of the Code to continue to qualify for available tax deductions related to named executive officer compensation. However, we also believe that preserving flexibility in awarding compensation is in our best interest and that of our stockholders, and we may determine, in light of all applicable circumstances, to award compensation in a manner that will not preserve the deductibility of such compensation under Section 162(m) of the Code.

Accounting for Share-Based Compensation

We account for share-based compensation awards, including our stock options, in accordance with the requirements of Financial Accounting Standards Board Accounting Standards Codification Topic 718, Compensation--Stock Compensation ("FASB ASC Topic 718"). Before we grant stock-based compensation awards, we consider the accounting impact of the award, as well as alternative equity-based awards.

Agreements with Our Named Executive Officers

CEO Employment Agreement

We have entered into an employment agreement dated July 12, 2008 with Craig J. Tuttle, our President and Chief Executive Officer. The employment agreement provides that the term of the agreement will be one year, but shall be automatically extended for additional one-year terms unless either we or Mr. Tuttle provides written notice to the other of an intention not to extend no later than sixty (60) days prior to the end of the then current term. The employment agreement automatically renewed for an additional year ending on July 12, 2013.

The employment agreement provides that Mr. Tuttle will be entitled to receive severance payments from us if his employment is terminated involuntarily except if such termination is based on "just cause", as that term is defined in the employment agreement. The severance payment payable in such circumstances is equal to his annual base salary at the time of termination and will be paid to him over a twelve-month period. The employment agreement provides that the severance payment provisions will be honored if our Company is acquired by, or merged into, another company and Mr. Tuttle's position is eliminated as a result of such acquisition or merger. This severance payment is designed to provide him with an amount of cash sufficient to provide for living expenses and other needs which would normally be paid from his monthly base salary payments in situations where the executive officer's employment was not terminated voluntarily or for just cause. In addition, the payments are designed so as to not exceed the maximum amount which may be paid without imposition of the excise tax imposed by Section 4999 of the Code or to not result in a loss of our income tax deduction for any portion of these payments under Section 280G of the Code if such payments are made after, or in contemplation of, a change of control transaction.

CFO Employment Agreement

We have entered into an employment agreement dated September 12, 2012 with Mark P. Colonnese, our Executive Vice President and Chief Financial Officer. The employment agreement may be terminated thirty (30) days following delivery of written notice of termination for any reason or no reason, by Mr. Colonnese or us.

Pursuant to the employment agreement, Mr. Colonnese was issued options to purchase 250,000 shares of our common stock, which vest over three years, with one-third vesting on each anniversary of the grant date; provided, however, that the options shall vest in full contingent upon, and effective as of immediately prior to, a "Change in Control", as that term is defined in the employment agreement. The employment agreement also provides that Mr. Colonnese will be entitled to receive severance payments from us if his employment is terminated involuntarily except if such termination is based on "just cause", as that term is defined in the employment agreement. The severance payment payable in such circumstances is equal to nine (9) months of his annual base salary at the time of termination and will be paid to him over a nine-month period. The employment agreement provides that the severance payment provisions will be honored if Mr. Colonnese is terminated by us as part of a Change in Control. This severance payment is designed to provide him with an amount of cash sufficient to provide for living expenses and other needs which would normally be paid from his monthly base salary payments in situations where the executive officer's employment was not terminated voluntarily or for just cause. In addition, the payments are designed so as to not exceed the maximum amount which may be paid without imposition of the excise tax imposed by Section 4999 of the Code or to not result in a loss of our income tax deduction for any portion of these payments under Section 280G of the Code if such payments are made after, or in contemplation of, a change of control transaction.

CFO Systems Letter Agreement

Effective June 30, 2010, we entered into a letter agreement with CFO Systems and Brett L. Frevert. Under the letter agreement CFO Systems provided financial and consulting services to us at rates of $75 to $150 per hour depending on the level of expertise involved. The services included providing Chief Financial Officer duties and other financial and accounting expertise on a time share basis. The letter agreement provided that either CFO Systems or we could terminate the agreement upon thirty (30) days written notification. In connection with the letter agreement, Mr. Frevert agreed to serve as our Chief Financial Officer. We were charged $120,280 and $405,763 for the services provided by CFO Systems during 2012 and 2011, respectively. The 2012 fees included $92,475 for Mr. Frevert's services and $27,805 for other professionals services. Effective June 3, 2012, we terminated our contract with CFO Systems and Mr. Frevert's service as our Chief Financial Officer terminated on such date.

Compensation Risk Analysis

We have reviewed our material compensation policies and practices for all employees and have concluded that these policies and practices are not reasonably likely to have a material adverse effect on us. While risk-taking is a necessary part of growing a business, our compensation philosophy, as discussed above is focused on aligning compensation with the long-term interests of our stockholders as opposed to rewarding short-term management decisions that could pose long-term risks.

REPORT OF THE COMPENSATION COMMITTEE

We, the Compensation Committee of the Board of Directors of the Company, have reviewed and discussed the Compensation Discussion and Analysis set forth above with the management of the Company, and, based on such review and discussion, have recommended to the Board of Directors inclusion of the Compensation Discussion and Analysis in the Company's Annual Report on Form 10-K for the year ended December 31, 2012 and its Proxy Statement for the 2013 Annual Meeting of Stockholders.

MEMBERS OF THE COMPENSATION COMMITTEE:

Antonius P. Schuh, Ph.D.
Rodney S. Markin, MD, Ph.D.
Robert M. Patzig

Compensation Committee Interlocks And Insider Participation

No member of the Compensation Committee was at any time during 2012, or at any other time, an officer or employee of ours. None of our executive officers serves as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our Board or its Compensation Committee.

2012 EXECUTIVE COMPENSATION

Summary Compensation Table

The following table sets forth compensation awarded to, paid to, or earned by our "named executive officers" for services rendered during fiscal years 2012, 2011 and 2010.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Option Awards[1]$	All Other Compensation ($)		Total ($)
Craig J. Tuttle [2]	2012	$345,833	$—	$—	$17,973	[3]	$363,806
President and	2011	325,000	10,000	457,950	12,102	[4]	805,052
Chief Executive Officer	2010	325,000	—	—	18,377	[5]	343,377
Mark P. Colonnese[6] Executive Vice President and Chief Financial Officer	2012	96,106	—	198,250	2,056	[7]	296,412
Brett L. Frevert[8] Former Chief Financial Officer	2012	—	—	—	92,475	[8]	92,475
	2011	—	5,000	228,975	242,250	[8]	476,225
	2010	—	—	—	96,225	[8]	96,225
Chad M. Richards[9]	2012	202,792	—	—	15,256	[10]	218,048
Chief Commercial Officer	2011	199,167	6,000	228,975	9,338	[11]	443,480
	2010	188,708	—	—	13,476	[12]	202,184

[1] The amounts in this column reflect the aggregate grant date fair value of the stock option awards granted during the respective fiscal year as computed in accordance with FASB ASC Topic 718, excluding the effect of estimated forfeitures. The amounts shown do not correspond to the actual value that will be recognized by the named executive officer. The assumptions used in the calculation of these amounts are included in Footnote 11 "Equity Incentive Plan" to our accompanying consolidated financial statements. See the "2012 Grants of Plan-Based Awards" table for information on stock options granted in 2012.

[2] See “Agreements with Our Named Executive Officers CEO Employment Agreement” for a description of Mr. Tuttle's employment agreement with us.

[3] Amounts paid to Mr. Tuttle in 2012 consisted of $9,600 in automobile allowances as provided in his employment agreement, $6,768 in 401(k) matching contributions, $990 in group life insurance and $615 in long term disability insurance.

[4] Amounts paid to Mr. Tuttle in 2011 consisted of $9,729 in automobile allowances as provided in his employment agreement, $691 in a service anniversary bonus, $1,182 in group life insurance and $500 in long term disability insurance.

[5] Amounts paid to Mr. Tuttle in 2010 consisted of $10,134 in automobile allowances as provided in his employment agreement, $6,325 in 401(k) matching contributions, $1,419 in group life insurance and $499 in long term disability insurance.

(6) Mr. Colonnese was appointed as our Executive Vice President and Chief Financial Officer on September 12, 2012. See “Agreements with Our Named Executive Officers--CFO Employment Agreement” for a description of Mr. Colonnese's employment agreement with us.

(7) Amounts paid to Mr. Colonnese in 2012 consisted of $1,719 in 401(k) matching contributions, $129 in group life insurance and $208 in long term disability insurance.

(8)Mr. Frevert began serving as our Chief Financial Officer effective June 30, 2010 when we entered into a letter agreement with CFO Systems relating to his service. All compensation listed under “All Other Compensation” as received by Mr. Frevert represents amounts paid to CFO Systems for Mr. Frevert's services on an hourly basis as our Chief Financial Officer in accordance with the terms of the Letter Agreement with CFO Systems. See “Agreements with Our Named Executive Officers-Letter Agreement with CFO Systems” for a description of the arrangement with CFO Systems. Effective June 3, 2012, we terminated our agreement with CFO Systems and Mr. Frevert's service as our Chief Financial Officer terminated on such date.

(9) Mr. Richards joined us as Senior Vice President, Sales and Marketing on October 8, 2007 and was promoted to Chief Commercial Officer in January 2011.

(10) Amounts paid to Mr. Richards in 2012 consisted of $7,580 in car lease payments, $6,270 in 401(k) matching contributions, $748 in a service anniversary bonus, $150 in group life insurance and $508 in long term disability insurance

(11) Amounts paid to Mr. Richards in 2011 consisted of $8,690 in car lease payments, $150 in group life insurance and $498 in long term disability insurance

(12) Amounts paid to Mr. Richards in 2010 consisted of $8,400 for an automobile allowance, $4,440 in 401(k) matching contributions, $166 in group life insurance and $470 in long term disability insurance

2012 Grants of Plan-Based Awards

The following table sets forth certain information with respect to grants of plan-based awards in fiscal year 2012 to our named executive officers. The option award granted to Mr. Colonnese in fiscal year 2012 was granted under our 2006 Incentive Plan. During the year ended December 31, 2012, no other equity awards were granted to our named executive officers. The option award vests over three years, with one-third vesting on the anniversary of the grant date, and has a term of ten years.

Name	Grant Date	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise or Price of Option Awards ($/sh) (1)	Grant Date Fair Value of Option Awards ($)(2)
Mark P. Colonnese	9/12/2012	250,000	$0.98	$198,250

(1)The exercise price of stock option awarded represents the fair market value of our common stock on the date of grant as defined in our 2006 Incentive Plan.

(2) The amount in this column reflects the aggregate grant date fair value of the stock option award granted during the fiscal year as computed in accordance with FASB ASC Topic 718, excluding the effect of estimated forfeitures. The amount shown does not correspond to the actual value that will be recognized by the named executive officer. The assumptions used in the calculation of this amount are included in Footnote 11 "Equity Incentive Plan" to our accompanying consolidated financial statements.

Outstanding Equity Awards at Fiscal 2012 Year-End

The following table provides certain information concerning outstanding option awards held by our named executive officers as of December 31, 2012. As of December 31, 2012, no other equity awards granted to our named executive officers were outstanding.

Name	Option Awards				
	Option Award / Grant Date	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date
Craig J. Tuttle	9/1/2006	200,000	—	$0.69	8/31/2016
Craig J. Tuttle	1/17/2007	200,000	—	0.75	1/16/2017
Craig J. Tuttle	7/12/2007	200,000	—	0.66	7/11/2017
Craig J. Tuttle	5/18/2011	166,667	333,333	1.19	5/17/2021
Mark P. Colonnese	9/12/2012	—	250,000	0.98	9/12/2022
Chad M. Richards	10/8/2007	200,000	—	0.69	10/7/2017
Chad M. Richards	5/18/2011	83,334	166,666	1.19	5/17/2021

Fiscal Year 2012 Option Exercises and Stock Vested

No stock options were exercised by any of our named executive officers during fiscal year 2012.

POTENTIAL PAYMENTS UPON TERMINATION OR CHANGE OF CONTROL

We have employment agreements with Mr. Tuttle and Mr. Colonnese. In the event of involuntary discharge, Mr. Tuttle is entitled to receive a severance payment equal to his then current annual base salary and Mr. Colonnese is eligible to receive a severance payment equal to nine months of his then current annual base salary. Mr. Richards does not have an employment agreement.

2006 Equity Incentive Plan

Stock Options. The 2006 Incentive Plan provides that if an optionee, including a named executive officer, voluntarily terminates employment with us, all unvested stock options will terminate and the optionee will have three months from the date of termination to exercise any vested stock options granted under the 2006 Incentive Plan. However, the 2006 Incentive Plan also provides that if the optionee's employment terminates due to death, disability or retirement, all stock options will immediately vest upon the optionee's death or disability and the optionee (or his or her estate or personal representative) will have twelve months from the date of death, disability or retirement to exercise the stock options; provided such optionee had continuously served as an employee, director or advisor for at least three years, or such shorter period as the Compensation Committee may prescribe. The 2006 Incentive Plan also provides that all unvested stock options will immediately vest upon the occurrence of a Change in Control of our Company (as defined in the 2006 Incentive Plan) unless provisions are made in connection with the transaction resulting in the Change in Control for the assumption of such option grants, or the substitution for such option grants of new grants, by the successor entity or parent thereof.

Potential Post Termination Benefits Table

The tables below quantify certain compensation that would have become payable to our named executive officers in the event such executive officer's employment had terminated on December 31, 2012 under various circumstances. The estimates set forth in the table below are based on our named executive officers' compensation and service levels as of such date and, if applicable, the closing stock price of our common stock on that date, as reported on the OTC Bulletin Board, which was $0.61.

These benefits are in addition to benefits generally available to salaried employees such as distributions under our 401(k) Plan, disability benefits and accrued vacation pay.

Due to the number of factors that affect the nature and amount of any benefits provided upon the events discussed below, any actual amounts paid or distributed to our named executive officers may be different. Factors that could affect these amounts include the timing of any such event, our stock price and the executive's age.

Name	Benefit	Cause	Without Cause[1]	Voluntary Termination	Change in Control[1]	Death[1]	Disability[1]	Retirement[1]
Craig. J. Tuttle	Cash	$—	$350,000	$—	$350,000	$—	$—	$—
	Stock options	—	—	—	—	—	—	—
	Benefits	—	—	—	—	—	—	—
	Total	$—	$350,000	$—	$350,000	$—	$—	$—
Mark P. Colonnese	Cash	$—	$206,250	$—	$206,250	$—	$—	$—
	Stock options	—	—	—	—	—	—	—
	Benefits	—	—	—	—	—	—	—
	Total	$—	$206,250	$—	$206,250	$—	$—	$—
Brett L. Frevert	Cash	—	—	—	—	—	—	—
	Stock options	$—	$—	$—	$—	$—	$—	$—
	Benefits	$—	$—	$—	$—	$—	$—	$—
	Total	$—	$—	$—	$—	$—	$—	$—
Chad M. Richards	Cash	$—	$—	$—	$—	$—	$—	$—
	Stock options	—	—	—	—	—	—	—
	Benefits	—	—	—	—	—	—	—
	Total	$—	$—	$—	$—	$—	$—	$—

[1] Because the exercise prices for all outstanding options held by our named executive officers December 31, 2012 were greater than $0.61, the closing price for our common stock on December 31, 2012 as reported on the OTC Bulletin Board, our named executive officers would not have earned any net proceeds as of December 31, 2012 upon exercise of their options on such date, and we have therefore not attributed any value to the exercise of options.

DIRECTOR COMPENSATION

It is our Board's general policy that compensation for independent directors should be a mix of cash and equity-based compensation. As part of a director's total compensation, and to create a direct linkage with corporate performance and stockholder interests, our Board believes that a meaningful portion of a director's compensation should be provided in, or otherwise based on, the value of appreciation in our common stock.

Our Board of Directors has the authority to approve all compensation payable to our directors, although our Compensation Committee is responsible for making recommendations to our Board regarding this compensation. Additionally, our Chief Executive Officer may also make recommendations or assist our Compensation Committee in making recommendations regarding

director compensation. Our Board and Compensation Committee annually review our director compensation. In connection with director compensation decisions in 2012, our Board and the Compensation Committee reviewed market director compensation data paid by companies in the life sciences industry as reported by Top 5 Data Services, Inc. (the “2011 Director Competitive Analysis”). The 2011 Director Competitive Analysis contained data for 217 publicly traded medical device (“MD”) companies and 331 biopharmaceutical companies, with 65 companies assigned to both sectors based on their mix of products. Based on its review of the 2011 Director Competitive Analysis, the Board did not make any changes to our director compensation program in 2012 and continued with the program adopted in 2011, which is further discussed below.

Cash Compensation

Directors who are also one of our employees are not separately compensated for serving on the Board other than reimbursement for out-of-pocket expenses related to attendance at Board and committee meetings. Independent directors are paid an annual retainer of $20,000 and they receive reimbursement for out-of-pocket expenses related to attendance at Board and committee meetings. Independent directors serving on any committee of the Board are paid an additional annual retainer of $2,500 unless they are also a chairman of a committee. The chairman of the Audit Committee receives an additional annual retainer of $8,000 and the chairman of any other committee receives an additional annual retainer of $4,000. All directors' fees paid annually or quarterly were prorated for partial periods. In addition, any independent director who attends more than four meetings per quarter, which includes committee meetings, receives $500 for each meeting attended over the four.

Equity-Based Compensation

Beginning in 2011, our current practice is to grant annually to each continuing independent director an option to purchase 25,000 shares of common stock, which option vests after one (1) year. Additional annual grants of options will be made each year by the Compensation Committee in its sole discretion. All options granted to independent directors have exercise prices that represented the fair market value of our stock on the grant date, as determined in accordance with our 2006 Equity Incentive Plan.

On February 12, 2012 (the grant date), our independent directors were each granted a non-qualified option to purchase 25,000 shares of our common stock with an exercise price equal to $1.45. The options vested in full on February 12, 2013.

Director Summary Compensation Table

The following table provides information regarding our compensation for non-employee directors during the year ended December 31, 2012. Directors who are our employees do not receive compensation for serving on the Board or its committees.

Name	Fees Earned or Paid in Cash ($)	Option Awards $ [1]	Total ($)
Doit Koppler, II	$22,000	$32,127	$54,127
Robert Patzig	24,625	32,127	56,752
Rodney Markin, M.D., Ph.D.	31,625	32,127	63,752
Antonius Schuh, Ph.D.	28,875	32,127	61,002

[1] The amounts reflected in this column reflect the grant date fair value of each option award granted during 2012, as determined in accordance with FASB ASC Topic 718. The amounts shown do not correspond to the actual value that will be realized by the independent director. The assumptions used in the calculation of these amounts are included in Footnote 11 "Equity Incentive Plan" to our accompanying consolidated financial statements. The average grant date fair value of the options granted to our independent directors in 2012 was $1.45 per option. The aggregate grant date

fair value for all options granted to our independent directors in 2012 was $128,510.

The following table sets forth each independent director's aggregate number of option awards outstanding as of December 31, 2012:

Name	Vested Stock Option Awards	Unvested Stock Option Awards	Aggregate Stock Option Awards
Doit Koppler, II	65,000	—	65,000
Robert Patzig	65,000	—	65,000
Rodney Markin, M.D., Ph.D.	75,000	5,000	80,000
Antonius Schuh, Ph.D.	65,000	5,000	70,000

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

Equity Compensation Plan Information

The following equity compensation plan information summarizes plans and securities approved and not approved by security holders as of December 31, 2012.

PLAN CATEGORY	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders [1]	4,353,167	$1.05	4,763,064
Equity compensation plans not approved by security holders	—	—	—
Total	4,353,167	$1.05	4,763,064

(1) Consists of our 2006 Equity Compensation Plan

Beneficial Ownership of Common Stock

As of March 7, 2013, there were 88,245,725 issued and outstanding shares of our common stock. Each share of common stock is entitled to one vote on each matter to be voted on by the holders of our common stock at the 2013 Annual Meeting of Stockholders. Common stockholders do not have the right to cumulate votes in the election of directors.

The following table provides information known to us with respect to beneficial ownership of our common stock by our directors and all nominees for director, by our named executive officers, by all of our current executive officers and directors as a group, and by each person whom we believe beneficially owned more than 5% of our outstanding common stock as of March 7, 2013. Except as indicated in the footnotes to this table, to our knowledge the persons named in the table below have sole voting and investment power with respect to all shares of our common stock beneficially owned and such shares are owned directly by such person. The number of shares beneficially owned by each person or group as of March 7, 2013 includes shares of common stock that such person or group had the right to acquire on or within 60 days after March 7, 2013 including, but not limited to, upon the exercise of options or warrants to purchase common stock or the conversion of securities into common stock. Beneficial ownership information of persons other than our current executive officers and directors is based on available information including, but not limited to, Schedules 13D, 13F or 13G filed with the SEC or information supplied by these persons.

Name and Address of Beneficial Owner[1]	Number of Shares Beneficially Owned		Percent of Class
Directors and Executive Officers			
Craig J. Tuttle, President and Chief Executive Officer, Director	766,667	(2)	*
Mark P. Colonnese, Executive Vice President and Chief Financial Officer	—		*
Brett L. Frevert, Former Chief Financial Officer[3]	—		*
Chad M. Richards, Chief Commercial Officer	341,834	(4)	*
Doit L. Koppler II, Director	135,254	(5)	*
Rodney S. Markin, M.D., Ph.D., Director	75,000	(6)	*
Robert M. Patzig, Director	119,467	(7)	*
Antonius P. Schuh, Ph.D., Director	65,000	(8)	*
All directors and executive officers as a group (7 persons)	1,503,222	(9)	1.7%
Other Stockholders			
Randal J. Kirk	29,499,241	(10)	30.1%
LeRoy C. Kopp	13,559,863	(11)	15.4%
Kevin Douglas	8,514,812	(12)	9.4%
AMH Equity, LLC and Leviticus Partners, L.P.	5,248,181	(13)	5.9%
Fidelity Select Biotechnology Portfolio	5,087,982	(14)	5.7%

* Represents less than 1% of our outstanding common stock.

(1) The address for all of our directors and executive officers is the address of our principal executive offices located at 12325 Emmet Street, Omaha, Nebraska 68164.

(2) Includes 766,667 shares issuable upon the exercise of options that are exercisable or will become exercisable within 60 days after March 7, 2013.

(3) Mr. Frevert's service as our Chief Financial Officer terminated on June 3, 2012.

(4) Includes 58,500 shares owned by Mr. Richards and includes 283,334 shares issuable upon the exercise of options that are exercisable or will become exercisable within 60 days after March 7, 2013.

(5) Includes 50,000 shares owned by Mr. Koppler and includes 85,254 shares issuable upon the exercise of options and warrants that are exercisable or will become exercisable within 60 days after March 7, 2013.

(6) Includes 75,000 shares issuable upon the exercise of options that are exercisable or will become exercisable within 60 days after March 7, 2013.

(7) Includes 40,000 shares owned by Mr. Patzig and includes 79,467 shares issuable upon the exercise of options and warrants that are exercisable or will become exercisable within 60 days after March 7, 2013.

(8) Includes 65,000 shares issuable upon the exercise of options that are exercisable or will become exercisable within 60 days after March 7, 2013.

(9) Includes shares which may be acquired by executive officers and directors as a group within 60 days after March 7, 2013 through the exercise of stock options or warrants.

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(10) Consists of (i) 9,245,903 shares of common stock; (ii) warrants to purchase 4,736,110 shares of common stock; (iii) shares of Series A Convertible Preferred Stock (the "Preferred Stock") convertible into 10,344,820 shares of common stock; and (iv) warrants to purchase shares of the Preferred Stock which are convertible into 5,172,408 shares of common stock. These shares and warrants are held 40% by Third Security Senior Staff 2008 LLC, 40% by Third Security Staff 2010 LLC and 20% by Third Security Incentive 2010 LLC, which companies are affiliated with the beneficial owner. Mr. Randal J. Kirk could be deemed to have indirect beneficial ownership of these shares. The business address of these beneficial owners is 1881 Grove Avenue, Radford, Virginia 24141.

(11) Consists of shares owned directly by Mr. Kopp, shares held in individual retirement accounts established for Mr. Kopp and his spouse, shares held in the Kopp Family Foundation of which he is a director and shares held in discretionary client accounts managed by Kopp Investment Advisors, LLC of which he is the Chief Executive Officer. The business address of each of these beneficial owners is 8400 Normandale Lake Boulevard, Suite 1450, Bloomington, Minnesota 55437.

(12) Mr. Douglas has dispositive power over all of the shares owned by the Douglas affiliates. The Douglas affiliates include shares owned directly by James E. Douglas,III as well as shares held in the following trusts: K&M Douglas Trust, Douglas Family Trust and the James Douglas and Jean Douglas Irrevocable Descendants' Trust . The business address of this beneficial owner is 125 East Sir Francis Drake Boulevard, Suite 400, Larkspur, California 94939.

(13) Consists of shares held by AMH Equity, LLC which is the general partner of Leviticus Partners, L.P. The business address of this beneficial owner is 60 East 42nd Street, Suite 901, New York, New York 10165.

(14) Fidelity Management & Research Company ("Fidelity"), a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, as amended, is the beneficial owner of 5,087,982 shares of common stock as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940, as amended. Edward C. Johnson 3d and FMR LLC, through its control of Fidelity, and the funds each has sole power to dispose of the 5,087,982 Shares owned by the Funds. Members of the family of Edward C. Johnson 3d, Chairman of FMR LLC, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, as amended, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Edward C. Johnson 3d, Chairman of FMR LLC, has the sole power to vote or direct the voting of the shares owned directly by the Fidelity funds, which power resides with the Funds' Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds' Boards of Trustees. The business address of this beneficial owner is 82 Devonshire Street, Boston, Massachusetts 02109.

Beneficial Ownership of Preferred Stock

As of March 7, 2013, there were 2,586,205 issued and outstanding shares of our Preferred Stock. Each share of Preferred Stock is entitled to one vote on each matter to be voted on by the Preferred Stockholders at the Annual Meeting.

The following table provides information known to us with respect to beneficial ownership of the Preferred Stock by each person whom we believe beneficially owned more than 5% of our outstanding Preferred Stock as of March 7, 2013. The number of shares of Preferred Stock beneficially owned by each person or group as of March 7, 2013 includes shares of Preferred Stock that such person or group had the right to acquire on or within 60 days after March 7, 2013, including, but not limited to, upon the exercise of warrants to purchase Preferred Stock. Except as indicated in the footnotes to this table, to our knowledge the persons named in the table below have sole voting and

investment power with respect to all of the Preferred Stock beneficially owned and such shares are owned directly by such person. Beneficial ownership information of such persons is based on available information, including, but not limited to, Schedules 13D, 13F or 13G filed with the SEC or information supplied by these persons.

Name and Address of Beneficial Owner	Number of Shares Beneficially Owned		Percent of Class	
Randal J. Kirk	3,879,307	(1)	100	%

(1) Includes warrants to purchase 1,293,102 shares of Preferred Stock. These shares of the Preferred Stock and warrants are held 40% by Third Security Senior Staff 2008 LLC, 40% by Third Security Staff 2010 LLC and 20% by Third Security Incentive 2010 LLC, which companies are affiliated with the beneficial owner. Mr. Randal J. Kirk could be deemed to have indirect beneficial ownership of these shares. The business address of these beneficial owners is 1881 Grove Avenue, Radford, Virginia 24141.

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

Review and Approval of Related Person Transactions

We recognize that related person transactions can present potential or actual conflicts of interest and create the appearance that our decisions are based on considerations which may not be in our best interests or the best interests of our stockholders. Accordingly, as a general matter, we prefer to avoid related person transactions. Nevertheless, we recognize that there are situations where related person transactions may be in, or may not be inconsistent with, our best interests. Pursuant to the Audit Committee Charter, the Audit Committee must review in advance and approve or reject all material transactions between our Company and a related party. The Audit Committee reviews and considers each transaction in light of the specific facts and circumstances presented. Related persons include our directors or executive officers and their respective immediate family members and 5% beneficial owners of our common stock. Our Board will also review related party transactions in accordance with applicable law and the provisions of our Third Amended and Restated Certificate of Incorporation.

In addition, our Business Ethics Policy establishes a policy on potential conflicts of interest. Under our Business Ethics Policy our directors and employees, including our executive officers, must promptly report any transaction, relationship or circumstance that creates or could be reasonably expected to create a conflict of interest. Members of our senior management, including our executive officers, and our Board may not engage in any activity giving rise to an actual or potential conflict of interest without the prior approval of the Audit Committee. Any waiver of this policy relating to our executive officers or directors may only be made by the Board and will be promptly disclosed to our stockholders as required by law or applicable exchange rules.

Third Security Convertible Promissory Notes and Conversion

On December 30, 2011, we entered into a Convertible Promissory Note Purchase Agreement (the “Note Purchase Agreement”) with Third Security Senior Staff 2008 LLC, a Virginia limited liability company, Third Security Staff 2010 LLC, a Virginia limited liability company, and Third Security Incentive 2010 LLC, a Virginia limited liability company (collectively, the “Third Security Entities”), in the aggregate amount of $3,000,000. The Third Security Entities are currently the holders of 100% of our Preferred Stock and collectively represent a more than 10% beneficial ownership interest in our common stock.

Under the Note Purchase Agreement, we sold to each of the Third Security Entities a convertible note with a March 31, 2012 maturity date (collectively, the “Convertible Notes”). The Note Purchase Agreement and Convertible Notes provided for conversion of any amount remaining due to the Third Security Entities under the Convertible Notes into our equity of the same class(es) or series and at the same price as our equity securities sold in our first sale or issuance of our equity securities after December 30, 2011, in the aggregate amount of at least $3,000,000.

A majority of the disinterested directors approved our entrance into the Note Purchase Agreement and issuance of the Convertible Notes to the Third Security Entities.

On February 2, 2012, we entered into a securities purchase agreement with certain institutional and other accredited investors (the “2012 Investors”) pursuant to which we: (i) sold to the 2012 Investors an aggregate of 19,000,000 shares

of our common stock at a price per share of $1.00 for aggregate gross proceeds of approximately $19,000,000; and (ii) issued to the 2012 Investors warrants (the "2012 Warrants") to purchase up to an aggregate of 9,880,000 shares of our common stock with an exercise price of $1.25 per share (collectively, the "2012 Offering"). The 2012 Warrants may be exercised, in whole or in part, at any time from February 7, 2012 until February 7, 2017 and contain both cash and "cashless exercise" features.

As part of the 2012 Offering, in connection with the conversion of the Convertible Notes, the Third Security Entities received an aggregate of 3,000,000 shares of our common stock (the "Third Security Common Shares") and warrants to purchase up to 1,500,000 shares of our common stock (the "Third Security Warrants") upon the same terms as the 2012 Investors. As part of the 2012 Offering, our Preferred Stock Directors, Doit L. Koppler, II and Robert M. Patzig, purchased shares of our common stock and warrants on the same terms as the other 2012 Investors.

On January 24, 2013, we entered into a securities purchase agreement with certain institutional and other accredited investors (the "2013 Investors") pursuant to which we: (i) sold to the 2013 Investors an aggregate of 16,600,000 shares of our common stock at a price per share of $0.50 (the "Common Shares") for aggregate gross proceeds of approximately $8,300,000; and (ii) issued to the 2013 Investors warrants (the "Warrants") to purchase up to an aggregate of 8,300,000 shares of our common stock with an exercise price of $0.75 per share (collectively, the "2013 Offering"). The Warrants may be exercised, in whole or in part, at any time from January 30, 2013 until January 30, 2018 and contain both cash and "cashless exercise" features. As part of the 2013 Offering, Third Security purchased Common Shares and Warrants on the same terms as the other 2013 Investors.

Director Independence

Our Company is governed by our Board. Currently, each member of our Board, other than our President and Chief Executive Officer, Craig J. Tuttle, is an independent director and all standing committees of the Board are composed entirely of independent directors, in each case under NASDAQ's independence definition. For a director to be considered independent, the Board must determine that the director has no relationship which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. Members of the Audit Committee also must satisfy a separate SEC independence requirement, which provides that they may not accept directly or indirectly any consulting, advisory or other compensatory fee from us or any of our subsidiaries other than their directors' compensation. In addition, under SEC rules, an Audit Committee member who is an affiliate of the issuer (other than through service as a director) cannot be deemed to be independent. The four independent members of the Board are Rodney S. Markin, M.D., Ph.D., Doit L. Koppler, II, Robert M. Patzig and Antonius P. Schuh, Ph.D.

Item 14. Principal Accountant Fees and Services.

The following table shows information about fees paid, or fees that were billed or were expected to be billed by McGladrey LLP, our independent auditor, during the fiscal years ended December 31, 2012 and 2011.

	2012	2011
Audit fees	$275,305	$321,005
Audit-related fees	31,250	25,999
Tax fees	28,035	30,190
All other fees	—	—
Total fees	$334,590	$377,194

Audit Fees. McGladrey LLP billed us for professional services rendered for the audit of our annual financial statements for those fiscal years and review of our interim financial statements included in Quarterly Reports on Form 10-Q filed by us with the SEC during that year.

Audit-Related Fees. McGladrey LLP billed us for audit-related services. Audit-related services generally include fees for the audits of our employee benefit plans and fees incurred in connection with services associated with SEC registration statements, periodic reports and other documents filed with the SEC.

Tax Fees. McGladrey LLP billed us for tax services. Tax services consist primarily of planning, advice and compliance, or return preparation, for U.S. federal, state and local, as well as international jurisdictions.

All Other Fees. McGladrey LLP did not render any services other than the services described above in 2012 or 2011.

Pre-Approval of Audit and Non-Audit Services

Under the Audit Committee Charter, the Audit Committee is required to pre-approve all audit and non-audit services to be provided to us by our independent auditor and its member firms. All services provided by our independent auditor in 2012 were pre-approved by the Audit Committee.

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Part IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The following documents are filed as part of this report:

1 Financial Statements. The following financial statements of the Registrant are included in response to Item 8 of this report:

Report of Independent Registered Public Accounting Firm.
Consolidated Balance Sheets of the Registrant and Subsidiary as of December 31, 2012 and 2011.
Consolidated Statements of Operations of the Registrant and Subsidiary for the years ended December 31, 2012, 2011 and 2010.
Consolidated Statements of Stockholders' Equity of the Registrant and Subsidiary for the years ended December 31, 2012, 2011 and 2010.
Consolidated Statements of Cash Flows of the Registrant and Subsidiary for the years ended December 31, 2012, 2011, and 2010.
Notes to Consolidated Financial Statements of the Registrant and Subsidiary.

2 Financial Statement Schedules.

All financial statement schedules are omitted because the information is inapplicable or presented in the notes to the financial statements.

3 Exhibits. The following exhibits were filed as required by Item 15(a)(3) of this report. Exhibit numbers refer to the paragraph numbers under Item 601 of Regulation S-K:

†2.1	Asset Purchase Agreement among the Registrant, Scoli Acquisition Sub, Inc. and Axial Biotech, Inc. dated August 27, 2012 (incorporated by reference to Exhibit 2.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 8, 2012).
3.1	Third Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 14, 2005).
3.2	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3(ii) to the Registrant's Current Report on Form 8-K filed on May 25, 2007).
3.3	Certificate of Designation of Series A Convertible Preferred Stock dated as of December 28, 2010 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on January 4, 2011.
3.4	Certificate of Amendment of Third Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on May 29, 2012).
3.5	Certificate of Amendment of Certificate of Designation of Series A Convertible Preferred Stock of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on May 29, 2012).
4.1	Form of Certificate of the Registrant's Common Stock (incorporated by reference to Exhibit 4 to the Registrant's Registration Statement on Form S-1 (Registration No. 333-32174) filed on March 10, 2000).
*10.1	

	2006 Equity Incentive Plan of the Registrant (incorporated by reference to Exhibit 4(b) to the Registrant's Registration Statement on Form S-8 (Registration No. 333-139999) filed on January 16, 2007).
*10.2	1999 UK Approved Stock Option Sub Plan of the Registrant (incorporated by reference to Exhibit 10.7 to the Registrant's Registration Statement on Form S-1 (Registration No. 333-32174) filed on March 10, 2000).
*10.3	Employment Agreement between the Registrant and Craig J. Tuttle dated July 12, 2006 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on July 12, 2006).

*10.4	Amendment No. 1 to the Employment Agreement between the Registrant and Craig J. Tuttle, effective July 12, 2006 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 14, 2006).
10.5	License Agreement, dated August 20, 1997, between the Registrant and Leland Stanford Junior University (incorporated by reference to Exhibit 10.15 to the Registrant's Registration Statement on Form S-1 (Registration No. 333-32174) filed on March 10, 2000).
10.6	License Agreement, dated December 1, 1989, between Cruachem Holdings Limited (a wholly owned subsidiary of the Registrant) and Millipore Corporation (incorporated by reference to Exhibit 10.13 to the Registrant's Annual Report on Form 10-K filed on March 25, 2002).
10.7	Sublicense Agreement, dated October 1, 1991, between Cruachem Holdings Limited (a wholly owned subsidiary of the Registrant) and Applied Biosystems, Inc. (incorporated by reference to Exhibit 10.14 to the Registrant's Annual Report on Form 10-K filed on March 25, 2002).
10.8	Missives, dated May 17, 2002, between Cruachem Limited (a wholly-owned subsidiary of the Registrant) and Robinson Nugent (Scotland) Limited (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on August 14, 2002).
10.09	License Amendment Agreement, dated June 2, 2003, by and between Geron Corporation and the Registrant (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed on August 12, 2003).
10.10	Supply Agreement, dated January 1, 2000, between the Registrant and Hitachi Instruments (incorporated by reference to Exhibit 10.16 to the Registrant's Registration Statement on Form S-1 (Registration No. 333-32174) filed on March 10, 2000)
10.11	Form of Securities Purchase Agreement by and between the Registrant and various counter-parties dated September 22, 2005 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 14, 2005).
*10.12	Employment Agreement Extension between the Registrant and Craig Tuttle dated July 12, 2008 (incorporated by reference to the Registrant's Current Report on Form 8-K filed on July 16, 2008).
10.13	License Agreement between the Registrant and the Dana-Farber Cancer Institute dated October 8, 2009 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 5, 2009).
+10.14	Asset Purchase Agreement, dated November 29, 2010, by and among PGxHealth, LLC, Clinical Data, Inc. and the Registrant (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
+10.15	Amendment to Asset Purchase Agreement, dated December 29, 2010, by and among PGxHealth, LLC, Clinical Data, Inc. and the Registrant (incorporated by reference to Exhibit 2.2 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
10.16	Series A Convertible Preferred Stock Purchase Agreement with Third Security dated December 29, 2010 (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).

10.17	Form of Series A Convertible Preferred Stock Warrant issued to Third Security Senior Staff 2008 LLC, Third Security Staff 2010 LLC, and Third Security Incentive 2010 LLC on December 29, 2010 (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
10.18	Registration Rights Agreement, dated December 29, 2010, by and among the Registrant, Third Security Senior Staff 2008 LLC, Third Security Staff 2010 LLC, and Third Security Incentive 2010 LLC (incorporated by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
10.19	Secured Promissory Note, issued December 29, 2010 by the Registrant in favor of PGxHealth, LLC (incorporated by reference to Exhibit 4.4 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
10.20	Secured Promissory Note, issued December 29, 2010 by the Registrant in favor of PGxHealth, LLC (incorporated by reference to Exhibit 4.5 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
10.21	Sublease Agreement, dated December 29, 2010, by and between the Registrant and Clinical Data, Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).

10.22	Noncompetition and Nonsolicitation Agreement, dated December 29, 2010, by and among PGxHealth, LLC, Clinical Data, Inc. and the Registrant (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
10.23	Security Agreement, dated December 29, 2010, by and between PGxHealth, LLC and the Registrant (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed on January 4, 2011).
10.24	First Amendment to Registration Rights Agreement dated November 8, 2011 (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on November 14, 2011).
10.25	Agreement Regarding Preferred Stock dated November 8, 2011 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on November 14, 2011).
10.26	Convertible Promissory Note Purchase Agreement by and among the Registrant; Third Security Senior Staff 2008 LLC; Third Security Staff 2010 LLC; and Third Security Incentive 2010 LLC dated December 30, 2011 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on January 6, 2012).
10.27	Convertible Promissory Note by and between the Registrant and Third Security Senior Staff 2008 LLC dated December 30, 2011(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on January 6, 2012).
10.28	Convertible Promissory Note by and between the Registrant and Third Security Staff 2010 LLC dated December 30, 2011 (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed on January 6, 2012).
10.29	Convertible Promissory Note by and between the Registrant and Third Security Incentive 2010 LLC dated December 30, 2011(incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed on January 6, 2012).
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10.30	Securities Purchase Agreement entered into by and among the Registrant and the Investors dated February 2, 2012 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on February 7, 2012).
10.31	Form of Warrant issued by the Registrant to the Third Securities Entities on February 7, 2012(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on February 7, 2012).
10.32	Form of Warrant issued by the Registrant to the Investors on February 7, 2012 (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed on February 7, 2012).
10.33	Form of Registration Rights Agreement entered into by and among the Registrant, the Third Securities Entities and the Investors dated February 2, 2012 (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed on February 7, 2012).
*10.34	Employment Agreement between the Registrant and Mark P. Colonnese (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on September 17, 2012).

10.35	Securities Purchase Agreement, entered into by and among the Registrant and the Investors, dated January 24, 2013 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K/A filed on January 31, 2013).
10.36	Form of Warrant issued by the Registrant to the Investors on January 30, 2013 (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K/A filed on January 31, 2013).
10.37	Registration Rights Agreement, entered into by and among the Registrant and the Investors, dated January 24, 2013 (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K/A filed on January 31, 2013).
10.38	Forbearance Agreement, dated February 7, 2013, by and between the Registrant and Dogwood Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on February 8, 2013).
10.39	Loan and Security Agreement among the Registrant, Third Security Senior Staff 2008 LLC, as administrative agent and a lender, and the other lenders party thereto, dated March 13, 2013
21	Subsidiaries of the Registrant.
23	Consent of Independent Registered Public Accounting Firm.
24	Powers of Attorney (included on signature page hereto).
31	Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

**32	Certifications pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document ***
101.SCH	XBRL Taxonomy Extension Schema Document ***
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document ***
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document ***
101.LAB	XBRL Taxonomy Extension Label Linkbase Document ***
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document ***

† Pursuant to Item 601(b)(2) of Regulation S-K, the schedules to this agreement have been omitted. The Registrant agrees to furnish supplementally a copy of any omitted schedule to the Securities and Exchange Commission upon request.

* Denotes exhibit that constitutes a management contract, or compensatory plan or arrangement.

** These certifications are not deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. Such certifications will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Registrant specifically incorporates it by reference.

*** XBRL information is furnished and not filed for purposes of Sections 11 and 12 of the Securities Act of 1933 and Section 18 of the Securities Act of 1934, and is not subject to liability under those sections, is not part of any registration statement or prospectus to which it relates and is not incorporated or deemed to be incorporated by reference into any registration statement, prospectus or other document.

+ Confidential treatment has been granted with respect to certain portions of this exhibit. Omitted portions have been filed separately with the SEC.

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 on this 14th day of March 2013.

TRANSGENOMIC, INC.

By: /s/ CRAIG J. TUTTLE
Craig J. Tuttle,
President and Chief Executive Officer

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ CRAIG J. TUTTLE Craig J. Tuttle	Director, President and Chief Executive Officer (Principal Executive Officer)	March 14, 2013
/s/ MARK P. COLONNESE Mark P. Colonnese	Executive Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 14, 2013
/s/ RODNEY S. MARKIN Rodney S. Markin	Director	March 14, 2013
/s/ ANTONIUS P. SCHUH Antonius P. Schuh	Director	March 14, 2013
/s/ ROBERT M. PATZIG Robert M. Patzig	Director	March 14, 2013
/s/ DOIT L. KOPPLER II Doit L. Koppler II	Director	March 14, 2013