Except for the historical information contained herein, the matters set forth in this annual report regarding the Company’s growth or plans regarding the Company’s genetic testing and molecular diagnostics business, expected realization of benefits during the second half of 2008, opportunities, expectations regarding nanopore technology, particularly nanopore-based single molecule readout technology, and its potential, plans to introduce new products, anticipated new products and market opportunities such as pathogen typing and identification, plans to complete development of a Trisomy 21 test and related expected performance specifications and plans to validate additional markers, plans to request market clearance from the U.S. Food and Drug Administration for RhD and Down syndrome tests, anticipated growth in the Company’s core genetic analysis business and advances in molecular diagnostics, expanding into new markets, extending product portfolios, further improvements to the NanoDispenser software in 2008, the expectations regarding capabilities of the Oncomutation panel, the aims, impact, or expectations and potential of SEQureDx technology, the Company’s plans to expand research to identify fetal RNA markers to address routine Trisomy testing, realizing the full diagnostic application of nucleic acids and the impact on patients and healthcare, the goals of the Clinical Advisory Board, market opportunities and market potential, and expressions using the word “will” are forward-looking statements with the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995.

These forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially, including the risks and uncertainties associated with the Company’s operating performance, demand for and acceptance of the Company’s products, services, and technologies, new technology and product development and commercialization particularly for new technologies such as non-invasive prenatal diagnostics, reliance upon the collaborative efforts of other parties, research and development progress, competition, government regulation, obtaining or maintaining regulatory approvals, and other risks described from time to time in the Company’s SEC (U.S. Securities and Exchange Commission) filings, including the Company’s Annual Report on Form 10-K for the year ended December 31, 2007, most recent periodic quarterly report, and other documents subsequently filed with or furnished to the SEC. These forward-looking statements are based on current information that may change and you are cautioned not to place undue reliance on these forward-looking statements which speak only as of the date of this report. All forward-looking statements are qualified in their entirety by this cautionary statement, and the Company undertakes no obligation to revise or update any forward-looking statement to reflect events or circumstances hereafter.
Nurturing a Culture of Innovation
Advancing Through Leading-Edge Science and Technology

In today’s competitive environment, our people are our core asset and our strategic edge. They are our roots and the foundation for a strong company. We recognize that recruiting, retaining, and developing talented individuals will continue to make us grow.

We place high expectations on ourselves and are proud to have an impressive group of professionals widely recognized across the industry for their expertise. At Sequenom, we have assembled a world-class group of scientific and business professionals.

Our people have come from leading academic and industrial laboratories, and other ventures from across the country and around the world. We strive to maintain a diverse, dynamic, highly-motivated and team-oriented workforce.

Ultimately, our success is driven by the professionalism and expertise of every member of our team. With a commitment to excellence, our employees demonstrate unwavering dedication to achieving a performance standard that sets us apart from our competitors.

“Ultimately, our success is driven by the professionalism and expertise of every member of our team.”
To Our Stockholders, Customers, Suppliers, and Employees,

We are proud to report on the significant growth by Sequenom during 2007. We believe growth is driven by innovation. Sequenom has always been committed to innovation, and in 2007 we continued to thrive and grow in all facets of our organization.

During the year we solidified our leadership in fine mapping, gained recognition for our methylation and quantitative gene expression solutions, and laid the groundwork for promising initiatives in genetic testing and molecular diagnostics.

Revenues in 2007 reached a record $41 million, up 44% compared with 2006, with growth in all segments of our genetic analysis business including MassARRAY® system placements, consumables and a dramatic increase in Contract Research Services. We controlled expenses while investing in research and development and commercialization activities that will begin showing benefit in the second half of 2008.

We also entered a business with enormous opportunity with the late-year launch of our first in a series of planned noninvasive prenatal genetic tests based on our proprietary SEQureDx™ Technology.

Recapping our genetic business accomplishments, we placed 55 MassARRAY systems in 2007, which is 21 more than in 2006, and we now have more than 225 systems in the field, each generating recurring consumable sales. While fine mapping and genotyping served as our primary growth drivers, we benefited from increasing contributions
from epigenetic and quantitative gene expression analysis applications, as well.

Important products introduced last year included our TYPER 4.0 genotyping software, which improves upon what we believe already is the industry’s best available fine mapping and genotyping solution. Our new Assays-by-Sequenom service provides customers the flexibility to choose SNPs of interest with the convenience and reliability of off-the-shelf, pre-validated assay reagents, which can be access through our customer portal mysequenom.com.

We also took a major step toward entering the complementary whole-genome analysis market through the exclusive licensing of third-generation, single-molecule nucleic acid analysis technology from Harvard University. Although early in development, we expect this nanopore technology to deliver large-scale genotyping solutions in the near term, with longer-term potential to provide a commercially viable, rapid human genome sequencing solution for less than $1,000, a key step in personalized medicine.

The coming year looks promising as we expand into new geographies and introduce new and enhanced genomic analysis products. Already launched this year is our Cancer EpiPanel for high-throughput methylation profiling of DNA samples over hundreds of validated cancer-associated genes. We also plan to introduce new and more powerful next-generation assay, which, improve data quality and enhance ease of use. Working with the Health Protection Agency in the U.K. and the Centers for Disease Control and Prevention in the U.S., we anticipate a mid-year launch of an important iSEQ™ product for comparative sequence analysis that could open new multi-billion dollar market opportunities.

This will be an important year for our SEQureDx Technology for noninvasive prenatal diagnostics. We plan to complete development of a test that can directly assess risk of Trisomy 21 (Down syndrome) – a market estimated to exceed $1 billion annually in the U.S. alone. Our test will have the advantage of using a maternal blood sample, and comparative sequence analysis in the first trimester or early in the second trimester, which is earlier than invasive procedures that carry unnecessary risks.

Development of this test was made possible by intellectual property we secured last year from Prof. Dennis Lo of the Chinese University of Hong Kong and earlier from ISIS Innovation Ltd., affiliated with Oxford University. Early this year we announced that our first multi-marker Trisomy 21 test indicates performance approaching 85%, plus or minus 5% ethnic coverage, greater than 95% sensitivity and close to 99% specificity. We expect performance specifications may further improve as additional markers are validated. We are finalizing LDTs for RhD incompatibility and recessive gender disorders to be run on our MassARRAY system, and are working with prominent institutions and thought-leaders to assess our RhD and Down syndrome technologies prior to requesting marketing clearance from the U.S. Food and Drug Administration.

With anticipated continued growth in our core genetic analysis business and advances in molecular diagnostics, we are optimistic about our future at Sequenom. I want to personally thank our employees, investors and stakeholders for their continued support.

Sincerely,

Harry Stylli, Ph.D.
President and Chief Executive Officer

“With anticipated continued growth in our core genetic analysis business and advances in molecular diagnostics, we are optimistic about our future.”
Genetic Analysis Solutions
Meeting Customer Needs and Expanding into New Markets

Advancing Genotyping

Assays-by-Sequenom

Assays-by-Sequenom launched in 2007, and provides a convenient and cost effective way for customers to obtain ready-to-go mixed and validated assays. The new offering includes three levels of service, which researchers can choose from based on their needs. It decreases hands-on time and infrastructure requirements for assay set up. Assays-by-Sequenom enables larger scale studies with faster turnaround time, which further strengthens our competitive advantage in the single nucleotide polymorphism (SNP) fine mapping market.

TYPER 4.0

TYPER 4.0, developed through extensive collaboration with our customers, enables superior quantitative genotyping results. TYPER 4.0 significantly simplifies workflow, provides better data management, and presents a more user-friendly interface.

The software is used in conjunction with Sequenom’s iPLEX® Gold assay for fine mapping genotyping applications, including studies validating the association of SNPs with specific diseases.
Increasing Market Share and Extending Product Portfolios

PCR Reagent Set
The PCR Reagent Set delivers a complete solution for high performance DNA amplification. All PCR components and reaction conditions are optimized and validated for iPLEX Gold genotyping and gene expression experiments. The PCR Reagent set is also bundled with the iPLEX Gold Reagent Kit and SpectroCHIP® Solid Supports, allowing customers to conveniently order all genotyping and gene expression analysis reagents from Sequenom.

NanoDispenser RS1000
In 2007, we successfully launched the RS1000 Nanodispenser. This integrated, benchtop dispenser for nanoliter liquid handling includes a touch screen operator interface and optical dispense QC. Further improvements to the software in 2008 will make it an essential instrument for all our customers.

EpiGenomics Tools
MassARRAY EpiTYPER® technology represents a paradigm shift in quantitative DNA methylation analysis. In 2007, we compiled the Sequenom Standard EpiPanel, representing the first high resolution, fine mapping panel for epigenetic targets. Using EpiTYPER together with the EpiPanel enables a first-of-its-kind combination of fast, inexpensive, and quantitative analysis not available elsewhere. Assays for any genomic region of interest can be easily designed using Sequenom’s EpiDesigner software.

Improving Communication
In 2007 we implemented mysequenom.com, a new web-based customer portal. It allows customers to access Assays by Sequenom, as well as utilize additional tools and downloads, e-commerce capabilities and support functions. In an effort to facilitate communication and portray an image consistent with cutting edge genomic technology, we also introduced our new web site. It has already received twice as many customer visits as this time last year.
Looking forward: 2008

iSEQ

iSEQ is a new MassARRAY application for automated comparative sequence analysis. It is a highly accurate, reproducible method for identifying and typing microbes and viruses. iSEQ will launch in June 2008, heralding our presence in the microbiology field.

CNV Solutions

MassARRAY enables highly accurate quantification of copy number variant (CNV) regions, a current focus of intense investigation. Genome-wide studies are being undertaken to examine the roles CNVs play in population diversity and genotypic response to disease. These will require validation using independent methods, underscoring the utility of our platform.

Oncopanel

The Sequenom Oncomutation panel will enable the scientific community to readily access a number of pre-designed, pre-validated mutations commonly found in tumors. This unique panel will facilitate rapid, accurate, and highly sensitive detection for profiling tumors against well-documented oncogenes.

“In our Laboratory, we use the MassARRAY identification system in several projects. This technology serves as a basis for developing new methods for rapid genotyping of hepatitis B and C viruses and quasispecies analysis of the hepatitis C virus. Currently, a new project is underway to adapt the MassARRAY system to sequencing of whole genomes of hepatitis A and B viruses.”

Laboratory of Molecular Epidemiology and Bioinformatics, Division of Viral Hepatitis, Centers for Disease Control and Prevention (CDC).
Cancer EpiPanel

The Cancer EpiPanel, contains quantitative DNA methylation profiles and assay information for more than 400 cancer related genes. The Cancer EpiPanel is designed for use with EpiTYPER technology, and offers the first high throughput, quantitative, methylation profiling tool for a large set of cancer-related genes.

Next Generation Sequencing

Nanopore-based single molecule readout technology will enable ultra-high throughput DNA analysis such as sequencing, genotyping, RNA, and epigenetic analysis on a whole-genome scale. Developing this technology will significantly contribute to the personalized medicine revolution.
Awakening Growth Through Innovation
Noninvasive Prenatal Diagnostics

Sequenom has exclusively licensed intellectual property rights to develop noninvasive prenatal genetic tests using the MassARRAY system and other platforms. The MassARRAY system delivers reliable and specific data from genetic target material that is only available in trace amounts.

Our research and development team, in collaboration with the world’s leading experts in genetic medicine, are working on noninvasive prenatal genetic tests using “SEQureDx™” technology. SEQureDX technology aims to provide accurate information to women, their physicians, and genetic counselors. We anticipate that SEQureDx technology will be utilized early in pregnancy, reduce the need for amniocentesis, and contribute to the care and prevention of birth defects.

SEQureDx is based on the work of Professor Dennis Lo, and analyzes circulating fetal nucleic acid from maternal blood. The technology has particular promise for new, noninvasive tests for fetal gene and chromosome abnormalities such as RHD, fetal sex determination and Trisomy – including Trisomy 21. Through key partnerships with genetic testing laboratories, our first test for fetal RHD was made available in 2007.

In 2008, we anticipate initiating key clinical studies to validate noninvasive fetal markers for pregnan-
cies at risk of X-linked and gender related disorders such as Congenital Adrenal Hyperplasia (CAH) and population based screening methods for aneuploidies, specifically Down syndrome.

Compared to testing intact fetal cells isolated from maternal blood, there are significant advantages to testing cff DNA. First, there appears to be “enough” cff DNA in pregnancy to develop prenatal diagnostic tests that generate results for routine testing. Second, the turnover of cff DNA is quite rapid. Rapid turnover means that a given fetal DNA measurement is unlikely to interfere with subsequent pregnancies, and offers a “real-time” picture of the genetic health of the fetus. Finally, cff DNA is reported to be routinely detected at 12 weeks pregnancy, with some groups reporting routine detection at 5 weeks gestation. These unique characteristics of cff DNA provide promise of rapid, reliable and reproducible prenatal tests that can be easily carried out for a large number of samples.

Most recently, Dennis Lo’s research group established a new approach of analyzing placenta derived RNA transcripts. A significant advantage of looking at RNA is that all genes are not switched on in all tissues. By looking at genes that are only switched on in the placenta — a fetal specific organ — the RNA is 100% specific to the fetus. Sequenom is expanding this research to identify sufficient fetal RNA markers to address routine Trisomy testing with broad ethnic coverage, and more than 95% sensitivity and close to 99% specificity.

The full diagnostic application of cff nucleic acids are yet to be realized. Sequenom is committed to developing methods to improve fetal DNA extraction, fetal marker identification, and making prenatal tests available to ALL women that desire prenatal genetic testing to improve pregnancy outcome.

As stated by Dr. Allan Bombard, Chief Medical Officer at Sharp Mary Birch Hospital for Women and Chair of Sequenom’s Clinical Advisory Board, “In the near future, noninvasive methods using fetal nucleic acids circulating in the mother’s blood stream will dramatically improve the way patients undergo prenatal screening and, ultimately, diagnosis. To ensure that the values and policies that impact prenatal healthcare are thoughtfully considered and implemented, Sequenom recently established a Clinical Advisory Board comprised of medical leaders, public policy experts, and ethical thought leaders in the field of medical genetics and maternal-fetal medicine. Our Clinical Advisory Board will help drive the goal to develop safe and accurate prenatal testing for all pregnant women.”
International Expansion
Reaching New Markets and Providing Customer Support

As our customer base is expanding, it is important to continuously adapt to their needs and provide appropriate support. To meet those goals we have now opened offices in India, China and Japan.
We thank all of our employees who volunteered to have their images taken for this year’s annual brochure.

Stockholders, investors, and others seeking more information about the company may access the company’s proxy statement and other documents filed with the SEC’s web site at http://www.sec.gov and also by contacting:

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