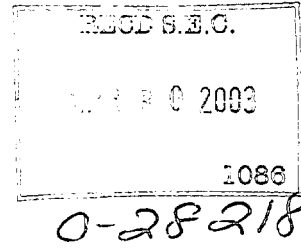




Affymetrix is advancing  
one of science's  
boldest adventures —  
unraveling the  
genetic basis of life  
and exploring  
all its possibilities.

ARIS  
P.E.  
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What's Next?



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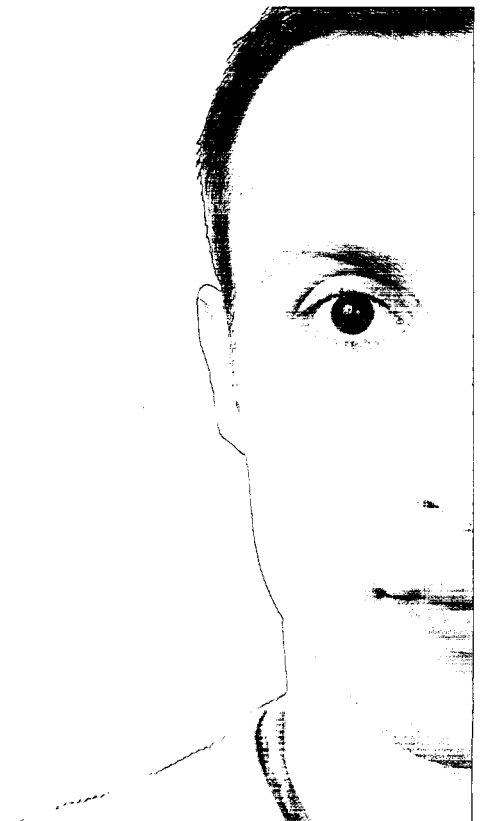
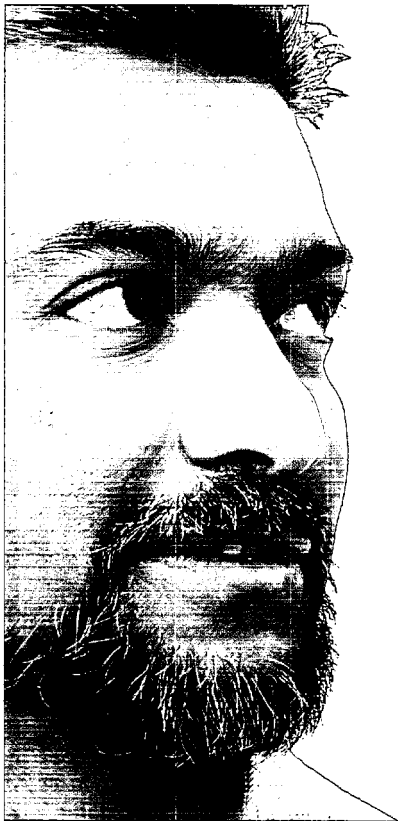


4

Scientists have always employed new technologies to advance their knowledge and understanding of the natural world. Today, Affymetrix GeneChip® technology is helping them answer fundamental questions about the genetic basis of life, and develop new products to enhance human well-being. Demand for Affymetrix® products and services has grown rapidly, as the potential uses of Affymetrix tools expand with each new discovery.

Affymetrix customers are pursuing answers to a wide range of powerful questions: How does our shared human genome express itself differently in each of us? How could a new understanding of the genome make medicine more efficient and effective? How could knowledge of our individual genetic differences benefit our lives and health? Affymetrix technology is helping to answer these questions — and many more.

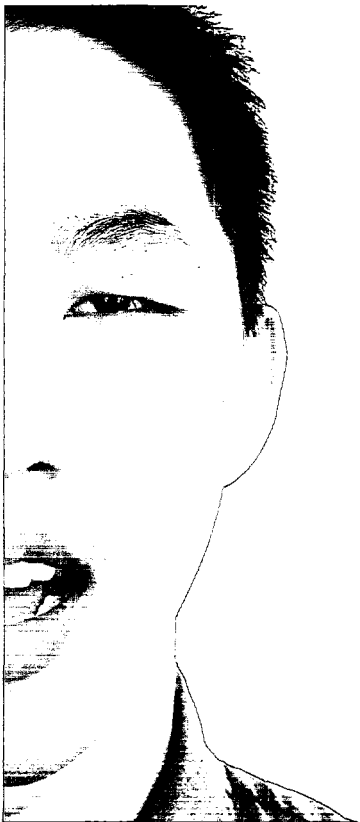
The Way Ahead



Researchers are just starting to explore ways in which the thousands of genes in the human genome interact to create cells, tissues, and organs. Affymetrix technology dramatically accelerates research into these

fundamental processes, giving researchers far more insight than previously imagined. This is leading to breakthrough discoveries with the potential to profoundly influence our life and health.

For Understanding the Genome



*What makes his hearing so sharp?*



*What makes her immune system so strong?*

Medical science is being transformed by more detailed knowledge of the role genes play in disease and aging. Affymetrix technology is helping drug developers refine their therapeutic "targets," so drugs can be optimized

to work in more effective ways, while helping to streamline the drug development process, reduce costs, and bring drugs more quickly to market.

For Creating Better Medicines



What could give her more energy?

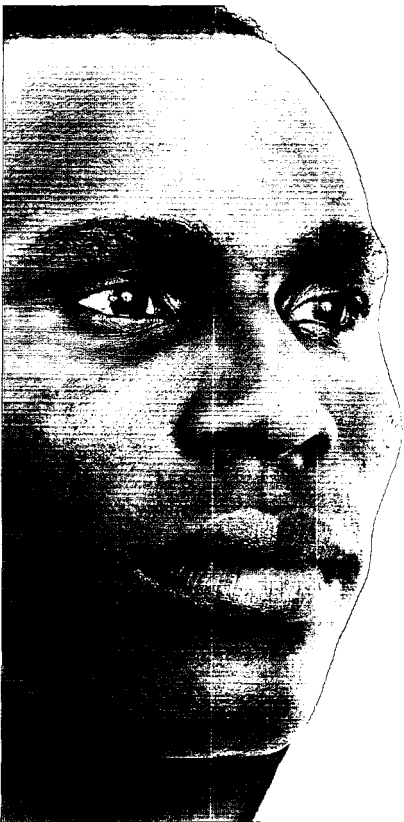


What could prevent his arthritis?

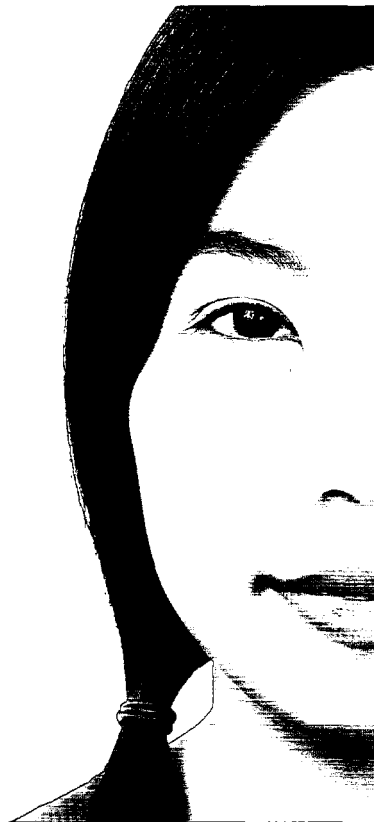
Complex illnesses, such as various types of cancer, may arise from multiple biological pathways, and different versions of these illnesses may progress or respond to therapy in highly varied ways.

Medical researchers are using Affymetrix tools to identify the genetic profiles of disease in the hope that physicians may one day use this information to choose the best course of treatment for their patients.

For Identifying Therapeutic Options



Antihistamines or allergy shots?

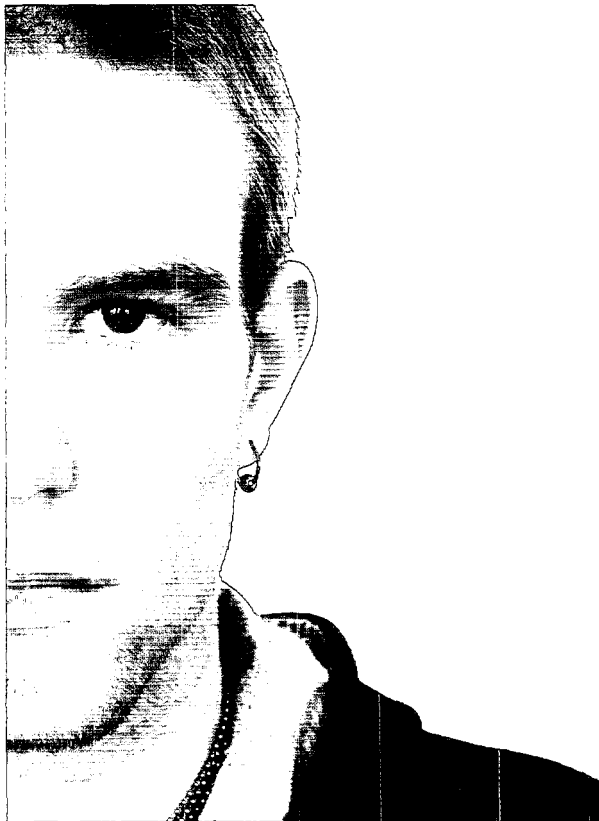


Begin treatment now, or wait?

Affymetrix technology is helping medical researchers conceive and develop more customized options for helping us live longer, healthier lives. Possibilities include more refined diagnoses, personalized advice about nutrition

and prescriptions, and better ways to assess how well each of us responds to these new healthcare options.

For Personalizing Healthcare



How can he best manage his diabetes?



How can she keep her cholesterol levels low?

## GeneChip® Technology

Affymetrix leverages techniques similar to those used by semiconductor companies to pack millions of circuits on a computer chip. On microarrays, instead of "circuits," we use known sequences of DNA that bind to genetic sequences in experimental samples. With this technology, Affymetrix invented the GeneChip system, a robust, scalable platform that brings complex genetic analysis to the benchtop, enabling individual researchers to analyze groups of genes or a whole genome itself.

## From Steps to Leaps

Affymetrix technology enables exponential leaps in information content — from 16,000 DNA probes per chip in 1994 to over 500,000 in 2002, and projections of millions more in the years ahead. The GeneChip platform also makes it easy for scientists to access, analyze, and share their results using personal computers and the Internet. These advances explain why Affymetrix is considered the growing standard in genetic research and analysis.

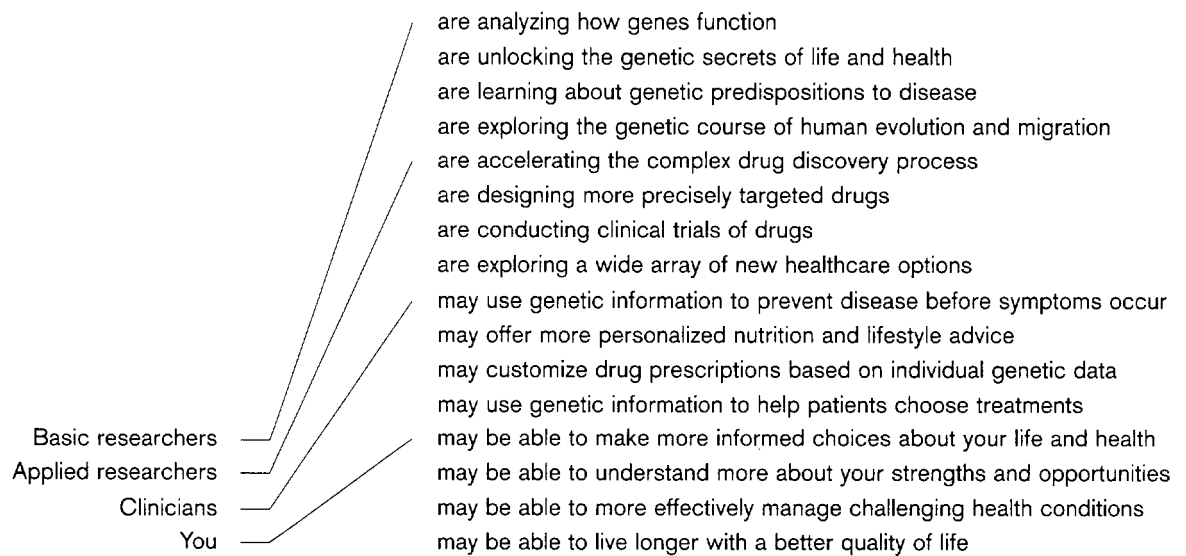
## Expanding Applications

Another great advantage for customers using GeneChip technology is that it has the potential to be used in all phases of investigation, from basic research to clinical applications. Customers can use the GeneChip platform to discover drug targets, for example, help evaluate the safety and effectiveness of a drug candidate in clinical trials, and serve as the platform for creating new clinical diagnostic products.

Affymetrix has been working for more than a decade to prepare for this opportunity — the era when humanity would need technology capable of deciphering the enormous complexity of the human genome and the many mysteries it contains. Previously, scientists could study only a few genes at a time — work that was costly and laborious. Advancing knowledge required a new approach.



## The Right Technology at the Right Time



### Growing Scientific Strength

Like scientists everywhere, Affymetrix is driven by a passion to make new discoveries that serve humanity. An internal team we call *Affymetrix Research Laboratories* is charged with further leveraging our exceptional intellectual property portfolio, while advancing the company's core technology, demonstrating new applications for GeneChip products, conducting original research, and collaborating with scientific thought-leaders worldwide.

### Vibrant Business Model

Affymetrix provides complete solutions including arrays, instrumentation, reagents, software, and an international support network. This strategy has attracted a broad industrial and academic customer base that includes the world's top 40 pharmaceutical companies, over 55 biotech companies, and hundreds of the world's leading academic research institutions. Many third parties are creating products to complement Affymetrix technologies.

### Addressing the Future

Affymetrix is uniquely equipped with science and technology to create new opportunities in basic research and applied development, medical discovery, and clinical medicine. From this vantage point across many disciplines, Affymetrix is advancing society's discussion of fundamental issues, such as public ownership of the human genome, genetic privacy, and ways to ensure equitable access to the benefits of the Genetic Age.

To maximize its scientific and commercial opportunities, Affymetrix is continuing to build a company capable of broadening its technology and making it available worldwide. Growing scientific strength, a vibrant business model, and a clear vision of the way ahead for science have rapidly become the company's most prized attributes.

The Right Company in the Right Place

The GeneChip® Platform  
Expression Monitoring  
DNA Analysis  
Clinical Applications

includes microarrays that pack over 500,000 DNA probes on one chip  
includes instruments that automate research and analysis  
includes reagents that optimize results for customers  
includes software for accessing, analyzing, and sharing knowledge  
enables comprehensive study of how DNA is "expressed" in cells  
is Affymetrix' largest current market for GeneChip products  
includes GeneChip arrays for a wide range of research  
advanced in 2002 enabling study of the whole human genome on two arrays  
expedites study of genetic variation  
is Affymetrix' second largest current opportunity for GeneChip products  
includes mapping, genotyping, and resequencing of the genome  
advanced in 2002 with a whole-genome SNP assay  
may include new tools for evaluating therapeutic choices  
represents a large, long-term market opportunity for Affymetrix  
may be used worldwide in hospitals and health clinics  
provides partnership and growth opportunities for Affymetrix

## Expanding the Platform

Affymetrix®  
GeneChip®  
platform includes  
a broad range  
of commercially  
available  
microarrays  
for complex  
genetic analysis.  
The compact,  
next-generation  
GeneChip®  
Scanner 3000  
offers fast,  
high-resolution  
scanning of  
these  
GeneChip arrays,  
yielding  
information  
customers value  
in moving their  
research forward.

## Opening New Markets

Affymetrix and Roche, a global leader in discovering and developing pharmaceuticals and diagnostics, announced a partnership to create and commercialize GeneChip-based clinical diagnostics aimed at fighting cancer and osteoporosis, as well as a range of cardiovascular, metabolic, infectious, and inflammatory illnesses.

Based on a grant announced in 2002, the National Cancer Institute and *Affymetrix Research Laboratories* published breakthrough findings demonstrating the human genome contains more coding and non-coding instructions dictating how gene expression is regulated and processed than scientists originally predicted — as much as ten times more.

## Posting Profits

Affymetrix recorded net U.S. GAAP profits in both the third and fourth quarters of 2002, by combining strong revenue growth with tightly managed operating costs and improved gross margins. This achievement moved the company ahead of schedule for profitability.

Throughout time, maps have afforded explorers tremendous opportunity. Opportunity to explore. To discover. And today, with the map of the human genome, to unravel the complexities of our existence. No matter the adventure, discovery has required explorers and pioneers to identify new pathways and forge the way ahead.

In so many ways, the past year has yielded unparalleled new opportunities for *Affymetrix* — ones in which we used maps created by fellow explorers, along with tools we pioneered — to advance our core technologies, expand market opportunities, solidify the industry standard, grow the business, achieve profitability, and continue down our clear and focused path.

And because we've remained true to our original charter — to provide researchers with the most powerful technology to accelerate the pace of scientific discovery — *Affymetrix* is uniquely positioned to create state-of-the-art technologies for improving human well-being and exploring opportunities previously only imagined.

As a result, *Affymetrix* stands squarely at the forefront of a burgeoning era with technology that will enable customers to develop a better understanding of our genome and human health. Our fellow scientists may now identify a broader range of therapeutic options for improving medicine, personalizing healthcare, and ultimately, improving lives. *Affymetrix* technology has come of age.

It is this accomplishment that keeps our mission as fresh and exhilarating as when we started, and keeps our focus clear.

#### Advancing the Technology

It is also the reason we continue to evolve our flagship GeneChip® brand platform. The introduction of GeneChip technology fundamentally enabled a new way for researchers to study the human genome, and helped fuel the growth of a new generation of empowering tools. GeneChip technology is driving new science, creating dynamic markets, and helping customers and partners pursue the many applications it makes possible.

With that in mind, we expanded *Affymetrix Research Laboratories (ARL)* whose internal mission is to further advance our popular GeneChip platform, investigate product concepts for rapid development, and create innovations that will influence our business model for decades to come.

One of ARL's recent achievements, for example, was to create a prototype array capable of handling over 60 million fragments of DNA — demonstrating the power and scalability of our manufacturing process to increase information density. Concurrently, ARL collaborated on a study sponsored by the National Cancer Institute to uncover hidden transcription in the human genome, and help scientists better understand genetic instruction. Together, these advancements in "shrink" and increases in information content indicate we'll be able to put ever-increasing millions of nucleic acid fragments on a single chip over the next four to five years, and empower applications not yet envisioned.

Our previous technological accomplishments were recognized in 2002 by *The Economist* magazine and Japan's



prestigious Takeda Foundation. Similarly, our intellectual property portfolio was ranked number one in the pharmaceutical and biotech sector in MIT's 2001 *Technology Review*. In the years to come, we'll continue our tireless pursuit of scientific excellence.

#### Expanding Market Opportunities

Over the past decade, we have focused on opportunities in three key market areas: expression analysis, genotyping or DNA analysis, and clinical applications.

Gene expression monitoring has become one of the most important applications in genetic research and development. Affymetrix' GeneChip technology is now the leading platform for this work, opening a new world of systems biology with applications in basic research, drug development, and disease classification. GeneChip expression analysis products have driven the company's impressive near-term growth and represented the principal source of our product revenues in 2002.

In DNA analysis, Affymetrix technology is providing exponential increases in the amount of information scientists can analyze in a single experiment. You may recall Perlegen Sciences, Inc., the company we founded to uncover the basic patterns of human diversity and its initiative to screen 50 human genomes for common genetic variations. Perlegen's enormous progress this past year yielded amazing discoveries surrounding the single nucleotide polymorphisms (SNPs) that reside within the human

genome. In early 2003, we expanded our relationship with Perlegen to gain access to this valuable information, which can be used to develop microarrays for DNA analysis of a single SNP or the entire human genome. This flexibility and power will enable scientific studies on an unprecedented scale and accelerate the research community's access to these important data.

The clinical applications of Affymetrix GeneChip® arrays for diagnosing and treating disease represent the third major market opportunity. Shortly after the close of 2002, we signed a major agreement with Roche, one of the world's largest pharmaceutical and diagnostic companies, allowing it access to GeneChip technology for developing and commercializing diagnostic products in a broad range of human disease areas. The 18-year, non-exclusive agreement included an up-front payment totaling \$70 million and the potential for a broad range of other compensation over the life of the partnership. This agreement validates the potential for clinical applications of GeneChip technology, which we anticipate will be of significant value to numerous pharmaceutical and diagnostic innovators.

This past year, we also announced a number of collaborations to move microarray-based applications to the clinic with organizations including MIT's Whitehead Institute, Ardaís Corporation, and Boston University Medical Center, to name a few.

We believe the confluence of our successes in these markets will solidly position us to take advantage of new opportunities in the clinical marketplace.

### Solidifying the Standard

Early success in expression analysis, along with the GeneChip platform's flexibility and data reproducibility, have fueled the company's commercial momentum as researchers worldwide standardize on Affymetrix technology. Our broad base of industrial and academic customers grew impressively in 2002, as evidenced by an increase in the global installed base of GeneChip systems to nearly 800 placements.

Adoption of GeneChip technology was most notable among academic customers, many of whom took delivery of their first GeneChip systems during the year. This is particularly exciting when you consider that scientists of today are making major research breakthroughs, while training the scientists of tomorrow to use Affymetrix GeneChip products.

Large pharmaceutical partners, too, have demonstrated growing enthusiasm for applications that will help them identify potential drug targets, create drugs to effectively address them, conduct clinical trials, and take new products to market more efficiently and more cost-effectively. Our expanding customer list now includes all of the world's top 40 pharmaceutical companies and many more.

Together, academic and industrial customers have come to rely on the unmatched Affymetrix quality that enables them to confidently reproduce results time after time, and to share data with colleagues. Empowering this data sharing has driven standardization on GeneChip

technology and explains the growing volume of peer-reviewed publications citing our technology — to date, more than 1,000 scientific papers on topics from cancer to cardiovascular and infectious disease, more than half in the past year alone.

Other academic and commercial entities have also shown tremendous interest in developing technologies and products that complement the GeneChip platform. On all fronts, customers and developers alike view the GeneChip platform as the growing standard for complex genetic analysis.

### Growing the Business

In 2002, growing the business meant introducing our most information-packed product ever—the GeneChip® Human Genome U133 Set — enabling customers to analyze gene expression across the whole human genome using just two GeneChip arrays. Its tremendous success earned "Product of the Year" honors from an industry publication, and became the company's best-selling product.

To complement the HG-U133 Set, we also innovated the next-generation GeneChip® Scanner 3000. Like our GeneChip arrays, this new scanner packs a lot more performance into a smaller space, and makes the GeneChip system even more approachable and easier to use.

New products, along with dedicated sales and marketing organizations in the United States and Europe, accounted for notable growth on both continents.

Similarly, we set the stage for transition to a direct selling operation in Japan, as well as for solid 2003 margins and autonomy in one of the world's most important life science technology markets.

Global sales and marketing were wholly supported by strong array manufacturing operations, along with instrument design and development. Together, these world-class competencies position us to ably meet production demands for years to come.

#### Achieving Profitability

These accomplishments, along with our drive for crisp execution, all contributed to solid financial performance in 2002. As proof, the company increased revenues and income to record levels, posting profits in the third and fourth quarters. Our top-line growth included a 27% increase in product revenues, to a solid \$248.5 million. In the process, we grew total system placements worldwide more than 30%. This growing installed base led to a 52% increase in sales of GeneChip arrays over 2001.

As importantly, we effectively managed expenses by focusing on productivity and increased operating leverage in our manufacturing and distribution infrastructure. As a result, we sharply narrowed our net loss from \$33.1 million in 2001 to \$1.6 million in 2002, reported in accordance with U.S. GAAP standards.

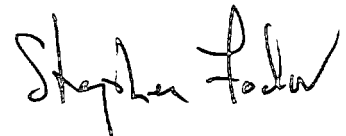
In addition, Affymetrix has a strong balance sheet, solidly positioning the company to fund future growth opportunities.

#### The Way Ahead™

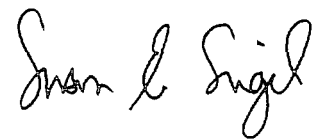
These wins, in conjunction with advances in our core technologies, an expanding market opportunity, and a clear and focused path, will provide us with even more scientific and operating leverage in the years to come. We're thrilled to be at the threshold of this new Genetic Age with enthusiastic customers, partners, employees, and stockholders, who believe in our pioneering spirit and vision for the way ahead.

Many thanks for your continued support and shared commitment.

Sincerely,

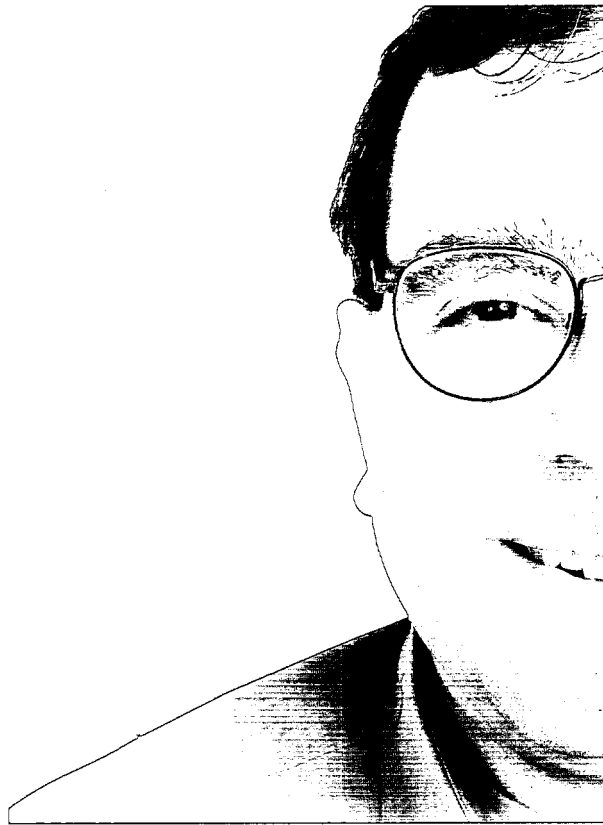


Stephen P.A. Fodor, PhD  
Founder, Chairman, and  
Chief Executive Officer



Susan E. Siegel  
President

For Improving Medicine



For Improving Lives



**Directors**

Paul Berg, PhD <sup>2</sup>  
Cahill Professor in  
Cancer Research and  
Biochemistry, Emeritus;  
Director, Beckman Center,  
Emeritus  
Stanford University  
Medical Center

John D. Diekman, PhD <sup>1,3</sup>  
Managing Partner  
5AM Ventures

Stephen P. A. Fodor, PhD <sup>1</sup>  
Founder, Chairman, and  
Chief Executive Officer  
Affymetrix, Inc.

Vernon R. Loucks, Jr <sup>3</sup>  
Chairman  
The Aethena Group, LLC;  
Former Chairman and  
Chief Executive Officer  
Baxter International, Inc.

Susan E. Siegel  
President  
Affymetrix, Inc.

David B. Singer <sup>3</sup>  
Chairman and  
Chief Executive Officer  
GeneSoft  
Pharmaceuticals, Inc.

John A. Young <sup>1,2</sup>  
President and Chief  
Executive Officer (Retired)  
Hewlett-Packard Company

- 1 Nominating Committee  
2 Compensation Committee  
3 Audit Committee

**Executive Officers**

Barbara A. Caulfield  
Executive Vice President  
and General Counsel

Stephen P. A. Fodor, PhD  
Founder, Chairman, and  
Chief Executive Officer

Trevor J. Nicholls, D. Phil.  
Chief Commercial Officer  
Global Operations

Gregory T. Schiffman  
Senior Vice President and  
Chief Financial Officer

Susan E. Siegel  
President

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HP10 0HH  
United Kingdom

Affymetrix Japan K.K.  
Mita NN Bldg. 16th Floor  
4-1-23 Shiba, Minato-ku  
Tokyo 108-0014  
Japan

**Independent Auditors**

Ernst & Young LLP  
Palo Alto, CA

**Stock Market Information**

The Company's Common Stock trades on The Nasdaq Stock Market® under the symbol AFFX. As of December 31, 2002 there were 442 registered holders of record of the Company's Common Stock. The table listed below reflects the low and high closing prices for 2002 and 2001. Per share prices have been adjusted to reflect the August 21, 2000 stock split.

2002	Low	High
First Quarter	\$ 23.43	\$ 39.94
Second Quarter	\$ 20.71	\$ 28.63
Third Quarter	\$ 14.60	\$ 23.20
Fourth Quarter	\$ 20.01	\$ 28.79

2001	Low	High
First Quarter	\$ 26.69	\$ 72.88
Second Quarter	\$ 20.25	\$ 50.42
Third Quarter	\$ 14.50	\$ 25.95
Fourth Quarter	\$ 16.07	\$ 39.95

**Transfer Agent /Registrar**

American Stock Transfer  
& Trust Company  
59 Maiden Lane  
New York, NY 10038  
Tel 800 937 5449

**SEC Form 10-K**

A copy of the Company's  
Annual Report to the  
Securities and Exchange  
Commission on Form 10-K  
is available without charge  
upon request to:

Investor Relations  
Affymetrix, Inc.  
3380 Central Expressway  
Santa Clara, CA 95051

Additional Company  
information can be obtained  
at [www.affymetrix.com](http://www.affymetrix.com).

All statements in this annual report that are not historical are "forward-looking statements" within the meaning of Section 21E of the Securities Exchange Act as amended, including statements regarding our "expectations," "beliefs," "hopes," "intentions," "strategies," or the like. Such statements are based on our current expectations and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements, including, but not limited to, risks of Affymetrix' ability to achieve and sustain higher levels of revenue, higher gross margins, and reduced operating expenses. Affymetrix, Inc. cautions investors that there can be no assurance that actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors, including, but not limited to, the risk factors discussed in Affymetrix' Form 10-K for the year ended December 31, 2002 and other SEC reports, including its Quarterly Reports on Form 10-Q for subsequent quarterly periods. Affymetrix expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in Affymetrix' expectations with regard thereto, or any change in events, conditions, or circumstances on which any such statements are based. Affymetrix, the Affymetrix logo, and GeneChip are registered trademarks owned or used by Affymetrix, Inc. "The Way Ahead" is a trademark owned by Affymetrix, Inc.

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