Personalized Medicine: *A Value Proposition*

A Conference Hosted By

HARVARD MEDICAL SCHOOL – PARTNERS HEALTHCARE
CENTER FOR GENETICS AND GENOMICS

HARVARD BUSINESS SCHOOL

November 12-14, 2008

Joseph B. Martin Conference Center
at Harvard Medical School, Boston

A CONFERENCE
TO FOCUS ON RECOGNIZING
THE VALUE OF
PERSONALIZED MEDICINE

Conference Program

HIGHLIGHTS FROM PAST CONFERENCES










November 12, 2008

Dear Colleague,

Welcome to the 2008 conference ***Personalized Medicine: A Value Proposition.*** This is the fourth such annual gathering and the Harvard Medical School-Partners HealthCare Center for Genetics and Genomics is pleased again to have Harvard Business School as its co-host and the collaboration of the Personalized Medicine Coalition for this important meeting.

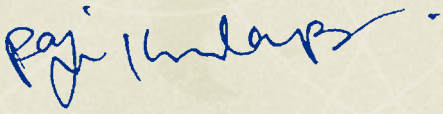
In our current economic circumstances, where healthcare issues are being vigorously debated, it is very important to find strategies to improve the quality of healthcare without placing extraordinary burdens on society. I have argued for many years that the practice of personalized medicine can contribute positively to achieving this objective. The ever increasing pace of genetic and genomic discoveries, the rapid reduction in costs for such activities as whole genome sequencing and the rate at which the knowledge is being translated into the clinic reinforce the aspiration that personalized medicine can and will be the paradigm for patient care.

For personalized medicine to be a reality it is important that we can demonstrate its value. The value proposition of personalized medicine is different for different sectors of the community. Nevertheless, patients; physicians; scientists; pharmaceutical, diagnostic, and information technology companies; insurers; venture capital and other funding sources; and government agencies all have to find a common language and a common purpose in implementing personalized medicine. We also must recognize that personalized medicine has no regional or national boundaries – it is equally applicable to all individuals in all nations. Reaching those points of progress are the theme and the goal of this year's conference.

The cause of personalized medicine has enjoyed a significant boost in recent years through the active advocacy of Secretary Michael Leavitt and several of his colleagues at the U.S. Department of Health and Human Services and in the focused consideration of the President's Council of Advisors on Science and Technology. Both will play prominent roles in this year's conference, underlining the essential values that personalized medicine offers and providing substantive context for all our discussions.

I am deeply grateful to the members of our organizing committee, our speakers and panelists, my staff, and the generous sponsors, all of whose involvement is critical to the success of our meeting.

Sincerely,



Raju Kucherlapati, Ph.D.
Paul C. Cabot Professor of Genetics and Professor of Medicine
Harvard Medical School
Scientific Director Emeritus
Harvard Medical School-Partners HealthCare Center for Genetics and Genomics

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Program Associate
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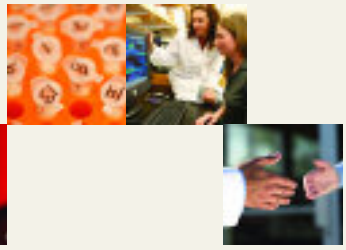
Harvard-Partners Center for Genetics and Genomics Labs at 65 Landsdowne Street, Cambridge



Conference Program

Information Technology & Personalized Medicine Symposium

Wednesday, November 12, 2008

12:00 p.m.	Registration & Refreshments	All talks and sessions will take place in the Amphitheater unless otherwise noted
1:00 p.m.	Welcome	**Raju Kucherlapati, Ph.D.** Paul C. Cabot Professor of Genetics, Professor of Medicine, Harvard Medical School, Scientific Director Emeritus, Harvard Medical School-Partners HealthCare Center for Genetics and Genomics
1:05 p.m.	Keynote: Realizing Value in Personalized Medicine	**David J. Brailer, M.D., Ph.D.** Chairman, Health Evolution Partners Introducer: **Diane Keogh** Corporate Director for Research Computing, Partners HealthCare
1:40 p.m.	Panel I: Genetics in the Healthcare Enterprise	Moderator: **Jeffrey D. Miller** Vice President, Worldwide Health and Life Sciences/Public Sector Technology Solutions Group, Hewlett-Packard Company **Neil de Crescenzo** Senior Vice President and General Manager, Healthcare and Life Sciences, Oracle Corp. **Janet Dillione** Chief Executive Officer, Health Services, Siemens Medical Solutions **John P. Glaser, Ph.D.** Vice President and Chief Information Officer, Partners HealthCare **Eiry W. Roberts, MB (Hons) BS MRCP FFPM** Vice President, Transitional Phase Development, Eli Lilly and Company
2:40 p.m.	Break & Refreshments	

3:10 p.m.	Panel II: Business Outlook	Moderator: **Thomas J. Miller** Chief Executive Officer, Division Workflow & Solutions, Siemens AG, Sector Healthcare **George M. Church, Ph.D.** Professor of Genetics, Harvard Medical School, Director, Center for Computational Genetics **James Heywood** Chairman and Co-Founder, PatientsLikeMe **Frederick S. Lee, M.D., M.P.H.** Product Manager for Personalized Medicine and Genomics, McKesson Corp. **Steven St. Peter, M.D., M.B.A.** Managing Director, MPM Capital
4:15 p.m.	Panel III: IT in Personalized Genomics	Moderator: **Samuel J. Aronson** Executive Director of Information Technology, Harvard Medical School-Partners HealthCare Center for Genetics and Genomics **Linda Avey** Co-Founder, 23andMe **Jorge Conde** Co-Founder and Chief Executive Officer, Knome, Inc. **David P. King** President and Chief Executive Officer, Laboratory Corporation of America **Dietrich A. Stephan, Ph.D.** Founder and Chief Science Officer, Navigenics, Inc.
5:15 p.m.	Closing	**Raju Kucherlapati, Ph.D.** Paul C. Cabot Professor of Genetics, Professor of Medicine, Harvard Medical School, Scientific Director Emeritus, Harvard Medical School-Partners HealthCare Center for Genetics and Genomics

Conference Program

Personalized Medicine: *A Value Proposition*

Thursday, November 13, 2008

7:30 a.m.	Registration & Continental Breakfast	
8:45 a.m.	Welcome	**Raju Kucherlapati, Ph.D.** Paul C. Cabot Professor of Genetics, Professor of Medicine, Harvard Medical School, Scientific Director Emeritus, Harvard Medical School-Partners HealthCare Center for Genetics and Genomics
9:00 a.m.	Keynote: The Innovator's Prescription: A Disruptive Solution to our Health Care Crisis	**Clayton M. Christensen, D.B.A.** Robert and Jane Cizik Professor of Business Administration, Harvard Business School Introducer: **Sandra Glucksmann, Ph.D.** Senior Vice President of Research and Business Operations, Tempo Pharmaceuticals
	Keynote: Personalized Medicine and Medical Practice	**Richard M.J. Bohmer, MBChB, MPH** MBA Class of 1973 Senior Lecturer of Business Administration, Harvard Business School Introducer: **Robert I. Tepper, M.D.** Partner, Third Rock Ventures, LLC
	Conversation with Keynote Speakers	Moderator: **Richard G. Hamermesh, D.B.A.** MBA Class of 1961 Professor of Management Practice, Faculty Chair, HBS Healthcare Initiative, Harvard Business School
10:30 a.m.	Break & Refreshments	
11:15 a.m.	Panel Discussion: Evidence-Based Medicine	Introducer: **Christine Seidman, M.D.** Investigator, Howard Hughes Medical Institute, Thomas W. Smith Professor of Medicine and Genetics, Harvard Medical School, Director, Cardiovascular Genetics Center, Brigham and Women's Hospital Moderator: **Mason W. Freeman, M.D.** Chief, Lipid Metabolism Unit, Massachusetts General Hospital, Harvard Medical School **Mark A. Creager, M.D.** Professor of Medicine, Brigham and Women's Hospital, Harvard Medical School **Felix W. Frueh, Ph.D.** Vice President, R&D, Personalized Medicine, Medco Health Solutions, Inc.

continued	Panel Discussion: Evidence-Based Medicine	**Matthew P. Goetz, M.D.** Assistant Professor of Oncology, Assistant Professor of Pharmacology, Mayo Clinic **Peter G. Traber, M.D.** President, Chief Executive Officer and Executive Dean, Baylor College of Medicine
12:30 p.m.	Break – Transition to Rotunda, Pechet Room and Room 350	
1:00 p.m.	Luncheon Keynote: A Report on the Enquiry on Genomic Medicine, United Kingdom	**The Lord Naren Patel, MB, ChB** Member, House of Lords Introducer: **Joanne C. Armstrong, M.D.** Senior Medical Director for Women's Health and Clinical Lead for Genomics, Aetna, Inc.
2:00 p.m.	Table Discussions	Facilitators: **Robert C. Wells** Partner, HealthFutures, LLC **Harry Glorikian** Managing Partner, Scientia Advisors **Mollie Roth, Esq.** Corporate Counsel, Vice President, Business Development, Diaceutics
3:00 p.m.	Break – Transition back to Amphitheater	
3:15 p.m.	Keynote: Progressing Personalized Medicine in Pharma: A Perspective from Pfizer	**Aidan C. Power, MB BCh MSc MRCPsych** Vice President & Global Head of Molecular Medicine, Pfizer Global Research and Development Introducer: **Nadine Cohen, Ph.D.** Head of Pharmacogenomics and Senior Research Fellow, Johnson & Johnson Pharmaceutical Research and Development. LLC
3:45 p.m.	Case Studies on Drugs & Treatments	Chair: **Deborah Dunsire, M.D.** President and Chief Executive Officer, Millennium Pharmaceuticals, Inc. – The Takeda Oncology Company **Mary Del Brady** President and Chief Executive Officer, RedPath Integrated Pathology, Inc. **David D. Chang, M.D., Ph.D.** Vice President Global Development, Hematology/Oncology, Amgen, Inc.
5:00 p.m.	Reception – Elements Café	

Conference Program

Personalized Medicine: *A Value Proposition*

Friday, November 14, 2008

7:15 a.m.	Continental Breakfast	
8:15 a.m.	Keynote: Personalized Health Care: A Value Predicate	**The Honorable Michael O. Leavitt** Secretary of Health and Human Services, U.S. Department of Health and Human Services Introducer: **James J. Mongan, M.D.** President and Chief Executive Officer, Partners HealthCare
	Personalized Medicine Coalition's Fourth Annual Award for Leadership in Personalized Medicine	Award Background: **Edward Abrahams, Ph.D.** Executive Director, Personalized Medicine Coalition Presenter: **Mara G. Aspinall** Senior Advisor, Genzyme Corporation, Dana-Farber Cancer Institute
9:15 a.m.	Panel Discussion: Government & Regulators	Moderator: **M. Kathleen Behrens, Ph.D.** General Partner, RS Investments, Member, President's Council of Advisors on Science and Technology (PCAST) **Arthur A. Daemmrich, Ph.D.** Assistant Professor of Business Administration, Harvard Business School **Gregory J. Downing, D.O., Ph.D.** Program Director, Personalized Health Care, U.S. Department of Health and Human Services **Lawrence J. Lesko, Ph.D., FCP** Director, Office of Clinical Pharmacology, Center for Drug Evaluation and Research, U.S. Food and Drug Administration **Michael S. Paul, Ph.D.** President and Chief Executive Officer, LineaGen
10:30 a.m.	Break & Refreshments	

11:00 a.m.	Panel Discussion: Reimbursement	Moderator: **Samuel R. Nussbaum, M.D.** Executive Vice President, Clinical Health Policy and Chief Medical Officer, WellPoint, Inc. **Mara G. Aspinall** Senior Advisor, Genzyme Corporation, Dana-Farber Cancer Institute **Robert S. Epstein, M.D., M.S.** Senior Vice President, Medical & Analytical Affairs and Chief Medical Officer, Medco Health Solutions, Inc. **Carol J. McCall, FSA, MAAA** Vice President, Research and Development, Innovation Center, Humana, Inc. **Margaret Piper, Ph.D., M.P.H.** Associate Director, Blue Cross/Blue Shield Association Technology Evaluation Center
12:20 p.m.	Town Hall Meeting	Facilitators: **Robert C. Wells** Partner, HealthFutures, LLC **Harry Glorikian** Managing Partner, Scientia Advisors **Mollie Roth, Esq.** Corporate Counsel, Vice President, Business Development, Diaceutics
1:20 p.m.	Closing	**Raju Kucherlapati, Ph.D.** Paul C. Cabot Professor of Genetics, Professor of Medicine, Harvard Medical School, Scientific Director Emeritus, Harvard Medical School-Partners HealthCare Center for Genetics and Genomics
1:30 p.m.	Bag Lunch	

Conference Speakers

Edward Abrahams, Ph.D.
Edward Abrahams, Ph.D., Executive Director of the Personalized Medicine Coalition, a non-profit educational and advocacy group representing diverse members with a interest in advancing medical progress through the adoption of personalized medicine concepts and products, brings extensive experience in industry, academia, and government to the position. As former Executive Director of the Pennsylvania Biotechnology Association, Dr. Abrahams managed all aspects of the Association, including public advocacy, media relations, and educational programs, tripling its size and revenues in three years. He also spearheaded the successful effort that led to the Commonwealth of Pennsylvania's investment of $200 million to commercialize biotechnology in that state.

Previously, Dr. Abrahams had been Assistant Vice President for Federal Relations at the University of Pennsylvania, and also held a senior administrative position at Brown University. Before becoming a university administrator, Dr. Abrahams worked seven years for the United States Congress, including as a legislative assistant to Senator Lloyd Bentsen and as an economist for the Joint Economic Committee under the chairmanship of Congressman Lee Hamilton. In addition to articles in both popular and professional journals, he is the author of *The Lyrical left: Randolph Bourne, Alfred Stieglitz and the Origins of Cultural Radicalism in America.*

Joanne Armstrong, M.D., M.P.H.
Joanne Armstrong, MD, MPH is a senior medical director at Aetna where she leads the areas of women's health and genetics. In this role, she is the clinical and strategic lead for genomic medicine-related activities including policy development, clinical program development and implementation, medical cost management efforts, and other activities. Dr. Armstrong is board-certified in obstetrics and gynecology and has additional training in epidemiology and public health.

Aetna is the nation's third largest health benefits company, providing medical benefits for nearly 16 million individuals and pharmacy benefits for 10 million individuals.

Samuel (Sandy) Aronson
Samuel (Sandy) Aronson is the Executive Director of IT of the Partners Center for Personalized Genetic Medicine (PCPGM). In this position he oversees the development of IT infrastructure to support both the PCPGM's facilities and it's clinically focused Laboratory for Molecular Medicine. This includes the development of portal, LIMS and repository systems as well as integrating these systems with other Partners clinical infrastructure. Mr. Aronson's group also actively works with other groups to continuously enhance support for genetics in the electronic health record. Prior to this position, Mr. Aronson held several positions with Sapient Corporation, was a Strategic Consultant for Monitor Company and founded LearningAction, a web-based training company. Mr. Aronson holds a Masters in Organizational Behavior and a Bachelors in Computer Science from Stanford University. He also holds a Masters in Biology from Harvard Extension School.

Mara G. Aspinall, M.B.A.
Mara Aspinall is a biotechnology executive with focus and experience in oncology, diagnostics and personalized medicine. She is currently on sabbatical from Genzyme working at Harvard Medical School and Dana Farber Cancer Institute on the implementation of personalized medicine into physician education, clinical practice and research. For the last seven years, Mara was President of Genzyme Genetics, a leading provider of testing and consultative services in the oncology and reproductive markets. Genzyme Genetics is a business unit of Genzyme Corporation, one of the world's largest biotechnology firms with more than 10,000 employees and $4 billion in revenue.

Under Mara's leadership, Genzyme Genetics set the standard for quality in the industry, while growing the business at an unprecedented pace. She transformed the business – expanding its scope and market reach to become one of the nation's largest diagnostic laboratories. The division successfully completed and integrated four acquisitions, expanded research and development and initiated new programs for community outreach and education.

She is an active member of the Federal Secretary of Health and Human Services' Advisory Commission on Genetics, Health and Society as well as Vice Chairman of the Personalized Medicine Coalition. Most recently, she co-authored, "Realizing the Promise of Personalized Medicine" in Harvard Business Review.

Mara previously served as President of another Genzyme division, Genzyme Pharmaceuticals. In her four years as President, she restructured the business from generic drug manufacturing to value-added custom production. She built a new international management team that created more than 25% annual growth.

Mara started her business career at Bain & Company, an international strategic consulting firm. Her Masters of Business Administration from Harvard Business School was enriched with the John P. Stevens Prize for leadership.

Linda Avey

Linda has over 20 years of sales and business development experience in the biopharmaceutical industry in San Francisco, Boston, San Diego, and Washington, D.C. Prior to starting 23andMe, she developed translational research collaborations with academic and pharmaceutical partners for Affymetrix and Perlegen Sciences. Linda also spent time at Spotfire helping scientists understand the power of data visualization and at Applied Biosystems during the early days of the human genome project. The advent of high density genome-wide scanning technologies brought huge potential for significant discoveries. However, the lack of sufficient funding to enable adequate studies prompted Linda to think of a new research model. These ideas led to the formation of 23andMe. Her primary interest is the acceleration of personalized medicine, using genetic profiles to target the right drug to the right person at the correct dose. Linda graduated from Augustana College with a B.A. in biology.

M. Kathleen Behrens, Ph.D.

Dr. Behrens presently serves as a member of the President's Council of Advisors on Science and Technology (PCAST), a role in which she has served since 2001. She was a director of the Board on Science, Technology and Economic Policy (STEP) for the National Research Council from 1997-2005, at which time she also participated as a member of the Institute of Medicine Committee on New Approaches to Early Detection and Diagnosis of Breast Cancer. Kathy was a director of the National Venture Capital Association from 1993 to 2000, also serving as President of the NVCA from May, 1998 through April, 1999, Chairman from May 1999 through September, 1999 and Past Chairman from October 1999 through April, 2000. Dr. Behrens was a Trustee of the University of California, Davis, Foundation from 1996-2001 and also is a member of the Advisory Committee for the J. David Gladstone Institutes. Kathy holds a Ph.D. in Microbiology from the University of California, Davis, where she performed genetic research for six years.

Kathy established a career in the financial services industry, working with Robertson Stephens & Co. from 1983 through 1996, at which time the firm was sold. During this tenure, she became a general partner and managing director. Dr. Behrens continued in her capacity as a General Partner for selected venture funds for RS Investments from 1996 through today, after management led a buy-out of that firm from Bank of America. Her professional career included tenures as a public-market biotechnology securities analyst, as well as venture capitalist focusing on healthcare, technology and related investments. She was instrumental in the founding of several biotechnology companies including Protein Design Labs, Inc. and COR Therapeutics, Inc. and participated in financing a broad range of biotechnology, health services and device companies. Most recently, Kathy served as a director of Abgenix, Inc. in a role that spanned that firm's early rounds of private financings through the company's sale in 2006 to Amgen, Inc.

Richard M.J. Bohmer, MB, ChB, MPH

Richard M.J. Bohmer is a physician and the MBA Class of 1973 Senior Lecturer in Business Administration at the Harvard Business School in the Technology and Operations (TOM) unit. He teaches a second year course on health care operations management, "Managing Medicine," which discusses the design, management and improvement of the processes by which patients are medically treated. He co-directs the MD-MBA program and teaches a course at Harvard Medical School on medical management. He is the faculty chair for the Executive Education program Healthcare Delivery.

His research has focused on health care operations strategy, technology adoption in health care, patient safety, clinical process management and clinical quality improvement. Central to his teaching and research is the principle that health care delivery requires different types of process, each of which must be managed in a different way. Professor Bohmer has written on learning, technology adoption and health care operations strategy in the medical and management literatures and published numerous cases on health care operations management. In 2004 he was a member of the Institute of Medicine committee that produced the report "Saving Women's Lives: Strategies for Improving Breast Cancer Detection and Diagnosis."

Before joining the HBS faculty, Dr. Bohmer was a Senior Clinical Associate at Massachusetts General Hospital and the Clinical Director of Quality Improvement for four years, where he was responsible for planning and implementing the clinical quality improvement program at the hospital.

continued

Dr. Bohmer was born in Wellington, New Zealand. He trained at the Auckland University School of Medicine in Family Medicine, and has practiced medicine in New Zealand, England and Africa. He attended the Harvard School of Public Health on a Fulbright Scholarship from where he graduated in 1993 with a Masters of Public Health in Health Care Management. He has taught and consulted on health management issues in numerous locations both in the US and internationally.

Mary Del Brady
Ms. Brady, President and CEO of RedPath Integrated Pathology, Inc., is an entrepreneur whose 30 years of professional experience include the founding and ownership of several companies in the services and biotechnology industries.

She has held an executive role within a major academic health system, was president of a national association of business owners with international responsibilities, and has served as a director/advisor for numerous not-for-profit and for-profit organizations.

Prior to joining RedPath, Ms. Brady was co-founder and president of the highly regarded TissueInformatics.Inc, one of Western Pennsylvania's earliest first biotechnology companies. She holds a Masters in Business Administration from the University of Pittsburgh.

David J. Brailer, M.D., Ph.D.
David J. Brailer, MD, PhD, chairman of Health Evolution Partners, has sought to drive positive change in health care in his work as a physician, researcher, teacher, entrepreneur and policymaker. He earned his MD at West Virginia University, completed internal medicine residency at the University of Pennsylvania School of Medicine, and earned his PhD in health economics at The Wharton School. Dr. Brailer taught in Wharton's MBA curriculum for ten years.

Dr. Brailer founded CareScience, Inc. and served as Chairman and CEO from inception, through its IPO and until its sale in 2002. CareScience led the market in development of care management, outcomes analysis and health information exchange under his leadership.

President George W. Bush appointed Dr. Brailer as the first National Coordinator for Health Information Technology, and he served in this role from May 2004 through May 2006. Dr. Brailer oversaw the President's Executive Order, which called for widespread deployment of health information technology within ten years to help realize substantial improvements in safety and efficiency.

David D. Chang, M.D., Ph.D.
Since joining Amgen in 2002, David Chang has played an instrumental role in defining Amgen's strategy in entry of small molecule and biologic therapeutics into clinical testing. He has managed several programs in anti-angiogenesis, cell proliferation, and apoptosis, and was the lead clinical scientist in biomarker development program in oncology. He was also a key clinical strategist for several late stage programs. In 2005, he assumed leadership of the Oncology Therapeutics program and currently oversees clinical development of oncology therapeutics portfolio at Amgen.

Dr. Chang received his B.S. from Massachusetts Institute of Technology, his M.D. and Ph.D. from Stanford University School of Medicine in 1988, and his postgraduate clinical training at the Brigham and Women's Hospital and the Dana Farber Cancer Institute. Prior to joining Amgen, Dr. Chang served on the faculty at the School of Medicine, UCLA. He is a recipient of the Searle Scholars Award, James McDonnell Scholars Award, and the Presidential Early Career Award for Scientists and Engineers.

Clayton M. Christensen, D.B.A.
Clayton M. Christensen is the Robert and Jane Cizik Professor of Business Administration at the Harvard Business School, with a joint appointment in the Technology & Operations Management and General Management faculty groups. His research and teaching interests center on the management issues related to the development and commercialization of technological and business model innovation. Specific areas of focus include developing organizational capabilities and finding new markets for new technologies.

Professor Christensen holds a B.A. with highest honors in economics from Brigham Young University (1975), and an M.Phil. in applied econometrics and the economics of less-developed countries from Oxford University (1977), where he studied as a Rhodes Scholar. He received an MBA with High Distinction from the Harvard Business School in 1979, graduating as a George F. Baker Scholar. He was awarded his DBA from the Harvard Business School in 1992. Prior to joining the HBS faculty, Professor Christensen served as chairman and president of Ceramics Process Systems Corporation (CPS), a firm he co-founded with several MIT professors in 1984. CPS is a leading developer of products and manufacturing processes using high-technology metals and ceramics such as silicon nitride and silicon carbide. From 1979 to 1984 he worked as a consultant and project manager with the Boston Consulting Group (BCG), where he was instrumental in

founding the firm's manufacturing strategy consulting practice. In 1982 Professor Christensen was named a White House Fellow, and served through 1983 (on a leave of absence from BCG) as assistant to U.S. Transportation Secretaries Drew Lewis and Elizabeth Dole.

Professor Christensen became a faculty member at the Harvard Business School in 1992. He taught courses in Technology and Operations Management, General Management, and Operations Strategy. He then developed a course called Managing Innovation. Professor Christensen currently teaches an elective course he designed called Building a Sustainably Successful Enterprise, which teaches managers how to build and manage an enduring, successful company or transform an existing organization.

Professor Christensen is the author of the bestselling books The Innovator's Dilemma (1997), which received the Global Business Book Award for the best business book published in 1997, The Innovator's Solution (2003), and Seeing What's Next (2004). In addition, he edited two casebooks on Innovation: Innovation and the General Manager (1999) and Strategic Management of Technology and Innovation, 4th edition (2004).

Professor Christensen's writings have been featured in a variety of publications, and have won a number of awards, such as the Best Dissertation Award from The Institute of Management Sciences for his doctoral thesis on technology development in the disk drive industry; the Production and Operations Management Society's 1991 William Abernathy Award, presented to the author of the best paper in the management of technology; the Newcomen Society's award for the best paper in business history in 1993; and the 1995 and 2001 McKinsey Awards for articles published in the Harvard Business Review.

Professor Christensen was born in Salt Lake City, Utah. He worked as a missionary for the Church of Jesus Christ of Latter-Day Saints in the Republic of Korea from 1971 to 1973 and speaks fluent Korean. He continues to serve in his church in a variety of ways and is extensively involved in other activities in the community. He served from 1986 to 1994 as a member of the Program Review Board and Strategic Planning Committee of the Brigham and Women's Hospital in Boston, and was a member and chairman of the board of directors of the Massachusetts Affiliate of the American Diabetes Association between 1984 and 1996. Professor Christensen was also a founding board member of the Combined Health Appeal of Northeastern Massachusetts. He was an elected member of the Town Meeting (council) in Belmont Massachusetts for eight years; served as vice-chairman of the town's personnel board; and as chairman of its long-range financial planning task force. He has served the Boy Scouts of America for 25 years as a scoutmaster, cubmaster, den leader and troop and pack committee chairman. He and his wife Christine live in Belmont, MA. They are the parents of five children.

George Church, Ph.D.

Professor of Genetics, Harvard Medical School, Director of the Center for Computational Genetics. 1984 Harvard PhD

included the first direct genomic sequencing method, molecular multiplexing tags, which lead to automation & software used at Genome Therapeutics Corp. for the first commercial genome sequence -- pathogen, Helicobacter in 1994. This multiplex solid-phase sequencing evolved into polonies (1999), ABI-SOLiD (2005) & open-source Polonator.org (2007). Innovations in homologous recombination and array-based DNA reading & writing lead to current research and new ethics/safety strategies in Personal Genomics (PGP, 23andme, Knome) & synthetic biology (Codon Devices, SynBERC, LS9).

Nadine Cohen, Ph.D.

Nadine Cohen was trained as a pharmacist in France and received her Ph.D. in Immunogenetics in 1986 from the Hebrew University in Jerusalem. She was a post-doctorate fellow at Stanford University until 1989, and after heading

the genetic screening laboratory at the Foundation Jean Dausset-Human Polymorphism Study Center in Paris, she was an Assistant Professor from 1995-2001 at the Technion Bruce Rappaport Faculty of Medicine in Haifa (Israel). She joined the Jansen Research Foundation in August 1999 to establish a Pharmacogenomics program. She is currently Head of the Pharmacogenomics Team at the Johnson and Johnson Pharmaceutical Research and Development (Raritan, NJ, USA). She has published more than 70 scientific papers in the area of immunogenetics and human molecular genetics. Nadine Cohen is also the current elected chair of the industry Pharmacogenetics Working Group, and represents Johnson and Johnson on various external organizations engaged in Pharmacogenomics and Personalized Medicine. Nadine Cohen is also the invited editor of the book "Pharmacogenomics and Personalized Medicine", to be published in August 2008 by Springer-Human Press.

Jorge Conde

Co-Founder and CEO Jorge Conde is President and CEO of Knome, Inc. He has spent his entire professional career in the biotechnology industry, working in finance, business development, marketing and operations. Prior to Knome, Mr. Conde worked in strategic marketing and operations at MedImmune, Inc. He has also worked in business development at Helicos Biosciences Corporation, a DNA sequencing company, and in the life sciences group at Flagship Ventures, a venture capital firm. Previously, Mr. Conde was

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an investment banker at Morgan Stanley & Co., specializing in the biotechnology and genomics industries. He holds an MBA from Harvard Business School, an MS from the Harvard-MIT Division of Health Sciences and Technology (HST) and a Bachelor's degree in Biology from The Johns Hopkins University.

Mark A. Creager, M.D.
Mark A. Creager is Professor of Medicine at Harvard Medical School, a member of the Cardiovascular Division, and Director of the Vascular Center at the Brigham and Women's Hospital in Boston. Dr. Creager earned his medical degree at Temple University in Philadelphia, following which he was Clinical and Research Fellow in Peripheral Vascular Disease and subsequently Cardiology Fellow at University Hospital and Boston City Hospital. He has been the recipient of many awards and honors, and is currently the Simon C. Fireman Scholar in Cardiovascular Medicine at Brigham and Women's Hospital.

Dr. Creager's major research and clinical interest is in vascular medicine, specifically vascular regulatory mechanisms. He is an editor of the textbook, Vascular Medicine and the editor of the journals, Vascular Medicine and Current Treatment Options in Cardiovascular Medicine, and a member of the editorial board Arteriosclerosis, Thrombosis and Vascular Biology. He is the author of more than 280 published contributions to the medical literature, including: research papers on vascular function, book chapters, and monographs on vascular disease. He is a member of the Board of Directors of the American Heart Association, and the American Board of Vascular Medicine. Dr. Creager currently serves as President of the Vascular Disease Foundation. He is Past President and Master of the Society for Vascular Medicine, and a Fellow of the American Heart Association, the American College of Cardiology, and the American Physiological Society.

Arthur A. Daemmrich, Ph.D.
Arthur Daemmrich is an assistant professor in the Business, Government, and the International Economy Unit and a member of the interdisciplinary HBS Healthcare Initiative. His work examines the regulation of science-based industries, with a particular emphasis on comparative risk analysis and the interplay of changing scientific knowledge with business practices in the pharmaceutical and chemical sectors.

Dr. Daemmrich has published on pharmaceutical regulation, biotechnology policy and politics, and innovation in industrial chemistry. His 2004 book, Pharmacopolitics, compares drug regulation in the United States and Germany, with a focus on regulatory laws, clinical trials, and adverse reaction reporting systems in the two countries. His edited volume, Perspectives on Risk and Regulation: The FDA at 100 (2007) brought together the viewpoints of FDA officials and industry leaders on the future of regulating pharmaceuticals, medical devices, food, and dietary supplements. Dr. Daemmrich is currently advancing a comparative study of chemicals regulation in the United States and European Union. He is also initiating a research project on healthcare and information technology, which will compare internationally the legal and regulatory boundaries countries put on the ability to commercialize health information and what this tells us about the prospects for global healthcare businesses.

Dr. Daemmrich holds a Ph.D. in Science and Technology Studies from Cornell University and a B.A. in History and Sociology of Science and German Literature (dual-degree) from the University of Pennsylvania. He was a Fellow at the Kennedy School of Government at Harvard University in 1999-2000. Before coming to HBS, Daemmrich was the founding director of the Center for Contemporary History and Policy at the Chemical Heritage Foundation in Philadelphia. Under Daemmrich's leadership, the Center grew rapidly to encompass programs on innovation and entrepreneurship, risk and regulation, and scientific and industrial infrastructure.

Neil de Crescenzo
Oracle Corp. has created a Health Sciences Global Business Unit and named Neil de Crescenzo to lead it as senior vice president and general manager.

Neil de Crescenzo most recently served as group vice president of healthcare and life sciences at Oracle. He previously led Perot Systems Corp.'s health care provider strategy unit and was healthcare industry leader at IBM Corp. He also has served in administrative positions at Massachusetts Medical Center, Lahey Clinic and Blue Cross Blue Shield of Massachusetts.

Mr. de Crescenzo received his BA in Political Science from Yale University.

Janet Dillione
As CEO of the Healthcare IT Division for Siemens Medical Solutions, Janet Dillione is passionate about having a positive impact on patient care through the use of technology. With her in-depth knowledge of the healthcare environment and her long-standing partnerships with customers, Dillione understands that information technology (IT) is a great enabler, giving nurses and physicians more time to spend delivering quality patient care.

In her current position, Dillione leads Siemens global healthcare IT business, including strategy and portfolio management, profit and performance, and customer satisfaction. With her broad range of expertise in product development and marketing, country-specific operations, sales channel management, and customer relationship manage-

ment, she brings her unique drive to represent the voice of the customer in every action and every decision, with the ultimate goal of having a positive impact on the future of healthcare.

Dillione has 25 years of experience in the healthcare information services industry. With Siemens since 2000, Dillione most recently served as chief operating officer (COO) for the Healthcare IT Division, and also served as senior vice president of U.S. Healthcare IT Business Management, with operating responsibility for profitability, market share growth and customer satisfaction throughout the country. Her prior role was serving as group vice president, global financial systems. Dillione's astute management and domain knowledge of information systems were key in leading the development and launch of Siemens next generation Soarian® solution, a premier workflow-based HIT solution.

Prior to Siemens, Dillione spent 18 years at Shared Medical Systems (SMS), starting as a systems consultant and moving into positions of increased responsibilities on a regular basis. Her years at SMS gave Dillione a well-rounded view of the healthcare information systems landscape since she worked in both the financial and clinical solutions arenas, as well as in technical and management positions.

A member of the Health Information and Management Systems Society (HIMSS) Advisory Board (2005-2007 term) and a frequent speaker at industry forums, Siemens user-group meetings and conferences, Dillione passionately supports efforts to improve the quality and safety of healthcare delivery and technology's role in doing so.

In April 2007, Dillione was named as one of the "Top 25 Women in Healthcare" by Modern Healthcare magazine. She shares this prestigious honor with other US leaders such as Senator Hilary Rodham Clinton; Julie Gerberding, Director, Center for Disease Control (CDC); and Angela Braly, recently appointed president of WellPoint, the US' largest private health insurer. In compiling the listing, Modern Healthcare editors cited the growing number of influential women who are leading healthcare systems, corporations, government agencies, philanthropic organizations, and professional associations. Worth noting is that Dillione is the only representative of the healthcare information systems industry on the list. Dillione also secured a coveted spot on VARBusiness magazine's August 2007 "50 Most Powerful Women of the Channel" listing. Additionally, HIMSS recognized Dillione's contributions to the industry by awarding her with a 2007 Board of Directors Service Award.

Dillione has a Bachelor of Arts degree in bio-medical ethics from Brown University and is a graduate of the Wharton School's Executive Management Program. She lives in West Chester, Pa., with her husband and two daughters.

Gregory J. Downing, D.O., Ph.D.

Dr. Downing is Director of the Office of Technology and Industrial Relations (OTIR) in the Office of the Director at the National Cancer Institute (NCI), National Institutes of Health. In this role, he facilitates the collaboration among Federal, academic, and private biomedical research sectors to support technology development that will yield innovative diagnostic, detection, and targeted treatment strategies for cancer. Through the OTIR, he supervises the administration of grants and contracts for programs in nanotechnology, biosensors, therapeutic delivery systems, and new technology platforms and imaging systems. He currently serves on several committees, including the NCI-FDA Interagency Oncology Task Force and the Biomedical Information Science and Technology Consortium.

Dr. Downing began his career at the NIH in 1994 as a fellow at the National Institute for Child Health and Human Development, and subsequently served in the Office of Science Policy and Planning as a health science policy analyst and deputy director. Today, he continues to lead the implementation of training and programs that support the research policy goals of the NIH.

Dr. Downing earned his medical degree from Michigan State University and his Ph.D. in pharmacology from the University of Kansas. He completed his residency in pediatrics and fellowship in neonatology before joining the faculty of the University of Missouri-Kansas City in the Department of Neonatology at The Children's Mercy Hospital.

Dr. Downing is certified by the American Board of Pediatrics in pediatrics and neonatology— perinatal medicine. He sits on the editorial board of the Journal of Maternal-Fetal Investigation and is Associate Editor of Disease Biomarkers. He has published numerous articles and research in the fields of pharmacology and medicine and has contributed to three books.

Deborah Dunsire, M.D.

Dr. Dunsire joined Millennium in July, 2005 with nearly 20 years of experience in commercial, operational, clinical and scientific aspects of a world-leading pharmaceutical business. Her vision for Millennium was to establish a vibrant, growing biotechnology company, which discovers and develops new medicines that change standards of care in cancer and inflammation.

In April of 2008, Millennium was acquired by Takeda Pharmaceuticals of Japan to become the centerpiece for achieving their global vision of Oncology Leadership by 2020. Dr Dunsire remains as President and CEO of Millennium, the Takeda Oncology Company. The current late stage immunology compounds will continue to be developed at Millennium but commercialized through Takeda.

Previously, Dr. Dunsire led the Novartis U.S. Oncology business and played a critical role in the broad development and launch of successful products such as Zometa®, Femara® and Gleevec®. Notably, Dr. Dunsire managed 12

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product launches and built the business from approximately $50 million to $2.1 billion in revenues over 10 years.

Earlier in her career, she was a clinical researcher responsible for the implementation of global Phase II and Phase III studies across multiple therapeutic areas, including immunology, endocrinology, neurology, dermatology, oncology and transplantation.

Dr. Dunsire graduated from medical school at the University of Witwatersrand in Johannesburg, South Africa. In 2006, she was also awarded a Doctor of Science, Honoris Causa, from Worcester Polytechnic Institute.

Currently, Dr. Dunsire is a board member of Biotechnology Industry Organization (BIO), Allergan, Inc., the Museum of Science (Boston), CancerCare (New York) and the G&P Foundation for Cancer Research. She is also a member of the Massachusetts Women's forum and the Healthcare Business Women's Association.

Dr. Dunsire was the 2001 recipient of the American Cancer Society Excalibur award, the 2000 recipient of the Health Care Business Women's Association Rising Star award and also the Creative Spirit award from the Creative Center for Women with Cancer.

Robert S. Epstein, M.D., M.S.

Dr. Robert S. Epstein joined Medco in 1995 and has served as Medco's Senior Vice President of Medical & Analytical Affairs and Chief Medical Officer since 1997. In this capacity, he is responsible for formulary development, clinical guidelines, drug information services, accreditation oversight, and personalized medicine services. He is also responsible for analysis and reporting for Medco's clients. Dr. Epstein was trained as an epidemiologist, and worked in public health and academia before joining the private sector. He is past elected President of the International Society of Pharmacoeconomics and Outcomes Research, and has served on the Board of Directors for the Drug Information Association. He has published more than 50 peer reviewed medical articles and book chapters, and serves as a reviewer for several influential medical journals.

Mason Freeman, M.D.

Mason Freeman, MD is Chief of the Lipid Metabolism Unit at Massachusetts General Hospital, Harvard Medical School. Trained in internal medicine and endocrinology, Dr. Freeman has spent the past twenty years studying the trafficking of cholesterol into and out of macrophages. He founded and still directs the Lipid Clinic at MGH and is an internationally recognized expert in the treatment of lipid disorders. In 2005, Dr. Freeman took a sabbatical from Harvard to work as Vice-President and Global Head of Translational Medicine for Cardiovascular, Diabetes, and Metabolic Diseases at the Novartis Institutes of Biomedical Research in Cambridge, MA. In this role, he and his translational medicine team were responsible for designing the early development programs for drugs affecting hypertension, diabetes, obesity, atherosclerosis and lipid disorders. On returning to MGH in 2007, he assumed the dual roles of Director of the Genetics Enters Medicine trials in Partners and Director of Translational Medicine at MGH. Dr. Freeman received his A.B from Harvard College, M.D. from the University of California, San Francisco, and did post-doctoral training in cell biology and lipid metabolism at MIT.

Felix W. Frueh, Ph.D.

Dr. Felix Frueh joined Medco in May 2008 to head up a newly created R&D organization for Personalized Medicine and expand Medco's leadership in this field. In this function, Dr. Frueh is responsible for the strategy and oversight of new research initiatives that will help to better assess the safety and effectiveness of drug therapies at the level of individual patients. Dr. Frueh joined Medco after four years as Associate Director for Genomics at the U.S. FDA, where he built and led a core genomics review team in the Center for Drug Evaluation and Research (CDER), and chaired the first FDA-wide, interdisciplinary pharmacogenomics review group (IPRG). Prior to the FDA, he was Managing Partner at Stepoutside Consulting, LLC, and held senior positions at Transgenomic and Protogene Laboratories. His academic career includes a faculty appointment at the Departments of Pharmacology and Medicine at Georgetown University in Washington DC, and postdoctoral fellowships at Stanford University and the University of Basel, Switzerland, where he also received his Ph.D. in biochemistry. Dr. Frueh is a native of Switzerland and lives in Maryland with his wife and two sons.

John Glaser, Ph.D.

John Glaser, PhD, is Vice-President and Chief Information Officer, Partners HealthCare System, Inc. Previously, he was Vice-President, Information Systems at Brigham and Women's Hospital. Prior to Brigham and Women's Hospital, Dr. Glaser managed the Healthcare Information Systems consulting practice at Arthur D. Little.

Dr. Glaser was the founding Chairman of College of Healthcare Information Management Executives (CHIME) and is past President of the Healthcare Information and

Management Systems Society (HIMSS). He has been a member of the Board of the American Medical Informatics Association.

Dr. Glaser is currently the Chairman of the eHealth Initiative Board and the Senior Advisor for National HIT Adoption for CHIME. He is a Senior Advisor to the Deloitte Center for Health Solutions.

He is a fellow of HIMSS, CHIME and the American College of Medical Informatics. He has been awarded the John Gall award for healthcare CIO of the year. CHIME has established a scholarship in Dr. Glaser's name. He was a recipient of CIO Magazine's 20/20 Vision Award. Partners HealthCare has received several industry awards for its effective and innovative use of information technology.

Dr. Glaser has published over one hundred articles and four books on the strategic application of information technology in healthcare.

He holds a Ph.D. in Healthcare Information Systems from the University of Minnesota.

Harry Glorikian

Harry Glorikian is recognized worldwide as a leader in helping companies accelerate the development of their businesses with a combination of robust analysis and deep commercial/technical experience. Harry's expertise spans more than two decades within the life sciences/healthcare industry. His unique understanding of both buyer and internal company perspectives has shaped the methodology and framework analysis tools Scientia uses to create sophisticated, enduring business strategies that capture and sustain optimal value.

Harry is regularly quoted in industry magazines and periodicals and writes articles about life sciences/healthcare and business strategies regularly. He is a frequent speaker at industry events and often is asked to provide insight to the media and industry leaders on life sciences/healthcare and current business trends.

In Harry's past experience he has held several senior management positions with many leading life science firms. Harry's experience spans many different areas: Diagnostics, Molecular Biology, Proteomics and Cellular Biology as well as in the area of Biodefense.

Currently Harry serves on the advisory board of Draper Laboratories. He is an avid inventor with 2 issued US patents and more pending both in the US and internationally.

Harry holds a Bachelor of Business Administration degree and a Master of Business Administration degree from Boston University.

Alexandra Glucksmann, Ph.D.

Alexandra Glucksmann is currently Senior Vice President of Research and Business Operations at Tempo Pharmaceuticals, which she joined in October 2006 at its founding. Tempo Pharmaceuticals is developing a proprietary nanoparticle technology designed to improve the safety and efficacy of marketed and development-stage drugs. Prior to joining Tempo, she spent 13 years at Millennium Pharmaceuticals which she joined in 1993 as one of its first scientists. At Millennium, she held a series of positions with increasing responsibility, ultimately becoming vice president of all platform technology groups before moving into a senior role in strategic program management and operations, where she worked closely with the CEO and led company-wide process improvement initiatives and participated in business development and M&A efforts. During her tenure at Millennium, Alexandra was critical to helping Millennium evolve from a genomics research-focused organization to a fully integrated pharmaceuticals company with products on the market. Her division played an integral role in the numerous Millennium-large pharma collaborations, which generated over $1.8 billion in funding for the company.

She serves on the Board of Directors of Taconic Farms and is a Chair of the Board of Women Entrepreneurs in Science and Technology. She is also a member of Genetics Advisory Council of the Harvard-Partners Center for Genetics and Genomics.

Alexandra was a post-doctoral fellow at the Massachusetts Institute of Technology and holds a Ph.D. with honors from the University of Chicago.

Matthew P. Goetz, M.D.

I am a breast cancer oncologist with a research focus in the development and validation of biomarkers for breast cancer. My work is performed in collaboration with the laboratory of Matthew Ames, Ph.D., who chairs the Department of Molecular Pharmacology and Experimental Therapeutics at Mayo Clinic. My additional key collaborators at Mayo Clinic are James Ingle, M.D., (PI, Mayo Breast SPORE), Richard Weinshilboum, M.D., (PI, Mayo PGRN), and Thomas Spelsberg, Ph.D.

A notable area of our focus is the pharmacogenetics of tamoxifen biotransformation, and our work with CYP2D6 has led to a recent FDA recommendation to change the label of tamoxifen to incorporate the importance of genetic and drug-induced variation in CYP2D6. I am principle investigator of ongoing studies (1R01 CA133049-01) focused on the pharmacogenetics of tamoxifen biotransformation in collaboration with the laboratories of Dr. Matthew Ames and Dr. Richard Weinshilboum. These studies are designed to understand the role of CYP2D6 as a tool to individualize hormonal therapy in the adjuvant setting, and to understand the effect of commonly administered drugs on the activity of CYP2D6 in tamoxifen treated women. This latter activity is being performed in collaboration with the

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Consortium of Breast Cancer Pharmacogenomics (COBRA). Additionally, we are studying the role of the 13C - DM breath test as a marker of CYP2D6 activity in tamoxifen treated patients in collaboration with Physical Sciences, Inc. and Cambridge Isotope Laboratories, Inc.

In addition to NCI funding, I am a funded investigator in the Mayo Pharmacogenetics Research Network grant (Richard Weinshilboum, PI), and a past recipient of a Career Development Award (Mayo Breast Cancer SPORE), and Paul Calabresi Scholar Award (K-12).

My interest in pharmacogenetics also extends to irinotecan, and our group has been the first to demonstrate that UGT1A1*28 genotype affects the maximally tolerated dose of irinotecan-based therapy. We have several ongoing NCI-sponsored trials in which the recommended phase II dose of therapy will be dependent upon UGT1A1 genotype.

Finally, I am a member of the Phase I group at Mayo Clinic, and I am working with the Ames laboratory in both pre-clinical and clinical development of drugs focused on breast cancer including the drug aminoflavone.

Richard G. Hamermesh, D.B.A.

Richard Hamermesh is the MBA Class of 1961 Professor of Management Practice at the Harvard Business School where he teaches in the MBA Program and is the Faculty Chair of the HBS Healthcare Initiative. Richard created and teaches the second-year MBA elective, Entrepreneurship and Venture Capital in Healthcare. Previously, he was the Course Head for the required first year course entitled The Entrepreneurial Manager.

From 1987 to 2001, Richard was a co-founder and a Managing Partner of The Center for Executive Development, an executive education and development consulting firm. Prior to this, from 1976 to 1987, he was a member of the faculty of the Harvard Business School.

Richard is also an active investor and entrepreneur, having participated as a principal, director, and investor in the founding and early stages of over 20 organizations. These have included start-ups, leveraged buy-outs, industry roll-ups, and non-profit foundations. He was the founding president of the Newton (MA) Schools Foundation and served on the editorial board of the Harvard Business Review. He is currently on the Boards of one public and two private corporations, as well as two non-profit Boards. From 1991 to 1996, he was the founding Chairman of Synthes Spine, Inc. Richard is the author or co-author of five books, including New Business Ventures and the Entrepreneur. His best-known book, Fad-Free Management, was published in 1996. He has published numerous articles and more than 100 case studies. Richard received his AB from the University of California, and his MBA and DBA from HBS. He is married, has two children, and his hobbies include tennis, skiing, and yoga.

James Allen Heywood

Jamie is the co-founder and chairman of PatientsLikeMe where patients share in depth information on treatments, symptoms, and managing disease. PatientsLikeMe is a personalized research platform for patients, pharmaceutical and biotech companies as well as non-profits to better understand disease, improve care and accelerate the development of new treatments and biomarkers.

Jamie is the d'Arbeloff founding director of ALS Therapy Development Institute, the world's first non-profit biotechnology company and served as its CEO from 1999 to 2007. Pioneering an open research model and an industrialized therapeutic validation process under Jamie's leadership ALS TDI grew to being the worlds largest ALS research program.

An MIT engineer, he entered the field of translational research when his brother Stephen was diagnosed with ALS in 1998 at the age of 29. His work has been profiled in the New Yorker, 60 Minutes, Pulitzer Prize winner Jonathan Wiener's book, His Brothers Keeper, and in the Sundance award winning documentary So Much So Fast.

Diane Keogh

Diane Keogh is the Corporate Director for Research Computing, Partners HealthCare Systems, Inc. This position provides enterprise IT strategy and systems support for the biomedical research community at Massachusetts General Hospital, Brigham and Women's Hospital and affiliated hospitals. This includes administrative systems, site infrastructure teams, enterprise infrastructure, genetics and genomics IT, and enterprise research repositories.

Previously she held the position of Corporate Director of Enterprise Services at Partners HealthCare focusing on clinical integration, non-acute, and research IT. She also spent 10 years as Chief Information Officer at Newton-Wellesley Hospital.

Ms. Keogh has over 25 year experience in healthcare IT covering industry, community hospitals, academic hospitals, and biomedical research with a major focus on developing scalable enterprise strategies and solutions.

David P. King

David P. King has served as President and Chief Executive Officer and a director of the Company since January 1, 2007. Prior to that date, Mr. King served as Executive Vice President and Chief Operating Officer from December 2005 to January 2007, as Executive Vice President of Strategic Planning and Corporate Development from January 2004 to December 2005 and was hired in September 2001 as Senior Vice President, General Counsel and Chief Compliance

Officer. Mr. King is a member of the Executive Committee of the Company. Prior to joining the Company, he was a partner with Hogan & Hartson L.L.P. in Baltimore, Maryland from 1992 to 2001.

Raju Kucherlapati, Ph.D.
Raju Kucherlapati came to the United States in 1967 after receiving his B.S. in Biology at P.R. College, Kakinada, India and his M.S. in Biology at Andhra University, Waltair, India. He received his Ph.D. from the University of Illinois at Urbana and did his post-doctoral work in the lab of Frank Ruddle at Yale University. He was assistant professor in the Department of Biochemical Sciences at Princeton University, then became professor in the Department of Genetics at the University of Illinois College of Medicine. In 1989 Dr. Kucherlapati went to the Albert Einstein College of Medicine where he was the Lola and Saul Kramer Professor of Molecular Genetics and Chairman of the Department of Molecular Genetics, a position he held for eleven years. In 2001 Dr. Kucherlapati became the Paul C. Cabot Professor of Genetics and Professor of Medicine at Harvard Medical School and was the first Scientific Director of the Harvard Medical School-Partners HealthCare Center for Genetics and Genomics (HPCGG).

At HPCGG Dr. Kucherlapati is devoting his energies to advancing the cause of personalized medicine. Under his direction HPCGG launched initiatives that resulted in a large number of novel molecular diagnostics; built new information technology programs that captured the results of clinical and basic genetic research in structured formats that could then be applied meaningfully in clinical decision making that would benefit diagnosis, prognosis and treatment of patients. He also strengthened and developed new training and educational programs for physicians, scientists, healthcare professionals, patients, and others in human genetics and genomics and the application of genetics in healthcare.

Dr. Kucherlapati contributed to several different areas of research. These include human gene mapping, generation of physical maps of the human genome with special emphasis on human chromosome 12, development of techniques to modify genes in mammalian cells and in cloning many human disease genes. To date he holds 12 patents. He was a member of the National Advisory Council for Human Genome Research at the National Human Genomics Research Institute, was a co-chair of the steering committee for the National Cancer Institute's Mouse Models for Human Cancer Consortium. He served on the editorial board of the *New England Journal of Medicine* and was editor in chief of the journal *Genomics*. He is a fellow of the American Association for the Advancement of Science and a member of the Institute of Medicine.

Dr. Kucherlapati was a founder of Cell Genesys, Abgenix and Millennium Pharmaceuticals. He currently serves on the boards of privately held AVEO Pharmaceuticals and Enlight Biosciences.

Michael O. Leavitt
U.S. Department of Health and Human Services
Michael O. Leavitt was sworn in as the 20th Secretary of the U.S. Department of Health and Human Services on January 26, 2005. As Secretary, he leads the Nation's efforts in protecting the health of all Americans and providing essential human services to those in need.

Following his core principles, Secretary Mike Leavitt uses a 500-Day Plan as a management tool to guide his energies in fulfilling the President's vision of a healthier and more hopeful America. The plan is both flexible and dynamic. The 250-Day Update reflects the evolution of the Secretary's original 500-Day Plan. Based on these guides, Secretary Leavitt has identified his priorities for the coming year.

Frederick S. Lee M.D., MPH
In his role as Product Manager for McKesson, Fred is responsible for strategies that enhance the clinical electronic health record to support personalized medicine and leverage advanced molecular diagnosis. He is also responsible for evaluating trends and opportunities in the broader molecular and in vitro diagnostics industries.

Fred has over 10 years of experience in healthcare information technology and executive leadership. Prior to his current role with McKesson, Fred led product strategy for electronic healthcare record systems with GE Healthcare in the UK market. Fred has also served as Physician Executive for Dearborn Advisors, a boutique healthcare IT consultancy. He has also served in executive leadership roles as CMIO and COO for a large ambulatory care network in New York State.

Fred's clinical background is in General Surgery and Preventive Medicine, having received his MD degree and clinical residency training from Stony Brook University Medical Center and the Mailman School of Public Health at Columbia University. Fred attended MIT as an undergraduate, where he received a Bachelor of Science degree in Life Sciences. He is currently based in Seattle, WA.

Lawrence J. Lesko, Ph.D., FCP
Lawrence J. Lesko, Ph.D., FCP has been the Director of the Office of Clinical Pharmacology in the Center for Drug Evaluation and Research at the Food and Drug Administration since 1995. The main focus of Dr. Lesko's Office is the translational analysis of dose-response and PK-PD data for the purposes of optimizing dosing and the ben-

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efit/risk ratio of FDA-approved drugs, the use of PK and biomarkers to assist in dosing adjustments for drug-drug interactions, special populations (e.g., renal patients) and other patient subsets defined by pharmacogenomics, individualization of drug therapy using plasma drug levels, and the application of quantitative methods such as disease state progression models and simulations to design clinical trials. Outside FDA, Dr. Lesko has served as President of the American College of Clinical Pharmacology (2004-2006). Prior to joining FDA, Dr. Lesko was a faculty member in academia for over 15 years, most recently at the University of Maryland. He has directed the clinical pharmacology laboratory at the University of Massachusetts Medical Center, and was Vice-President of PharmaKinetics Laboratories, a Baltimore-based contract research organization. He has been appointed as an Adjunct Professor at the University of Florida and at the University of Southern California in the Colleges of Pharmacy where he lectures and interacts with graduate students. Dr. Lesko is an American Association of Pharmaceutical Scientist (AAPS) Fellow and is Board Certified in Clinical Pharmacology by the American Board of Clinical Pharmacology. He received the Rawls-Palmer Progress in Medicine Award from the American Society of Clinical Pharmacology and Therapeutics in March 2007, the University of North Carolina Institute of Personalized Medicine Clinical Services Award in May 2007 and the Nathaniel T. Kwit Memorial Distinguished Service Award from the American College of Clinical Pharmacology in September 2007. He is a member of the editorial board of several prestigious journals including the Journal of Clinical Pharmacology. He has over 145 publications in peer-reviewed journals and is a frequent invited speaker nationally and internationally. His hobbies are motorcycle riding, scuba diving and underwater photography. He is a Divemaster certified by the Professional Association of Diving Instructors.

Carol J. McCall, FSA, MAAA

Carol is a Fellow of the Society of Actuaries and has 20 years of healthcare experience. She is currently Humana's VP of R&D where she's pioneered the use of novel techniques in prediction and computational health intelligence to predict health severity, disease progression and consumer health behavior. She also leads Humana's Health Service Research Center, focused on health services research, the psychology of health behavior change, pharmacovigilance, and personalized medicine research.

"It's boring putting 'insurance' as my area of expertise. I'm interested in anything remotely related to health and anything that's weird and cool with data and analytics. This includes everything from ubiquitous computing, distributed intelligence, personal sensor technologies, you name it.

I'm also interested in the 'social life' of information – the self-organization, co-creation and emergence of meaning in social systems – particularly in highly recursive topologies, pervasive information ecosystems, and/or asymmetric information landscapes. This is where 'prediction meets people and can help them in meaningful ways."

Jeffrey D. Miller

As Vice President, Worldwide Health and Life Sciences (HLS), Jeff Miller is responsible for market strategy, business planning, service offerings, and solutions development for the healthcare provider, health insurer, pharmaceutical/biotech, and life sciences research market segments. He oversees the marketing and sales activities for this industry sector, driving overall effectiveness and impact on a global scale. In addition, Miller has responsibility for strategic oversight of HP's global sales and services efforts in the Public Sector.

For several years, Miller has focused his activities on enabling the transformation of the HLS industry as it has evolved from departmental technology solutions into an ecosystem with an integrated set of solutions that allow participants across the value chain to digitize content, analyze data, and manage their information collaboratively and effectively, and where the quality of patient care is critical to sustainable competitive advantage. During his tenure, industry analysts report that HP HLS revenues have grown to more than $5 billion annually.

Miller has more than twenty years experience in strategic planning, product development, and operational process improvement in the health care, manufacturing, public sector, and technology industries. Prior to joining HP, he led the development and delivery of management consulting services at The Advisory Board Company and Deloitte Consulting. He has worked with a diverse set of Health industry organizations on the identification and development of transformational strategies and the implementation of technology-enabled business processes. Previously, he managed a variety of business strategy, product planning, and development operations organizations at IBM.

Miller is based in Research Triangle Park, North Carolina. He holds a master's of Business Administration from the Fuqua School of Business at Duke University in Durham, North Carolina, and a bachelor's in Economics from Northwestern University in Chicago.

Thomas (Tom) J. Miller, Jr.

Thomas (Tom) J. Miller, Jr. is Chief Executive Officer (CEO) of Siemens Healthcare's Workflow and Solutions division. Previously, Tom was a member of the Group Board of

Siemens Medical Solutions and has an impressive record of leadership within Siemens and other multi-national companies. He served as President and CEO, of Health Services, Siemens Healthcare Information Technology business, and has led the magnetic resonance division and the US sales and service organization.

Additionally, he .was president and CEO of Carl Zeiss, Inc., the American subsidiary of the multi-billion dollar optical company and simultaneously the general manager of the worldwide medical division of Carl Zeiss, responsible for surgical microscopes and ophthalmology products. Tom also served as President and CEO of Analogic Corporation, a manufacturer of components and subsystems for the healthcare and security industry. He co-founded a company, LightLab Imaging, to commercialize a new diagnostic imaging method called optical coherence tomography (OCT) enabling the acquisition and display of real-time ultra high-resolution cross sectional images with light.

This broad range of experience and expertise in medical physics and information technology have served to shape Tom's passion for medicine and for transforming how we approach the prediction, prevention, diagnosis, and treatment of disease.

Tom holds a B.S. in Nuclear Engineering with a minor in English Literature from the University of Massachusetts and a Masters of Science degree from the Harvard Medical School/Massachusetts Institute of Technology (MIT) joint program in Medical Physics.

James J. Mongan, M.D.

Dr. Mongan is president and chief executive officer of Partners HealthCare in Boston, an integrated health system founded in 1994 by Brigham and Women's Hospital and Massachusetts General Hospital.

In addition to its two academic medical centers, the Partners system also includes community hospitals, specialty hospitals, community health centers, a physician network, home health and long-term care services, and other health-related entities.

Partners is one of the nation's leading biomedical research organizations and a principal teaching affiliate of Harvard Medical School.

A professor of health care policy and a professor of social medicine at Harvard Medical School, Dr. Mongan also serves on the board of the Commonwealth Fund and chairs its Commission on a High Performance Health System.

Prior to being appointed president and CEO of Partners, Dr. Mongan was president of Massachusetts General Hospital, the largest and oldest teaching affiliate of Harvard Medical School. He also served for 15 years as executive director of the Truman Medical Center in Kansas City, a large public hospital, where he also served as dean of the University of Missouri-Kansas City School of Medicine.

Dr. Mongan spent 11 years in Washington as staff to the Senate Finance Committee, working on Medicare and Medicaid legislation. He later served in the Carter administration as deputy assistant secretary for health and then at the White House as associate director of the domestic policy staff.

Dr. Mongan is a member of the Institute of Medicine of the National Academy of Sciences. He has served on the boards of the American Hospital Association and the Kaiser Family Foundation, and was a member of both the Prospective Payment Assessment Commission established by Congress and the Institute of Medicine's Commission on the Consequences of Uninsurance.

A native of San Francisco, Dr. Mongan received his undergraduate education at the University of California, Berkeley, and Stanford University, and his medical degree from Stanford University Medical School. He completed his internship at the Kaiser Foundation Hospital in San Francisco and served for two years in the U.S. Public Health Service.

Samuel R. Nussbaum, M.D.

Dr. Samuel Nussbaum is executive vice president, clinical health policy and chief medical officer for WellPoint, Inc. He oversees corporate medical policy, clinical pharmacy programs, health improvement and quality resources, programs in clinical excellence, and health information technology to optimize care for members. His principal responsibilities include: serving as chief spokesperson and policy advocate on medical issues, guiding the corporate vision regarding quality of care and its measurements, leading efforts to assess cost of care performance and developing a strategy to foster further collaboration with physicians and hospitals to strengthen and improve patient care. Dr. Nussbaum also has responsibility for HealthCore, WellPoint's clinical outcomes research subsidiary.

Dr. Nussbaum has served as president of the Disease Management Association of America, Chairman of the National Committee for Quality Health Care, as Chair of America's Health Insurance Plan's (AHIP) Chief Medical Officer Leadership Council and as a member of the AHIP Board, and currently serves on the National Quality Forum (NQF) Board. He received the 2004 Physician Executive Award of Excellence from the American College of Physician Executives and Modern Physician magazine. Dr. Nussbaum is professor of clinical medicine at Washington University School of Medicine and serves as adjunct professor at the Olin School of Business, Washington University.

Dr. Nussbaum served as executive vice president, Medical

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Affairs and System Integration, of the BJC Health System and President of its medical group.

Dr. Nussbaum earned his medical degree from Mount Sinai School of Medicine. He trained in internal medicine at Stanford and Massachusetts General Hospital and in endocrinology and metabolism at Harvard and Massachusetts General Hospital, where he directed the Endocrine Clinical Group. His clinical and basic research has led to new therapies to treat skeletal disorders and new technologies to measure hormones in blood.

Lord Naren Patel

Lord Naren Patel; Member House of Lords; Chairman Enquiry on Genomics Medicine;

Born Tanzania, Grad. Medicine Univ. St Andrews; Professor Obstetrics and Gynaecology. Chancellor Univ. of Dundee; Fellow Acad. of Med Science; Fellow and Vice President Royal Society, Edinburgh. M.D. D.Sc. Hon Causa Univ. Dr. sweden, S Africa, Scotland , England, Greece, Etc Several Hon Fellowships. Res Int Obs; gyn; fetal growth, preterm labour, Etc.

Civil Hons.. Awarded Knighthood (Sir Naren) 1997, for Services to Medicine; Made A Life Peer; seat in House of Lords Baron Patel of Dunkeld (Lord Patel) 1999.

Michael S. Paul, Ph.D.

Dr. Paul has been involved in numerous biomedical technology start-up and licensing initiatives. Dr. Paul was President and Chief Operating Officer at the non-profit LineaGen Research Corporation, responsible for all corporate development and operational activities. Prior to joining LineaGen Research Corporation, Dr. Paul worked for the start-up Huntsman Biotechnology Corporation as VP of Business Development, and for the publicly-traded biopharmaceutical company, NPS Pharmaceuticals, Inc. as Director of Strategic Development.

Dr. Paul has successfully led multidisciplinary product development teams, formulated strategic development initiatives, and been responsible for the strategic management of corporate intellectual property. At NPS, he was involved in negotiations for several multi-million dollar licensing and corporate acquisition deals. Dr. Paul has also worked at the University of Utah Technology Transfer Office, where he has participated in marketing University inventions to the pharmaceutical and biotechnology industries. He is a licensed patent agent of the United States Patent and Trademark Office. Dr. Paul received his B.A. from Colby College and his Ph.D. from the University of Utah.

Margaret Piper, Ph.D, MPH

Margaret Piper, PhD, MPH is the Director of Genomics Resources at the Blue Cross and Blue Shield Association (BCBSA) Technology Evaluation Center (TEC, www.bcbs.com/tec), an Agency for Healthcare Research and Quality (AHRQ)-funded Evidence-based Practice Center. She has been with TEC since 1994, joining the staff full-time in 1999. Her experience at TEC has focused on systematic reviews of medical technology, including topics in autoimmunity and transplantation, oncology, laboratory medicine, and genomics/genetic testing. Dr. Piper has authored over 30 TEC systematic reviews and reports and has co-authored 4 AHRQ-EPC reports.

Among other outreach activities, Dr. Piper has served on the Centers for Medicare and Medicaid Services' Medicare Evidence Development & Coverage Advisory Committee and on a work group for the Institute for Quality in Laboratory Medicine, and currently serves on the Working Group for the CDC-funded Evaluation of Genomic Applications in Practice and Prevention (EGAPP) project. Roles of the EGAPP Working Group include: establishing methods and process for evidence-based evaluation of genetic tests; prioritizing and selecting topics for review; participating in technical expert panels for commissioned evidence reviews;and developing conclusions or recommendations based on the evidence. In addition to these activities, Dr. Piper has given presentations on evidence-based evaluation of genetic tests at meetings organized by the Institute of Medicine, Agency for Healthcare Research and Quality, and the National Cancer Institute.

Prior experience includes over 13 years of managing a variety of clinical diagnostic laboratory departments in both academic hospital and commercial clinical laboratory settings, designing and evaluating new laboratory diagnostics for biomedical industry, consulting with physicians, publishing, and volunteer teaching for professional organizations in laboratory medicine. In 2000, Dr. Piper received a Distinguished Service Award from the American Society of Clinical Pathologists Commission on Continuing Education. Following a mid-career National Cancer Institute fellowship in cancer prevention and control, which included obtaining an MPH in epidemiology, Dr. Piper gained experience in cancer epidemiology at the NCI and subsequently at the Centers for Disease Control and Prevention, with a focus on cancer genetics. Dr. Piper has a BS in molecular biology (University of Wisconsin—Madison), a PhD in immunology (Duke University), and an MPH in epidemiology (Emory University).

Aidan Power, MB BCh MSc MRCPsych

Aidan Power is Vice President and Global Head of Molecular Medicine at Pfizer. Molecular Medicine represents a synthesis of all the emerging technologies (including imaging, pharmacogenomics, metabolomics and proteomics) that form the scientific basis of emerging approaches to the development of Personalized Medicine.

Graduating in Medicine from University College Cork,

Ireland, Dr. Power trained as a psychiatrist in England, working mainly in clinical practice. He received post-graduate qualifications in Psychiatry (MRCPsych) and the History of Science and Medicine (MSc) from University College London and the Wellcome Institute for the History of Science and Medicine.

In 1993, Dr. Power joined Pfizer in the United Kingdom at the Sandwich Research and Development Laboratories working on the antidepressant, Sertraline, and the antipsychotic, Ziprasidone. Aidan also set up a group at the research site in Clinical Pharmacogenetics.

In 2002, Dr. Power relocated to Pfizer Global Research and Development Headquarters in New London, Connecticut, where he headed Clinical Pharmacogenomics. In this role, he was responsible for developing the initial plan for the BioBank, a secure, long-term storage of DNA, biofluid and tissue samples for use in exploratory research. This $17 million facility stores samples at scale, using robotic systems that automate much of the isolation and storage of DNA, as well as apportioning and storage of bio-fluids. Over the last year he has headed up Molecular Medicine which has been integrating molecular studies across disease areas as well as developing diagnostics for critical programs in the Pfizer product pipeline.

Eiry Roberts, MB (Hons), BS, MRCP, FFPM

Dr. Roberts is a physician who trained in pharmacology and medicine in the UK, qualifying from the University of London in 1987. Her post-graduate clinical training was in clinical pharmacology and cardiology at St. Bartholomew's Hospital and the Royal London Hospital. She obtained membership of the Royal College of Physicians of the UK in 1990.

In 1991 Dr. Roberts joined the Pharmaceutical Industry in the UK working in clinical pharmacology and translational clinical development. Her early career in the industry focused on the exploratory clinical development of novel cardiovascular drugs, including antithrombotics and antiplatelet agents. Through this work she gained experience in the application of established and novel biomarkers in early drug development.

Her last role at Lilly was Vice President of Project/Program Medical. In this role she has responsibility for all Phase 1 and 2 clinical development across the 5 therapeutic areas supported by Lilly. In addition all clinical and translational biomarker efforts, including analytical platforms development, imaging, pharmacogenomics, proteomics, etc. fall within the scope of this Project/program Medical role. Recently, Eiry was promoted to Vice President, Transitional Phase Development.

Mollie Roth, Esq.

With over 15 years in scientific research and the legal profession, Mollie brings a unique combination of skills to Diaceutics focusing on the emerging market for personalized medicine. Based in the US, Mollie has combined her experience as a research scientist with a complex pharmaceutical liability legal practice to focus more recently on the pharmacolegal and regulatory environment surrounding the Personalized Medicine industry and its evolving business dynamic. Prior to joining the Diaceutics team, Mollie worked with Kaye Scholer LLP, New York, NY and Nixon Peabody LLP, Washington, D.C. on behalf of a number of pharmaceutical clients including Bayer, Novartis, Chiron, SmithKline Beecham and Pfizer.

Christine Seidman, MD

Christine (Kricket) Seidman is a Professor in the Departments of Medicine and Genetics at Harvard Medical School and Brigham and Women's Hospital. In 2005 she was named the Thomas W. Smith Professor of Medicine. She is also an Investigator of the Howard Hughes Medical Institute. She was an undergraduate at Harvard College and received a M.D. from George Washington University School of Medicine in 1978. Dr. Seidman served as an intern and resident in Internal Medicine at John Hopkins Hospital and received subspecialty training in cardiology at the Massachusetts General Hospital. She joined the staff at Brigham and Women's Hospital in 1987 and is currently the Director of the Cardiovascular Genetics Center.

Honors include: Marion Hypertension Research Award (1984); American Heart Association Clinician-Scientist Award (1986); Bristol-Myers Squibb Unrestricted Cardiovascular Research Grant Award (1990); American

Heart Association Established Investigatorship Award (1992); Robert J. and Claire Pasarow Foundation Award in Cardiovascular Research (1992); American Heart Association, Edgar Haber Cardiovascular Award (1997); American Heart Association, Helen B. Taussig Memorial Lecturer (1997); Member, Johns Hopkins University Society of Scholars (1998); Member, American Academy of Arts and Sciences (1999); Member, Institutes of Medicine (1999); American Heart Association, Basic Research Prize (1999); Gill Heart Institute Award for Cardiovascular Research (2000); American College of Cardiology, Louis F. Bishop Lecture (2000); Gill Heart Institute Award for Cardiovascular Research (2001); 12th Annual Bristol-Myers Squibb Award for Distinguished Achievement in Cardiovascular Research (joint recipient with Jonathan Seidman, PhD) (2002); Fellow, International Society Heart Research (2002); Distinguished Scientist, American Heart Association (2003); Cannon Award, American Physiologic Society (2004); Member, Association of University

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Cardiologists (2005); Distinguished Alumni Achievement Award, The George Washington University (2005); Member, National Academy of Sciences (2005); Lefoulon-Delalande Foundation, Grand Prix for Science (joint recipient with Jonathan Seidman, PhD)(2007).

Dietrich Stephan, Ph.D.
Dr. Stephan is chairman of the National Institutes of Health (NIH) Neuroscience Microarray Consortium, and has previously held faculty appointments at Johns Hopkins University, the National Human Genome Research Institute of the NIH, the University of Arizona, Arizona State University, George Washington University and the Children's National Medical Center in Washington, D.C.

Dr. Stephan has published extensively in journals such as *Science, the Proceedings of the National Academy of Sciences, Nature Genetics* and the *New England Journal of Medicine*. Dr. Stephan received his B.S. at Carnegie-Mellon University and his Ph.D. at the University of Pittsburgh, and trained as a fellow at the National Human Genome Research Institute of the NIH.

Steven St. Peter, M.D., MBA
Dr. Steven St. Peter joined MPM in 2004 with experience from Apax Partners and The Carlyle Group, where his investment scope included both venture and buyout transactions across medical technology and pharmaceuticals. He began working at MPM in 2003 and was promoted to General Partner in 2005. Dr. St. Peter was previously an assistant Clinical Professor of Medicine at Columbia University. He completed his Doctor of Medicine at Washington University and his residency and fellowship at the Hospital of the University of Pennsylvania. Prior to his medical training, he was an investment banker at Merrill Lynch. He also holds an M.B.A. from the Wharton School of the University of Pennsylvania and a B.A. in Chemistry from the University of Kansas. He is on the Board of the New England Venture Capital Association.

Robert Tepper, M.D.

Bob is an experienced scientific and medical entrepreneur. Bob was president of R&D and CSO at Millennium. Bob also co-founded Cell Genesys/Abgenix. He is a trained oncologist and molecular biologist, an adjunct professor at Harvard Medical School and an advisory board member of several leading health care institutions.

Peter G. Traber, M.D.
Peter G. Traber, MD, is president, CEO and executive dean of Baylor College of Medicine.

Under Dr. Traber's leadership, Baylor College of Medicine is building an innovative culture, healthcare campus, and model of care from the ground up for the delivery of personalized medicine, using each patient's unique genetic and molecular profile to better prevent, predict and treat disease. In 2007, Baylor College of Medicine broke ground on a 21st century healthcare facility that will integrate patient care, research and education as never before, while leveraging the College's renowned strengths in research, science, and genomic medicine.

A recognized thought leader in academic medicine, Dr. Traber serves on the Department of Veterans Affairs Genomic Medicine Program Advisory Committee, the Personalized Medicine Coalition, and the boards of BioHouston, BCM Technologies, the Houston Technology Center, and the National Space Biomedical Research Institute. He recently shared his vision for personalized medicine at the Burrill Annual Personalized Medicine Meeting, the National Cancer Institute's caBIG™ Summit and Annual Meeting and HP's Annual Life Sciences Conference.

Previously he was CEO of the University of Pennsylvania Health System and senior vice president and chief medical officer at GlaxoSmithKline.

He earned his MD at Wayne State University School of Medicine in 1981 and completed a residency and fellowship at Northwestern University Medical School.

Scott T. Weiss, M.D., M.S.
Dr. Weiss is currently Director of the Center for Genomic Medicine and Associate Director, Channing Laboratory, and Professor of Medicine at Harvard Medical School. In this capacity, he leads a 25 investigator, 110 person research group examining the environmental and genetic risk factors for the development of asthma and COPD.

He has authored or coauthored over 500 publications and three books in the area of asthma and COPD risk factors and natural history. His initial work concerned the role of airways responsiveness and environmental tobacco smoke exposure in asthma and COPD, the effect of allergen exposure and airways responsiveness on markers of inflammation and the combined effect of these factors on the development of COPD. In 1996, he developed a strong interest in the genetics of asthma and his recent work has focused on this, and novel exposures such as vitamin D and the bowel flora. His laboratory is the only laboratory in the world that has active NIH research in the areas of asthma genetics, asthma pharmacogenetics, and COPD genetics. He

is the principal investigator or co-investigator on a total of six separate NHLBI-funded grant proposals in the area of the genetics of asthma and Asthma Pharmacogenetics, including a MERIT award.

Dr. Weiss has international research experience in China, The United Kingdom, Norway, Mexico, Costa Rica, and the Netherlands. Dr. Weiss is Principal Investigator of a long standing T-32 Training grant (HL-07427). Dr Weiss has had 27 trainees in the last 15 years, 25 of whom are still in academic medicine. He has served as ATS assembly chair for the EOH assembly and has served on numerous ATS committees. He has served in an administrative capacity with the NHLBI including the Special Emphasis Panel on the Use of NHLBI Specimens, the Oversight Committee for the Collaborative Study on the Genetics of Asthma, the NHLBI Genotyping Service Study Section, the T-32 review study section, and the oversight committee for the NHLBI resequencing and genotyping facility.

Robert Wells

Robert Wells has more than twenty years experience in government relations, pubic policy and international corporate development. His diverse career has given him expertise in business and policy issues associated with life sciences, health care, financial services and global markets.

Prior to co-founding HealthFutures, Robert served for seven years with Affymetrix, Inc, the world leader in microarray technology, as Vice President for Corporate Affairs and International Markets. In that role, he directed the company's internationally respected government relations program, believed by many to be the most forward thinking in the life sciences and health care industry. Robert sought not only to represent the company's commercial and regulatory interests, but to open a wider dialogue with the patients, payers, researchers, clinicians, ethicists, legal experts, investors and other stake holders in the modern healthcare ecosystem.

Robert is a founding member of the Personalized Medicine Coalition; he also played an industry role in the effort to enact greater federal privacy protection for genetic information and drove an international dialogue on innovative intellectual property regimes. Working in corporate development, he launched a successful business strategy to enter the China market and started innovative collaborations with world class research centers in Sweden, France, Singapore and Korea.

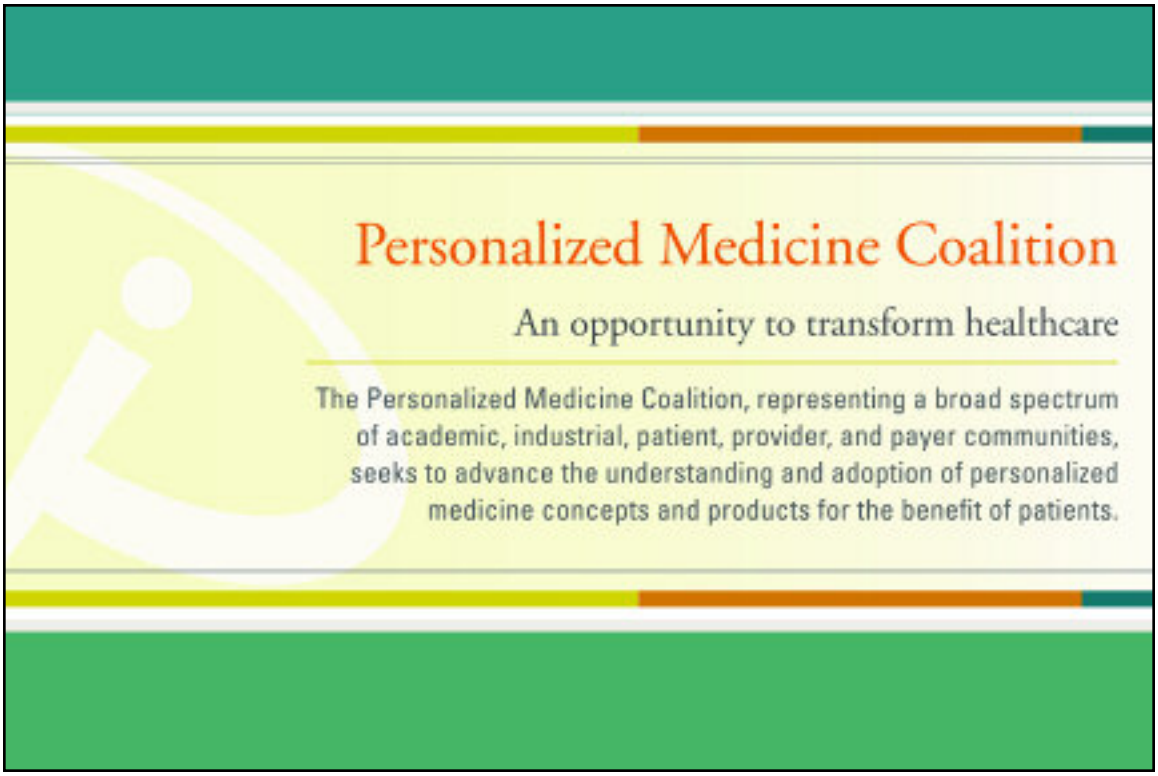
Before joining Affymetrix, Robert had a highly successful career with Citigroup where he served as Vice President for International Government Relations, coordinating pubic policy efforts in the company's almost-100 overseas offices. He has also taken time from his traditional career path to work in three presidential campaigns and to write two television pilots for Columbia/Tri-Star Television.

Robert completed his undergraduate work at the University of North Carolina / Chapel Hill. He also holds a JD degree from the Wake Forest University School of Law. He is a member of the Board of Directors of the Personalized Medicine Coalition and chairs the organization's Public Policy Committee. He has been a frequent speaker before various professional groups.

POST-CONFERENCE COVERAGE

After the conference, find keynote presentations, summary articles, press coverage, photographs and more at:

www.hpcgg.org/PM/2008



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Bringing genetics to medicine

HARVARD MEDICAL SCHOOL-PARTNERS HEALTHCARE CENTER FOR GENETICS AND GENOMICS

Interim Scientific Director: Scott Weiss, M.D., Professor of Medicine, Harvard Medical School, Brigham and Women's Hospital

To realize the promise of genetics and genomics in research and in medical practice, Harvard Medical School and Partners HealthCare System established the Harvard Medical School-Partners HealthCare Center for Genetics and Genomics (HPCGG) in 2001. Its mission is to accelerate personalized medicine by discovering genetic knowledge and integrating it into clinical medicine. The availability of the human genome sequence and the many high throughput technologies that have been developed have enabled an extraordinary growth in the identification of genes and of the specific genetic changes that are responsible for human disease. Widespread use of genetic and genomic information will revolutionize medical practice. It is anticipated that genetic and genomic testing will become an integral part of diagnosis, prognosis and treatment of disease and in determining the appropriate drugs for individual patients.

HPCGG is accomplishing its mission through the following approaches:

- Recruiting outstanding physicians and scientists
- Offering genetic-based diagnostic testing and developing new tests in its Laboratory for Molecular Medicine
- Developing and implementing strategies for evaluating the clinical outcomes of incorporating genetics into clinical practice
- Developing an IT infrastructure to integrate genetic and genomic data into clinical decision support systems
- Caring for patients with genetic disorders
- Training and educating physicians, scientists and the public

For more information about the Center, please visit www.hpcgg.org.

HARVARD BUSINESS SCHOOL

Harvard Business School's mission is to train business leaders in all industries. Healthcare, a $2 trillion industry, has become one of the school's key priorities. The Healthcare Initiative at HBS was launched in 2005 to bring together the extensive research, thought leadership, and interest in the business and management of healthcare that exists at HBS.

Healthcare research at HBS focuses on entrepreneurship, innovation and disruption. Faculty and students seek to understand and identify new products, services and delivery methods that will help to reshape the industry. HBS believes this focus on "creative destruction" will result in business models that offer the hope of improved outcomes, reduced costs, streamlined systems, and enhanced services.

Personalized medicine presents tremendous opportunities in healthcare and has garnered much attention at HBS. With its expertise in technology, commercialization, and business model development, HBS can play a critical role in the widespread adoption of personalized medicine applications.

For more information about the HBS Healthcare Initiative, please visit www.hbs.edu/healthcare.

Personalized Medicine: *A Value Proposition*

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