

# PERSONALIZED MEDICINE: *A Call for Action*

A CONFERENCE HOSTED BY

HARVARD MEDICAL SCHOOL – PARTNERS HEALTHCARE  
CENTER FOR GENETICS AND GENOMICS



HARVARD BUSINESS  
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NOVEMBER 29-30, 2007  
JOSEPH B. MARTIN CONFERENCE CENTER  
AT HARVARD MEDICAL SCHOOL, BOSTON



A CONFERENCE TO DEVELOP STRATEGIES  
FOR ACCELERATING THE ADOPTION  
OF PERSONALIZED MEDICINE

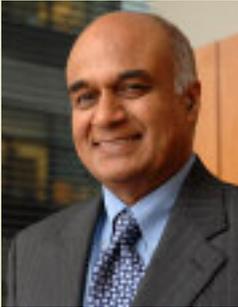
**Conference Program**

*HIGHLIGHTS FROM PAST CONFERENCES*



November 29, 2007

*Dear Colleague,*



It is my pleasure to welcome you to *Personalized Medicine: A Call for Action*. The Harvard Medical School-Partners HealthCare Center for Genetics and Genomics (HPCGG) is again delighted to collaborate with Harvard Business School to present a conference to develop strategies for accelerating the adoption of personalized medicine. This partnership is important because we believe that collaboration between medicine and business is critical for the implementation of personalized medicine. I am pleased that we are also continuing our collaboration with the Personalized Medicine Coalition (PMC), an international organization that is doing much to educate and promote personalized medicine through public discourse about policy issues, which is also essential in working to meet our goal. The PMC is presenting its Third Annual Award for Leadership in Personalized Medicine at our conference.

Personalized medicine is made possible by three recent revolutions in Genetics. The first is the recognition that genetics plays a very important role in virtually all aspects of human health and disease. The second is the Human Genome Project that provided the sequence of the human and many other genomes and spurred the development of many tools and approaches for high throughput biology. The third revolution is the use of rapidly accumulating new genetic and genomic knowledge in the care of patients. The transformation of patient care as a result of personalized medicine provides great opportunities for pharmaceutical, diagnostic and information technology companies, as well as healthcare providers, payors and regulatory agencies, the physicians who use genetic knowledge and ultimately the entire human population. The possibilities for reducing suffering, restoring quality of life and facilitating the delivery of cost effective healthcare are almost boundless, and our call for action is to accelerate the realization of these goals.

HPCGG aspires to accelerate the promise of personalized medicine by discovering and integrating genetic knowledge into the practice of healthcare. This conference provides the forum for continuing discussions to help us reach that goal. I would like to take this opportunity to thank the members of our organizing committee for their hard work in planning this conference; our speakers and participants for their enthusiasm in sharing their thoughts and plans; and the program's sponsors whose support enabled this year's conference. This is truly an exciting time for these discussions and I am delighted you have decided to join us.

Sincerely,

A handwritten signature in blue ink that reads "Raju Kucherlapati". The signature is fluid and cursive.

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



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*This conference is organized by the Harvard Medical School - Partners Healthcare Center for Genetics and Genomics and Harvard Business School in collaboration with the Personalized Medicine Coalition. It is made possible by the generous support of our sponsors.*

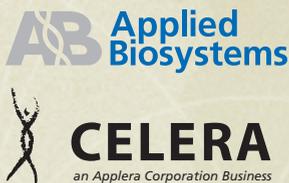
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**Edward Abrahams, Ph.D.**  
Executive Director  
Personalized Medicine Coalition

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Senior Medical Director for Women's Health and Clinical Lead for Genomics  
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President, Genzyme Genetics  
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General Partner, RS Investments  
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Harvard-Partners Center for Genetics and Genomics  
Labs at 65 Landsdowne Street, Cambridge



# Conference Program

Thursday, November 29, 2007

## Morning Session - Amphitheater

TIME	TOPIC	SPEAKER / MODERATOR
7:30-8:15	Registration & Continental Breakfast	
8:15	Welcome	<b>Raju Kucherlapati, Ph.D.</b> Scientific Director, Harvard-Partners Center for Genetics and Genomics, Paul C. Cabot Professor of Genetics, Professor of Medicine, Harvard Medical School, Boston, MA
8:25	Public Policy Implications of Personalized Medicine	Keynote Speaker: <b>M. Kathleen Behrens, Ph.D.</b> General Partner, Consultant, RS Investments, Member, President's Council of Advisors on Science and Technology (PCAST), Ross, CA  Introduction by: <b>Mark J. Levin</b> Partner, Third Rock Ventures, LLC, Boston, MA
9:10	The Personalized Health Care Challenge	Keynote Speaker: <b>Michael O. Leavitt</b> Secretary of Health and Human Services, U.S. Department of Health and Human Services, Washington, DC  Introduction by: <b>James J. Mongan, M.D.</b> President and Chief Executive Officer, Partners HealthCare, Boston, MA
10:00	Break	
10:45-12:15	Session I: Perspectives from Pharmaceutical and Diagnostics Companies	Moderator: <b>Richard G. Hamermesh, D.B.A.</b> MBA Class of 1961 Professor of Management Practice, Faculty Chair, HBS Healthcare Initiative, Harvard Business School, Cambridge, MA

The adoption of personalized medicine is, in part, dependent on the attitudes and approaches that are used by the drug developers, whether they are pharmaceutical companies or biotechnology companies. Companies that pursue diagnostic tools or services are also critical players since diagnostics lies at the core of personalized medicine. New drug development may also involve collaborations between drug makers and diagnostics companies. This session will explore the successes and obstacles faced by these industries and their perspectives on actions needed for personalized medicine to become a healthcare norm.

**Garry Neil, M.D.**, Corporate Vice President, Corporate Office of Science & Technology, Johnson & Johnson, Raritan, NJ  
**Samuel Broder, M.D.**, Chief Medical Officer, Celera, Rockville, MD  
**Peer M. Schatz**, Chief Executive Officer, Qiagen, Hilden, Germany  
**Thomas J. Miller**, Member, Executive Management Board, Siemens Medical Solutions, Erlangen, Germany

Panel Discussion All Four Speakers

## Luncheon & PMC Award Presentation – Rotunda & HIM Room

12:15	Personalized Medicine Coalition's Third Annual Award for Leadership in Personalized Medicine <b>Prospective Medicine: The Next Health Care Transformation</b>
Award Recipient:	<b>Ralph Snyderman, M.D.</b> Chancellor Emeritus, Duke University, Founder, Proventys, Inc., Durham, NC
Presentation by:	<b>Mara G. Aspinall</b> President, Genzyme Genetics, Genzyme Corporation, Westborough, MA
Introduction by:	<b>Edward Abrahams, Ph.D.</b> Executive Director, Personalized Medicine Coalition, Washington, DC

## Thursday, November 29, 2007

### Afternoon Session - Amphitheater

TIME	TOPIC	SPEAKER / MODERATOR
2:15	Markets of One: The Pharmaceutical Industry and the Pursuit of Personalized Medicine	Keynote Speaker: <b>John C. Lechleiter, Ph.D.</b> President and Chief Operating Officer, Eli Lilly and Company, Indianapolis, IN  Introduction by: <b>Deborah Dunsire, M.D.</b> President and CEO, Millennium Pharmaceuticals, Inc., Cambridge, MA

3:00 Break

3:30-5:00	Session II: Personalized Medicine: Clinical and Regulatory Issues	Moderator: <b>Christine Seidman, M.D.</b> 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, Boston, MA
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It is well known that all drugs are not effective, at least to the same degree, in all of the patients that are treated with them. There are several examples where it is clear that individual genetic variation, with which each person is born, or acquired genetic differences, as in the cases of most cancers, are critical to finding the right drug or the right dose of the drug for each patient. This understanding presents perils and opportunities to drug developers. Some would argue that development of targeted therapies would segment the markets and others argue that mechanism- or genetic/genomic- based treatment would expand indications for drugs. If new information about the safety or efficacy of drugs based on genes becomes available, it is important to show that gene based clinical decision making would result in better outcomes for patients. Such information gathering is the responsibility of drug developers, academic medical centers and regulatory agencies such as the Food and Drug Administration (FDA). In this session, experts from these different types of organizations will consider the barriers and opportunities for genetics in clinical trials and clinical medicine.

**Nadine Cohen, Ph.D.**, Head of Pharmacogenomics and Senior Research Fellow, Johnson & Johnson Pharmaceutical Research & Development East Coast and Europe, Raritan, NJ

**Hakan Sakul, Ph.D.**, Senior Director and Global Head of Diagnostics, Translational and Molecular Medicine Group, Worldwide Development, Pfizer Global R&D

**Mason W. Freeman, M.D.**, Chief, Lipid Metabolism Unit, Massachusetts General Hospital, Harvard Medical School, Boston, MA

**Felix W. Frueh, Ph.D.**, Associate Director, Genomics, Office of Clinical Pharmacology, CDER/FDA, Silver Spring, MD

Panel Discussion All Four Speakers

### Reception – Elements Café

5:00-6:30 Reception



# Conference Program *continued*

## Friday, November 30, 2007

### Morning Session - Amphitheater

TIME	TOPIC	SPEAKER / MODERATOR
7:30-8:30	Continental Breakfast	
8:30	Molecular Biology and the Advent of Precision Medicine	Keynote Speaker: <b>Clayton M. Christensen, D.B.A.</b> Robert and Jane Cizik Professor of Business Administration, Harvard Business School, Cambridge, MA  Introduction by: <b>Norman C. Selby</b> Senior Managing Director, Perseus, L.L.C., New York, NY
9:15	Personalized Healthcare: A Way Forward	Keynote Speaker: <b>Wayne A. Rosenkrans, Jr., Ph.D.</b> President & Chairman, Personalized Medicine Coalition, External Relations Director – Evidence-based Medicine and Personalized Healthcare, AstraZeneca Pharmaceuticals, Wilmington, DE  Introduction by: <b>Marcia A. Kean</b> Chief Executive Officer, Feinstein Kean Healthcare, Cambridge, MA
9:45-11:00	Session III: Who Will Pay for Personalized Medicine?	Moderator: <b>Edward Abrahams, Ph.D.</b> Executive Director, Personalized Medicine Coalition, Washington, DC
<p>The costs of healthcare in the United States are growing at a pace that many believe cannot be sustained by our economy. This is exacerbated by the aging population and the needs of this group of our citizens for medical care. In this atmosphere, any new technologies or approaches to personalized medicine have to be examined carefully through the prism of costs and benefits to society. For instance, although the cost of diagnostics is a small proportion of overall medical care, the implementation of personalized medicine will result in increases in diagnostic costs. In the United States, private insurance companies and the Centers for Medicare &amp; Medicaid Services (CMS) are expected to be responsible for covering the costs associated with diagnostics or companion treatments. This session brings together experts from insurance companies and the legislative policy side to discuss the national policy issues and financial models for dealing with the shift in costs associated with personalized medicine.</p> <p><b>Joanne C. Armstrong, M.D., M.P.H.</b>, Senior Medical Director for Women's Health and Clinical Lead for Genomics, Aetna, Inc., Sugarland, TX  <b>Anthony Miller</b>, Managing Director, Lemhi Ventures, Excelsior, MN  <b>Samuel R. Nussbaum, M.D.</b>, Executive Vice President and Chief Medical Officer, Wellpoint, Inc., Indianapolis, IN  <b>Dora L. Hughes, M.D., M.P.H.</b>, Health Policy Advisor, Senator Barack Obama, Washington, DC</p>		
Panel Discussion	All Four Speakers	
11:00	Break	

## Friday, November 30, 2007

TIME	TOPIC	SPEAKER / MODERATOR
11:30-12:45	Session IV: What are the Public Policy and IT Issues that will Drive Personalized Medicine?	Moderator: <b>Gregory Downing, D.O., Ph.D.</b> Program Director, Personalized Health Care, U.S. Department of Health and Human Services, Bethesda, MD
<p>Genetic and genomic information as it is relevant to clinical settings is accumulating at a very rapid pace. Portable electronic records that are capable of capturing many different types of clinical and genetic information could result in significant improvements in the health of individuals. How to collect, store, retrieve, analyze and use this information for clinical decision making is a challenge and an opportunity that has technological and public policy dimensions. The FDA is also leading an effort to implement regulatory changes to make diagnostics safe and of proven effectiveness. Educating the public is also of great importance. The panelists in this session will address from the perspective of various stakeholders how policy decisions and technological capabilities can be harnessed to advance the excitement of personalized medicine.</p> <p><b>Lawrence J. Lesko, Ph.D., FCP</b>, Director, Office of Clinical Pharmacology, Center for Drug Evaluation and Research, U.S. Food and Drug Administration, Silver Spring, MD  <b>Sharon F. Terry, M.A.</b>, President and Chief Executive Officer, Genetic Alliance, Washington, DC  <b>Jeffrey D. Miller</b>, Vice President, WW Health and Life Sciences, WW Public Sector, Hewlett-Packard Company, Houston, TX  <b>John P. Glaser, Ph.D.</b>, Vice President and Chief Information Officer, Partners HealthCare, Boston, MA</p>		
Panel Discussion	All Four Speakers	
12:45	Closing	<b>Raju Kucherlapati, Ph.D.</b> Scientific Director, Harvard Medical School-Partners HealthCare Center for Genetics and Genomics, Paul C. Cabot Professor of Genetics, Professor of Medicine, Harvard Medical School, Boston, MA
1:00	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 C. 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.

### Mara G. Aspinall

Mara Aspinall is the President of Genzyme Genetics, a leading worldwide provider of testing and consultative services. Genzyme Genetics is a division of Genzyme Corporation, one of the world's largest biotechnology firms with more

than 10,000 employees and more than \$3 billion in revenue. From its roots 20 years ago, Genzyme Genetics has established itself as one of the industry's foremost independent diagnostics businesses, performing more than one million tests annually, while leading the personalized medicine, oncology, prenatal, postnatal, and infertility testing markets. Genzyme Genetics has eight laboratories across the U.S. and employs the nation's largest network of board-certified genetic counselors. Genzyme Genetics has achieved record growth while setting the quality standard within the diagnostics industry. Most recently, Genzyme Genetics acquired the assets of IMPATH, Inc., one of the nation's largest cancer testing companies, making Genzyme Genetics one of the top commercial laboratories in the U.S.

Under Mara's leadership, Genzyme Genetics has expanded its range and reach in the marketplace. The division has successfully completed and integrated four acquisitions, expanded research and development programs, and initiated new programs for community outreach and education. Most recently, Mara co-authored an article published in the Harvard Business Review titled "Realizing the Promise of Personalized Medicine."

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.

Prior to joining Genzyme, Mara was Senior Consultant at Bain & Company, an international strategic consulting firm, where she specialized in developing and implementing business strategies for health care product and service companies. Mara also served as a Director at Hale and Dorr LLC.

Mara combines her professional life with active involvement in the community. Her two most important areas of focus are:

*The fight against cancer:* Mara is an active Board member of the Dana Farber Cancer Institute, where she sits on the Executive Committee as well as the Trustee Science Committee. She has previously served as Chairman of the Board of the American Cancer Society, Massachusetts. During her tenure at ACS, she oversaw the process of merging the Massachusetts chapter into a newly formed New England American Cancer Society.

*Expanding educational opportunities for young children:* Mara co-chairs Early Education for All, an advocacy cam-



paign to establish statewide standards for pre-school education. Mara is a frequent speaker to regional and national organizations on creating business and legislative support for children's educational programs.

Her Masters of Business Administration from Harvard Business School was enriched with the John P. Stevens Prize for leadership. She has served on the board of the HBS Network for Women. A magna cum laude graduate of Tufts University, Mara majored in International Relations.

#### **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.

#### **Samuel Broder, M.D.**

Dr. Samuel Broder joined Celera at its founding in 1998, as the Executive Vice President for Medical Affairs and Chief Medical Officer. Before joining the company, he had been appointed by President Reagan to serve as Director of the National Cancer Institute in 1989, a position he held for six years. His laboratory interests include anti-retroviral therapy, and also, the relationship between immunodeficiency disorders and cancer. His laboratory focused on the role of suppressor cells in various immunodeficiency states and on neoplasms of immunoregulatory T cells.



His laboratory was also instrumental in developing several of the first drugs now widely used in the therapy of AIDS and its related disorders in adults and children, especially nucleosides such as Retrovir® (AZT), Videx®(ddI), and HIVID®(ddC). He also oversaw the development of other agents, such as TAXOL®. While serving as NCI Director, he helped launch a number of large-scale clinical trials related to the prevention, diagnosis, and treatment of cancer and inaugurated the SPORE Program. He is the author or co-author of over 330 scientific publications. He has received numerous scientific awards related to his research in cancer and AIDS. His current interests relate to applying knowledge of the human genome, DNA diagnostics, and proteomics to the development of new strategies to treat cancer.

#### **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-technolo-

*continued*



## Conference Speakers *continued*

gy 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.

### **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 60 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.

### **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., President and CEO**

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 is to establish a vibrant, growing biotechnology company, which discovers and develops new medicines that change standards of care in cancer and inflammation.



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 product launches and built the business from approximately \$50 million to \$2.1 billion in revenues over 10 years. Dr. Dunsire also was responsible in the U.S. for managing the merger and significant growth of the combined Sandoz Pharmaceuticals and Ciba-Geigy oncology businesses.

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 Witwatersand 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 the Pharmaceutical Research and Manufacturers of America (PhRMA), Biotechnology Industry Organization (BIO), Allergan, Inc. and the G&P Foundation for Cancer Research. In 2001, she was the 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.

### **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. Frueh holds the position of Associate Director for Genomics in the Office of Clinical Pharmacology (OCP) in the Center for Drug Evaluation and Research (CDER) at the



FDA and also chairs the FDA-wide Interdisciplinary Pharmacogenomics Review Group (IPRG). Prior to his appointment at the FDA, Dr. Frueh was Managing Partner at Stepoutside Consulting, LLC, and served as a Special Government Employee to the FDA and as a consultant to the CDC's NHANES project. He held the position of Research Director for Pharmacogenetics

at Transgenomic, Inc., managing the expansion of the business into new program areas for the diagnosis of genetic disorders. Prior, Dr. Frueh was the Assistant Director for Biology at Protogene Laboratories, Inc., responsible for application development based on novel, in situ synthesized DNA microarray technology. He held an appointment as Assistant Professor at Georgetown University, Washington, DC in the Departments of Pharmacology and

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## Conference Speakers *continued*

Medicine and was a postdoctoral fellow at Stanford University and at the Biocenter of the University of Basel, Switzerland. Felix is a native of Basel and lives in Maryland with his wife and two sons.

### **John P. 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.

### **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. His most recent article, "Realizing the Potential of Personalized Medicine," will appear in the Harvard Business Review (October 2007). 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.

### **Dora L. Hughes, M.D., M.P.H.**

Dr. Dora Hughes advises Senator Barack Obama on a broad range of health issues and helps to develop his national policy and legislative agenda. She previously served as Deputy Director for Health for Senator Edward M. Kennedy on the Committee on Health, Education, Labor and Pensions in the United States Senate. Prior to working on Capitol Hill, Dr. Hughes served as Senior Program Officer at The Commonwealth Fund, a national health foundation in New York City. She completed medical school at Vanderbilt University, residency at Brigham & Women's Hospital and public health school at Harvard University. Dr. Hughes is board-certified in internal medicine. June 2007.

### **Marcia A. Kean**

Marcia Kean was appointed Chief Executive Officer of Feinstein Kean Healthcare (FKH) in December 2002. In that role, she leads a team of 60+ professionals located in Cambridge, Massachusetts; San Francisco, California; Iselin, New Jersey; and Washington, DC. Mrs. Kean has a 25+ year track record in the life sciences, counseling CEOs and senior leadership in the use of communications to meet business and organizational objectives.



In 2003, Mrs. Kean founded the first Molecular Medicine communications practice in the country, to help clients manage the opportunities and issues

inherent in the molecular-based transformation of health care. She has subsequently become a thought leader in the field, through her publications and speaking engagements in the United States and internationally. Mrs. Kean currently serves as an advisor to the Board of Directors of the Personalized Medicine Coalition, and was awarded that organization's first Distinguished Service Award in 2006. She is also a member of the Genetics Advisory Council of the Harvard-Partners Center for Genetics and Genomics. She served in 2007 as a member of a Personalized Medicine Expert Panel convened by the Office of the Assistant Secretary for Planning and Evaluation (ASPE) of the US Department of Health and Human Services, to explore factors related to the integration of personalized medicine into clinical and public health practice. She has also been invited to serve on the Institute of Medicine Roundtable on Evidence-Based Medicine Communication Collaborative.

Mrs. Kean holds an MBA in Finance from New York University, and a BA from the University of California at Berkeley.

#### **Michael O. Leavitt**

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 to protect the health of all Americans and provide essential human services to those in need. He manages one of the largest civilian departments in the federal government, with a budget that accounts for almost one out of every four federal dollars and more than 67,000 employees.



During his first year, he led efforts to successfully enroll tens of millions of seniors and disabled persons in the new Medicare prescription drug benefit;

mobilized the nation's pandemic preparedness; accelerated the development of health information standards and oversaw the medical response to Hurricane Katrina. He also presided over changes in Medicaid statutes to give states flexibility to provide targeted insurance coverage to more people, and reauthorization by Congress, after ten extensions, of the Temporary Assistance to Needy Families.

He is intensively focused on making health care more transparent in quality and price, and reducing the time and expense of bringing safe and effective drugs to market. Prior to his current service, Leavitt served as head of the U.S. Environmental Protection Agency and three-term Governor of Utah.

During his eleven years of service, Utah was recognized six times as one of America's best managed states. He was

chosen by his peers as Chairman of the National Governors Association, Western Governors Association and Republican Governors.

Prior to his public service, he served as president and chief executive officer of a regional insurance firm, establishing it as one of the top insurance brokers in America. He is married to Jacalyn S. Leavitt; they are the parents of five children.

#### **John C. Lechleiter, Ph.D.**

John C. Lechleiter, Ph.D., was named president and chief operating officer in October 2005. He previously served as executive vice president, pharmaceutical operations since January 2004. He had been executive vice president for pharmaceutical products and corporate development since 2001. Lechleiter is a member of the company's policy and strategy committee, and also chairs the company's operations committee.



Lechleiter received a bachelor of science degree summa cum laude in chemistry from Xavier University (Cincinnati, Ohio) in 1975. He studied organic chemistry as a National Science Foundation Fellow at Harvard University, where he received his master's and doctorate degrees in 1980. In 2006, Lechleiter received an honorary doctorate of business administration from Marian College of Indianapolis. Joining Lilly in 1979 as a senior organic chemist in process research and development, Lechleiter became head of that department in 1982. In 1983, he began serving as director of pharmaceutical product development for the Lilly Research Center Limited, in Windlesham, England. He returned to the United States in 1986 as manager of research and development projects for Europe. In 1988, he became director of development projects management and subsequently assumed additional responsibility for pharmaceutical regulatory affairs: chemistry, manufacturing, and control in 1989. In 1991, he was named executive director of pharmaceutical product development and became vice president in 1993. He was appointed vice president of regulatory affairs in 1994. In 1996, he was named vice president of Lilly Research Laboratories, a division of Eli Lilly and Company, responsible for development and regulatory affairs. Lechleiter became senior vice president, pharmaceutical products in 1998.

Lechleiter is a member of the American Chemical Society. In 2004, he was appointed to the Visiting Committee of Harvard Business School and to the Health Policy and Management Council of the Harvard School of Public Health. He also serves as a member of the Board of Trustees of Xavier University in Cincinnati. In addition, he

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## Conference Speakers *continued*

serves as a distinguished advisor of The Children's Museum of Indianapolis, a member of the Dean's Advisory Council at the Indiana University School of Medicine, a member of the Board of Directors and Executive Committee of Fairbanks Institute, and a member of the United Way of Central Indiana Board of Directors.

### **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 benefit/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.

### **Mark J. Levin**

Mark is an industry visionary with more than 25 years of experience building and operating leading biotech companies. After ten years at Lilly and Genentech, Mark was co-founder of Mayfield life sciences effort where he was founding CEO of Tularik, Cell Genesys/ Abgenix, Focal, Stem Cells and Millennium Pharmaceuticals. Mark was at Millennium as CEO for 12 years and built what is recognized as the highest valued life sciences company since 1990.

### **Anthony Miller**

Tony Miller co-founded Lemhi Ventures in 2006 to build the capital base and value added approach of forming and helping companies continue to advance the marketization of the healthcare industry.



Additionally, Mr. Miller is part of the leadership team at Carol Corporation, a Lemhi Ventures Portfolio company. Mr. Miller serves on the Boards of VisionShare, and Carol Corporation. Prior to founding Lemhi Ventures, Mr. Miller was a co-founder and CEO of Definity Health, a national market leader in consumer-driven health benefit programs, which was sold to UnitedHealth Group in 2004.

Mr. Miller regularly serves as an industry expert in articles and other news coverage and is a frequent speaker on the topics of consumer-driven healthcare and health policy. Prior to founding Definity Health, Mr. Miller was a consultant at Deloitte Consulting where he focused on strategic business development in the managed care industry, including mergers and acquisition, market development and performance turnarounds. Mr. Miller holds an M.B.A. from Cornell University's Johnson Graduate School of Management and an M.S. in Kinesiology from the University of Illinois at Champaign-Urbana.

### **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. © 2007 Hewlett-Packard Development Company, L.P. 04/2007

### **Thomas J. Miller**

Miller holds an impressive professional track record within Siemens and other multinational corporations. During his initial 15-year tenure with Siemens, Miller headed up Med's Magnetic Resonance (MR) product division, and the U.S. sales and service organization. Afterwards Miller was vice president, Business Development, for Siemens Medical Solutions in Erlangen, Germany. Most recently, he led the Siemens Medical Solutions Health Services Corporation (HS).

Miller will tell you that there isn't a lack of information in the healthcare industry, but rather, it's perfecting the management of that information that will help healthcare organizations become more efficient and positively impact patient outcomes. His mission is to achieve the goals of assuring patient safety, increasing operational efficiency and improving clinical outcomes for all of Siemens' IT customers. Doing this means moving information through the healthcare continuum in an effective and meaningful way, analyzing and using it to continuously improve the processes involved in today's standards of care, resulting in true workflow optimization, expanding beyond the automation of manual processes.

In addition to his leadership positions at Siemens, Miller also was president and CEO of Carl Zeiss, Inc., the American subsidiary of the optical company, and simultaneously the general manager of their worldwide medical division, 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 also co-founded a company, LightLab Imaging, to commercialize a new diagnostic-imaging method called optical coherence tomography (OCT), which enables the acquisition and display of real-time ultra high-resolution, cross-sectional images with light. During the summer of 2002, following successful initial clinical trials for vulnerable plaque imaging in coronary arteries, he sold the operation to a Japanese company.

Whether he is racing motorcycles, bicycling, reading a classic or listening to music, the one thing that remains constant is Miller's passion for life. This exuberance is also true in his commitment to his work. As Miller sees it, the potential for healthcare IT is boundless and the exponentially increasing pace of technological advances offer great possibilities to those who can leverage it.

Miller holds a B.S. in nuclear engineering with a minor in English literature from the University of Massachusetts and a master's degree from Harvard Medical School/MIT's 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

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## Conference Speakers *continued*

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.

### **Garry Neil, M.D.**

Garry Neil, M.D. is Corporate Vice President, Corporate Office of Science & Technology (COSAT), Johnson & Johnson. In this role, Garry leads a team that catalyzes sustained cross-sector growth for Johnson & Johnson by identifying and launching emerging technologies that underpin the creation of future businesses.



He has broad experience in the science, medicine and pharmaceutical research and development. He has held a number of senior positions within J&J, most recently Group President, Johnson and Johnson Pharmaceutical Research

and Development. Under his leadership a number of important new medicines for the treatment of cancer, anemia, infections, central nervous system and psychiatric disorders, pain, and genitourinary and gastrointestinal diseases, gained initial or new and/or expanded indication approvals.

Garry joined J&J in 2002. He previously held senior-level positions with Astra Merck Inc., Astra Pharmaceuticals, Astra Zeneca and Merck KGaA. He has also held a number of academic posts at a number of academic institutes including the Ludwig Institute for Cancer Research, the University of Toronto, the University of Iowa College of Medicine and the University of Pennsylvania (adjunct). He has written more than 50 articles and book chapters. He is

a Fellow of the American College of Physicians, a Fellow of the American College of Gastroenterology, a member of the American Association of Immunologists, and the Society for Clinical Trials. He is a member of the Board of the J&J Development Corporation and is J&J's representative to, and Vice Chairman, of the Pharmaceutical Research and Manufacturers Association (PhRMA) Science and Regulatory Committee, Vice Chairman and Treasurer of the PhRMA Foundation Board, a member of the Board of Trustees for the University of Medicine and Dentistry of New Jersey, a member of the Executive Committee of the Biomarkers Consortium, and a member of the Board of Trustees of the Newark Boys Chorus School.

### **Samuel R. Nussbaum, M.D.**

Dr. Samuel Nussbaum is executive vice president and chief medical officer for WellPoint, Inc. He oversees corporate medical policy, clinical pharmacy programs, health improvement and quality resources, programs for clinical excellence, disease and care management, and clinical informatics to optimize care for members. Dr. Nussbaum also has responsibility for the Health Management Corporation (HMC) and HealthCore subsidiaries. When Anthem, Inc. merged with WellPoint Health Networks Inc. in November 2004 and was subsequently renamed



WellPoint, Inc., Dr. Nussbaum was serving as executive vice president and chief medical officer of Anthem. He joined Anthem in January 2001.

His principal responsibilities continue to include: serving as chief spokesperson 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 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. He received the 2004 Physician Executive Award of Excellence from the American College of Physician Executives and Modern Physician magazine. Dr. Nussbaum is a member of numerous professional organizations and has spoken at national and regional conferences pertaining to his medical research as well as on health-care delivery. 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 Affairs and System Integration, of the BJC Health System—one of the largest academic and community integrated health and hospital systems in the United States, where he also served as CEO of its health plan 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 Harvard and in endocrinology and metabolism at Harvard and Massachusetts General Hospital, where he directed the Endocrine Clinical Group and the Musculoskeletal Pathophysiology course at Harvard Medical School. His clinical and basic research has led to new therapies to treat skeletal disorders and new technologies to measure hormones in blood. Nussbaum is board-certified in internal medicine and specialty certified in endocrinology and metabolism.

#### **Wayne A. Rosenkrans, Jr., Ph.D.**

Wayne is Director of External Relations for the Personalized Healthcare Team at AstraZeneca and for Evidence-based Medicine (EBM) as part of External Medical Relations where he has responsibility for long-range external relations strategy and policy development. He is Chairman, President and a member of the board of directors of the Personalized Medicine Coalition, a Washington DC based organization working with government and other agencies on evolving healthcare policy for Personalized Healthcare.

He also is involved in a number of work-streams at the Institute of Medicine (IOM), and represents AZ on several strategy and advisory boards at different organizations including the Health Industry Forum, National Pharmaceutical Council, C-Path Institute, MIT, Georgetown University, IBM, and the Personalized Healthcare Initiative in the Secretary's office at Health and Human Services. He has presented at numerous forums on aspects of personalized healthcare, evidence-based medicine, new development paradigms, and strategy development. He holds an S.B. in Biology from MIT, a Ph.D. in Cell and Molecular Biology from Boston Univ., and received post-doctoral training in Cancer and Radiation Biology at the Univ. of Rochester. Wayne is based in Wilmington, is married with two college-age children, and enjoys teaching martial arts (Tang Soo Do), restoring antique/classic Fords, and aviation history.



#### **Hakan Sakul, PhD**

Senior Director and Global Head of Diagnostics Translational and Molecular Medicine Group, Clinical R&D Pfizer Global R&D, New London Laboratories, Connecticut, USA

Since May 2007 Hakan has been a Senior Director in the Translational and Molecular Medicine Group where he is the Global Head of Diagnostics, leading Pfizer's Diagnostics effort across all therapeutic areas.



Hakan joined Parke-Davis in December 1998 as Director of Human Genetics, Statistical Genetics and Pharmacogenetics programs. Due to site closure shortly after Pfizer's merger with Warner-Lambert, he moved to

Ardais Corporation in Lexington, MA as Vice President of Statistical Genomics, after which he returned to Pfizer in November 2001 as Director and Site Head for Clinical Pharmacogenomics in Groton/New London Laboratories. Hakan was promoted to Senior Director in mid-2005 and was responsible for programs in CNS and Infectious Diseases prior to assuming his current role.

Hakan is a native of Turkey where he completed his BS and MS degrees. He then completed his PhD degree in Quantitative Genetics at the University of Minnesota as a Rotary Foundation Scholar. He completed a postdoctoral program at the University of California, Davis in quantitative genetics, animal genetics and international agriculture before moving into the biotech industry in human genetics and pharmacogenomics in 1995. Hakan has authored over 30 scientific refereed articles, several book chapters, and served as invited speaker on many panels and scientific meetings. He represents Pfizer on the Clinical Science and Technology Committee of Personalized Medicine Coalition, and Pharmacogenetics Working Group. Hakan is keenly interested in applications of diagnostics, pharmacogenomics and other -omics to the pharmaceutical pipeline as a business enabler, and their applications in improving and individualizing patient care.

#### **Peer M. Schatz**

Peer M. Schatz is QIAGEN's Chief Executive Officer and Chairman of the Executive Committee. He joined QIAGEN in 1993 as Chief Financial Officer. Mr.



Schatz was previously a partner in a private management buyout group in Switzerland and worked in finance and systems positions in Sandoz, Ltd. and Computerland AG as well as in finance, operations, management and sales positions in various start-up companies in

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## Conference Speakers *continued*

the computer and software trading industry in Europe and the United States. Mr. Schatz graduated from the University of St. Gall, Switzerland, with a Master's degree in Finance in 1989 and obtained an M.B.A. in Finance from the University of Chicago Graduate School of Business in 1991. Mr. Schatz is a member of the German Corporate Governance Commission.

### **Christine Seidman, M.D.**

Christine (Cricket) 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 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).

### **Norman C. Selby**

Norman C. Selby is a Senior Managing Director at Perseus llc, a private equity firm and merchant bank ([www.perseusllc.com](http://www.perseusllc.com)) based in Washington DC and New



York City. Mr. Selby is responsible for Perseus's strategy and investments in the pharmaceutical, biotech and medical products industries.

From 2001 to 2004, Mr. Selby was President and CEO of Transform Pharmaceuticals, a specialty pharmaceutical company focused on innovation in the form and formulation of drug compounds. During his tenure Transform

grew from a start-up to a successful drug development company, signed major strategic alliances with Alza, Lilly and J & J, out-licensed two products and put its first proprietary compound in the clinic. Johnson & Johnson acquired Transform for \$230 million in cash in early 2005.

From 1997 to 2000, Mr. Selby was a Senior Officer at Citigroup/Citicorp. He joined as Executive Vice President and head of Global Audit and Risk Review, and was a member of the Citicorp Management Committee. After the merger with Travelers, he became head of the Consumer Internet Business, reporting to both John Reed and Sandy Weill.

Prior to Citicorp, Mr. Selby was a Director (Senior Partner) in the New York office of McKinsey & Company, the international management consulting firm. In his 19 years at McKinsey, Mr. Selby's work was concentrated on strategy and organization issues for a variety of companies in the health care, consumer, communications and manufacturing industries. Mr. Selby had several important leadership roles at McKinsey, including head of the Firm's Global Pharmaceuticals Practice, head of the New York Office's Healthcare and Consumer Industry Practices, and member of the Firm's Principals Committee. Mr. Selby also spent 1984-1985 in McKinsey's Dusseldorf Office.

Mr. Selby took a leave of absence from McKinsey from 1987-1989 to serve as Chief Operating Officer of the New York Blood Center, the largest community blood organization in the country. During this time he led a major financial and operational turnaround of the Blood Center.

Mr. Selby has a BA in Architecture from Yale College, and after college worked at SCM Corporation and the Boston Consulting Group. Mr. Selby received an MBA with Distinction from the Harvard Graduate School of Business Administration.

Mr. Selby is a member of the Board of Directors of

Millennium Pharmaceuticals (MLNM), and Nanobio, Inc. He is also Chairman of Windhover Information, the leading B2B publishing and information company in the pharmaceutical, biotech and medical device industries. Its products include publications like IN VIVO, Start-Up, RPM and Medtech Insight, 10+ major conferences, and the best data base on business transactions and alliances in these industries. In addition, Mr. Selby serves on the Board of Trustees of the Central Park Conservancy, Memorial Sloan-Kettering Cancer Center and the Ralph Lauren Center for Cancer Care and Prevention – all in New York City.

### **Ralph Snyderman, M.D.**

Dr. Snyderman is Chancellor Emeritus, Duke University and James B. Duke Professor of Medicine in the Duke University School of Medicine. He served as Chancellor for Health Affairs and Dean of the School of Medicine from 1989 to July 2004. Dr. Snyderman led the transition of this excellent medical center into an internationally recognized leader of academic medicine. During his tenure, the medical school and hospital achieved ranking amongst the nation's best. Dr. Snyderman oversaw the development of the Duke University Health System, one of the most successful integrated academic health systems in the country, and served as its first President and Chief Executive Officer. Dr. Snyderman has played a leading role in the conception and development of Prospective Care, a novel approach to personalized health and an evolving model of national health care delivery. In 2004, after stepping down as Chancellor, Dr. Snyderman founded Proventys, Inc., a company at the forefront of transforming health care into a personalized and preventative approach through the development of high powered risk assessment and clinical decision support tools.

Dr. Snyderman accepted his first faculty appointment at Duke in 1972 and became chief of the Division of Rheumatology and Immunology in 1975 and, by 1984, he was the Frederic M. Hanes Professor of Medicine and Immunology. His research contributed to the understanding of how white blood cells respond to chemical signals to mediate host defense or tissue damage. Dr. Snyderman is internationally recognized for his contributions in inflammation research. His bibliography exceeds 350 manuscripts as well as numerous books. In 1987, Snyderman left Duke to join Genentech, Inc., the pioneering biomedical technology firm, as Senior Vice President for medical research and development and a member of its senior leadership team. While at Genentech, he led the development and licensing of several novel therapeutics.



A graduate of Washington College in Chestertown, Md. (1961), Snyderman received his M.D., magna cum laude, in 1965 from the Downstate Medical Center of the State University of New York. He served his internship and residency in medicine at Duke and later worked as a Public Health Officer doing research in immunology at the NIH (1967-72).

He is the recipient of numerous honors, including the CIBA GEIGY Award in 1992, the highest prize in inflammation research, the 1993 Bonazinga Award for Excellence in Leukocyte Biology Research and awarded the American College of Rheumatology Master designation in 2005. Snyderman was honored with the Lifetime Achievement Award from the Arthritis Foundation in 1997. In 1995, Downstate Medical Center of the State University of New York awarded him with their Distinguished Alumni Achievement Award, and in 1996, an Honorary Doctor of Science degree. He was the recipient of the Washington College Distinguished Alumni Citation in 1996 and an Honorary Doctor of Science degree in 2004. In November 2003, he was awarded the first Bravewell Leadership Award for outstanding achievements in the field of integrative medicine.

Dr. Snyderman has been called upon by Congress, the Institute of Medicine, the NIH, and national policy makers to contribute to the debate on health care reform, particularly his concepts concerning prospective care. He has played a prominent role in the leadership of such important national organizations as the Association of American Physicians, the Institute of Medicine and the Association of American Medical Colleges. He is a member of the Institute of Medicine and the American Academy of Arts & Sciences. He served as Chair of the AAMC in 2001-2002 and President of the Association of American Physicians in 2003-2004.

### **Sharon F. Terry, M.A.**

Sharon is President and CEO of the Genetic Alliance, a coalition of over 600 disease specific advocacy organizations working to increase capacity in advocacy organizations and to leverage the voices of the millions of individuals and families affected by genetic conditions. She is the founding Executive Director of PXE International, a research advocacy organization for the genetic condition pseudoxanthoma elasticum (PXE). Following the diagnosis of their two children with pseudoxanthoma elasticum (PXE) in 1994, Sharon, a former college chaplain, and her husband, Patrick, founded and built a dynamic organization that fosters ethical research



*continued*



## Conference Speakers *continued*

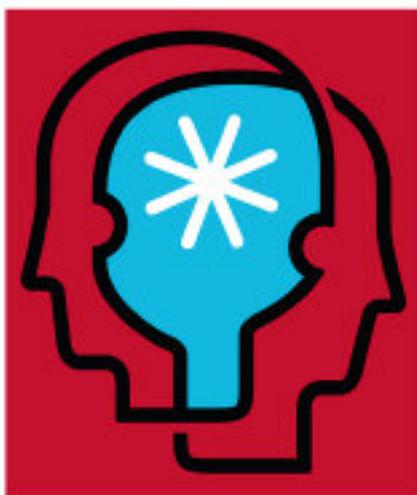
and policies and provides support and information to members and the public.

She is at the forefront of consumer participation in genetics research, services and policy and serves as a member of many of the major governmental advisory committees on medical research, including the Food and Drug Administration Cellular, Tissue and Gene Therapies Advisory Committee and the Advisory Committee on Heritable Disorders and Genetic Diseases in Newborns and Children. She served as an Ethical Legal and Social Implications Research Advisor of NHGRI/NIH, the National Institute of Arthritis Musculoskeletal and Skin Diseases Council and currently is liaison to the National Advisory Council for Human Genome Research. She is a member of the board of directors of the Biotechnology Institute and on the advisory board of the Johns Hopkins Genetics and Public Policy Center funded by the Pew Charitable Trusts. She serves on the boards of the Coalition for 21st Century Medicine, the Personalized Medicine Coalition, DNA Direct, and the Center for Information and Study on Clinical Research Participation. She is the chair of the Coalition for Genetic Fairness, composed of advocates, healthcare providers and industry working to enact effective federal policy to prohibit genetic information discrimination. She is also chair of the Social Issues Committee of American Society of Human Genetics. In 2005, she received an honorary doctorate from

Iona College for her work in community engagement and haplotype mapping.

Ms. Terry is a co-founder of the Genetic Alliance Biobank and serves as president of its board. It is a centralized biological and data [consent/clinical/environmental] repository catalyzing translational genomic research on rare genetic diseases. The BioBank works in partnership with academic and industrial collaborators to develop novel diagnostics and therapeutics to better understand and treat these diseases. Along with the other co-inventors of the gene associated with PXE (ABCC6), she holds the patent for the invention. She co-directs a 19-lab research consortium and manages 52 offices worldwide for PXE International.

Sharon feels strongly that advocates, working together and partnering with professionals and industry, can generate the energy and mechanisms necessary to realize the promise of biomedical research. Her work with the Genetic Alliance over the past few years has particularly focused on genetic literacy, research protections, biosample repositories, technology translation, genetic nondiscrimination, accessible services and youth issues. She has published widely on these issues. Sharon is committed to facilitating technical assistance to advocacy organizations, so that each organization benefits from the wisdom of the other. Sharon lives with Patrick and their two children in Maryland.



### Collaborating to create personalized medicine



Personalized medicine offers the potential to transform healthcare and dramatically improve clinical outcomes. The right IT infrastructure is essential in supporting this vision for personalized medicine to:

- Improve the quality and efficiency of research and clinical operations.
- Integrate genetic test results into electronic medical record systems.
- Ensure the data integrity of the personalized medicine information flow.
- Manage costs.

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Technology for better business outcomes

## HARVARD MEDICAL SCHOOL-PARTNERS HEALTHCARE CENTER FOR GENETICS AND GENOMICS

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](http://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](http://www.hbs.edu/healthcare).*

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