

State of Biomedical Innovation Conference

The Brookings Institution • Washington, DC Wednesday, June 27, 2012



Murray Aitken, MBA is executive director of the IMS Institute for Healthcare Informatics. The Institute provides policy setters and decision makers in the global health sector with objective, transformational insights into healthcare dynamics derived from granular analysis of information. In this role since January 2011, Mr. Aitken previously served in other roles at IMS including healthcare insights, corporate strategy, and consulting and services. Prior to joining IMS in 2001, Mr. Aitken was a partner at McKinsey & Company where he was based in the New Jersey, Seoul, and Los Angeles offices. Mr. Aitken writes and speaks regularly on the challenges facing the global healthcare industry and prospects for improving patient outcomes, managing costs and maximizing access globally through better use of healthcare information. Mr. Aitken's

recent research has focused on the changing dynamics of spending on medicines, healthcare utilization, and related policy issues and been published in *Health Affairs* and as working papers from the *National Bureau of Economic Research.* Mr. Aitken received an MBA degree with distinction from Harvard University, and holds a Master of Commerce degree from the University of Auckland in New Zealand.



Michael F. Bennet was elected United States Senator for Colorado in November 2010. A newcomer to politics with experience in business and public service, he is widelyrecognized as a pragmatic, innovative and independent thinker driven by a deep-seated obligation to create more opportunity for the next generation. Since arriving in Washington, Senator Bennet hasn't wasted a moment. In his fight to create goodpaying jobs for Coloradans and restore fiscal responsibility to Washington, Senator Bennet has emerged as an effective leader with a proven record of bringing people together to deliver results for working families. As the father of three young girls, Senator Bennet has made reducing the deficits and debt that threaten our economic future a top priority. And as a former school superintendent and a member of the

Senate Education Committee, Senator Bennet is pushing for bold reforms that support great teaching, cut needless red tape and bureaucracy, and incentivize innovative efforts at the state and local level. Senator Bennet is a member of the Senate committees on Agriculture, Nutrition and Forestry; Health, Education, Labor and Pensions; Banking, Housing and Urban Affairs; and the Special Committee on Aging. Before his appointment to the Senate in 2009 and subsequent election to a full six year term in 2010, Senator Bennet served as superintendent of Denver Public Schools. Prior to his time at the Denver Public Schools, Senator Bennet served as chief of staff to then-Denver mayor John Hickenlooper and as managing director at the Anschutz Investment Company.



Francis S. Collins, MD, PhD is the director of the National Institutes of Health (NIH). In that role he oversees the work of the largest supporter of biomedical research in the world, spanning the spectrum from basic to clinical research. Dr. Collins is a physiciangeneticist noted for his landmark discoveries of disease genes and his leadership of the international Human Genome Project, which culminated in April 2003 with the completion of a finished sequence of the human DNA instruction book. He served as director of the National Human Genome Research Institute at the NIH from 1993-2008. Before coming to the NIH, Dr. Collins was a Howard Hughes Medical Institute investigator at the University of Michigan. He is an elected member of the Institute of Medicine and the National Academy of Sciences, was awarded the Presidential Medal

of Freedom in November 2007, and received the National Medal of Science in 2009.



Mark E. Deem is managing partner at The Foundry, LLC. Mr. Deem joined The Foundry at its inception in 1998. In addition to spearheading the research and invention process on new clinical opportunities, Mr. Deem leads the early stage effort in The Foundry's new companies until the company's CEO and Senior Staff is hired. Prior to joining The Foundry, Mr. Deem served in a founding role as consulting director of research and development for Ventrica, Inc. Previously, Mr. Deem was a senior member of the Research & Development team at Medtronic Micro Interventional Systems. Mr. Deem joined MIS as one of the initial members of the company's engineering team and remained there through the acquisition by Medtronic. Previously, Mr. Deem held engineering positions with Devices for Vascular Engineering, Cordis

Corporation and the USCI Division of C.R. Bard. Mr. Deem has spent over twenty years in the design, testing and manufacture of medical devices. He is a co-inventor on over 150 issued and pending U.S. patents. Mr. Deem earned his BS degree in biomedical engineering from Boston University. Mr. Deem serves as a director for Cabochon Aesthetics and Innovative Pulmonary Solutions, and as chairman of Miramar Labs.



Ronald A. DePinho, MD is president of The University of Texas MD Anderson Cancer Center. His research program has focused on the molecular underpinnings of cancer, aging and degenerative disorders and the translation of such knowledge into clinical advances. Dr. DePinho's independent scientific career began at the Albert Einstein College of Medicine, where he was the Feinberg Senior Scholar in Cancer Research. He then joined the Department of Medical Oncology at the Dana-Farber Cancer Institute and Department of Medicine and Genetics at the Harvard Medical School. At Harvard, he was the founding director of the Belfer Institute for Applied Cancer Science at the Dana-Farber Cancer Institute and a professor of medicine and genetics at Harvard Medical School. Dr. DePinho is a former member of the Board of Directors of

the American Association for Cancer Research, and has served on numerous advisory boards in the public and private sectors including co-chair of advisory boards for the NCI Mouse Models of Human Cancer Consortium and for the Human Cancer Genome Altas Project. Dr. DePinho studied biology at Fordham University, where he graduated class salutatorian, and received his MD degree with distinction in microbiology and immunology from the Albert Einstein College of Medicine. For his fundamental contributions to cancer and aging, he has received numerous honors and awards including the March of Dimes Basil O'Connor Award, James S. McDonnell Scholar Award, the Cancer Research Institute Scholar Award, the Melini Award for Biomedical Excellence, the Irma T. Hirschl Award, the Kirsch Foundation Investigator Award, and the Richard and Claire Morse Scholar Award. He is the 2002 recipient of the American Society for Clinical Investigation Award, the 2003 AACR Clowes Award, the 2007 Helsinki Medal, the 2007 Harvey Lectureship and the 2009 Albert Szent-Gyorgyi Prize. He is a member of the Institute of Medicine of the National Academy of Sciences. In 2010, Dr. DePinho was elected to membership in the American Academy of Arts and Sciences. In 2012, he was elected as a member of the National Academy of Sciences. He is a founder of Aveo Pharmaceuticals and a number of biopharmaceutical companies focused on cancer therapy and diagnostics.



Henry Grabowski, PhD is currently a professor emeritus of Economics and the director of the Program in Pharmaceuticals and Health Economics at Duke University. He obtained his doctorate in economics at Princeton University in 1967. He has previously served on the faulty at Yale University and at HHS, and the International Institute of Management in Berlin. His academic and research specialties are the pharmaceutical industry, health economics, economics of innovation government regulation, and global health issues. Under a series of grants from the National Science Foundation, he has examined the economics of pharmaceutical research and development ("R&D") and the effect of various government policy actions on drug innovation. He has testified several times before Congressional committees in the United States on pharmaceutical industry

issues, including effective patent life and generic competition, follow-on biologics, health care reform, and federal policy toward children's vaccines. He has also been an advisor and consultant to the National Academy of Sciences, the Congressional Budget Office, the Institute of Medicine, the Federal Trade Commission, and the General Accounting Office.



Margaret A. Hamburg, MD is commissioner of the Food and Drug Administration (FDA), where she has served since May 2009. As FDA Commissioner, she is advancing regulatory science, medical product innovation and globalization of the agency, while overseeing the implementation of groundbreaking laws to curb the use of tobacco and enhance food safety. She has undertaken major efforts to streamline and modernize FDA's regulatory pathways. Before joining FDA, Dr. Hamburg was vice president and senior scientist at the Nuclear Threat Initiative. In the 1990s, as New York City's health commissioner, she launched several major initiatives, including the nation's first public health bioterrorism preparedness program and an internationally recognized program to curtail the resurgence and spread of TB. President Clinton later

named her assistant secretary for planning and evaluation in the U.S. Department of Health and Human Services. Dr. Hamburg earned her MD from Harvard Medical School.



Jonathan S. Leff, MBA is a managing director with Warburg Pincus and has been a member of the firm's Healthcare Group since 1996. Beginning in 1999, Mr. Leff took responsibility for the firm's investment efforts in biotechnology. Since that time, he has shaped the firm's biotechnology investment strategy and has overseen biotechnology investments at all stages of development in North America, Europe and Asia. The companies that Mr. Leff has helped to build and finance have successfully developed and brought many novel products to patients, including therapies for cancer, HIV, Huntington's disease, pulmonary fibrosis, Fabry's disease and Hunter syndrome, among others. In addition to his investing responsibilities, Mr. Leff has been a leading voice in policy discussions related to biopharmaceutical innovation. He currently serves

on the Executive Committee of the Board of the National Venture Capital Association (NVCA) and leads the NVCA's life sciences industry efforts as chairman of the NVCA's Medical Innovation and Competitiveness Coalition (MedIC), and also serves as a member of the Board of the Emerging Companies Section of the Biotechnology Industry Organization (BIO). Mr. Leff has spoken at many conferences and participated in many panels on biopharma investment and innovation, and has testified before Congress on the impact of FDA regulation on investment in life sciences. Prior to joining Warburg Pincus, Mr. Leff was a consultant at Oliver, Wyman & Co. Mr. Leff received an AB in Government from Harvard University and an MBA from the Stanford University Graduate School of Business. Mr. Leff is currently a Director of Allos Therapeutics, InterMune, ReSearch Pharmaceutical Services, Sophiris Bio, Rib-X Pharmaceuticals and Talon Therapeutics, and also serves on the Board of Directors of the Spinal Muscular Atrophy Foundation and the Board of Visitors of Columbia University Medical Center.



Mark McClellan, MD, PhD is director of the Engelberg Center for Health Care Reform and Leonard D. Schaeffer Chair in Health Policy Studies at the Brookings Institution. At the Center, his work focuses on promoting high-quality, innovative and affordable health care. A doctor and economist by training, he also has a highly distinguished record in public service and in academic research. Dr. McClellan is a former administrator of the Centers for Medicare & Medicaid Services (CMS) and former commissioner of the U.S. Food and Drug Administration (FDA), where he developed and implemented major reforms in health policy. These include the Medicare prescription drug benefit, the FDA's Critical Path Initiative, and public-private initiatives to develop better information on the quality and cost of care. Dr. McClellan chairs the FDA's Reagan-Udall

Foundation, is co-chair of the Quality Alliance Steering Committee, sits on the National Quality Forum's Board of Directors, is a member of the Institute of Medicine, and is a research associate at the National Bureau of Economic Research. He previously served as a member of the President's Council of Economic Advisers and senior director for health care policy at the White House, and was an associate professor of economics and medicine at Stanford University.



Kevin Sharer served as chief executive officer of Amgen from May 2000 to May 2012. He became the company's chairman of the board in January 2001. Mr. Sharer joined Amgen in October 1992 as president, chief operating officer and member of the board of directors. Before joining Amgen, Sharer was executive vice president and president of the Business Markets Division at MCI Communications. Prior to MCI, he served in a number of executive positions at General Electric Company, and was a consultant for McKinsey & Company. Mr. Sharer received a bachelor's degree in aeronautical engineering from the U.S. Naval Academy in 1970, a master's degree in aeronautical

engineering from the U.S. Naval postgraduate school in 1971, and a master's degree in business administration from the University of Pittsburgh in 1982. Mr. Sharer served on two nuclear attack submarines following graduation from the academy. Mr. Sharer serves on the boards of directors of Northrop Grumman Corporation and Chevron Corporation and is chairman of the board of trustees of the Los Angeles County Museum of Natural History.