

COLUMBIA PRECISION MEDICINE INITIATIVE

PRECISION MEDICINE & SOCIETY

IS PRECISION MEDICINE RELEVANT
IN THE AGE OF COVID-19?

OCTOBER 9, 2020 1:30PM-3:30PM

VIRTUAL SEMINAR

 COLUMBIA | PRECISION MEDICINE

Welcome Letter

Welcome to a special panel organized by the Precision Medicine & Society program at Columbia University. We convened this panel to address a topical question of immediate relevance to the current moment: has the decades-long emphasis on tailoring treatment to the genetic profile of individuals (otherwise known as precision or personalized medicine [PM]) been a distraction and an obstacle in dealing with COVID-19, and crowded out efforts to develop the population health approaches necessary for a pandemic? Or is this a false dichotomy, and can the fundamental advances made by PM research be adapted to inform public health initiatives? We believe that Columbia University, as a center of cutting-edge PM research—as well as the only institution with a thriving program dedicated to exploring the social, ethical, legal, and economic aspects of PM—is ideally positioned to begin this conversation. To do so, we invited some of the most esteemed and influential leaders of biomedical research, whether regulatory, clinical, or academic.

The Precision Medicine & Society Program is an integral part of Columbia's Precision Medicine Initiative. This University-wide collaboration was created to jump-start academic discussion and research about the interplay between the biomedical advances of precision medicine and the social sciences, the humanities, law, and business. It brings together biomedical and public health researchers, clinicians, and bioethicists working at our Medical Center with social scientists, legal scholars, and humanists in the Faculty of Arts & Sciences and the Law and Business Schools.

Our thanks to President Bollinger, the Columbia Precision Medicine Initiative, and its director, Tom Maniatis, for supporting the Precision Medicine & Society Program and making possible this special panel. We hope that you will find it both enlightening and relevant to the pressing issues of the day.

Paul S. Appelbaum, MD, Elizabeth K. Dollard Professor of Psychiatry,
Medicine and Law

Gil Eyal, PhD, Professor of Sociology
Co-Directors of the Columbia Precision Medicine & Society Program

Opening Comments



John (Jack) Rowe

Julius B. Richmond Professor of Health Policy and Aging at the Columbia University Mailman School of Public Health

Dr. John W. Rowe is the Julius B. Richmond Professor of Health Policy and Aging at the Columbia University Mailman School of Public Health. Previously, from 2000 until late 2006, Dr. Rowe served as chairman and CEO of Aetna, Inc., one of the nation's leading healthcare and related benefits organizations. Before his tenure at Aetna, from 1998 to 2000, Dr. Rowe served as president and chief executive officer of Mount Sinai NYU Health, one of the nation's largest academic healthcare organizations. From 1988 to 1998, prior to the Mount Sinai-NYU Health merger, Dr. Rowe was president of the Mount Sinai Hospital and the Mount Sinai School of Medicine in New York City. Before joining Mount Sinai, Dr. Rowe was a professor of medicine and the founding director of the Division on Aging at the Harvard Medical School, as well as chief of gerontology at Boston's Beth Israel Hospital. He was director of the MacArthur Foundation Research Network on Successful Aging and is co-author, with Robert Kahn, PhD, of *Successful Aging* (Pantheon, 1998). Currently, Dr. Rowe leads the MacArthur Foundation's Research Network on an Aging Society. Dr. Rowe was elected a fellow of the American Academy of Arts and Sciences and a member of the National Academy of Medicine of the National Academy of Sciences. He was chairman of the Board of Overseers of Columbia University's Mailman School of Public Health and Harvard Medical School and continues to serve on those Boards as well as the Board of the Columbia University Irving Medical Center. He previously served on the Board of Trustees of the Rockefeller Foundation, was a founding commissioner of the Medicare Payment Advisory Commission (Medpac), and was chair of the Boards of Trustees of the University of Connecticut and the Marine Biological Laboratory.



Scott Gottlieb

Former FDA Commissioner; Special Partner at New Enterprise Associates

Dr. Scott Gottlieb is a special partner on the New Enterprise Associates (NEA) health-care investment team; he was venture partner at NEA from 2007 to 2017 until being appointed the 23rd Commissioner of the U.S. Food and Drug Administration (FDA), where he served from 2017 to 2019. Dr. Gottlieb's work focuses on advancing public health through developing and implementing innovative approaches to improving medical outcomes, reshaping healthcare delivery, and expanding consumer choice and safety.

In addition to his role as an investor, Dr. Gottlieb is a physician, policy expert, and advocate for healthcare entrepreneurship, innovation, and access. Dr. Gottlieb is an elected member of the National Academy of Medicine and currently a resident fellow at the American Enterprise Institute (AEI) in Washington, DC. In addition to his recent role as FDA Commissioner, Dr. Gottlieb previously served as the FDA's Deputy Commissioner for Medical and Scientific Affairs and, before that, as a senior adviser to the administrator of the Centers for Medicare and Medicaid Services.

Dr. Gottlieb was a practicing hospitalist and a clinical assistant professor at the New York University School of Medicine. Earlier in his career, he worked as a healthcare analyst for the investment bank Alex. Brown & Sons. He completed a residency in internal medicine at the Mount Sinai Medical Center in New York and is a graduate of the Mount Sinai School of Medicine and of Wesleyan University, in Middletown, Connecticut, where he studied economics.

In 2018 and again in 2019 Dr. Gottlieb was recognized by *Fortune* as one of "The World's 50 Greatest Leaders" and by *Time* as one of the "50 People Transforming Healthcare." He is a CNBC contributor, and his work is frequently published in a wide range of publications and medical journals, including the *Wall Street Journal*, the *New York Times*, and the *Washington Post*.



Teri Manolio

Director of the Division of Genomic Medicine at the National Human Genome Research Institute (NHGRI)

As a physician and epidemiologist, Teri Manolio, MD, PhD, has a deep interest in discovering genetic changes associated with diseases by conducting biomedical research on large groups of people. As the director of the Division of Genomic Medicine, a position she has held since 2012, Dr. Manolio leads efforts to support research translating those discoveries into diagnoses, preventive measures, treatments, and prognoses of health conditions.

“I see our division as a unique undertaking at NHGRI. We apply the rapidly expanding knowledge base of genetic associations and genome-scale analytic technologies to clinical problems of disease diagnosis and treatment,” said Dr. Manolio. “This knowledge will enable us to meld clinical and genomic research for rapid improvements in clinical care.”

Dr. Manolio envisions a day when patients have ready access to affordable, reliable genetic tests enabling them to avoid rare, sometimes devastating, complications of common drug treatments. She also hopes to find ways of using a patient’s genomic information to enhance diagnostic strategies and improve treatment outcomes by examining comprehensive databases of patients whose physical characteristics and genomic variants match those of the patient at hand.

Dr. Manolio joined NHGRI in 2005 as senior advisor to the NHGRI director for population genomics, and in 2007 established NHGRI’s Office of Population Genomics and became its director. She has led efforts to apply genomic technologies to population and clinical research, including the Population Architecture for Genomics and Epidemiology (PAGE) Network, the Electronic Medical Records and Genomics (eMERGE) Network, the Clinical Sequencing Exploratory Research (CSER) Consortium, the ClinGen Resource, the Implementing Genomics in Practice (IGNITE) Network, and the NHGRI Genome-Wide Association Catalog.

Dr. Manolio came to NHGRI from NIH’s National Heart, Lung, and Blood Institute, where she was involved in large-scale cohort studies such as the Cardiovascular Health Study and the Framingham Heart Study. Dr. Manolio also maintains an active clinical appointment on the in-patient medical service of the Walter Reed National Military Medical Center, Bethesda, and is a professor of medicine on the faculty of the Uniformed

Services University of the Health Sciences. She has authored more than 280 research papers and has research interests in genome-wide association studies of complex diseases, ethnic differences in disease risk, and incorporating genomic findings into clinical care.

She received her BS in biochemistry from the University of Maryland College Park, her MD from the University of Maryland at Baltimore, and her PhD in human genetics and genetic epidemiology from the Johns Hopkins School of Hygiene and Public Health.



James Heath

President and Professor at Institute for Systems Biology

Dr. James R. Heath is president and professor at Institute for Systems Biology in Seattle. Heath also has the position of professor of molecular and medical pharmacology at UCLA, and he has directed the National Cancer Institute–funded NSB Cancer Center since 2005. Formerly, he was the Elizabeth W. Gilloon Professor of Chemistry at Caltech and served as co-director of the Parker Institute for Cancer Immunotherapy at UCLA until 2017.

Heath received his PhD in 1988 from Rice University, where he was the principal graduate student involved in the discovery of C₆₀ and the fullerenes—work that resulted in three senior members of his group receiving the Nobel Prize in Chemistry in 1996. He was a Miller Fellow at UC Berkeley before joining the research staff at IBM Watson Labs in 1991. He took a faculty position at UCLA in 1994 and moved to Caltech in 2003.

He has received several awards and honors, including the Irving Weinstein Award from the American Association of Cancer Researchers and the Sackler Prize in the Physical Sciences. He was named one of the top seven innovators in the world by *Forbes* magazine.

Heath has founded or cofounded several companies, including PACT Pharma, Integrated Diagnostics, Indi Molecular, CTI Molecular Imaging (acquired by Siemens in 2005), Sofie Biosciences, Isoplexis, and NanoSys.

Closing Comments



Amy Zhou

Assistant Professor of Sociology at Barnard College

Amy Zhou is an assistant professor of sociology at Barnard College. Her research and teaching interests include healthcare, inequality, race/ethnicity, development, and science and technology studies. Professor Zhou's research has examined health inequalities in both the US and global settings. One line of research explores the impact of global health policies. Her current book project examines how global health efforts to address the HIV epidemic reconfigures local healthcare institutions and has unintended consequences for policymaking, healthcare practices, and the lives of providers and patients in Malawi. Another line of research looks at racial health inequalities in the US, focusing on the meaning of race in delivering racially targeted health services. Recently, she has started a new project that examines the social and ethical implications of gene drive technologies. Professor Zhou received her BA and PhD in sociology from UCLA as well as postdoctoral training at the UCSD Institute for Practical Ethics.

