

# **On Being a Scientist: An Updated and Online Guide to the Responsible and Ethical Conduct of Research**

## **Committee**

### **Alan I. Leshner**

#### **Co-Chair**

Alan I. Leshner is chief executive officer emeritus of the American Association for the Advancement of Science and former executive publisher of the journal *Science*. Prior to joining AAAS, he served as director of the National Institute on Drug Abuse at the National Institutes of Health and as deputy director and acting director of the National Institute of Mental Health, and held roles at the National Science Foundation. Earlier in his career, he was professor of psychology at Bucknell University. His work spans neuroscience, behavioral science, and science policy, with experience in federal research leadership and scientific organizations. Leshner is an elected fellow of the American Association for the Advancement of Science and the American Academy of Arts and Sciences and served as a member and vice chair of the governing council of the National Academy of Medicine. His honors include the Walsh McDermott Medal from the National Academy of Medicine and seven honorary doctor of science degrees. He earned an MS and PhD in physiological psychology from Rutgers University and an AB in psychology from Franklin and Marshall College. He currently serves as chair of the National Academies Committee on Science, Engineering, Medicine, and Public Policy.

## **Michele Masucci**

### **Co-Chair**

Michele Masucci serves as vice chancellor for research and economic development for the University System of Maryland, where she works to align system-wide research and economic development activities and support the translation of research into practice through commercialization, innovation initiatives, and university-industry partnerships. She also holds an appointment as professor of geography and environmental systems at the University of Maryland, Baltimore County and is an affiliated professor at the University of Maryland Center for Environmental Science. Her research examines how information and communication technologies shape community outcomes related to education, health, and environmental quality in the United States and internationally, including work supported by federal, state, local, and foundation funding and conducted in collaboration with nonprofit partners. Earlier in her career, she served as vice president for research at Temple University, director of the Information Technology and Society Research Group, and professor and chair of the department of geography and urban studies. She also served as co-chair of the Federal Demonstration Partnership and as president of the Federal Demonstration Partnership Foundation. She is a member of the boards of directors of Oak Ridge Associated Universities and the University City Science Center. Masucci earned a bachelor's degree in geography and regional planning from Salisbury University and a master's degree and doctorate in geography from Clark University. She currently serves on the National Academies Strategic Council for Research Excellence, Integrity, and Trust.

## **Roger D. Cone**

### **Member**

Dr. Roger Cone joined the University of Michigan as 2016 as the Director of the Life Sciences Institute and was appointed Vice Provost for the Biosciences in 2017. Cone was Chairman of the Department of Molecular Physiology and Biophysics at Vanderbilt University from 2008 to 2016 and a faculty member of the Vollum Institute, Oregon Health Sciences University from 1990 to 2008. He is credited with the discovery of multiple fundamental biological roles for the melanocortin system in energy homeostasis. Cone was elected to the National Academy of Sciences (2010), and the National Academy of Medicine (2016), and received the Berson Award, Berthold Memorial Award, Ipsen Prize, and the Rolf Luft Prize. He received his BA in Biochemistry from Princeton and PhD in Biology from MIT. He served two terms on the National Academies Board on Life Sciences.

## Heather Douglas

### Member

Heather Douglas is Professor in the Department of Philosophy at Michigan State University. She held previous tenure-line faculty positions at the University of Puget Sound, the University of Tennessee, and the University of Waterloo prior to moving to Michigan State in 2018. She is a philosopher of science who works on the relationships among science, values, and democratic publics, including the moral responsibilities of science and historical shifts in the understanding of those responsibilities. In 2016, she was named an American Association for the Advancement of Science (AAAS) fellow, and she was Senior Visiting Fellow at the Center for Philosophy of Science at the University of Pittsburgh in 2021-2022. She is the author of *Science, Policy, and the Value-Free Ideal* (2009), *The Rightful Place of Science: Science, Values, and Democracy* (2021), and the editor of the book series *Science, Values, and the Public* for University of Pittsburgh Press. Douglas received a PhD from the History and Philosophy of Science Department at the University of Pittsburgh in 1998.

## Kelvin Droegemeier

### Member

Kelvin K. Droegemeier is professor of climate, meteorology, and atmospheric sciences and special advisor to the chancellor for science and policy at the University of Illinois Urbana-Champaign. He previously spent 38 years on the faculty at the University of Oklahoma, where he served for nearly a decade as vice president for research, and he has held senior leadership roles in state and federal government, including Oklahoma cabinet secretary for science and technology. Most recently, he served as director of the White House Office of Science and Technology Policy, science advisor to the president, and acting director of the National Science Foundation. His research addresses thunderstorm dynamics, computational fluid dynamics, data assimilation, numerical weather prediction, and aviation weather, and he has contributed to the development of National Science Foundation research centers. Dr. Droegemeier is a fellow of the American Meteorological Society and the American Association for the Advancement of Science and has chaired and served on a range of scientific boards, including the UCAR and SURA boards of trustees. He is the author of *Demystifying the Academic Research Enterprise* (2023). He earned a BS in meteorology from the University of Oklahoma and an MS and PhD in atmospheric science from the University of Illinois Urbana-Champaign. He currently serves on the National Academies Board on Research Data and Information and the Committee on Science, Engineering, and Public Policy.

## **Penny Gordon-Larsen**

### **Member**

Dr. Penny Gordon-Larsen is the W. R. Kenan, Jr. Distinguished Professor in Nutrition and the Vice Chancellor for Research at UNC-Chapel Hill. Notably, she oversees research integrity, science and security, ethics, and education, as well as all research compliance functions of the university, promotes institutional culture around rigor and responsibility, and oversees the postdoctoral program. Her research spans molecular to community contributions to obesity and its cardiometabolic consequences. She leads collaborative, international research teams, including an ongoing NIH training grant on global cardiometabolic diseases. Gordon-Larsen served on the National Institute of Health (NIH)'s National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Scientific Advisory Council and chair of the Kidney, Nutrition, Obesity, and Diabetes (KNOD) study section. As President of the scientific professional society, the Obesity Society, she oversaw the society journal, *Obesity*. She has received two distinguished professorships and several national awards, including the Eli Lilly Scientific Achievement Award, George A. Bray Founders Award and the from the Obesity Society. Gordon-Larsen received her PhD and MA specializing in Human Biology from the University of Pennsylvania, her BA from Tulane University, and her postdoctoral fellowship in nutrition epidemiology at the University of North Carolina at Chapel Hill.

## **Reshma Jagsi**

### **Member**

Dr. Jagsi is Chair of the Department of Radiation Oncology and Senior Faculty Fellow in Ethics at Emory. A physician-bioethicist, her research includes empirical and normative work on professionalism, social scientific studies of harassment in academic medicine, and translational clinical research in breast cancer. Elected to the National Academy of Medicine, Association of American Physicians, and American Society of Clinical Investigation, she has authored or co-authored over 500 publications and is PI of multiple grants from the NIH and philanthropic foundations. She is a fellow of the AAAS, ASCO, ASTRO, and the Hastings Center. She received an MD from Harvard Medical School and a DPhil in Social Policy from the University of Oxford, where she was a British Marshall Scholar. She serves on the National Academies Committee on Women in Science, Engineering, and Medicine, the NIH Board of Scientific Counselors, and the Greenwall Foundation's Faculty Scholars Program Committee.

## **Nancy Kass**

### **Member**

Nancy Kass, ScD, is Phoebe R. Berman Professor of Bioethics and Public Health at Johns Hopkins, where she is also Deputy Director for Public Health in the Berman Institute of Bioethics and Professor of Health Policy and Management in the Johns Hopkins Bloomberg School of Public Health (JHSPH). Dr. Kass conducts empirical work in bioethics and health policy. Her publications are in U.S. and global research ethics, public health ethics, infectious diseases and ethics policy, and ethics and the learning healthcare system. Kass received two Dean's awards for mentoring and developed guidance on mentoring for PhD students across Johns Hopkins University (while serving as Vice-Provost) and for mentoring of junior faculty in her academic department. She is an elected member of the National Academy of Medicine and an elected fellow of the Hastings Center. Kass held a postdoctoral fellowship in Bioethics at Georgetown University's Kennedy Institute of Ethics and received an ScD in Health Policy and Management from Johns Hopkins Bloomberg School of Public Health. She has served on numerous National Academies committees, including as a member of the Division Committee for the Health and Medicine Division.

## **Mitul Luhar**

### **Member**

Dr. Mitul Luhar is Associate Professor of Aerospace and Mechanical and Civil and Environmental Engineering at the University of Southern California. He is the inaugural holder of the Henry Salvatori Early Career Chair in Engineering. His primarily research expertise is in fluid dynamics. His work addresses aerodynamic and hydrodynamic design, the restoration and management of river systems, and the evaluation of nature-based solutions to coastal hazards. Luhar has received the NSF Career Award and the AFOSR Young Investigator Program Award. Before joining USC, Luhar was a Postdoctoral Scholar at Caltech. He earned his PhD from MIT, where he was awarded the Presidential Fellowship, and his BA and M.Eng. degrees from the University of Cambridge. He is an alum of the National Academy of Engineering Frontiers of Engineering program and is currently co-chair for the National Academies New Voices program. He serves as a member of the overarching On Being a Scientist committee.

## **Barbara M. Means**

### **Member**

Dr. Barbara Means is Principal Learning Sciences Researcher at the nonprofit organization Digital Promise. Prior to joining Digital Promise in 2017, she was at SRI International, where she founded SRI's Center for Technology in Learning in 1994. Dr. Means studies the implementation and effectiveness of innovative education approaches supported by digital technology. Currently, she leads large-scale implementation and efficacy studies of digital courseware and teaching practices in the domains of college statistics and chemistry. Another thread of her research has examined opportunity structures for preparing students to enter and succeed in postsecondary STEM programs. Drawing on her expertise in both education and learning technologies, Dr. Means has advised the U.S. Department of Education on national educational technology plans for both K-12 and postsecondary education. She has authored or edited a half dozen books related to learning and technology research. A fellow of the American Educational Research Association, she earned her undergraduate degree in psychology from Stanford University and her Ph.D. in educational psychology from the University of California, Berkeley. Dr. Means has served on many NASEM study panels related to science education, including the panels that produced How People Learn I and How People Learn II.

## **Paul M. Ndebele**

### **Member**

Paul Ndebele serves as assistant director in the Office of Research Excellence in the Milken Institute School of Public Health at George Washington University and as professorial lecturer in the department of global health, where he teaches courses on responsible conduct of research and ethical issues in global and public health research and policy. He also serves as a member of the university's institutional review board. His work focuses on research ethics, bioethics, and ethical considerations in domestic and international research and programming. He has held leadership and advisory roles in research ethics across multiple institutions, including the Medical Research Council of Zimbabwe, the National Institutes of Health Division of AIDS, the University of Botswana, the University of Malawi, and Michigan State University. He has also participated as a scholar in several international bioethics training programs, including the Fogarty African Bioethics Training Program at Johns Hopkins University, SARETI at the University of KwaZulu Natal, the Erasmus Mundus Bioethics Program at the University of Padova, and the Ethox Centre at the University of Oxford. He earned a PhD in research ethics from the University of KwaZulu Natal in South Africa.

## Emily Pentzer

### Member

Emily Pentzer is professor of chemistry and associate dean for research in the College of Arts and Sciences at Texas A&M University. Her research combines synthesis and processing to develop polymer-based composites and to examine structure–property–application relationships relevant to carbon capture, thermal energy management, and electrochemical energy storage. She also participates in activities supporting the professional development of students and postdoctoral researchers as they transition to careers in STEM fields. Dr. Pentzer has received several honors, including the National Science Foundation CAREER Award (2016), the Case Western Reserve University Faculty Diversity Excellence Award (2019), the American Chemical Society Women Chemists Committee Rising Star Award (2021), designation as a Texas A&M Presidential Impact Fellow (2021), and selection as a finalist for the Blavatnik Award in the physical sciences and engineering (2022). She serves as the inaugural editor in chief of RSC Applied Polymers beginning in 2023. She is a member of the third cohort of the National Academies New Voices program for 2024–2026.

## Dena Plemmons

### Member

Dr. Dena Plemmons is the founding Director of the Research Ethics Education Program and an adjunct Associate Professor in the Graduate Division at the University of California, Riverside. She serves as Chair of the Executive Board of the Association for Practical and Professional Ethics (APPE) and is recently retired as the Editor in Chief of the SpringerNature journal Science and Engineering Ethics. She is an expert consultant to the National Center for Principled Leadership and Research Ethics, and in that capacity works on STEM-focused professional development programs. She is a member of AAAS, and an elected AAAS Fellow, as well as a member of Sigma Xi and APPE. She has consistently been funded, as PI and Co-PI, through NIH, NSF, and ORI for her research and curriculum development in research ethics, and investigations into common and best practices in areas of scientific practice, both nationally and internationally. Plemmons received a PhD in Anthropology from the University of North Carolina at Chapel Hill.

## **Roger M. Wakimoto**

### **Member**

Roger M. Wakimoto is vice chancellor for research and creative activities and professor in the department of atmospheric and oceanic sciences at the University of California, Los Angeles. Previously, he served as assistant director for the geosciences directorate at the National Science Foundation and as director of the National Center for Atmospheric Research, an NSF federally funded research and development center. An atmospheric scientist, his work focuses on severe weather. In his administrative role at UCLA, he oversees research misconduct cases and has been involved in research security efforts with federal agencies, scientific organizations, and the Federal Bureau of Investigation. Wakimoto is a fellow of the American Meteorological Society and the American Association for the Advancement of Science, served as president of the American Meteorological Society, and currently serves on the AAAS board of directors. He earned a PhD in geophysical sciences from the University of Chicago and a BS in meteorology from San José State University. He has served on the National Academies Roundtable on Open Science.

## **Elizabeth Cady**

### **Staff Officer**

## **Kait Spear**

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