# The National Academies of
# SCIENCES · ENGINEERING · MEDICINE

**Advancing Open Science Practices: Stakeholder Perspectives on Incentives and Disincentives**
**September 20, 2019 (Friday)**

National Academy of Sciences
2101 Constitution Avenue NW
Lecture Room
Washington, DC 20418

**8:30 AM**      **Registration—East Court**

**9:00 AM**      **Welcoming Remarks, Roundtable Overview, and Setting Today's Agenda**

     Tom Kalil, Schmidt Futures and Keith Yamamoto, University of California, San Francisco

**9:15 AM**      **Researcher Perspectives**

*Implications of proposed changes to credit/reward systems for individual researchers as well as for their departments, institutions, and disciplines.*

     Meredith Niles, University of Vermont
     David Yokum, Brown University
     Jean-Baptiste Poline, McGill University
     Juan Pablo Alperin, Simon Fraser University

**10:45 AM**      **Break**

**11:00 AM**      **Open Reporting and Communication of Science**

*Libraries, societies, and publishers are three primary pieces in this evolving environment. What do they consider the key accelerators and roadblocks that could advance or impede our efforts?*

     Ivy Anderson, University of California System
     Brooks Hanson, American Geophysical Union
     Veronique Kiermer, PLOS
     Boyana Konforti, Howard Hughes Medical Institute

**12:30 PM**      **Lunch—East Court**

**1:15 PM          Infrastructure**

*Tools, technology, and services are necessary to serve, catalog, and safeguard research outputs. Accommodating open outputs requires interoperability, discovery, and metadata standardization, etc. How do we ensure that policies translate into effective and efficient practice?*

Sergio Baranzini, University of California, San Francisco
Kristen Ratan, Strategies for Open Science

**2:30 PM          Adjourn Public Symposium**

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A Symposium**

**September 20, 2019**

National Academy of Sciences
2101 Constitution Ave NW
Washington, DC

Participants List

**Thomas Kalil (Co-Chair)**
Schmidt Futures

**Keith Yamamoto (Co-Chair) (NAS/NAM)**
University of California, San Francisco

**Caralee Adams**
SPARC

**Elizabeth Albro**
U.S. Department of Education

**Juan Pablo Alperin**
Simon Fraser University

**Derrick Anderson**
Arizona State University

**Ivy Anderson**
University of California System

**Tom Arrison**
National Academies of Sciences,
  Engineering, and Medicine

**Sergio Baranzini**
University of California, San Francisco

**Lorena Barba**
The George Washington University

**Chaitan Baru**
National Science Foundation

**Gary Berg-Cross**
Ontolog Forum

**Chris Bourg**
Massachusetts Institute of Technology

**Courtney Brown**
Lumina Foundation

**Stuart Buck**
Arnold Ventures

**Myka Carroll**
Open Society Foundations

**Chanda Chhay**
Caset Associates, Ltd

**Philip Cohen**
University of Maryland

**Anne-Marie Coriat**
Wellcome Trust

**Mark Cullen (NAM)**
Stanford University (teleconference)

**Scott Dineen**
The Optical Society

**Ashley Farley**
Bill & Melinda Gates Foundation

**Liesl Folks**
The University of Arizona

**Maryrose Franko**
Health Research Alliance

**Ann Gabriel**
Elsevier

**Lisa German**
University of Houston

**Matthew Giampoala**
American Geophysical Union

**Nicholas Gibson**
John Templeton Foundation

**Daniel Goroff**
Alfred P. Sloan Foundation

**Jon Gurstelle**
American Political Science Association

**Randolph Hall**
University of Southern California

**Robert Hanisch**
National Institute of Standards and
Technology

**Brooks Hanson**
American Geophysical Union

**Jeffrey Hayes**
National Aeronautics and Space
  Administration

**Reginald Hayes**
National Academies of Sciences,
  Engineering, and Medicine

**Jennifer Heimberg**
National Academies of Sciences,
  Engineering, and Medicine

**Annie Hill**
American Psychological Association

**Lindsey Horan**
American Association for Dental Research

**Patricia Hswe**
Andrew W. Mellon Foundation

**Adam Jones** (teleconference)
Gordon and Betty Moore Foundation

**Heather Joseph**
SPARC

**Emi Kameyama**
National Academies of Sciences,
  Engineering, and Medicine

**Mary Lee Kennedy**
Association of Research Libraries

**Veronique Kiermer**
PLOS

**Robert Kiley**
The Wellcome Trust

**George Komatsoulis**
CancerLinQ LLC

**Boyana Konforti**
Howard Hughes Medical Institute

**Stefan Kramer**
American University Library

**Jennifer Kroeger**
Science and Technology Policy Institute

**Hetty Lee**
Elsevier

**Jenny Lee**
Royal Society of Chemistry

**Ross Mounce**
Arcadia

**Dewey Murdick**
Georgetown University

**Lisa Nichols**
Office of Science and Technology Policy

**Meredith Niles**
University of Vermont

**Sarah Nusser**
Iowa State University

**Loretta Parham**
Atlanta University Center Woodruff Library

**Eric Perkins**
Addgene

**Heather Pierce**
Association of American Medical Colleges

**Jean-Baptiste Poline**
McGill University

**David Potgeiter**
Templeton World Charity Foundation

**Brian Quinn**
Robert Wood Johnson Foundation

**Kristen Ratan**
Strategies for Open Science

**Kacy Redd**
Association of Public and Land-grant
  Universities

**William Regli**
University of Maryland

**Matt Rumsey**
The Center for Open Da

**Judy Ruttenberg**
Association of Research Libraries

**Daniel Salsbury**
PNAS

**Rene Von Schomberg**
European Commission

**Jerry Sheehan**
National Library of Medicine

**Stuart Shieber**
Harvard University

**Carolyn Shore**
National Academies of Sciences,
  Engineering, and Medicine

**Robin Sinn**
Johns Hopkins University

**Susan Sauer Sloan**
National Academies of Sciences,
  Engineering, and Medicine

**Toby Smith**
Association for American Universities

**Chloë Somers**
UK Research and Innovation USA

**Philip Spector**
Johns Hopkins University

**Sylvia Spengler**
National Science Foundation

**Gabriel Stein**
MIT Knowledge Futures Group

**Bodo Stern**
Howard Hughes Medical Institute

**George Strawn**
National Academies of Sciences,
  Engineering, and Medicine

**Greg Tananbaum**
Open Research Funders Group

**James Tien (NAE)**
University of Miami

**Alan Tomkins**
National Science Foundation

**Micah Vandegrift**
North Carolina State University

**Thomas Wang**
American Heart Association

**Stephen Wiggins**
University of Bristol

**John Wilbanks**
Sage Bionetworks

**Richard Wilder**
Coalition for Epidemic Preparedness
  Innovations

**Ken Wilkins**
National Institutes of Health

**David Yokum**
Brown University

**National Academies Symposium**
**Advancing Open Science Practices: Stakeholder Perspectives on Incentives and Disincentives**

**Invited Speaker Biographical Information**

**September 20, 2019**
**Washington, DC**

**JUAN PABLO ALPERIN** is an Assistant Professor in the Publishing Program, the Associate Director of Research Associate with the Public Knowledge Project, and the Director of the Scholarly Communications Lab. He is an established scholar in both the open access and altmetrics (social media metrics) communities, having received numerous invitations to speak, and publish on these topics, both in North and Latin America, and has contributed a combination of conceptual, methodological, and empirical peer-reviewed articles and presentations, as well as edited two volumes, and authored several book chapters on scholarly communication topics. Dr. Alperin is best known as a leading voice on issues of developing regions to the scholarly community through a combination of published research, presentations, and membership in advisory boards and steering committees. Most relevant to the NAS roundtable on incentives and disincentives is the project he leads on Assessing Review, Tenure, and Promotion Practices in the US and Canada.

**IVY ANDERSON** is Associate Executive Director and Director of Collections at the California Digital Library (CDL), where she oversees a broad range of shared collections activities on behalf of the ten-campus University of California (UC) system, including primary responsibility for negotiating systemwide content licenses with publishers. Ms. Anderson is the CDL lead for UC's efforts to transition major journal licenses to open access and serves as co-chair of UC's systemwide Publisher Negotiations Task Force organized for that purpose. She currently chairs the Governing Council of SCOAP3, a global open access initiative in high energy physics, and serves on the steering group of the Plan S "Pricing Publisher Services" project.  Ms. Anderson was co-Principal Investigator on the Pay It Forward project, which examined the viability of a large-scale transition to open access for major North American research institutions, and has served on numerous publishing advisory boards, including the advisory board for PubMed Central.  Before coming to the CDL in December 2005, Ms. Anderson was Licensing Program Manager at the Harvard University Library, where she developed and managed a shared licensing program on behalf of Harvard's many libraries;  prior to that, she served as Head of Information Systems at the Brandeis University Libraries.  Ms. Anderson holds a B.A in music from New York University and a Master of Library Science from Simmons College. Before acquiring her library degree, Ms. Anderson pursued doctoral studies in music history and theory at Brandeis University.

**SERGIO E. BARANZINI** is Distinguished Professor of Neurology I at the University of California San Francisco (UCSF). He is also a member of the Graduate Program in Bioinformatics, the Institute for Human Genetics, the Bakar Computational Health Sciences Institute, ImmunoX, and the California Institute for Quantitative Biology (QB3). He holds the Heidrich Friends and Family endowed chair in Neurology. Dr. Baranzini earned his degrees in clinical biochemistry (1992) and Ph.D. in human molecular genetics (1997) from the University of Buenos Aires, Argentina. Dr. Baranzini then moved to UCSF to specialize in the analysis of complex hereditary diseases, and focused his efforts on multiple sclerosis. His current research involves the large throughput analysis of samples from MS patients to characterize the activity of genes during different stages of the disease, differential response to treatment,

and disease progression. In addition, Dr. Baranzini collaborates with several interdisciplinary teams worldwide to integrate all the available knowledge obtained in different research domains in an approach known as systems biology. Dr Baranzini's current research also involves immunological studies using the EAE model, sequencing of whole genomes and transcriptomes from patients with multiple sclerosis and developing bioinformatics tools to integrate this information with that coming from other high throughput technologies. He also leads the iMSMS, an international consortium to study the effect of bacterial populations (microbiota) on MS susceptibility and progression. Dr. Baranzini has published his research on MS in several top-tier journals like Science, Nature, PNAS, J Immunol, and PLoS Biol. He is a member of the International Multiple Sclerosis Genetics Consortium, the American Association of Immunologists, and an elected member of the American Neurological Association and the International Society of Neuroimmunology. He is also a member of the Editorial Board of the *MS Journal*, *Neurology* and *mSystems* in addition to serving as an ad-hoc reviewer for several other scientific publications in including Nature Medicine, PNAS, and the Am J Hum Genet.

**BROOKS HANSON** serves as the Executive Vice President for Science for the American Geophysical Union (AGU). He is responsible for overseeing AGU's publications, meetings, and ethics programs and Thriving Earth Exchange and coordinating science activities across these. He served previously as Sr. Vice President for Publications at AGU, responsible for AGU's portfolio of many books and 20 journals and their editorial operations, helping set overall editorial policies, and leading future developments. Before arriving at AGU, Dr. Hanson served as the Deputy Editor for Physical Sciences at Science and earlier as an editor at Science. Dr. Hanson has a Ph.D. in Geology from University of California, Los Angeles and held a post-doctoral appointment at the Department of Mineral Sciences, Smithsonian Institution. His main areas or research and publications span the tectonics of the western U.S., metamorphic petrology, modeling magmatic and hydrothermal processes, and on scholarly publishing. He is a fellow of the Geological Society of America and Mineralogical Society of America.

**VÉRONIQUE KIERMER** is Publisher and Executive Editor at the Public Library of Science (PLOS), where she works closely with the editorial teams of PLOS journals to continually improve the communication of research and promote open science practices. Before joining PLOS in 2015, she was Executive Editor and Director of Author and Reviewer Services for Nature Publishing Group. In that capacity she oversaw editorial and research integrity policies across the Nature journals. She started her career in publishing as the founding Chief Editor of Nature Methods and subsequently took on publishing responsibility for the title and other online products. Dr. Kiermer has a Ph.D. in molecular biology from the Université Libre de Bruxelles, Belgium. Her postdoctoral work was in the laboratory of Dr. Eric Verdin at the Gladstone Institute, University of California, San Francisco, studying the transcriptional regulation of HIV. She worked on gene therapy projects at the biotechnology company Cell Genesys before moving into publishing in 2004. She currently serves on the Board of Directors of Keystone Symposia Board and ORCID.

**MEREDITH NILES** is an assistant professor in the Food Systems program and the Department of Nutrition and Food Sciences at the University of Vermont, where she also serves on the Library Advisory Committee and co-chairs the committee's collections subcommittee. Dr. Niles' work focuses on the nexus of food and environment with a focus on people, behaviors and policy. Her current research examines climate change and food security, agriculture and food policy, farmer's adoption of sustainable management practices, and food waste behaviors. Dr. Niles holds a B.A in political science with honors in environmental studies from The Catholic University of America and a Ph.D. in ecology with a focus on human ecology and environmental policy from the University of California, Davis. She was a Sustainability Science post-doctoral fellow at Harvard University's Kennedy School of Government where she worked with the Climate Change, Agriculture, and Food Security (CCAFS) group to explore smallholder farmer experiences with climate change and food security. Prior to her academic career Dr. Niles worked for the U.S. Department of State on the President's Emergency Plan for AIDS Relief

(PEPFAR) and several non-profits. Dr. Niles is passionate about making academic research more publicly available through advocating for open access and research policies and has served on the board of directors for Public Library of Science (PLOS) as their early-career board member since 2014. She has been recognized for her contribution to open-science, receiving the inaugural Next Generation Leadership Award from the Right to Research Coalition for policy and advocacy efforts for open access and science.

**JEAN-BAPTISTE POLINE** is an Associate Professor in the Department of Neurology and Neurosurgery at McGill University; the co-Chair of the NeuroHub and Chair of the Technical Steering Committee for the Canadian Open Neuroscience Platform (CONP) at the Montreal Neurological Institute & Hospital (the NEURO); and a Primary Investigator at the Ludmer Centre for Neuroinformatics & Mental Health. Among its early pioneers, Dr. Poline is a leading researcher in the fields of fMRI, imaging genetics research, and the neuroinformatics technologies that make a big-data approach to neuroscience possible. Through his research, he has developed several novel data-analysis techniques in statistical modeling and inference for functional brain imaging (fMRI, PET) with applications to large imaging genetic datasets. He also participated in the development of the most widely-used fMRI software to date: Statistical Parametric Mapping (SPM). A strong proponent of data sharing and publishing, Dr. Poline led the biostatistics and bioinformatics components of the IMAGEN study, a European multi-centre functional and structural genetic neuroimaging study in mental health. Dr. Poline is also the co-founder and was co-editor-in-chief of Frontiers in Brain Imaging Methods, which not only aims to advance novel brain imaging methods but to address reproducibility issues as well. He is an investigator in the ReproNim project, a large NIH funded effort to improve reproducibility in neuroimaging. Dr. Poline obtained an engineering degree in computer sciences and electronics in Paris, France. He completed a Masters in Biomathematics and a Ph.D. in Image Analysis and Biostatistics at the Université Paris Diderot (Paris VII), France.

**KRISTEN RATAN** founded Strategies for Open Science (Stratos) to synthesize open science efforts into a cohesive movement and to offer pathways to success for open science projects and initiatives. Ms. Ratan has a 20-year history working to accelerate advances in science and research communication. She co-founded the Collaborative Knowledge Foundation (Coko), was the Publisher at the Public Library of Science (PLOS), and also held leadership positions at HighWire Press, Atypon, and BIOSIS. Ms. Ratan is on the board of the American Institute of Physics Publishing, the Code for Science and Society, and ASAPbio. She is a change Agent and collaborator with talent for leadership, strategic planning, organizational effectiveness, communication, stakeholder engagement, partnership development, and operational excellence. Ms. Ratan received her M.S. in biomedical studies from Icahn School of Medicine at Mount Sinai and B.S. in Anthropology from University of Chicago.

**BODO STERN** became Howard Hughes Medical Institute's (HHMI's) chief of strategic initiatives in September 2016. As chief of strategic initiatives, Dr. Stern works directly with HHMI's president and senior executive team to formulate and execute the organization's strategic initiatives and direction, with emphasis on enhancing HHMI's investment in research and science education. Dr. Stern also is responsible for the Institute's philanthropic collaborations to advance science. Dr. Stern joined HHMI in 2015 as a scientific officer. In 2016, he also assumed primary oversight of science operations for the organization, managing field staff who support HHMI investigators around the country. Before joining HHMI, Dr. Stern served for eight years as director of research affairs at the Harvard Center for Systems Biology, where he helped to manage the Bauer Fellows Program, a unique initiative that gives young scientists the opportunity to run independent research groups. He also has worked as a senior scientific editor at Cell. Dr. Stern earned a Ph.D. in biochemistry from University College, London, and an M.A. in biochemistry from the University of Tübingen, in Germany. His primary research explored how cells correct chromosome errors during cell division.

**DAVID YOKUM** is Director of The Policy Lab at Brown University, where he leads a wide portfolio of work leveraging scientific methods to improve public policy and operations. Dr. Yokum is also an Adjunct Associate Professor at the Watson Institute and Senior Advisor to The Lab @ DC. He was previously the founding director of The Lab @ DC in the D.C. Mayor's Office and, before that, a founding member of the White House's Social and Behavioral Sciences Team and director of its scientific delivery unit housed at the U.S. General Services Administration. Dr. Yokum's work — from the world's largest field experiment of a police body-worn camera program, to building algorithms that predict the location of rats, to a Form-a-Palooza initiative systematically re-designing all government forms—has been published in diverse outlets (e.g. Nature Human Behavior, PNAS, Health Affairs, Governing Magazine) and received widespread media coverage (New York Times, Wall Street Journal, NPR, etc.). Dr. Yokum was the founding host of The Podcast @ DC, and he is also starting a new podcast called 30,000 Leagues, which will be a forum for discussing work at the nexus of science, public policy, and life in general. His public speaking, teaching, and advocacy won the Excellence in Teaching Award from the University of Arizona. Dr. Yokum earned a JD/Ph.D. (Psychology: Cognition & Neural Systems) from the University of Arizona, a Master's degree in Bioethics & Medical Humanities from the University of South Florida, and a B.S. in Biology from Birmingham-Southern College.