



US-UK Scientific Forum on
RESEARCHER
ACCESS TO DATA

September 12 – 13, 2023

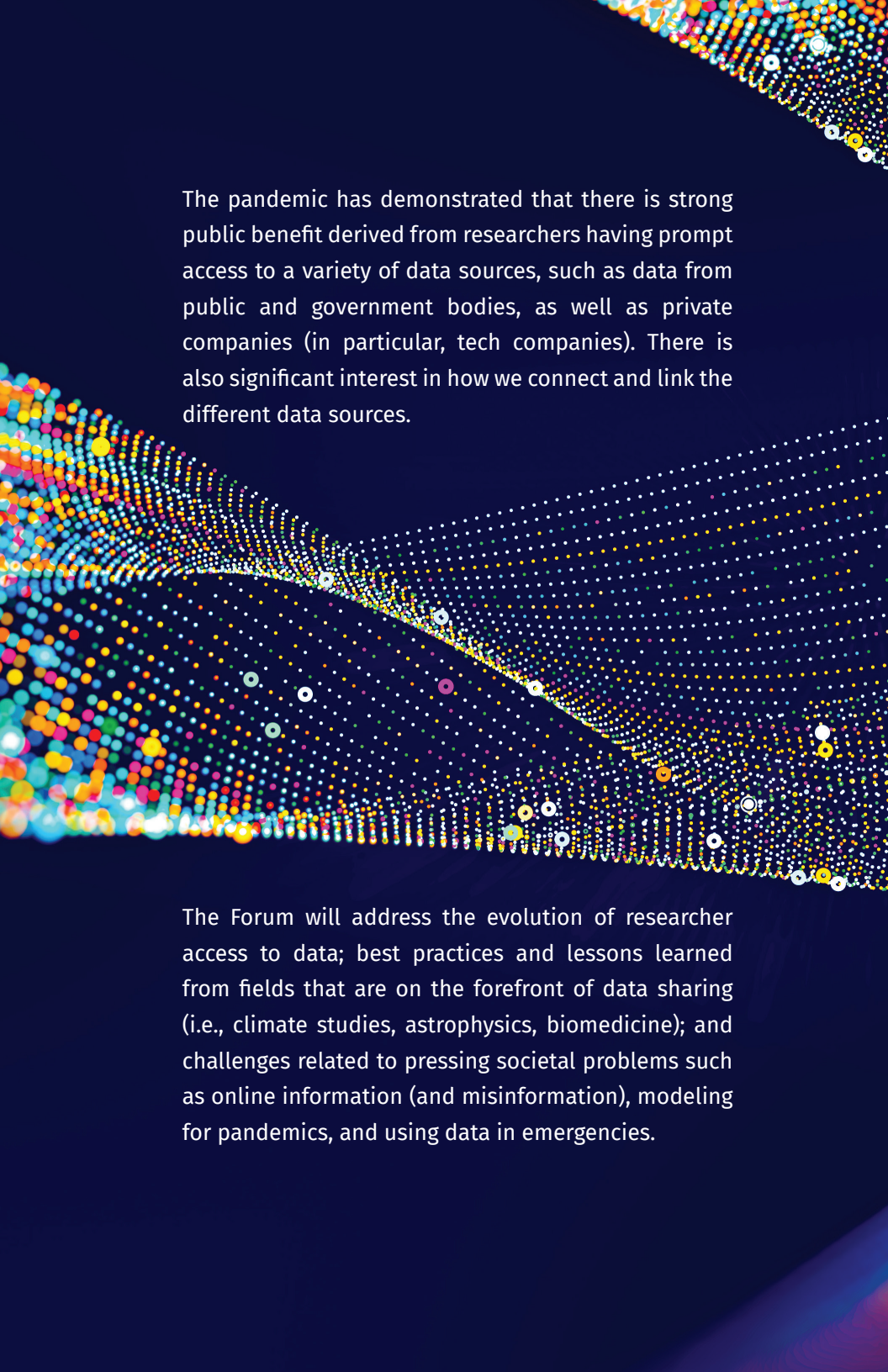
WASHINGTON, D.C.

ORGANIZING COMMITTEE CO-CHAIRS

Arturo Casadevall and Frank Kelly

COMMITTEE MEMBERS

James Austin, Cynthia Dwork, Gina Neff,
Feryal Özel, Marian Scott, Richard Sever,
Nigel Shadbolt



The pandemic has demonstrated that there is strong public benefit derived from researchers having prompt access to a variety of data sources, such as data from public and government bodies, as well as private companies (in particular, tech companies). There is also significant interest in how we connect and link the different data sources.

The Forum will address the evolution of researcher access to data; best practices and lessons learned from fields that are on the forefront of data sharing (i.e., climate studies, astrophysics, biomedicine); and challenges related to pressing societal problems such as online information (and misinformation), modeling for pandemics, and using data in emergencies.

AGENDA

MONDAY, SEPTEMBER 11

6:00 – 8:00 pm **Welcome Reception**
Top of the Gate Rooftop Lounge, Watergate Hotel

TUESDAY, SEPTEMBER 12

7:50 am **First Bus from Watergate Hotel to NAS Building**

8:00 – 9:00 am **Breakfast, East Court**

8:15 am **Second Bus from Watergate Hotel to NAS Building**

9:00 – 9:10 am **Welcome Remarks: Co-Chairs' Introduction to the Forum**

Arturo Casadevall, Professor and Chair, Molecular Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health
Frank Kelly, Emeritus Professor of the Mathematics of Systems, University of Cambridge

9:10 – 10:00 am **Keynote Address**

Data for the Public Good: Advancing Researcher Access and Innovation in National Statistics

Sir Ian Diamond, UK's National Statistician, Office for National Statistics

In this keynote, the UK's National Statistician, Professor Sir Ian Diamond, will explore the Office for National Statistics' (ONS) commitment to data for the public good and the lessons learned from a distinguished career, including his time as Chief Executive of the Economic and Social Research Council (ESRC) and leadership on data for decision-making during the COVID-19 pandemic. The ONS is pioneering innovative approaches to generating robust statistics from various sources, while enabling researcher access to data through the Secure Research Service, Data Science Campus, and the Integrated Data Programme. They are also contributing to international data access work through engagement with the United Nations and other international partners. The address will conclude with reflections on the current and future challenges surrounding researcher access to data, emphasizing the importance of understanding user needs and collaborating with partners to achieve the ultimate goal of providing timely and reliable data for the public good.

10:00 – 10:10 am **Coffee Break (East Court)**

10:10 am – 12:20 pm **Session 1: Volume and Heterogeneity: Addressing Usability Challenges Between Research Communities**

Session Chair: Feryal Ozel, Professor and Chair, School of Physics, Georgia Institute of Technology

This session will explore how new developments and approaches, from organizational techniques to federated systems and AI-driven tools, can help researchers overcome the access barriers caused by very large or heterogeneous datasets. The session will draw upon real-world examples in the fields of astrophysics, environmental science, and molecular dynamics to characterize these challenges, examining possible responses to managing data volume, and curating data that lacks uniformity. Attendees can expect to leave with an understanding of how large-scale data processing is helping to solve important societal challenges, how approaches to access (including new developments in AI) and standardization might be able to help, and how supercomputing is being used in the U.S. and U.K.

- **Opening remarks (10 mins)**
- **Lightning presentations of x4 case studies (40 mins)**
 - » Leanne Guy, Data Management Scientist, Vera Rubin Observatory/NOIRLab
 - » Casey Greene, Founding Director, Center for Health AI, University of Colorado
 - » Megan Cromwell, Assistant Chief Data Officer, National Oceanic and Atmospheric Administration/National Ocean Service
 - » Pier Luigi Buttigieg, Principal Investigator and Senior Data Scientist, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research
- **Panel discussion and audience questions (20 mins)**
- **Breakout groups (40 mins)**

Breakout group questions:

 - » What are some challenges for sharing large volumes of data and simulation outputs between distributed institutions, researchers, and communities? What are some promising avenues to achieve this?
 - » What is one tool or resource you wish you had for organizing, accessing, sharing, and/or finding data?
 - » What are the challenges and benefits of standardizing data formats across different disciplines? What incentives may work to achieve this?
- **Plenary session and closing remarks (20 mins)**

12:20 – 1:10 pm **Lunch (East Court)**

1:10 – 3:10 pm **Session 2: Sharing and Processing Health Data: Lessons from Large-Scale Health Data Initiatives**

Session Chair: Arturo Casadevall, Professor and Chair, Molecular Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health

This session will address health data, which includes information about people's behaviors and location, their phenotype and genotype, medical history, and response to clinical trials. Whether gleaned from mobile apps or patient records, insights from health data are critical for advancing scientific research. Health data also played a critical role in understanding and responding to the COVID-19 pandemic. However, accessing and processing health data can entail legal, ethical, and technical challenges. Drawing on case studies from the U.S. and the U.K., this session will explore approaches to health data collection, access, and sharing. In doing so, discussions will address key issues around privacy and data governance. It will also explore how effectively the FAIR principles are applied in different jurisdictions, and how this can be improved upon for future health research, including in emergencies. Attendees can expect to leave with an understanding of shared lessons learned about sensitive health and patient data: how health data access and use is managed in different contexts, how trusted research environments work, and how public trust can be fostered for sensitive health data sharing.

- **Opening remarks (10 mins)**
- **Lightning presentations of x3 case studies (30 mins)**
 - » Michael Worobey, Professor and Department Head, Ecology and Evolutionary Biology, University of Arizona
 - » Peter Stokes, Director of Platform Development, OpenSAFELY/University of Oxford
 - » Christl Donnelly, Professor of Applied Statistics, University of Oxford
- **Panel discussion and audience questions (20 mins)**
- **Breakout groups (40 mins)**

Breakout group questions:

 - » Is de-identified health data the patrimony of humanity? If so, when does this happen?
 - » Are common standards needed for sharing health data (for example, definition of 'fever' varies)?
 - » Is there a moral and ethical imperative for sharing health data?
- **Plenary session and closing remarks (20 mins)**

3:10 – 3:30 pm **Coffee Break (East Court)**

3:30 – 5:30 pm **Session 3: The Nature Emergency: Data for Net Zero, Biodiversity and Climate Adaptation**

Session Chair: Marian Scott, Professor of Environmental Statistics, University of Glasgow

This session will explore data availability, accessibility and challenges in integrating such data as essential features of research to measure, mitigate, and explore scenarios for the climate (and nature) emergencies, from severe weather events to biodiversity loss and air pollution. Covering environmental datasets, including earth observation data, carbon emissions (at business and individual levels), and energy use (buildings and homes), this session will foreground the challenges researchers face in accessing data in understanding and addressing the impacts of climate change. Attendees can expect to leave with an understanding of the opportunities presented in various environmental and ecological datasets for designing and analyzing the efficacy of climate mitigations, as well as the challenges associated with national security, surveillance and privacy.

- **Opening remarks (10 mins)**
- **Lightning presentations of x3 case studies (30 mins)**
 - » Loic Lannelongue, Research Associate, Biomedical Data Science & Green Computing, University of Cambridge
 - » Jeremy Freeman, Executive Director, Carbon Plan
 - » Lydia Jennings, Presidential Postdoctoral Fellow, Arizona State University; Research Fellow, Duke University
- **Panel discussion and audience questions (20 mins)**
- **Breakout groups (40 mins)**

Breakout group questions:

 - » What are the challenges in bringing together (fusing/integrating) such data sets and how can we move forward?
 - » How can we frame these challenges in systems thinking, especially as we would also wish to consider the inter-connections (known and unknown)?
 - » Environmental data may be open or protected, and we may wish to link them to health and economic data. How do we overcome the challenges of linking such data sources?
- **Plenary session and closing remarks (20 mins)**

5:30 – 6:00 pm **Reception (Rotunda)**

6:00 – 8:00 pm **Dinner (West Court)**

8:00 pm **Bus from NAS Building to Watergate Hotel**

DAY 2: WEDNESDAY, SEPTEMBER 13

7:30 am **First Bus from Watergate Hotel to NAS Building**

7:40 – 8:20 am **Breakfast, East Court**

7:45 am **Second Bus from Watergate Hotel to NAS Building**

8:20 am **Day 1 Recap**

Arturo Casadevall, Frank Kelly

8:30 – 10:40 am **Session 4: Privately Held Data: Opportunities, Challenges, and Lessons for Researchers**

Session Chair: Gina Neff, Professor and Executive Director, Minderoo Centre for Technology & Democracy, University of Cambridge

This session will explore data collected by private companies, which often contain useful insights that can help alleviate major societal challenges including climate change, healthcare, food security, and disinformation. Accessing this data, however, can be costly, controversial, and unreliable. Solving these challenges could help unlock vast amounts of data for researchers, providing novel insights and better guidance for policymakers. With lessons from social media platforms, mobile health applications, and retailers, this session will highlight best practice for accessing data held by private companies and consider solutions to the challenges of commercial sensitivity, data protection, and emergency preparedness. Attendees can expect to leave with an understanding of the value to be gained from privately held data, topical data security challenges, and an overview of partnership enhancing technologies.

- **Opening remarks (10 mins)**
- **Lightning presentations of x4 case studies (40 mins)**
 - » Henry T. (Hank) Greely, Professor, Stanford School of Medicine, Director, Center for Law and the Biosciences, Stanford University
 - » Cyndi Grossman, Senior Director, Biogen Digital Health
 - » Uyi Stewart, Chief Data and Technology Officer, Data.org
 - » Gavin Starks, Founder and CEO, IcebreakerONE
- **Panel discussion and audience questions (20 mins)**
- **Breakout groups (40 mins)**

Breakout group questions:

 - » What other opportunities, challenges, and lessons for working with privately held data do you want to surface?
 - » What helps the research community make progress in researcher access to such data?
 - » Is there anything else that the breakout group wants to respond to from the lightning presentations or in reflecting on this topic and the previous sessions?
- **Plenary session and closing remarks (20 mins)**

10:40 – 10:50 am **Coffee Break (East Court)**

10:50 am – 1:00 pm **Session 5: The Role of Data Institutions in Data Access**

Session Chair: Sir Nigel Shadbolt, Principal and Professorial Research Fellow in Computer Science, University of Oxford

This session will explore data institutions, which are organizations or arrangements for facilitating researcher access to data through data stewardship; archives and statistics agencies are some of the oldest examples. Data institutions operate in a variety of ways, from combining or linking data from multiple sources to creating open access data sets or maintaining standards. This session will explore the roles of institutions such as data repositories, federated data systems, and data commons. Attendees can expect to leave the session with awareness of how data institutions can support scientific research and how researchers can collaborate with these institutions for access to data.

- **Opening remarks (10 mins)**
- **Lightning presentations of x4 case studies (40 mins)**
 - » Hyon Kim, Program Director, Data.gov
 - » Margaret Levenstein, Director, ICPSR, University of Michigan
 - » Meredith Goins, Executive Director, World Data System
 - » Sylvie Delacroix, Professor in Law and Ethics, Birmingham Law School
- **Panel discussion and audience questions (20 mins)**
- **Breakout groups (40 mins)**

Breakout group questions:

 - » How do we ensure that data institutions are sustainable?
 - » What are the lessons for data institutions when mobilizing data and making it available for researchers in crisis-management contexts such as the pandemic, or climate change?
 - » How might the challenges facing IP impact data institutions or wider data sharing for researchers?
- **Plenary session and closing remarks (20 mins)**

1:00 – 1:45 pm **Lunch (East Court)**

1:45 – 3:45 pm **Session 6: Openness and Data Availability in Academic Research: Tensions and Possibilities**

Session Chair: Frank Kelly, Emeritus Professor of the Mathematics of Systems, University of Cambridge

This session will draw from previous discussions to address cross-cutting themes related to data access for scientific research. Barriers to open data availability include tensions between open science and security/privacy, data subject intentions and repurposing of personal data, as well as cultural and practical disinclinations amongst academic researchers. However, the potential for data-driven research is interdisciplinary and cross-sector in nature: open research is increasingly encouraged by publishers, funders, universities, and governments. Considering the different definitions of open research across different jurisdictions, this session will address the practical implications of open data practices and mandates (e.g., OSTP's call for 'free, immediate, and equitable access to federally funded research'). It will also consider implications for useful data that is neither publicly funded nor research data, with critical attention to transparency in data provenance and collection methods. Attendees can expect to leave with an understanding of how scientists can respond to open research requirements, and to contribute views on best practice for open research in academia, both for meeting and thinking beyond regulatory requirements.

- **Opening remarks (10 mins)**
- **Lightning presentations of x3 case studies (30 mins)**
 - » Chris Marcum, Senior Statistician and Senior Science Policy Analyst, Office of the Chief Statistician of the United States
 - » Mila Rosenthal, Executive Director, International Science Reserve, New York Academy of Sciences
 - » Johan Ugander, Associate Professor, Management Science & Engineering, Stanford University
- **Panel discussion and audience questions (20 mins)**
- **Breakout groups (40 mins)**

Breakout group questions:

 - » Are there other barriers to data availability that have not been addressed in the Forum?
 - » Are the differences in data sharing culture between disciplines inherently driven by the nature of the disciplines? Are there lessons from interdisciplinary experience?
 - » How important is data provenance, and how should this area evolve?
- **Plenary session and closing remarks (20 mins)**

3:45 – 4:15 pm **Forum Conclusion and Adjourn**

Arturo Casadevall, Frank Kelly

4:15 pm **Bus from NAS Building to Watergate Hotel**

The background is a vibrant, abstract composition of numerous small, multi-colored dots (red, blue, yellow, green, purple) arranged in dense, flowing, and undulating patterns that resemble data streams or particle tracks. The colors are bright and saturated, set against a dark, almost black background, creating a sense of depth and movement. The overall effect is that of a complex, interconnected network of information.

FORUM PARTICIPANTS



James Austin

Senior Research Scientist, Institute for Geophysics, Jackson School of Geosciences

B.A. geology, Amherst College (1973)

Ph.D. oceanography (geology & geophysics), MIT-Woods Hole Oceanographic Institution (WHOI) Joint Program in Oceanography (1979)

Employment: Almost 45 years at the Institute for Geophysics, Jackson School of Geosciences (JSG), The University of Texas at Austin, as a Research Scientist and Senior Research Scientist (inc. ~5 years as Associate Director).

Research Specialty: reflection seismology, geologic history of continental margins (worldwide); more than 4 years at sea on 31 different research vessels. More than 100 peer-reviewed papers published.

Extensive fundraising/philanthropy experience: Woods Hole Oceanographic Institution, Jackson School of Geosciences, URI Graduate School of Oceanography, AGU (American Geophysical Union). Thus far, ~\$5 million dollars of personal resources committed to supporting the ocean sciences. Currently on the AGU Development Board.

Advisory roles: Trustee, Woods Hole Oceanographic Institution; Vice Chair, Advisory Council, University of Rhode Island Graduate School of Oceanography.



Juan Carlos Bicarregui

Head of Data Division, Science and Technology Facilities Council, UK Research and Innovation (UKRI), Council Member, Research Data Alliance

Juan Bicarregui is Head of the Data Division within the Scientific Computing Department at UKRI Science and Technology Facilities Council. Based at the Rutherford Appleton Laboratory, his division delivers state-of-the-art operational data infrastructures for the scientific programme of STFC. Juan has been an advocate of open research for many years and was a central figure in establishing the Research Data Alliance and the European Open Science Cloud, where he coordinated the EOSCpilot project and was a member of the first EOSC Executive Board. Juan is chair of the board of the Digital Preservation Coalition and has played a key role in formulating UK policy on opening up access to research outputs. He is currently leading the development of the Physical Science Data Infrastructure in the UK (psdi.ac.uk). Juan has given many keynote talks and has over 100 publications covering Software Engineering and Research Infrastructures.



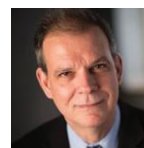
Pier Luigi Buttigieg

Principal Investigator and Senior Data Scientist, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research

I'm a Digital Knowledge Steward and Senior Data Scientist working in the Earth and Environment branch of the Helmholtz Metadata Collaboration.

My thematic foci are in ocean and biodiversity data (especially microbiome and biomolecular data), as well as their societal links. I contribute to the steering, strategy, and operations of multiple regional and international research data infrastructures and Actions within and related to the UN Decade of Ocean Science for Sustainable Development, including those addressing globally federated digital exchange and digital twinning. I also chair the Ocean Data and Information System Project of the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

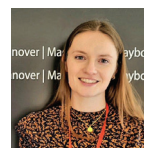
My additional focal areas include digital strategy and architecture development, interoperability approaches, semantic harmonisation, knowledge representation, and high-dimensional data analysis.



Arturo Casadevall

Professor and Chair, Molecular Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health

Arturo Casadevall, MD, PhD, focuses on host defense mechanisms, how fungi cause disease, and in the development of antibody-based therapies for infectious diseases.

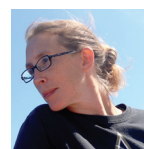


Chloe Colliver

Head of Industry Developments - Online Safety, Ofcom

Chloe Colliver is Head of Industry Developments for Online Safety at Ofcom, leading the organisation's work to build an evidence base for upcoming regulatory responsibilities.

Chloe is an expert in disinformation and terrorism online, having previously led the research division at the Institute for Strategic Dialogue in the UK, Europe and the US. She has directly advised national governments and the trust & safety teams of major tech companies on the design and implications of tech policy, as well as the risks of emerging online threats. She is an experienced public commentator with over 50 media appearances across outlets including the BBC, CNN and Sky News, 15 published reports and appearances at two UK Parliamentary Select Committees.



Megan Cromwell

Assistant Chief Data Officer, National Oceanic and Atmospheric Administration/National Ocean Service

Megan Cromwell is the Assistant Chief Data Officer for NOAA's National Ocean Service (NOS) where she focuses on data governance, policy

development and implementation, as well as innovative technological solutions to ensure that NOAA data are findable, accessible, interoperable, and ultimately reusable. The Ocean Service's mission is to provide science-based solutions through collaborative partnerships to address evolving economic, environmental, and social pressures on our ocean and coasts. This mission relies on open access to data. Megan has been with NOAA more than 9 years, beginning as an intern at the National Centers for Environmental Information and advancing to lead the NOAA Ocean Exploration Data Management Team. Throughout her career, Megan has remained dedicated to applying emerging technical solutions to big data management challenges, with a focus on underwater imagery data. She holds a Bachelor of Science in Marine Science with a Geographical Information Systems certification from the University of Southern Mississippi and will complete a Masters of Science in Environmental Geoscience from Mississippi State University in 2023.



Sylvie Delacroix

Professor in Law and Ethics, Birmingham Law School

Professor Delacroix's research focuses on the intersection between law and ethics, with a particular interest in habits and the infrastructure that molds our habits (data-reliant tools are an increasingly big part of that infrastructure). She is considering the potential inherent in bottom-up Data Trusts as a way of reversing the current top-down, fire-brigade approach to data governance. She co-chairs the Data Trust Initiative, which is funded by the McGovern Foundation: see <https://datatrusts.uk>. Professor Delacroix has served on the Public Policy Commission on the use of algorithms in the justice system (*Law Society of England and Wales*). She is also a Fellow of the Alan Turing Institute. Her current work on bottom-up data empowerment infrastructure and the public domain is funded by Omidyar Network. Previously, Professor Delacroix's work has been funded by the Wellcome Trust, the NHS and the Leverhulme Trust, from whom she received the Leverhulme Prize. Her latest book *-Habitual Ethics?* Was published by Bloomsbury / Hart Publishing in August 2022. @SylvieDelacroix | <https://delacroix.uk>



Ian Diamond

UK's National Statistician, Office for National Statistics

Professor Sir Ian David Diamond, FBA, FRSE, FAcSS, is the UK's National Statistician, Chief Executive of the UK Statistics Authority, Head of the Government Statistical Service (GSS) and Head of the Analysis Function (AF). Sir Ian is the former Principal and Vice-Chancellor of the University of Aberdeen. His previous roles include Chief Executive of the Economic and Social Research Council, Chair of the Research Councils UK Executive Group, Deputy Vice-Chancellor at the University of Southampton and Chairman of the Social Security Advisory Committee.



Christl Donnelly

Professor of Applied Statistics, University of Oxford

Christl Donnelly is a professor of statistical epidemiology at Imperial College London, the University of Oxford and a Fellow of St Peter's College, Oxford. She serves as associate director of the MRC Centre for Global Infectious Disease Analysis. Donnelly's research investigates statistical and biomathematical methods to analyse epidemiological patterns of infectious diseases such as coronavirus disease 2019 (COVID-19), Influenza A virus subtype H1N1, and Severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), the Ebola virus disease, zoonoses and HIV/AIDS. She has interests in ecology, conservation, and animal welfare having worked on bovine spongiform encephalopathy (BSE) and Foot-and-mouth disease in cattle, bovine tuberculosis, and policies regarding badger culling in the United Kingdom.



Cynthia Dwork

Gordon McKay Professor of Computer Science at the Harvard University John A. Paulson School of Engineering and Applied Sciences and Affiliated Faculty at Harvard Law School

Cynthia Dwork, Gordon McKay Professor of Computer Science at the John A. Paulson School of Engineering and Applied Sciences at Harvard, Radcliffe Alumnae Professor at the Radcliffe Institute for Advanced Study, Affiliated Faculty at the Harvard Law School and the Harvard Department of Statistics, and Distinguished Scientist at Microsoft, is renowned for placing privacy-preserving data analysis on a mathematically rigorous foundation. A cornerstone of this work is Differential Privacy, a strong privacy guarantee permitting sophisticated data analysis. Differential Privacy is widely in use in industry, including in every Apple device, and was the basis of the Disclosure Avoidance System for the 2020 Decennial Census. Dwork's earliest work established the pillars on which every fault-tolerant system has been built for decades. Her innovations modernized cryptography to the ungoverned interactions of the internet and the era of quantum computing, formed the basis of crypto-currencies, and gave the first general approach to ensuring statistical validity in exploratory data analysis. In 2012 she launched the theoretical investigation of algorithmic fairness. Dwork is a member of the National Academy of Sciences, the National Academy of Engineering, and the American Philosophical Society, and a Fellow of the American Academy of Arts and Sciences. Her recent rewards include the 2017 Gödel Prize, the 2020 IEEE Hamming Medal, and the 2020 ACM-IEEE Knuth Prize.



Jeremy Freeman

Executive Director, Carbon Plan

Jeremy is a scientist with a long standing passion around open science, open source, and bringing communities together to tackle big problems. After nearly a decade working in biology, software, and philanthropy, he founded CarbonPlan, a non-profit working to improve the transparency and scientific integrity of climate solutions through open data and tools. Read more at carbonplan.org.



Meredith Goins

Executive Director, World Data System

Meredith comes to WDS with over two decades of management and leadership experience in working with state, federal and international scientific organizations. She graduated from the University of Tennessee with a Master's in Information Science and from East Carolina University with a bachelor's in communication. Meredith's research interests include subject matter experts' opinions and habits around peer review, particularly grant funding reviews and data repository certification reviews.



Henry Greely

Professor, Stanford School of Medicine, Director, Center for Law and the Biosciences, Stanford University

Henry T. (Hank) Greely (BA '74) specializes in the ethical, legal, and social implications of new biomedical technologies, particularly those related to genetics, assisted reproduction, neuroscience, or stem cell research. He is a founder and immediate past president of the International Neuroethics Society; a member of the Multi-Council Working Group of the NIH's BRAIN Initiative, whose Neuroethics Working Group he co-chairs; chair of the Ethical, Legal, and Social Issues Committee of the Earth BioGenome Project; and chair of California's Human Stem Cell Research Advisory Committee. He served as a member of the Committee on Science, Technology, and Law of the National Academies from 2013-2019; Neuroscience Forum of the Institute of Medicine from 2012-2019; as a member of the Advisory Council of the NIH's National Institute for General Medical Sciences from 2013-2016; and from 2007-2010 as co-director of the Law and Neuroscience Project, funded by the MacArthur Foundation. Professor Greely chairs the steering committee for the Stanford Center for Biomedical Ethics and directs both the law school's Center for Law and the Biosciences and the Stanford Program in Neuroscience and Society. Greely is also a professor (by courtesy) of genetics at Stanford School of Medicine. In 2007 Professor Greely was elected a fellow of the American Association for the Advancement of Science, received Stanford University's Richard W. Lyman Award in 2013, and the Stanford Prize in Population Genetics and Society in 2017. He published *The End of Sex and the Future of Human Reproduction* in 2016. His next book, *CRISPR People: The Science and Ethics of Editing Humans*, was published in February 2021.



Casey Greene

Founding Director, Center for Health AI, University of Colorado

Casey is the Chair of and a Professor in the Department of Biomedical Informatics and the founding Director of the Center for Health AI. His lab develops machine learning methods that integrate distinct large-scale datasets to extract the rich and intrinsic information embedded in such integrated data. This approach reveals underlying principles of an organism's genetics, its environment, and its response to that environment. Extracting this key contextual information reveals where the data's context doesn't fit existing models and raises the questions that a complete collection of publicly available data indicates researchers should be asking. In addition to developing deep learning methods for extracting context, a core mission of his lab is bringing these capabilities into every molecular biology lab through open, transparent science conducted by a diverse team of researchers. Before starting the Integrative Genomics Lab in 2012, Casey earned his Ph.D. for his study of gene-gene interactions in the field of computational genetics from Dartmouth College in 2009 and moved to the Lewis-Sigler Institute for Integrative Genomics at Princeton University where he worked as a postdoctoral fellow from 2009-2012. The overarching theme of his work has been the development and evaluation of methods that acknowledge the emergent complexity of biological systems.



Cynthia Grossman

Senior Director, Biogen Digital Health

I have spent my career applying my social and behavioral science expertise toward research and programs that address unmet needs of patients and communities. I have experience in government, non-profit and academia bringing diverse groups together to solve problems and work toward common goals. I am currently obsessed with the potential of health data to advance research and well-being by connecting individuals, communities, and systems.



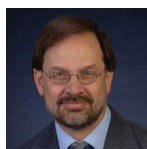
Leanne Guy

Data Management Scientist, Vera Rubin Observatory/NOIRLab

Leanne Guy joined LSST in May 2018, taking on the role of LSST Data Management (DM) Scientist. In this position, Leanne will lead the DM System Science Team (SST) to ensure that the DM System delivers the scientific promise of LSST. This includes liaising with the LSST Science Collaborations and community to understand their needs, advocating new scientific opportunities for the DM System, ensuring a

science-driven prioritization of construction activities, and leading the scientific validation of the DM Subsystem and Data Products.

Leanne holds a Ph.D in Experimental Particle Physics (2000) from the University of Melbourne, Australia. From 1999-2005 Leanne worked in the IT department at CERN and held key positions in the European DataGrid and Enabling Grids for E-Science in Europe projects, developing the Grid middleware and data processing systems used today to manage the peta-bytes of data from experiments at the Large Hadron Collider, CERN. Following a short sabbatical in investment banking leading the deployment of Grid computing systems for global derivatives trading, Leanne returned to science to take up a position on the ESA Gaia mission at the Observatoire de Genève, Switzerland in 2007, working predominantly on the development of algorithms and pipelines for transient and variable star processing



Robert Hanisch

Director, Office of Data and Informatics, National Institute of Standards and Technology (NIST)

Dr. Robert J. Hanisch joined NIST in July 2014 as the director of the Office of Data and Informatics (ODI) within the Material Measurement Laboratory. He is focused on providing data management and dissemination services for NIST research data products, including the Standard Reference Data collection and the Materials Genome Initiative. He is active in national and international data sharing and interoperability initiatives such as the National Data Service Consortium and the Research Data Alliance. Dr. Hanisch was previously a Senior Scientist at the Space Telescope Science Institute (STScI), Baltimore, Maryland, and the director of the U.S. Virtual Astronomical Observatory, a program funded by the National Science Foundation and the National Aeronautics and Space Administration. Over the past twenty years Dr. Hanisch has led many efforts in the astronomy community in the area of information systems and services, focusing particularly on efforts to improve the accessibility and interoperability of data archives and catalogs. He was the first chair of the International Virtual Observatory Alliance Executive Committee (2002-2003). From 2000 to 2002 he served as Chief Information Officer at STScI, overseeing all computing, networking, and information services for the Institute. Prior to that he had oversight responsibility for the Hubble Space Telescope Data Archive and led the effort to establish the Multimission Archive at Space Telescope—MAST—as the optical/UV archive center for NASA astrophysics missions. He completed his Ph.D. in Astronomy in 1981 at the University of Maryland, College Park.



Lydia Jennings

Presidential Postdoctoral Fellow, Arizona State University; Research Fellow, Duke University

Dr. Lydia Jennings (she/her) is an environmental soil scientist. Lydia, citizen of the Pascua Yaqui Tribe (Yoeme) and Huichol (Wixáritari), earned her Bachelors of Science from California State University, Monterey Bay in Environmental Science, Technology and Policy. She

completed her Ph.D. at the University of Arizona in the Department of Environmental Sciences, with a minor in American Indian Policy.

Her research interests are in soil health, environmental data stewardship and science communication. Lydia is a 2014 University of Arizona NIEHS Superfund Program trainee, a 2015 recipient of National Science Foundation's Graduate Research Fellowship Program, a 2019 American Geophysical Union "Voices for Science" Fellow, a 2020 Native Nations Institute Indigenous Data Sovereignty Fellow, and a 2021 Data Science Fellow. Lydia is currently a Presidential Postdoctoral Fellow at Arizona State University's The School of Sustainability and the Research Fellow at Duke University's Nicholas School of the Environment.

Outside of her scholarship, Lydia is passionate about connecting her scholarship to outdoor spaces, through running and increasing representation in outdoor recreation.



Frank Kelly

Emeritus Professor of the Mathematics of Systems, University of Cambridge

Frank Kelly is Emeritus Professor of the Mathematics of Systems in the University of Cambridge. He was elected a Fellow of the Royal Society in 1989, and an International Member of the National Academy of Engineering in 2012. In 2013 he was awarded a CBE for services to mathematical sciences.

His main research interests are in random processes, networks, and optimization. He is especially interested in applications to the design and control of networks and to the understanding of self-regulation in large-scale systems.

Frank Kelly has received several prizes for his work. In 1979 he won the Davidson Prize of the University of Cambridge. In 1989 he was awarded the Guy Medal in Silver of the Royal Statistical Society. He was awarded the 1991 Lanchester Prize of the Institute for Operations Research and the Management Sciences, and in 1997 the Naylor Prize of the London Mathematical Society. In 2005 he received the IEEE Koji Kobayashi Computers and Communications Award, in 2008 the John von Neumann Theory Prize of INFORMS, in 2009 the SIGMETRICS Achievement Award and the Gold Medal of the Association of European Operational Research Societies, in 2011 the Beale Medal of the Operational Research Society, in 2013 the INFORMS Saul Gass Expository Writing Award and in 2015 the IEEE Alexander Graham Bell Medal and the David Crighton Medal of the LMS and the IMA. He has been awarded Honorary Doctorates by Heriot-Watt University, Eindhoven University of Technology and Imperial College, London.

He served as Director of the Statistical Laboratory in the University of Cambridge from 1991 to 1993. He has served on the Scientific Board of HP's Basic Research Institute in Mathematical Sciences, the Scientific Council of EURANDOM, the Conseil Scientifique of France Telecom, and the Council of the Royal Society. He has chaired the Advisory Board of the Royal Institution/University of Cambridge Mathematics Enrichment Project, and the Management Committee of the Isaac Newton Institute for Mathematical Sciences.

He spent the academic year 2001-2 as a visiting professor at Stanford University. From 2003 to 2006 he served as Chief Scientific Adviser to the United Kingdom's Department for Transport. He was chair of the Council for the Mathematical Sciences from 2010 to 2013 and chair of the Royal Society's Advisory Committee on Mathematics Education from 2017 to 2019. He was a member of the RAND Europe Council of Advisors from 2008 to 2015, and Master of Christ's College from 2006 to 2016. He is currently chair of the Isaac Newton Trust and the Scientific Board of the Smith Institute, a member of the International Advisory Board of Inspec, and a trustee of the Glenfield Trust and the Alan Turing Institute.



Carl Kesselman

Professor, Information Sciences Institute, University of Southern California

Carl Kesselman is a William H. Keck Professor of Engineering in the USC Viterbi School of Engineering. He is a professor in the Daniel J. Epstein Department of Industrial and Systems Engineering and Department of Computer Science, Department of Population and Public Health Sciences in the Keck School of Medicine, and Biomedical Sciences in the Ostrow School of Dentistry. He is a USC Information Sciences Institute Fellow, where he directs the Informatics Systems Research Division, and the Director of the Center of Excellence for Discovery Informatics in the Michelson Center for Convergent Biosciences.

Carl Kesselman leads ISI's Informatics Systems Research Division. Created to understand how to build informatics systems that can help tackle the hardest problems of great societal impact, the work of the division spans grid computing, information security, service-oriented architectures, and sociotechnical systems and reproducibility.

Kesselman is an ISI Fellow, the Institute's highest honor. One of the fathers of grid computing and the Globus open-source toolkit. He has received numerous honors for his pioneering research including the Lovelace Medal from the British Computing Society and the Goode Memorial Award from the Institute for Electrical and Electronic Engineers (IEEE) Computing Society and the IEEE Internet Award. He is a Fellow of the British Computing Society, the IEEE, and the Association for Computing Machinery.

Kesselman joined ISI in 1997 as a USC Computer Science Department research associate professor. Kesselman received his PhD in Computer Science from the University of California at Los Angeles, a Masters in Electrical Engineering from the University of Southern California and a Bachelors of Electrical Engineering from the State University of New York at Buffalo.



Hyon Kim

Program Director, Data.gov

Hyon Kim (she/her) is the Program Director for Data.gov, the United States Government's open data website, operated by the U.S. General Services Administration (GSA). Her work is focused on expanding the

scope of published federal government datasets to assist the public, businesses, and academia. Prior to GSA, Hyon was a Program Manager at the Office of the Director of National Intelligence. Her other federal government experience includes working as Assistant General Counsel at the Federal Bureau of Investigation and serving on the staff of the Senate Select Committee on Intelligence.



Christine Kirkpatrick

Division Director, Research Data Services & Secretary General, CODATA

Christine Kirkpatrick leads the San Diego Supercomputer Center's (SDSC) Research Data Services division, which manages large-scale infrastructure, networking, and services for research projects of regional and national scope. Her duties also include a leadership role on the Schmidt Futures Foundation and NSF-funded Open Storage Network and as leader of the Data Core for the NIH-funded Metabolomics Workbench, a national data repository for metabolomics studies. Her research in computer science has centered on improving machine learning processing through research data management techniques. In addition to being PI of the EarthCube Office (ECO), Kirkpatrick founded the US GO FAIR Office, is PI of the West Big Data Innovation Hub, and Co-PI on an NSF Accelnet: Designing a Water, Data, and Systems Science Network of Networks to Catalyze Transboundary Groundwater Resiliency Research. She serves as the Secretary General of the International Science Council's Committee on Data (CODATA), co-Chairs the FAIR Digital Object Forum, is on the external Advisory Board for the European Open Science Cloud (EOSC) Nordic, and the National Academies of Sciences' U.S. National Committee for the Committee on Data.



Julia Lane

Professor, Wagner Graduate School of Public Service, New York University

Julia is a Professor at the NYU Wagner Graduate School of Public Service. She was a senior advisor in the Office of the Federal CIO at the White House, supporting the implementation of the Federal Data Strategy. She cofounded the Coleridge Initiative, whose goal is to use data to transform the way governments access and use data for the social good through training programs, research projects and a secure data facility.

Julia is an elected fellow of the American Association for the Advancement of Science, the International Statistical Institute and a fellow of the American Statistical Association. She is the recipient of the 2014 Julius Shiskin award and the 2014 Roger Herriot award. She is also the recipient of the 2017 Warren E. Miller Award and the 2019 Distinguished Fellow award from the New Zealand Association of Economists. She holds a PhD in Economics and an MA in Statistics.



Loïc Lannelongue

Research Associate, Biomedical Data Science & Green Computing, University of Cambridge

Loïc is a Research Associate in Biomedical Data Science in the Heart and Lung Research Institute at the University of Cambridge, UK, and the Cambridge-Baker Systems Genomics Initiative. He leads the Green Algorithms project, an initiative promoting more environmentally sustainable computational science. His research interests also include radiogenomics, i.e. combining medical imaging and genetic information with machine learning to better understand and treat cardiovascular diseases. He is a Software Sustainability Institute Fellow, a Post-doctoral Associate at Jesus College, Cambridge, and an Associate Fellow of Advance HE.



Margaret Levenstein

Director, ICPSR, University of Michigan

Margaret Levenstein is Director of ICPSR, the Inter-university Consortium for Political and Social Research. Founded in 1962, ICPSR is the largest curated social science data archive in the world and a recipient of a 2019 National Medal for Museum and Library Service.

Levenstein is also Research Professor at the University of Michigan's Institute for Social Research, Professor in the School of Information, and Adjunct Professor of Business Economics and Policy at the Stephen M. Ross School of Business. She is the Principal Investigator of the NSF infrastructure project, Research Data Ecosystem, and the NIH's Social, Behavioral, and Economic COVID-19 Consortium Coordinating Center. She is Co-Director of the Michigan Federal Statistical Research Data Center, co-chair of the FSRDC Executive Committee, and Associate Chair for Survey of the American Economic Association's Committee on the Status of Women in the Economics Profession. She serves on the boards of the Social Science Research Council, Computational Antitrust, OpenDP, Coordinated Access for Data, Researchers and Environments (CADRE), the Data Documentation Initiative (DDI), the Network on Life Course Health Dynamics and Disparities in 21st Century America, Databrary, and the Qualitative Data Repository.

She received her PhD in economics from Yale University and BA in economics from Barnard College, Columbia University. She is the author of *Accounting for Growth: Information Systems and the Creation of the Large Corporation*. Formerly president of the Business History Conference, she is the author of numerous historical and contemporary studies of competition and of innovation. Her research examines the production, dissemination, and confidentiality protection of novel, non-designed data for social and economic measurement.



Bradley Malin

Professor, Department of Biomedical Informatics, Vanderbilt University

Bradley Malin, Ph.D. is the Accenture Professor of Biomedical Informatics, Biostatistics, and Computer Science, as well as Vice Chair for Research Affairs in the Department of Biomedical Informatics. His research is funded through grants from the National Science Foundation (NSF), National Institutes of Health (NIH), and Patient Centered Outcomes Research Institute (PCORI). His research is on the development of technologies to enable artificial intelligence and machine learning (AI/ML) in the context of organizational, political, and health information architectures. He has made specific contributions in a number of areas, including distributed data processing methods for medical record linkage and predictive modeling, intelligent auditing technologies to protect electronic medical records from misuse in the context of primary care, and algorithms to formally anonymize patient information disseminated for secondary research purposes. His investigations on the empirical risks to health information re-identification have been cited by the Federal Trade Commission in the Federal Register and certain privacy enhancing technologies he developed have been featured in popular media outlets and blogs, including Nature News, Scientific American, and Wired magazine.

He co-directs the Health Data Science (HEADS) Center, the Center for Genetic Privacy and Identity in Community Settings (GetPreCiSe) - an NIH Center of Excellence on Ethical, Legal, and Social Implications Research (CEER), the Ethics Core of the NIH Bridge2AI program, and the Infrastructure Core of the NIH Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity (AIM-AHEAD). In addition, he serves as the co-chair of the Committee on Access, Privacy, and Security (CAPS) of the All of Us Research Program of the U.S. Precision Medicine Initiative, an appointed member of the Technical Anonymisation Group of the European Medicines Agency, and an appointed member of the Board of Scientific Counselors of the National Center for Health Statistics of the Centers for Disease Control and Prevention (CDC).

He is an elected fellow of the National Academy of Medicine (NAM), the American College of Medical Informatics (ACMI), the International Academy of Health Sciences Informatics (IAHSI), and the American Institute for Medical and Biological Engineering (AIMBE). In addition, he was honored as a recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE) from the White House.

Dr. Malin completed his education at Carnegie Mellon University, where he received a bachelor's in biological sciences, a master's in machine learning, a master's in public policy and management, and a doctorate in computer science (with a focus on databases and software systems).



Christopher Marcum

Senior Statistician and Senior Science Policy Analyst, Office of the Chief Statistician of the United States

Dr. Marcum is a Senior Statistician and Senior Science Policy Analyst in the Office of the Chief Statistician of the United States at the White House Office of Management and Budget. His portfolio focuses on data access, science policy, cybersecurity, and artificial intelligence. Immediately, prior to his current role, Dr. Marcum served in the Biden-Harris Administration as the Assistant Director for Open Science and Data Policy in the White House Office of Science and Technology Policy (OSTP). Dr. Marcum oversaw transformative science policies in his OSTP portfolio that led to the 2022 OSTP Public Access Memo, the 2023 Federal Scientific Integrity Framework, and the White House declaring the 2023 as a Year of Open Science. Dr. Marcum received his Ph.D. in sociology from the University of California, Irvine (UCI) in 2011. He also has a Master's degree in demographic and social analysis from UCI and completed a post-doctoral fellowship in economics and statistics at the RAND Corporation. After his formal training, he joined the intramural research faculty of the National Human Genome Research Institute (NHGRI) at the National Institutes of Health (NIH) as a staff scientist and methodologist where his research focused on social networks and health. Eventually, he moved into science policy at the NIH and was appointed to be the Genomic Program Administrator and chair of the Data Access Committee at the National Institute of Allergy and Infectious Diseases (NIAID). His professional accolades include over fifty scientific publications, a commendation of exceptional service from OSTP, two Special Act or Service Award honors from NIAID, a Matilda White Rile Early Stage Investigator Honor from the Office of Behavioral and Social Science Research at the NIH, two GREAT Awards from the NHGRI, and an Order of Merit Award from the University of California-Irvine. He is a fellow of the Gerontological Society of America, nominated by his peers for his research, training, and advocacy on issues related to aging and the life course.



Alexa McCray

Professor of Medicine, Harvard Medical School

Alexa T. McCray, PhD is Professor of Medicine at Harvard Medical School where she conducts biomedical informatics research. She is the former director of the Lister Hill National Center for Biomedical Communications, an NIH intramural research division. Before joining the NIH, she was on the research staff of IBM's T.J. Watson Research Center. She received the PhD from Georgetown University, and for three years was on the faculty there. She conducted pre-doctoral research at the Massachusetts Institute of Technology. She was elected to the National Academy of Medicine in 2001.

Dr. McCray is past chair of the National Academies of Sciences, Engineering, and Medicine's (National Academies) Board on Research Data and Information, and she chaired a 2018 National Academies consensus study entitled Open Science by Design: Realizing a Vision for 21st Century Research. She currently chairs a Harvard Medical School faculty committee that is concerned with rigor, reproducibility and responsibility in research.



Charlton McIlwain

Vice Provost for Faculty Engagement and Development; Professor of Media, Culture, and Communication, New York University

Author of the recent book, *Black Software: The Internet & Racial Justice, From the Afropnet to Black Lives Matter*, Dr. Charlton McIlwain is Vice Provost at New York University, and Professor of Media, Culture, and Communication at NYU Steinhardt. He works at the intersections of computing technology, race, inequality, and racial justice activism. He has served as an expert witness in landmark U.S. Federal Court cases on reverse redlining/racial targeting in mortgage lending and recently testified before the U.S. House Committee on Financial Services about the impacts of automation and artificial intelligence on the financial services sector. He writes regularly for outlets such as *The Guardian*, *Slate's Future Tense*, *MIT Technology Review*, and other outlets about the intersection of race and technology. McIlwain is the founder of the Center for Critical Race & Digital Studies, and is Board President at Data & Society Research Institute. He leads NYU's Alliance for Public Interest Technology, is NYU's Designee to the Public Interest Technology University Network, and serves on the executive committee as co-chair of the International Panel on the Information Environment ethics panel.



Virginia Murray

Head of Global Disaster Risk Reduction, UK Health Security Agency

Professor Virginia Murray is a public health doctor committed to improving health emergency and disaster risk management. She was appointed as Head of Global Disaster Risk Reduction for UK Health Security Agency (formerly Public Health England) in April 2014. She is a member of the Integrated Research on Disaster Risk (IRDR) scientific committee and co-chair of IRDR's Disaster Loss Data (DATA) and is currently the Chair of the UNDRR/ISC Hazard Classification and Review Technical Working Group, with the report published in 2020 and the UNDRR-ISC Hazard Information Profiles: Supplement in 2021. She is a member of CODATA Executive Committee. She is a co-chair of the WHO Thematic Platform Health and Disaster Risk Management Research Network, and by working in collaboration with this network, she is one of the editors of the WHO Guidance on Research Methods for Health and Disaster Risk Management, published in October 2021 and updated in 2022.



Gina Neff

Professor and Executive Director, Minderoo Centre for Technology & Democracy, University of Cambridge

Gina Neff is the Executive Director of the University of Cambridge's Minderoo Centre for Technology & Democracy, where her team is leading work in the UK on researchers' access to social media data under the Online Safety Bill. Her books include *Venture Labor*, *Self-Tracking*, and *Human-Centered Data Science*, all from MIT Press.

Professor Neff helps to lead UKRI's new £30 million Responsible AI UK program and the ESRC Digital Good Network. A sociologist by training, she focuses on how digital information changes work and everyday life. She advises international organizations including UNESCO, the OECD and the US Social Science Research Council. In addition to awards for academic research, she led the team that won the 2021 Webby for the best educational site, the A to Z of AI, which has reached over 1 million people in 17 different languages that is now part of Google's free online job training platform.



Alison Noble

Technikos Professor of Biomedical Engineering, Oxford University; Foreign Secretary of the Royal Society

Professor Alison Noble CBE FREng FRS is currently the Technikos Professor of Biomedical Engineering at Oxford University and was appointed a Foreign Secretary of the Royal Society in 2023.

Alison is a biomedical engineer and has worked in industry and academia. Her academic research interests are at the inter-disciplinary interface of artificial intelligence (computer vision) and healthcare imaging. She has worked with clinical partners in the UK, India, and Kenya on translational AI-based imaging science, and commercialised some of her group's research via a spinout company.

Alison was elected a Fellow of the Royal Society in 2017 and was awarded the Royal Society Gabor Medal in 2019. She chaired the Royal Society Privacy Enhancing Technologies (PETs) Policy Working Group which led to two policy reports on "Protecting privacy in practice" (2019) and "From privacy to partnership" (2023).

Alison was awarded her CBE in the 2023 King's Birthday Honours List.



Feryal Ozel

Professor and Chair, School of Physics, Georgia Institute of Technology

Feryal Ozel is Chair and Professor in the School of Physics at Georgia Tech. She received her BS summa cum laude in physics and applied mathematics from Columbia University, her MS from the Niels Bohr Institute and her PhD from Harvard University in astrophysics in 2002. She was a NASA Hubble Postdoctoral Fellow and Member at the Institute for Advanced Study until 2004.

Dr. Ozel is a founding member of the Event Horizon Telescope collaboration and led the Modeling Working Group for the analysis of M87 and Sgr A* black hole images. She was co-chair of NASA's Lynx X-ray Observatory study and chair of NASA's Astrophysics Advisory Committee. She is an APS Fellow and the recipient of numerous awards, including Maria Goeppert Mayer award from the American Physical Society, the Guggenheim Fellowship, and the Radcliffe Fellowship at Harvard University. With the EHT collaboration, she received the Breakthrough Prize, the Rossi Prize of the American Astronomical Society, a Diamond Achievement award from the National Science Foundation, and was recognized with the distinction of Breakthrough of the Year by Science.



Taunton Paine

Director, Scientific Data Sharing Policy Division, National Institutes of Health (NIH)

Taunton Paine is the Director of the Scientific Data Sharing Policy Division in the Office of Science Policy in the Office of the NIH Director.

Taunton has been with the Office of Science Policy since 2011. His division is responsible for issues relating to data sharing policy, including issuance of the recent NIH Data Management and Sharing Policy, oversight of the NIH Genomic Data Sharing Policy, and management of the Data Science Policy Council.

Previously, he led the Clinical Research Policy team as a senior policy analyst and advised on matters related to the Common Rule, Certificates of Confidentiality, HIPAA, and other privacy and human participant protections issues.

Before that, he worked on issues relating to dual-use research. He holds a dual master's degree from Columbia University and London School of Economics and Political Science, where he studied science and technology in the history of international relations.



Irene Pasquetto

Assistant Professor, University of Maryland

Irene Pasquetto is a scholar in the field of information and communication science. She conducts research and teaches as Assistant Professor at the University of Michigan School of Information where she teaches "Ethics of Information Technologies" and "Digital Curation." Her most recent research work focuses on issues of science mis- and disinformation, open science practices, and public understanding and use/misuse of science products and infrastructures. From 2018 to 2020, she was a postdoctoral fellow at the Shorenstein Center on Media, Politics, and Public Policy, at the Harvard Kennedy School. Irene earned a Ph.D. in Information Studies from the University of California, Los Angeles (UCLA), where she also worked as a research assistant at the UCLA Center for Knowledge Infrastructures (CKI) and the UCLA Institute for Society and Genetics. Previously, Irene earned a master's and a bachelor's degree from the University of Verona (Italy).



Mila Rosenthal

Executive Director, International Science Reserve, New York Academy of Sciences

Mila Rosenthal has over 20 years of international experience as a leader, communicator, and educator on economic, social, climate, and environmental issues. Most recently, as Director of Communications and Advocacy for the United Nations Development Programme, she spearheaded global public policy advocacy across 170 countries for the UN's largest agency to combat poverty, inequality, and climate change. She currently also teaches at Columbia University as an Assistant Professor of Human Rights, and is the co-founder of Planet Reimagined, a start-up non-profit climate impact venture.

Previously, Rosenthal held executive positions at Amnesty International, HealthRight International, and Concern Worldwide. She worked extensively on public health, anti-poverty, and human development efforts in countries in Africa, and before that in Southeast Asia, where she served with the UN peacekeeping mission in Cambodia.

Rosenthal earned her Ph.D. in social anthropology from the London School of Economics, based on two years of ethnographic research in Vietnam with women factory workers in the garment industry.



Marian Scott

Professor of Environmental Statistics, University of Glasgow

Marian Scott is Professor of Environmental Statistics, University of Glasgow, School of Mathematics and Statistics. She has published more than 200 peer reviewed papers. She is an elected fellow of the Royal Society of Edinburgh and the International Statistics Institute and was vice president international for the RSE. She is a chartered statistician of the Royal Statistical Society and a member of the American Statistical Association. Her research lies firmly in applied Statistics, with specific interests in the environment, (past, present and future), archaeology and animal welfare. Marian is chair of EU Scientific Committee on Health, Environment and Emerging Risk, and member of the NatureScot and DEFRA Science Advisory Committees and the Scottish Science Advisory Council. In 2009, she was awarded an OBE for services to science. She won the Barnett award of the RSS in 2019 and the inaugural impact award of the Edinburgh Mathematical Society in 2021.



Yvette Seger

Director of Science Policy, Federation of American Societies for Experimental Biology (FASEB)

Yvette Seger oversees FASEB's Science Policy efforts and leads the development of strategic initiatives, including programs advance Diversity, Equity, Accessibility, and Inclusion (DEAI) in the biological and biomedical research workforce and FASEB DataWorks!, an initiative fostering culture change around data sharing and reuse. Prior to joining FASEB in 2013, Dr. Seger held senior policy positions at FasterCures, the National Institutes of Health, and Thomson Reuters. Dr. Seger holds a PhD in Genetics from Stony Brook University and a BA in Zoology (Genetics Concentration) and Politics & Government from Ohio Wesleyan University.



Richard Sever

Assistant Director of Cold Spring Harbor Laboratory Press at Cold Spring Harbor Laboratory

Richard Sever is assistant director of Cold Spring Harbor Laboratory Press at Cold Spring Harbor Laboratory in New York and cofounder of the preprint servers bioRxiv and medRxiv. He also serves as executive editor for the Cold Spring Harbor Perspectives and Cold Spring Harbor

Protocols journals and launched the precision medicine journal Cold Spring Harbor Molecular Case Studies. Previously he worked as an editor at Current Opinion in Cell Biology, Trends in Biochemical Sciences, and Journal of Cell Science. Richard received a degree in biochemistry from Oxford University and a PhD in molecular biology from Cambridge University.



Nigel Shadbolt

Principal and Professorial Research Fellow in Computer Science, University of Oxford

Professor Sir Nigel Shadbolt is a leading researcher in Artificial Intelligence (AI) and was one of the originators of the interdisciplinary field of Web Science. He is Principal of Jesus College Oxford and a Professor of Computing Science at the University of Oxford. He is chairman of the Open Data Institute which he co-founded with Sir Tim Berners-Lee. He was knighted in 2013 for 'services to science and engineering'.

Nigel has a degree in Philosophy and Psychology from the University of Newcastle and a PhD in Artificial Intelligence from the University of Edinburgh. In 1983 he joined the Department of Psychology at Nottingham and in 1992 he became the Allan Standen Professor of Intelligent Systems. He moved to Southampton's School of Electronics and Computer Science in 2000, where he researched the next generation of the World Wide Web and was the first Head of the Web and Internet Science Group. At Oxford he has focused his research in human centred AI in a wide range of applications.

With over 500 publications, he has researched and published on topics ranging from cognitive psychology to computational neuroscience, Artificial Intelligence to the Semantic Web. In 2018 he published *The Digital Ape: how to live (in peace) with smart machines*, described as a 'landmark book'.

He is a Fellow of The Royal Society, the Royal Academy of Engineering and the British Computer Society.



Dayo Simms

Privacy Counsel, TikTok

Dayo drives public policy feedback on matters involving US privacy policy, including analyzing and advising on proposed legislation at the state and federal level. She also steers the TikTok public policy team's efforts on ads policy and monetization initiatives for TikTok.

Before joining TikTok, Dayo spent 11 years building privacy programs at Uber and for the US federal government. Her career began at the Social Security Administration (SSA) Office of Privacy and Disclosure, where she was introduced to privacy, and worked to help SSA build privacy-by-design into its processes. She then decided to pursue a law degree at George Washington University. While pursuing her J.D. through GW Law's evening program, she worked full time at the Department of Homeland Security, and later the US Department of the Treasury as

a privacy analyst and program manager. She is a native of Baltimore Maryland, and is a graduate of The Johns Hopkins University and GW Law.



Gavin Starks

Founder and CEO, IcebreakerONE

Gavin has created over a dozen companies, employing 100's of people, and delivering \$100M's in measurable impact. He co-chaired the development of the Open Banking Standard and was founding CEO of the Open Data Institute. He has mentored, chaired, or been a non-exec of over 40 organisations across diverse sectors. He currently runs IcebreakerOne.org to help accelerate our Net Zero Future.



Uyi Stewart

Chief Data and Technology Officer, Data.org

Uyi Stewart is the Chief Data and Technology Officer at data.org. Uyi provides senior technical leadership in all aspects of data.org's work, with a particular focus on our programmatic initiatives which today include the Inclusive Growth and Recovery Challenge, the Capacity Accelerator Network, and Epiverse. Uyi plays a critical role in designing and building new initiatives, leveraging his global network to drive inclusive co-creation and strengthen outcomes.

Uyi is a trailblazing expert in data science as a technology with over 25 years of experience. Prior to joining data.org, he was the head of Data Science, Technical Operations, Seagen Inc., USA, focusing on the digitalization of biologics data to accelerate the development of transformative cancer drugs. Before that, he was an executive director, AI Commons, a non-profit focused on the creation of a knowledge hub to democratize and localize access to AI technologies in emerging markets. For ~3 years, he was a director of Global Development's Strategy, Data and Analytics at the Bill and Melinda Gates Foundation, centralizing the use of data to fight disease, poverty, and inequity. He spent 12 years at IBM Research, where he was a Distinguished Engineer, co-founder, and Chief Scientist, IBM Research – Africa, Nairobi, pioneering the use of Big Data to combat the Ebola outbreak in West Africa via behavior change, and other ML/AI solutions to address data-related societal challenges.

Uyi holds a Ph.D. in Linguistics from McGill University. He has 15 patents, authored 65 publications, and has been involved in the implementation of hundreds of innovative digital solutions across Africa, Asia, and the United States of America.



Peter Stokes

Director of Platform Development, OpenSAFELY/University of Oxford

Pete is Director of Platform Development at the Bennett Institute and is a strong advocate for increased access to data, for research that will improve people's lives. He joined in 2022, after a long career in the Civil Service, which included ten years leading the development

and operation of the Secure Research Service – the largest Trusted Research Environment in the UK. Pete has significant experience advising Ministers and senior leaders across the Public Sector and internationally, on managing secure research access to record-level data, and its benefits to society. Outside of work, Pete likes to be active and enjoys football, skiing, walking and running – with a particular love of the mud, water, obstacles, and teamwork of a WOLF Run.



Kenji Takeda

Director, Academic Health and AI Partnerships, Microsoft

Dr Kenji Takeda is Director of Academic Health and AI Partnerships for Microsoft Research Outreach. He is empowering researchers to develop and deploy human-centric AI and machine learning to transform healthcare by exploiting data in the cloud, empowering those at the frontline of healthcare, and moving towards precision medicine. This includes work in medical imaging on Project InnerEye OSS, supporting partners to clinically deploy AI for radiotherapy cancer treatment in the NHS. He coordinates Microsoft's Studies in Pandemic Preparedness collaborative research program that brought together leading researchers from academia and Microsoft to help address the current situation and better prepare for future pandemics. He is working with the global healthcare data research community on the development of Trusted Research Environments (TREs), serving on the UK Medical Research Council Data Science Strategic Advisory and Translational Research Groups. He regularly advises funding agencies and research organisations on innovation and technology strategy. He is a visiting industry fellow at the Alan Turing Institute and visiting fellow at the University of Southampton, UK.

He was a member of the Microsoft Global Hackathon 2022 and 2021 winning teams, and Health Data Research UK Team of the Year in 2020.

He was previously global lead for Microsoft's Azure for Research program, empowering researchers to take best advantage of cloud computing, including through data science, high-performance computing, and the internet of things.

He has a passion for developing novel computational and system-wide approaches to tackle fundamental and applied problems in science, engineering, and healthcare. He has extensive experience in cloud computing, high performance and high productivity computing, and engineering (aeronautics and astronautics, aerodynamics, aeroacoustics, and flight simulation).

Prior to joining Microsoft, he was tenured Associate Professor for Aeronautics at the University of Southampton, UK, where he co-founded the Microsoft Institute for High Performance Computing, Airbus Noise Technology Centre, and the world's first Master's course in race car aerodynamics working with many Formula One teams. He has received numerous awards, including the Royal Aeronautical Society Silver Award, Royal Academy of Engineering/ExxonMobil Gold medal for excellence in engineering teaching, and inaugural Royal Academy of Engineering Innovation prize.

He worked for many years as a freelance computer journalist with ZDNet, GameSpot, Computer Gaming World, and PC Pilot.



Kunal Talwar

Research Scientist, Apple

Kunal Talwar is a Research Scientist at Apple, leading a research group focusing on the foundations of machine learning and private data analysis. His research interests span various aspects of Computer Science including Differential Privacy, Machine Learning, Algorithms, and Data Structures. Prior to joining Apple, he worked at Microsoft Research in Silicon Valley from 2005 to 2014, and at Google Brain from 2014 to 2019. He has made major contributions to Differential Privacy, Metric Embeddings, and Discrepancy Theory. His work has been recognized by the Privacy Enhancing Technologies award in 2009 and Best Paper awards at ICLR and FORC.



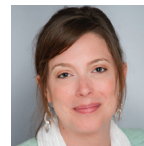
Alan Tomkins

Acting Division Director, Division of Social & Economic Sciences, US National Science Foundation (NSF)

Alan Tomkins is the deputy director of NSF's Division of Social and Economic Sciences (SES). Since joining the agency in the fall of 2014, he has served as the acting division director for SES on several occasions and for the Division of Behavioral and Cognitive Sciences (BCS) for eight months in 2018.

Dr. Tomkins has also performed a variety of agency-wide roles, ranging from increasing public access to simplifying, streamlining and standardizing the merit review process. His major cross-agency activity is serving as one of the co-chairs, along with representatives from OSTP, NIH, and NOAA, of the Subcommittee on Open Science. He also serves as NSF's representative on the committee that is advising the National Academies of Sciences, Engineering, and Medicine (National Academies) and the Federal Judicial Center on developing a fourth edition of the "Reference Manual on Scientific Evidence," a primary reference source for federal judges on questions of science, technology and medicine in litigation. Dr. Tomkins is also involved in the oversight of the National Academies' Societal Experts Action Network (SEAN): Facilitating Rapid and Actionable Responses to Social, Behavioral, and Economic-Related COVID-19 Questions.

Prior to joining NSF, Dr. Tomkins spent almost 30 years at the University of Nebraska-Lincoln, where was the founding director of the University of Nebraska Public Policy Center (now emeritus director) and professor in the Law-Psychology Program (now emeritus professor). He received a B.A. in Psychology and Philosophy from Boston University and a J.D. and Ph.D. in Social Psychology from Washington University in St. Louis.



Rebekah Tromble

Director of the Institute for Data, Democracy, and Politics, Associate Professor, George Washington University

Dr. Rebekah Tromble is Associate Professor in the School of Media and Public Affairs and Director of the Institute for Data, Democracy, and Politics (IDDP) at George Washington University. She recently joined George Washington University after spending eight years in the Institute of Political Science at Leiden University in the Netherlands.

Dr. Tromble's research focuses on political communication, digital research methodology, and research ethics. She is particularly interested in political discourse on social media, as well as the spread and impact of online misinformation. Her research has been published in leading journals such as *New Media & Society*, *International Studies Quarterly*, and *Political Communication*.

Dr. Tromble is currently leading two large research projects. The first, funded by Twitter, brings together a team of international researchers from both the social and computer sciences to investigate the "health" of political conversations on Twitter. The project is developing metrics for assessing the extent of phenomena such as echo chambers, incivility, and intolerance across political topics, different geographical regions, and languages. Dr. Tromble's second project, entitled "The (Mis)Informed Citizen" and run in collaboration with scholars at Utrecht University (the Netherlands) and the Alan Turing Institute (London), seeks to develop computational tools that will allow researchers to analyze and assess the quality of online news content. Such tools will, in turn, permit scholars to better understand the impacts of encountering misinformation on people's beliefs, attitudes, and behaviors—including voting behavior.

Dr. Tromble consults regularly for both industry and policymakers, particularly on topics of digital platform accountability, responsible data use, and best practices for combatting the effects of misinformation.



Johan Ugander

Associate Professor, Department of Management Science & Engineering, Stanford University

Johan Ugander is an Associate Professor at Stanford University in the Department of Management Science & Engineering, within the School of Engineering. His research develops algorithmic and statistical frameworks for analyzing social networks, social systems, and other large-scale social and behavioral data. Prior to joining the Stanford faculty he was a post-doctoral researcher at Microsoft Research Redmond 2014-2015 and held an affiliation with the Facebook Data Science team 2010-2014. He obtained his Ph.D. in Applied Mathematics from Cornell University in 2014. His awards include a NSF CAREER Award, a Young Investigator Award from the Army Research Office (ARO), three Best Paper Awards (2012 ACM WebSci Best Paper, 2013 ACM WSDM Best Student Paper, 2020 AAAI ICWSM Best Paper), and the 2016 Eugene L. Grant Undergraduate Teaching Award from the Department of Management Science & Engineering.



Edgar Whitley

Associate Professor of Information Systems, London School of Economics and Political Science

Edgar Whitley is an associate professor in the Department of Management at the London School of Economics and Political Science. He has a BSc (Econ) and PhD in Information Systems, both from the LSE. He is the co-editor of Information Technology and People, Editorial Advisory Board member for Information Systems Research, Senior Editor for the Journal of Information Technology and the AIS Transactions of Replication Research.

Edgar is co-chair of the Privacy and Consumer Advisory Group (PCAG) to the Government Digital Service and GOV.UK and a member of the Cabinet Office Digital Economy Act 2017 Debt and Fraud Information Sharing and the Public Service Delivery Review Boards. Between 2014 and 2017 he was a member of the Administrative Data Research Network, Information Assurance Expert Group. The purpose of the group was to provide the ADRN with advice on Information Assurance and Statistical Disclosure Control (SDC) in relation to research outputs from the ADRN secure infrastructure.



Michael Worobey

Professor and Department Head, Ecology and Evolutionary Biology, University of Arizona

Michael Worobey is Department Head, Ecology and Evolutionary Biology, and Professor, Ecology and Evolutionary Biology at the University of Arizona. Dr. Worobey taps into the genomes of viruses, using molecular and computational biology, to understand the origins, emergence, and control of pandemics. He has made discoveries pinpointing, for example, where, when, and how HIV originated and spread worldwide and how influenza pandemics, including the intense 1918 pandemic, emerge and kill large numbers of people. Recently, his interdisciplinary work on SARS-CoV-2 has shed light on how and when the virus originated and ignited the COVID-19 pandemic in China and how SARS-CoV-2 emerged and took hold in North America and Europe. Current research includes (1) SARS-CoV-2 genomic epidemiology and evolution from local to global scales, (2) work at the intersection of viral evolution and immunology with both SARS-CoV-2 and influenza viruses, (3) influenza vaccines, and (4) pandemic preparedness and prevention.

STAFF

Anna Bashkirova

Program Manager, Special Initiatives, National Academy of Sciences

June Brawner

Senior Policy Adviser (Data and Digital Technologies), The Royal Society

Areeq Chowdhury

Head of Policy (Data and Digital Technologies), The Royal Society

Luke Clarke

Head of International Affairs (Americas/Multilaterals/Africa), The Royal Society

Jennifer Clements

Program Coordinator, National Academy of Sciences

Ken Fulton

Executive Officer, National Academy of Sciences

Anne Giles

Senior Programme Manager, Science Policy, The Royal Society

Natalie Shanklin

Senior Membership and Communications Associate, National Academy of Sciences



NATIONAL ACADEMY OF SCIENCES

THE
ROYAL
SOCIETY

