Science Policy Sessions at the 2022 AAAS Annual Meeting

Thursday, February 17, 2022
Communicating Science Seminar: Cultural Humility and Cultural Competence in Public Engagement with Science
Communicating Science Seminar: Building Connections and Reciprocity Between Scientists and Communities
Communicating Science Breakout Sessions (multiple)

Friday, February 18, 2022
McGovern Lecture – John Wixted: Eyewitness Memory Is Reliable, But the Criminal Justice System Is Not
Sarton Lecture – Audra J. Wolfe: Evidentiary Constraint: When Science Policy Meets Activism Can Scientists Successfully Speak Truth to Power?
Human Neural Organoids, Transplants, and Chimeras: Science, Ethics, Governance
Faculty Make for Excellent Science Policy Fellows
Science Communication in a Diverse World
Understanding Changes in Global Science Attitudes during the COVID-19 Pandemic
Lessons for the Scientific Community on Activism and Movement Building
Missed and Future Opportunities: What Have We Learned from COVID-19 in the U.S.?
Science Diplomacy Fellowships: Crafting the Pipeline to Evidence-Informed Policy
Being a Scientist in the COVID-19 Crisis Room: Reflections from the Inside
Ocean Diplomacy: How Common Threats to Shared Resources Can Overcome Politics
The Science of Combating Disinformation
Data Decision to Action: Public Data Infrastructure for Scientific Discovery
2022 Science Policy Networking Mixer

Saturday, February 19, 2022
Kate Starbird: Unraveling the Big Lie: Participatory Disinformation and its Threat to Democracy
Building a Resilient Society through Evidence and Trust
Research Data Infrastructure: National Projects and International Collaboration
Injecting Science into Local Decision-Making
Climate Action to Protect and Promote Health: Building and Sharing the Evidence
Why Diversity and Inclusion Initiatives Matter in STEM: The Evidence
Empowering Non-Coastal States to Develop Climate Change Resilience Policies
So You Want to Be an S&T Policy Fellow?
How Have Studies of Crime Impacted Criminal Justice Policy and Racial Inequity?
Federal R&D: Update and Outlook for FY 2022
Evidence-Based Practices for Promoting Evidence-Based Policies
Pathways to a Career in Science Policy
Science for Policy in the Covid Era: Issues and Prospects of Asia and the U.S.
Queering STEM: Policies to Increase LGBT+ Retention
Navigating the Multilevel Governance for Science Advice in the European Union
At a Crossroads: Academia, Industry, Government—and a Workforce that Works for All
Sunday, February 20, 2022

Kyle Whyte: Against Crisis Science: Research Futures for Climate and Energy Justice
When Evidence Is Not Enough: The Science of Misinformation
Inclusive Science Policy Analysis and Tools
Communicating the Future: An Agenda for Engaging the Public with Basic Science
Generating Evidence to Empower Crime and Justice Policy to Reduce Harm
Understanding the Evidence in Evidence-based Policymaking
Diversity, Equity, and Inclusion in STEM Organizations: Evidence-Based Change
Resources for Early Career Scientists Catalyzing Policy Change
Is It Time to Re-visit the Definition of “Research Misconduct?”
Science Policy Barriers and Opportunities for International Scholars
Closing the Transparency Gap: Advancing Evidence-Informed Decision-Making
Out of the Lab and into Elected Office
Panel: Does Science Communication Still Work?
Communicating Science Seminar: Cultural Humility and Cultural Competence in Public Engagement with Science

- 9:00 – 10:30 AM EST
- **Type:** Special Sessions
- **Organizer:** Elana Kimbrell
- **Moderator:** Greetchen Diaz
- **Presentations:**
  - Where You Begin the Journey: Multiple Pathways to Empathy and Equity Through Researcher Community Collaborations – Rebecca Jim and Dan Brabander
  - Leading with Assumptions: Promoting Community in Science – Ella Greene-Moton and Suzanne Selig
- **Synopsis:** How do we invite those with varied lived experiences into conversation, and find entry points and common ground for conversations about science and how we use it in our lives? This session will reflect on our own assumptions and biases about other people’s motivations and expertise, and how proactively learning about and from the communities we want to collaborate with builds bridges to productive dialogue and action. Participants will share both experience and research in how being authentically curious and open to changing their minds changed their interactions—and their science—for the better.

Communicating Science Seminar: Building Connections and Reciprocity Between Scientists and Communities

- 11:00 – 12:30 PM EST
- **Type:** Special Sessions
- **Organizer:** Elana Kimbrell
- **Moderator:** Julie Maldonado
- **Presentations:**
  - Pastors and Scientists as Collaborators: Building Relationships and Research – Christopher Spencer and Pamela Payne-Foster
  - Restorative Engagement: Centering Communities in Cycles of Knowledge Exchange, Ideation, and Action – Nicole Hewitt-Cabral and Adam Parris
- **Synopsis:** This session will discuss ways of building the connections and relationships that are integral to effective, respectful, and mutually beneficial public engagement with science, particularly with communities that have been mistreated by scientists. This will include the perspectives of public participants, scientists doing engagement, and practitioners of science engagement and communication. Speakers will discuss approaches to engagement built on the principle of reciprocity, in a variety of different contexts and areas of science. This session is co-sponsored by the AAAS Dialogue on Science, Ethics and Religion (DoSER).

Communicating Science Breakout Sessions

- Various Times, all on Thursday (follow link for full list)
- **Type:** Special Sessions
- **Organizer:** Elana Kimbrell
- **Synopsis:** A series of seminars and breakout sessions on topics related to the Communicating Science Seminars. See link for full list.
McGovern Lecture – John Wixted: Eyewitness Memory Is Reliable, But the Criminal Justice System Is Not
- 10:00 – 11:00 AM EST
- Type: Special Sessions
- Speaker: John Wixted
- Moderator: Morton Ann Gernsbacher
- Synopsis: The reliability of any type of forensic evidence (e.g., forensic DNA) is assessed by testing its information value when it is not contaminated and is properly tested. Assessing the reliability of forensic memory evidence should be no exception to that rule. Unfortunately, testing a witness’s memory irretrievably contaminates it. Thus, only the first (properly conducted) test is relevant to the question of whether eyewitness memory is reliable. With few exceptions, the results of studies conducted in the lab and in the real world show that confidence is highly predictive of accuracy on the first test, and high-confidence often implies high accuracy. The fact that many eyewitnesses are known to have made high-confidence mis-identifications in the courtroom has cemented the almost universal impression that eyewitness memory is unreliable. However, it is the criminal justice system that is guilty of unwittingly using contaminated memory evidence (relying on the last memory test, in court) to win convictions of the innocent. That mistake should no longer be blamed on the unreliability of eyewitness memory.

Sarton Lecture – Audra J. Wolfe: Evidentiary Constraint: When Science Policy Meets Activism
- 10:00 – 11:00 AM EST
- Type: Special Sessions
- Speaker: Audra Wolfe
- Moderator: Jonathan Coopersmith
- Synopsis: This lecture uses two case studies from Philadelphia, Pennsylvania, to explore how administrative law constrains activists’ ability to use scientific evidence to demand environmental justice. Effecting meaningful change requires incorporating the lived experience of affected communities, even when those experiences push the boundaries of scientifically admissible evidence. Like many aging cities, Philadelphia struggles to cope with the environmental legacy of its industrial past. Swaths of the city are de facto sacrifice zones, with high-density neighborhoods surrounding or built on top of former manufacturing facilities. Today, Philadelphia has the highest rate of poverty, and the highest cancer rate, among the 10 most populous United States cities. These burdens disproportionately fall on the city’s Black and immigrant neighborhoods. A growing coalition of community activists, environmental advocates, and scientific experts are demanding better environmental futures for Philadelphia. While they have made some progress, their efforts have been stymied by a style of environmental regulation that prioritizes compliance over justice. Administrative judges have rejected evidence of demonstrable levels of dangerous pollutants, observing their job is to determine whether a given permit is in accordance with the law, not whether that law contributes to environmental racism. Some of the expert participants found this outcome surprising. Veteran activists did not. By definition, permits grant permission to pollute. Drawing on her experience as a historian of science, a science policy expert, and a resident of a deeply divided city, Wolfe asks: What is the right role for scientists when evidence and expertise are subject to political limits?

Can Scientists Successfully Speak Truth to Power?
- 11:00 – 11:45 AM EST
- Type: Scientific Session
- Organizer: Luke Clarke
- Moderator: Robin Grimes
• **Papers:**
  - The Importance of Effective Science Communication for the Post-COVID Age – Jim Al-Khalili
  - How Science Advice Can Empower Better Management of the Planet – Agnes Kalibata
  - The complexities of communicating Science and Science advice – Krishnaswamy VijayRaghavan

• **Synopsis:** Over the past 18 months, the relationships between science, politics, science advice, uncertainty, and evidence have come under unprecedented scrutiny as a result of the COVID-19 pandemic. The aim of this session is to explore the key lessons for science communication and science advice from the past year’s events and discuss what they mean for ensuring successful engagement between scientists, governments, and the public in future. A diverse panel of senior science advisers, recipients of science advice in government, and experts on science communication and risk will provide their perspectives on the key issues and identify possible ways forward. In particular, they explore the implications of these lessons for taking action on future crises of all kinds, whether ongoing environmental challenges such as climate change and biodiversity loss, or those which are on national and international risk registers but have not yet materialized such as future pandemics and cyberattacks; the structures, cultures, and infrastructure that may predispose a nation to being empowered by science advice, and their resilience to political change, which may include why there has not always been a correlation between strong scientific advisory mechanisms and good COVID-19 operational outcomes; and the limits to science advice and the trade-offs required with other critical policy considerations such as cost/benefit, risk, feasibility, acceptability, opportunity, and cost.

**Human Neural Organoids, Transplants, and Chimeras: Science, Ethics, Governance**

- 11:00 – 11:45 AM EST
- **Type:** Scientific Sessions
- **Organizer:** Anne-Marie Mazza
- **Moderator:** R. Alta Charo
- **Papers:**
  - New Methods for Studying the Cells and Circuits of the Human Brain – Joshua Sanes
  - The Promise of New Models for Understanding Brain Disorders – Paola Arlotta
  - Addressing Ethical Concerns Related to Advanced Models for Human Brain Research – Bernard Lo

• **Synopsis:** Tens of millions of individuals in the United States suffer from neurological and psychiatric disorders including neurodegenerative diseases such as Alzheimer’s disease and Parkinson’s disease, and psychiatric disorders such as autism spectrum disorder, depression, and schizophrenia. Treatments for these diseases are often completely lacking or only partially effective, due in large part to the inadequacy of animal models of brain disorders and the difficulty of conducting research on the human brain. In a recently released report, *The Emerging Field of Human Neural Organoids, Transplants, and Chimeras: Science, Ethics, and Governance*, the U.S. National Academies of Sciences, Engineering, and Medicine noted that researchers in recent years have developed new models to better represent and study the human brain, but that these models raise important ethical and regulatory issues. This session will discuss three such models, all of which generate and use pluripotent stem cells from healthy individuals and patients: human neural organoids, human neural transplants, and human-animal neural chimeras. It will review the status of research with these three models, consider the benefits and risks of the research, discuss associated ethical issues, and consider governance mechanisms for this type of research.
Faculty Make For Excellent Science Policy Fellows
- 11:00 – 11:45 AM EST
- Type: Workshops
- Coordinator: Jessica Soule
- Presenters: Jessica Soule, ConSandra McNeil, and Fernando Bruno
- Synopsis: One common assumption about the AAAS Science and Technology Policy Fellowships (STPF) program is that eligibility is limited to early career professionals. STPF welcomes fellows from all career stages including mid- and senior-career scientists seeking a sabbatical, public service, personal growth, or career transition. Join a conversation with faculty members who spent a year as fellows. Hear how they navigated the sabbatical or leave of absence process. Find out how they balanced research, teaching, and advising responsibilities during the fellowship. Learn how the fellowship can translate into new collaboration, research, teaching, and partnerships at your home institution. The session will be driven by audience Q&A.

Science Communication in a Diverse World
- 12:00 – 12:45 PM EST
- Type: Scientific Session
- Organizers: Bruce Lewenstein and Sunshine Menezes
- Moderator: Sunshine Menezes
- Respondent: Name
- Papers:
  - Science Communication in Multiple Languages is Critical to Its Effectiveness – Ana Maria Porras
  - Neglected Spaces in Science Communication: Communities, Subjects and Approaches – Clare Wilkinson
  - Amplifying Diverse Voices and Re-imagining Science Spaces Through Audio – Rackeb Tesfaye
- Synopsis: This session will present data and examples to explore the need for science communication practice and research that acknowledges how different experiences of the world shape people’s understandings of, and relationships with, science. What are the implications of this acknowledgement for science communication across its many settings, from lectures and one-way media to more interactional public engagement activities? As a 2021 PNAS article said, "Personal experiences bridge moral and political divides better than facts." Researchers need to think hard about what they mean by "evidence" that empowers, the theme of this meeting. For people of different genders or races, or people who come from different parts of the world or who speak different languages, who connect with different knowledge systems, "evidence" doesn't necessarily mean "facts." It might mean evidence of trust, or evidence of acknowledgement of difference, or evidence of understanding of historical inequity, or evidence of knowledge of a place. A science fair or a brilliant lecture or even a community engagement meeting with scientists who think of themselves as ultimately representing "facts" may not be the right science communication for a complex and diverse world. This session will feature speakers working across and beyond the traditional boundaries of science communication to highlight approaches that center experiential forms of evidence.

Understanding Changes in Global Science Attitudes during the COVID-19 Pandemic
- 12:00 – 12:45 PM EST
- Type: Scientific Session
- Organizer: Eric Jensen
- Moderator: Eric B. Kennedy
- Respondent: Name
Papers:
- Understanding Drivers of Irish and German Public Trust in Science and Scientists – Eric Jensen
- Explaining Public Response to Science over the Course of the Pandemic – Cary Funk
- Explaining Public Trust in Science over the Course of the Pandemic – Ethan Greenwood

Synopsis: The pandemic’s impact on public trust in science, scientists, and medical professionals will be one of the lasting legacies of this era. Public trust is critical not just in successful health messaging but also in maximizing vaccine uptake, attitudes about investment in scientific research, and other key outcomes. The 2020 and 2021 global polling data presented can help the scientific community get a deeper understanding of how the public’s engagement with their efforts at controlling the pandemic varied within and between countries. This includes variance by age, gender, education level, geographical area, and ethnicity. Drawing on high-quality survey research using probability-based samples (including the Wellcome Global Monitor, the largest multi-country random probability study at the time), this session will explain how the pandemic affected trust in scientists, medical professionals, and other key indicators of trust in science. The session explores key aspects of the public’s relationship with science at this critical time, such as: Do people trust scientists to act competently, honestly, and in the public interest? Does the public think that political leaders value scientific advice? How has scientific evidence factored into their own decisions about how to navigate this public health crisis? Findings show important inequalities in how different groups in society have been empowered with scientific evidence over the course of the COVID-19 pandemic.

Lessons for the Scientific Community on Activism and Movement Building
- 12:00 – 12:45 PM EST
- Type: Workshops
- Coordinators: Melissa Varga and Fernando Tormos-Aponte
- Presenters: Dana Fisher, Dominic Bednar, and Fernando Tormos-Aponte
- Synopsis: Using evidence from social science and other movements, the scientific community can learn how to build a stronger, more inclusive science advocacy movement. This workshop will bring together movement scholars and scientist-advocates to explore how to build upon the strengths of the science advocacy movement, and learn from and coordinate with other movements in solidarity to work together for a healthier, safer, more just future. The workshop will feature case studies and stories about movement building on the ground. Workshop participants will have the opportunity to participate in exercises that help them explore different levels, from individual, institutional, and cross-movement collaboration, to take action and get involved.

Missed and Future Opportunities: What Have We Learned from COVID-19 in the U.S.?
- 1:00 – 1:45 PM EST
- Type: Scientific Session
- Organizer: Roxane Cohen Silver
- Moderator: Fenit Nirappil
- Respondent: Name
- Papers:
  - Risk Communication Should be Strategic, Not an Afterthought – Baruch Fischhoff
  - Epistemic Humility in a Time of Global Pandemic – Sandro Galea
  - Have We Survived the Trauma of COVID-19?: Looking Backward and Forward – Roxane Cohen Silver
- Synopsis: Since the novel coronavirus SARS-CoV-2 emerged in China in early 2020 and rapidly spread to countries across the world, researchers have confronted a difficult reality. A viral outbreak was widely anticipated among scientists, yet the world was strikingly unprepared for the speed of transmission and widespread death. Moreover, the United States experienced a tragic amount of illness and loss, despite
a robust research infrastructure. This interdisciplinary symposium will examine the quality and quantity of research evidence in the behavioral and social sciences collected both before and during the pandemic, with a particular focus on the scientific fields of risk communication, epidemiology, and trauma psychology. What do these sciences have to tell policymakers and the public at large to ensure that the U.S. and the world emerge from this pandemic stronger and better able to anticipate and respond to future infectious disease outbreaks, which virologists tell us are inevitable in the future? And how can journalists be best enlisted across the media landscape to communicate sciences to the end users of research? As all emerge from the COVID-19 pandemic, this is an imperative for scientists from across the fields of public health, public policy, and mental health.

Science Diplomacy Fellowships: Crafting the Pipeline to Evidence-Informed Policy
- 1:00 – 1:45 PM EST
- Type: Workshops
- Coordinator: Lyndsey Gray
- Presenters: Marcella Ohira and Marga Gual Soler
- Synopsis: Following the COVID-19 pandemic, the demand for a more transdisciplinary approach to global challenges and the importance of international collaboration and science diplomacy has never been higher. Researchers must develop skills for non-academic career paths that utilize their knowledge and talents for the benefit of society. This workshop explores the role of policy fellowships across the globe as a key pipeline to train and connect the next generation of science diplomats. The audience will discuss: What kind of skills do science diplomacy leaders need? Why and how to connect to a global network of fellows? What programs already exist and what are the enablers and barriers for building science diplomacy capacity across the Americas?

Being a Scientist in the COVID-19 Crisis Room: Reflections from the Inside
- 2:00 – 2:45 PM EST
- Type: Scientific Session
- Organizer: Jan Marco Müller
- Moderator: Jan Marco Müller
- Papers:
  - Informing the World Health Organization’s Response to COVID-19 – Maria Van Kerkhove
  - Informing Italy’s Response to COVID-19 – Silvio Brusaferro
  - Informing New Zealand’s Response to COVID-19 – Juliet Gerrard
- Synopsis: The COVID-19 pandemic has been an unprecedented challenge not only for the health care sector and public health policies, but also for government science advice. Policymakers claiming to be “led by the science” posed an enormous responsibility on scientists and science advisors. While researchers across the globe rushed to develop life-saving vaccines with impressive speed and success, science advisors were informing policy decisions necessary for the management of the pandemic. This happened often under great time pressure, in the face of uncertainty and a dynamically evolving situation, and with public scrutiny of the advice given. This session will bring together three science advisors who became faces of the pandemic. They provided evidence to the very core of pandemic decision-making, being present in the (mostly virtual) crisis rooms where decisions were taken. They will reflect on the personal experiences gained in their roles: What worked? What didn’t work? What surprised them? When was evidence taken up, when was it ignored and why? How was their work hampered by the “infodemic” of anti-vaxxers and conspiracy theorists? How did they manage to bridge the gap between the need of being a voice of reason and the desire to show compassion with the loss of human beings? How did the pandemic change their own lives? The session aims at distilling from these personal experiences lessons to be learnt for science advice in crisis situations.
Ocean Diplomacy: How Common Threats to Shared Resources Can Overcome Politics

- **2:00 – 2:45 PM EST**
- **Type:** Scientific Session
- **Organizers:** Fernando Bretos and Katie Thompson
- **Moderator:** Fernando Bretos
- **Papers:**
  - Sargasso Sea Commission: A New Paradigm for High Seas Ecosystem Governance – David Freestone
  - Ocean Acidification Med Hub – Abed El Rahman Hassoun
  - U.S. - Russia Cooperation in the Bering Sea – David Gordon
- **Synopsis:** Ocean diplomacy is a tool to encourage countries with adversarial political relationships to conceive solutions to common threats. As climate change and ocean health are urgent global issues, solutions must occupy higher ground. Ocean diplomacy buoyed relationships between the United States and Russia, even during the height of the Cold War. With renewed political tension, U.S. and Russian scientists survey shared resources such as walruses and polar bears in the Arctic. The Gulf of Mexico Marine Protected Area Network, born out of the 2014 rapprochement between the U.S. and Cuba, recruited Mexico to what is now a regional network of 11 protected areas. It was created via the Trinational Initiative for Marine Science in the Gulf of Mexico, a working group that since 2007 unites scientists from the three nations to conduct collaborative research. Ocean Acidification Med-Hub gathers scientists studying OA in the Mediterranean to share science to impact policy. Over 50 scientists from 11 northern and southern Mediterranean countries work together in spite of animosity. The Sargasso Sea Commission binds 10 countries that border a two million-square mile of open ocean ecosystem under the Hamilton Declaration, which helps manage jurisdiction and use of high seas resources. Ocean diplomacy is the work of intrepid scientists, many working behind the scenes to advance regional goals. Scientists often become ambassadors heralded by their countries for bridging the political gap.

The Science of Combating Disinformation

- **2:00 – 2:45 PM EST**
- **Type:** Scientific Session
- **Organizer:** Daniel Rogers
- **Moderator:** Daniel Rogers
- **Papers:**
  - The Collective Chemistry Driving Online Dangers: U.S. Extremism and Beyond – Neil Johnson
  - Misinformation During a Pandemic – David Yanagizawa-Drott
  - Can “Inoculation” Build Broad-Based Resistance to Misinformation? – Beth Goldberg
- **Synopsis:** Nearly 3 billion people learn about the world through the personalized, manipulated lenses of newsfeed algorithms and recommender systems, which algorithmically presents users with individualized warped realities designed to monopolize their attention at the cost of everything else. The resulting degradation of the information environment following the rise of the attention economy presents one of the gravest threats post-Enlightenment civilization has faced. Disinformation, the intentional exploitation of the degraded information environment by actors whose motivations range from geopolitical to financial to purely nihilistic, follows discernible patterns that can be studied scientifically. This session presents rigorous studies of online behaviors that give rise to disinformation and extremism, the risk of resulting harms, and potential interventions. Research shows that the generalized dynamics of virality on social media follow the physics of shockwaves in heterogenous mixtures. Research also demonstrates robust and statistically significant correlations between
individuals’ information environments and their health outcomes during the COVID-19 pandemic. Inoculation theory, drawn from the field of epidemiology, can help stem the rise of disinformation and extremism. These results offer an optimistic view that deeply understanding the science of disinformation can empower people with the evidence they need to successfully combat it and thwart the onset of another Dark Age.

**Data Decision to Action: Public Data Infrastructure for Scientific Discovery**

- **3:00 – 3:45 PM EST**
- **Type:** Scientific Session
- **Organizer:** Marisa Rudolph
- **Moderator:** Marisa Rudolph
- **Papers:**
  - Leveraging Existing Bioenergy Data: The Power of Public Private Partnerships – Elizabeth Burrows
  - Links between Indigenous Governance, Data, Environment, and Community Wellness – Stephanie Russo Carroll
  - Partnerships for Data Sharing: Government, Scientists, Clinics, and Communities – Julianne McCall
- **Synopsis:** Generation of scientific data is increasing exponentially, and with it the potential for scientific innovation. However, the activation energy needed to turn this multitude of data into discoveries remains a hurdle to unlocking progress. In order to process mass amounts of data it needs to be FAIR - findable, accessible, interoperable, and reusable. Having access to FAIR data comes with the responsibility to use it ethically, as laid out in the CARE (collective benefit, authority to control, responsibility, and ethics) Principles. In order to make data FAIR and people-centric as CARE emphasizes, while engendering public trust takes an integrated approach. Research scientists, data scientists, and software developers in industry, academic, and policy settings must work together to meet these standards and use data for advancing our society. This type of effort requires the building of cross-disciplinary collaborative networks and innovative distributed systems. With the building of quality public data infrastructure, the potential of the scientific community's data, and the data it is constantly producing can be harnessed to respond to public health crises faster, create new solutions for dealing with climate change, and lead to better societies. This session will introduce actors across the data sphere and showcase state-of-the-art examples of public data infrastructure supporting scientific discovery and innovation in climate change, health, and policy.

**2022 Science Policy Networking Mixer**

- **5:30 – 7:00 PM EST**
- **Type:** Special Sessions
- **Synopsis:** Each year, the AAAS Science & Technology Policy Fellowships (STPF) program looks forward to the #scipol (science policy) networking event of the year: the STPF Science Policy Networking Mixer! This year, we’ll gather online and ask that you join us for a unique networking experience to see how our science policy folks are faring and catch up with colleagues. Choose a breakout room, cool zoom background, and virtually mingle with current fellows, alumni, professionals, and other individuals who have a shared interest.
Kate Starbird: Unraveling the Big Lie: Participatory Disinformation and its Threat to Democracy
- 10:00 – 11:00 AM EST
- Type: Special Sessions
- Speaker: Kate Starbird
- Moderator: Lisa Chong
- Synopsis: In this talk, Starbird will present research results from ongoing efforts to understand the spread of disinformation about the 2020 Election. First, she will describe the work of the Election Integrity Partnership — a multi-stakeholder collaboration that addressed mis- and disinformation about the 2020 United States election in (near) real-time through rapid response data science. Next, she will discuss analyses to show how the “Big Lie” — the sustained effort to sow doubt in the results of the 2020 election — took shape on social media platforms throughout the latter half of 2020. She will reveal some of the “super spreader” accounts that helped produce and sustain this disinformation campaign. She will also highlight the campaign’s participatory nature, and show how the production of online disinformation integrates the activities of elites in politics and media with the work of online crowds. Finally, she will conclude with reflections on the threat of pervasive disinformation to democratic societies and offer some recommendations for what can be done to address this critical challenge.

Building a Resilient Society through Evidence and Trust
- 11:00 – 11:45 AM EST
- Type: Scientific Sessions
- Organizer: Atsushi Arakawa
- Moderator: Michinari Hamaguchi
- Papers:
  - Pros and Cons of Bringing Mathematical Models to Decision-Making Process – Hiroshi Nishiura
  - New Challenges for the Accessibility of Research in a Transforming Society – Chieko Asakawa
  - Co-creation to Catalyze Trust and Resilience – Jacqueline Meszaros
- Synopsis: The COVID-19 pandemic has highlighted the importance of scientific knowledge in decision-making, and forced people to address how science and society can develop the trust necessary for citizens to accept such decisions. Japan has learned from disasters like the tragic East Japan Earthquake that a “co-creation mechanism” is key to overcome these challenges. Even during non-emergency times, discussions on social issues among scientists and stakeholders from diverse fields foster a system that enables decision-making based on transparent scientific evidence and mutual trust. It is an important foundation for social empowerment, and for building a resilient society. This session will review how scientific evidence was incorporated into the decision-making process regarding the COVID-19 pandemic in Japan, and discuss how to build trust between citizens and the scientific community. This session will also discuss a funding mechanism to empower scientists in the United States to engage in "co-creation," and explore how scientists can work together to create new socioeconomic value and resilience.

Research Data Infrastructure: National Projects and International Collaboration
- 11:00 – 11:45 AM EST
- Type: Scientific Sessions
- Organizer: Georg Bechtold
- Moderator: Johannes Fournier
• **Papers:**
  - Germany's National Research Data Infrastructure and its European Integration - York Sure-Vetter
  - Distributed but Federated: Scalable Designs for FAIR Data in Materials Science – Robert Hanisch
  - Google Dataset Search: How to Find Datasets Stored Across the Web – Natasha Noy

• **Synopsis:** In 2020, the development of vaccines against and treatment for COVID-19 had once again accentuated the urgent need to improve the infrastructure supporting the use of research data on an international level while money for building a data backbone for the global research enterprise is still controlled primarily on a national level. Internationally, a big leap towards coordination has been made with the “FAIR Guiding Principles for Scientific Data Management and Stewardship” published in 2016 in Nature Scientific Data. Rather than establishing standards, FAIR provides principles (Findable, Accessible, Interoperable, and Reusable) for the organization of research data and their metadata turning them into digital assets for a variety of stakeholders such as academia, industry, funding agencies, and scholarly publishers. Moreover, with an emphasis on machine-actionability a future research data infrastructure built according to those principles offers the potential of data use and mining with none or minimal human intervention and thus stays abreast of an increasing volume, complexity, and creation speed of data. This session will bring together the different perspectives of research organizations, the private sector, research funding agencies from the United States and Germany/Europe, and last but not least some experiences with the European Open Science Cloud (EOSC) to discuss how to best coordinate national research data infrastructure projects for an international benefit.

**Injecting Science into Local Decision-Making**
- **11:00 – 11:45 AM EST**
- **Type:** Workshops
- **Coordinators:** Christopher Jackson and Arti Garg
- **Presenters:** Arti Garg, Savannah Thais, and Christopher Jackson
- **Synopsis:** Social issues ranging from COVID-19 to climate change have highlighted the role of science in local decision-making processes. Scientists and engineers too often don't engage in city, county, and state governments. Local government provides a high-impact pathway for individuals with science, technology, engineering, and mathematics (STEM) backgrounds to shape policy in their community, but it can be difficult to know where to start. This session will feature scientists and engineers at a variety of career stages who have used their backgrounds to successfully engage on local issues in their communities. Participants will also be provided with the tools to take concrete next steps in developing their own local engagement plans.

**Climate Action to Protect and Promote Health: Building and Sharing the Evidence**
- **12:00 – 12:45 PM**
- **Type:** Scientific Sessions
- **Organizers:** Volker ter Meulen and Johanna Mogwitz
- **Moderator:** Robin Fears
- **Papers:**
  - Climate Change: A Grand Challenge for Human Health and Equity – Victor J Dzau
  - Climate Change and Health in the Americas: From Impact to Action – Sherilee L Harper
  - Climate Change and Health in Africa: From Impact to Action – Deoraj Caussy
• **Synopsis:** Climate has a range of effects on health but effective adaptation and mitigation strategies can reduce impacts and improve health. The InterAcademy Partnership (more than 140 academies of science, engineering, and medicine) and the U.S. National Academy of Medicine share findings from new academy projects in the Americas and Africa to link global research and public policy development, covering both direct and indirect adverse climate effects on health. The design of the studies is novel, taking transdisciplinary and cross-sectoral perspectives, ensuring inclusivity of issues for lower income countries, Indigenous People, and other vulnerable groups in support of a systems-based approach to tackle priorities for developing resilient and equitable health systems under climate change. These priorities include impacts of heat, flooding, extreme weather events, air pollution, food insecurity, infectious diseases, and migration. It focuses on examples of good practice in devising integrated adaptation and mitigation solutions and shows how available evidence can inform policy, and identify knowledge gaps to fill. The concurrent health crises of COVID-19 and climate change are unprecedented threats but there are also unprecedented scientific opportunities to drive innovation, integrate evidence-based policy at national, regional, and global levels, and empower individuals and communities to effect transformative change in support of the United Nations Sustainable Development Goals.

**Why Diversity and Inclusion Initiatives Matter in STEM: The Evidence**
- 12:00 – 12:45 AM EST
- Type: Scientific Sessions
- Organizers: Jennifer Curtis and Norma Alcantar
- Moderator: Lorelle Espinosa
- Papers:
  - The Evidence in Higher Education – Darryll Pines
  - The Evidence at the Department/Division/Group Level – Matthew Francis
- **Synopsis:** Want to convince a department chair, manager, co-worker, or friend why diversity-focused initiatives in STEM are essential, matter, and how can they impact higher education? It may seem shocking, but many just do not know the facts or have a perception that does not follow the true trends. This session offers evidence to make a case for the benefits of diversity in the academy and in the workplace, as well as the facts on the negative effects of implicit bias. For instance, having a heterogenous representation in campuses is connected to the development of cross-cultural interactions which encourage students to show positive impacts on racial understanding and openness to accepting diverse social identities. Another outcome will be to discuss sources for misinformation/deception and mitigating strategies to counteract misrepresentation. Such biases and deceptions can influence resistance to inclusive teaching or promote a lack of awareness for cultural richness. Similarly, biases suppress creativity and inclusion of representatives of various cultural identities. Compelling research from McKinsey, Gallup, education data, and peer-reviewed studies will be presented that can motivate change and alter perspectives and priorities. Specific focus areas will include the following: productivity, innovation and outcomes, role models, cultural competence, climate, community, recruitment, performance evaluation, retention, and support programs.

**Empowering Non-Coastal States to Develop Climate Change Resilience Policies**
- 12:00 – 12:45 PM EST
- Type: Workshops
- Coordinators: Deborah Stine and Joan Centrella
- Presenters: Deborah Stine, Katherine Himes, and Jeff Dukes
• **Synopsis:** In non-coastal states, only 30-40 percent of state residents (compared to 43 percent nationally and 50 percent in coastal counties) indicated they believed they would be personally impacted by climate change, according to a 2020 Yale Program on Climate Change Communication study. During this workshop, presenters from Idaho, Indiana, and West Virginia will illustrate how they worked with the public as well as business, government, and nonprofit leaders to conduct analyses on the impact of climate change in their states and sometimes recommend policies to increase their state’s resilience in response. Participants can then use these activities as a starting point to conduct similar activities in their own communities and states.

**So You Want to Be an S&T Policy Fellow?**

- **1:00 – 1:30 PM EST**
- **Type:** Expo Events
- **Synopsis:** Ever wonder what it takes to be a AAAS S&T Policy Fellow? Join this virtual discussion about what makes a compelling application and how to be prepared for this year’s policy fellowship application season. The session will focus on the nuts and bolts of eligibility, application components, interview process and review criteria. The session will be conversational and tailored to the questions of attendees. Ideal for those who are planning to apply to STPF in 2022.

**How Have Studies of Crime Impacted Criminal Justice Policy and Racial Inequity?**

- **1:00 – 1:45 PM EST**
- **Type:** Scientific Sessions
- **Organizers:** Linda Teplin and Madeline Lag
- **Moderator:** Daniel Nagin
- **Papers:**
  - How Neighborhood and Life-Course Research Informs Criminal Justice Policy – Robert J. Sampson
  - Long-Term Outcomes of Juvenile Justice Youth: How Data Drives Reform – Linda Teplin
  - Successes and Failures Using Scientific Research to Inform Policy Decisions – Alex Piquero
- **Synopsis:** Although crime rates in the United States have dropped since the late 1990s, serious crimes such as homicide, robbery, and sexual violence are still more common than in most comparably developed countries. Homicide rates are 17 times higher in the U.S. than the United Kingdom. The U.S. also has one of the highest incarceration rates among industrialized nations, including oppressive regimes. African Americans are disproportionately affected. In the past decade, the U.S. National Institute of Justice has spent $1.9 billion on empirical studies to address crime. How have these studies affected criminal justice policy? This interdisciplinary session convenes four behavioral scientists who have spent decades studying crime. Among the topics they will discuss: The Project on Human Development in Chicago Neighborhoods, a 25-year longitudinal study that examines how family, school, and neighborhood characteristics affect criminal behavior in juveniles and adults; the Northwestern Juvenile Project, a 25-year longitudinal study of needs and outcomes of detained youth that has precipitated reform in the juvenile justice system; and a body of studies focusing on successes and failures in the implementation of scientific research designed to reduce crime. The moderator will summarize how empirical evidence has guided criminal justice policy and recommend future directions to advance reform and reduce racial injustice.

**Federal R&D: Update and Outlook for FY 2022**

- **1:00 – 1:45 PM EST**
- **Type:** Special Sessions
• **Speakers:** Matt Hourihan, Deborah Altenburg, and Paul Doucette
• **Synopsis:** With much of the year already gone, Congress is still grappling with annual appropriations— with potentially big increases for science on the agenda. Join DC experts for an up-to-the-minute breakdown of where research funding stands.

**Evidence-Based Practices for Promoting Evidence-Based Policies**
• 1:00 – 1:45 PM EST
• **Type:** Workshops
• **Coordinator:** Taylor Scott
• **Presenters:** Brittany Gay, Jessica Pugel, and Toria Herd
• **Synopsis:** The gap between research and policy is widely recognized, yet ironically most strategies aiming to bridge research and policy are not evaluated rigorously. This interactive workshop details three strategies that have been empirically shown to improve legislators’ research engagement: being an “honest broker,” effectively establishing credibility, and using storytelling to convey research. Attendees will be guided through drafting a fact sheet outline and email for distribution to policymakers. By using evidence-based strategies for improving science communication and engagement, scientists can increase their impact by supporting policymakers’ research use.

**Pathways to a Career in Science Policy**
• 2:00 – 2:30 PM EST
• **Type:** Coffee Chat
• **Synopsis:** In this ESEP-sponsored coffee chat, attendees will be encouraged to ask and answer questions about finding science policy jobs (both with and without a fellowship), share tips for applying, and reminisce about best and worst job stories. Invited speakers—all science policy professionals with a diversity of job experiences and backgrounds—will share their pathways to policy and encourage attendees to think outside the box.

**Science for Policy in the Covid Era: Issues and Prospects of Asia and the U.S.**
• 2:00 – 2:45 PM EST
• **Type:** Scientific Sessions
• **Organizers:** Hiroshi Nagano and Hyun-Chin Lim
• **Moderator:** Peter Kirby
• **Papers:**
  - A Brief History of Japan’s Scientific Advising, or How It Does Not Work So Well – Kenji Ito
  - The ASEAN’s Responses to Covid-19: Science-Policy-Society Nexus – Ying Hooi Khoo
  - Science for Policy: Thomas Jefferson to COVID-19 – Tomoko Steen
• **Synopsis:** Science for policy is a question of how scientific knowledge is applied to policy. Everyday problems, such as disaster prevention, the environment, medical treatment, and the economy are related to science. Decision-making in politics and industry is impossible without scientific knowledge. In recent years, the advice of scientists has become extremely important. Many Organization for Economic Co-operation and Development countries, including the United States and those in Europe, take social and scientific cooperation seriously, develop and institutionalize methodologies for and solutions to scientific communication problems, and actively collaborate with scientists in government and parliamentary policymaking. Recently—not only since the COVID-19 pandemic—some Asian countries have required scientific knowledge to solve problems such as SARS, avian influenza, and the Fukushima nuclear power plant accident, and science for policy has not been fully used. Damage can spread and the reliability of science has been lost. An independent policy advisory system based on a
consensus of scientists from different fields is essential. While policy advice from scientists is relatively successful in Korea and Taiwan, it is developing in Japan and Association of Southeast Asian Nations countries, where scientific knowledge is sometimes arbitrarily used for political purposes. This session will compare Asian countries and the U.S., and discusses the potential of an independent policy advisory system.

Queering STEM: Policies to Increase LGBT+ Retention
- 2:00 – 2:45 PM EST
- Type: Workshops
- Coordinators: Kolin Clark and Colbie Chinowsky
- Presenters: Kolin Clark, Anna Dye, and Shane Coffield
- Synopsis: This workshop will present the current state of research on LGBT+ attrition in science, technology, engineering, and mathematics (STEM) in the United States and the United Kingdom, offering potential policy solutions to increase retention. Through a collaboration between National Science Policy Network and the U.K. Science and Innovation Network, the team will present collated data on LGBT+ attrition and policy recommendations. It will share data from informational interviews of government, academic, university, funding agency, and nonprofit stakeholders. The audience should leave with knowledge of best practices and understanding of LGBT+ attrition and U.S. and U.K. remedies.

Navigating the Multilevel Governance for Science Advice in the European Union
- 3:00 – 3:45 PM EST
- Type: Scientific Sessions
- Organizers: Emanuela Bellan and Stijn Verleyen
- Moderator: Karen Akerlof
- Papers:
  - Bringing Science and Policy Closer Together in a Regional Ecosystem – Mikel Irujo
  - Fostering the Role of Scientific Evidence in Multilevel Policy-Making Processes – Andrea Schneider
- Synopsis: The pandemic has shown the importance of science to underpin policymaking. Excellent scientific output is not enough -- the main challenge is to bridge the gap between science and policy. This requires a variety of mechanisms, tools and institutionalized pathways, allowing the analytical power of research to inform the normative universe of policymaking. The European Union (EU) is an interesting case in point, as a multilevel policymaking system. Legislation at EU level trickles down to member states, which have their own areas of competence. Implementation of policies at the local level also needs to be evidence-informed. The European Commission’s Joint Research Centre (JRC) addresses each of these levels, by producing relevant knowledge, but also by connecting and boosting the various ecosystems of science for policy. This session will explore the importance of thriving and well-connected science for policy ecosystems. The session will offer a diversity of perspectives from the EU, national and subnational levels, and show how JRC is actively supporting and connecting these through tools like Science meets Regions and the e-workshops on science for policy ecosystems. Keynote presentations will be followed by an open discussion about how to navigate the different governance levels in EU policymaking, and what general messages can be distilled from the EU experience in a broader international context. A comparative perspective with the United States will be included.
At a Crossroads: Academia, Industry, Government—and a Workforce that Works for All

- **3:00 – 4:00 PM EST**
- **Type:** Special Sessions
- **Moderator:** Gilda Barabino
- **Speakers:** Babak Parviz and Sethuraman Panchanathan
- **Synopsis:** The Honorable Sethuraman “Panch” Panchanathan is a computer scientist and engineer and the 15th director of the U.S. National Science Foundation (NSF). NSF is an $8.3B independent federal agency and the only government agency charged with advancing all fields of scientific discovery, technological innovation, and STEM education. Dr. Panchanathan has a distinguished career in science, technology, engineering, and education that spans more than three decades. Babak Parviz is an electrical engineer by training. His research interests lie in photonics and nanodevices and biosystems. He holds degrees from the University of Washington (BA), Sharif University of Technology (BSE), University of Michigan (MS, PhD). From 2010 to 2014, Babak worked at Google, where he was a Google Distinguished Engineer and a Director at Google[x]. He is the creator of Google Glass and founded, built, and led the Google Glass program from 2010 to 2013. He is also the co-founder of the Smart Contact Lens program at Google. In 2014, he joined Amazon, where he has since led projects such as Comprehend Medical (machine learning for healthcare); Echo Frames (look up from the phone and take artificial intelligence with you anywhere); Amazon Care (cloud medicine for Connected Care); Amazon Explore (teleportation); and Amazon Glow (togetherness through remote play).

Sunday, February 20, 2022

Kyle Whyte: Against Crisis Science: Research Futures for Climate and Energy Justice

- **10:00 – 11:00 AM EST**
- **Type:** Topical Lectures
- **Moderator:** Kim Montgomery
- **Speaker:** Kyle Whyte
- **Synopsis:** Research on climate change and energy is often put forward as science that addresses today’s global environmental crisis. There is moral and epistemic urgency to ask scientific questions that will engender knowledge of and solutions for climate change. For diverse Indigenous peoples, the issues and solutions being studied have promises and perils for environmental justice. Climate and energy justice problems -- as Indigenous peoples experience them -- are rarely represented fairly in research. Moreover, there is evidenced concern that some researchers are not taking seriously enough that some prominent solutions to climate change will foster further degradation and dispossession of Indigenous territories. There are already cases of solutions to climate change whose implementation relies on the same colonial tools and institutions that Indigenous peoples have resisted for generations. Better pathways are needed for science to relate to environmental justice, both in terms of research itself and the risks of climate solutions. One starting point for developing such pathways is a critical assessment of the assumptions about the nature of the global environmental crisis that drive the urgency of certain scientific questions. The critical assessment of the meaning of crisis holds major insights into what questions about climate and energy are genuinely conducive for a future of Indigenous justice. Deep reforms to the leading assumptions about the meanings of justice and crisis are crucial next steps for scientists who seek to stand with communities affected by climate and energy injustice.
When Evidence Is Not Enough: The Science of Misinformation

- **11:00 - 11:45 AM EST**
- **Type:** Scientific Sessions
- **Organizer:** Sarah Brown-Schmidt
- **Moderator:** Nora Benavidez
- **Papers:**
  - Why Misinformation Is a Problem: The Effects of Repetition and Knowledge Neglect – Lisa Fazio
  - How Epistemic Motivations and Political Attitudes Fuel Misinformation – Dannagal Young, Erin Maloney, Amy Bleakley, and Jessica Langbaum
  - Using Behavioral Nudges to Reduce the Spread of Misinformation on TikTok – Lindsay Juarez
- **Synopsis:** Everyday people are bombarded with large amounts of new information, some of it true, some of it false, and much of it contradictory. How do they decide what to believe and what to discard? With eroded public trust in science and skepticism of evidence-based recommendations, false claims are reverberating throughout networks of people, resulting in real and tangible harms to both individuals and social institutions. This session will focus on the psychological predictors of belief and how people come to believe false information. Three panelists will present new empirical findings and discuss why it is difficult to detect misinformation even when it contradicts prior knowledge, how bad actors manipulate partisan differences to spread false information, and how to fight back and prevent belief in misinformation. This session will showcase the state of knowledge in the scientific study of misinformation and will demonstrate how misinformation is being actively combated in Silicon Valley using evidence from this scientific research. By focusing on real-world misinformation in fast-changing popular social media and internet outlets, this symposium is uniquely positioned to inform policymakers, industry leaders and educators on the harms of misinformation and evidence-based solutions. The session will illustrate how we can leverage the science of knowledge, paired with the technological power of industry to prevent and combat misinformation in daily life.

Inclusive Science Policy Analysis and Tools

- **11:00 AM - 11:45 AM EST**
- **Type:** Workshops
- **Coordinator:** Holly Mayton
- **Presenters:** Ans Irfan and Marissa Ramirez
- **Synopsis:** Science and policy do not exist in a vacuum, and it is not enough to base policy decisions on scientific evidence and data alone. In order for science policy to contribute to transformative social change, justice, and equality, it is essential that scientists’ contributions to policy take communities’ views, values, and needs into account, factoring ethics and equity into conclusions and recommendations. This workshop will introduce several tools, best practices, and concepts for inclusive policymaking, as well as applications in science policy, followed by Q&A and a case study exercise in virtual breakout rooms. Participants will strengthen their skills for incorporating equity, ethics, and inclusivity into future science policy projects.

Communicating the Future: An Agenda for Engaging the Public with Basic Science

- **12:00 - 12:45 PM EST**
- **Type:** Scientific Sessions
- **Organizer:** Keegan Sawyer
- **Moderator:** Katherine E. Rowan
Papers:

- Toward an Integrated Framework for Engaging the Public with Basic Science – Rick Borchelt
- Developing Training and Resources for Scientists Working in Discovery Research – Brooke Smith
- A Research Agenda for Understanding Public Engagement with Basic Research – Sara Yeo

Synopsis: Public engagement around basic science is neither well understood nor well studied. Are there opportunities and challenges unique to basic research that should inform, and potentially change, public engagement strategies? In July 2021, The U.S. Department of Energy’s Office of Science and The Kavli Foundation shared a series of commissioned landscape studies and convened a broad segment of stakeholders for a conference to address this gap by exploring the characteristics of public engagement in basic research with the goal to ensure that basic science engagement is supported, sustainable, and effective. What are goals for public engagement with basic science? Do they differ from applied science? Are curiosity and awe drivers of public interest in basic science? Can they draw attention to basic science from members of the public, including policymakers, who are typically uninterested in discovery research? The session will discuss and amplify the findings of these activities as well as point to evidence-based directions in scholarship, training, and practice that could be explored moving forward for scientists and organizations seeking to increase the impact of their public engagement with basic science programs.

Generating Evidence to Empower Crime and Justice Policy to Reduce Harm

- 12:00 – 12:45 PM EST
- Type: Scientific Sessions
- Organizer: William Pridemore
- Moderator: William Pridemore

Papers:

- Use of Extreme Risk Protection Orders in Response to Threats of Mass Shootings – April Zeoli
- Evidence-Based Guidance for Justice: Role of the National Institute of Justice – Angela Moore

Synopsis: Justice is central to democracy, yet crime policy typically stems from politics instead of systematic analysis. This panel addresses how scientific evidence can be harnessed to empower policy to reduce crime and promote justice. The first presenter examines justifications for and effects of Extreme Risk Protection Orders, which temporarily restrict firearm access from individuals at risk of committing violence. This is the first study of ERPOs and mass shooting threats, for which ERPOs are uniquely suited because intent is often signaled by perpetrators. The new data include characteristics of threats and of those making them, and results provide the most up-to-date evaluation of ERPO impact. The second presenter considers police behavior and reform. Using a randomized controlled trial, new results reveal de-escalation training produces significant reductions in use of force and citizen and officer injuries and that supervisors’ receptivity to de-escalation training is critical for their support of its use among subordinates. The third presenter is senior science advisor at the U.S. National Institute of Justice. NIJ’s goal is to strengthen science and advance justice. It is tasked by Congress to produce real-world benefits for justice systems and victim services agencies via scientific innovation. The presenter describes NIJ’s critical role in supporting new rigorous research and program evaluations, and provides examples of how NIJ empowers its constituents with evidence.
Understanding the Evidence in Evidence-based Policymaking

- **12:00 – 12:45 PM EST**
- **Type:** Scientific Sessions
- **Organizer:** Stefan Peterson
- **Moderator:** Stefan Peterson
- **Papers:**
  - Evidence in Decision-Making on Capitol Hill – Chloe McPherson
  - Consequential Knowledge and Convergent Evidence in Fact-Checking – Kathleen Hall Jamieson
  - What Does “Follow the Science” Mean in Practice? – Paul Cairney
- **Synopsis:** Popularity of evidence-based policies has been on the rise in recent years both in political and scientific realms. The COVID-19 pandemic has provided a critical time where the intersection of science and politics is more tangible than ever. Additionally, many scientists feel like their research may have even more impact if it can influence governmental policies. However, what does it really mean to have evidence-based policies and what evidence is considered by those in the political sphere in the current climate of disinformation? This session will analyze the practice of evidence-based policymaking from scientific and political stakeholders. It will emphasize the complexity of political decision-making and fact-checking in the political arena and provide a framework for how scientists can effectively engage in policy.

Diversity, Equity, and Inclusion in STEM Organizations: Evidence-Based Change

- **1:00 – 1:45 PM EST**
- **Type:** Scientific Sessions
- **Organizers:** Marla Dowell and Heather Evans
- **Moderator:** Sesha Moon
- **Papers:**
  - Diversity and Inclusivity at NIST – Mary Theofanos
  - Creating a Culture of Inclusion at Rockwell Automation – Bobby Griffin
  - Trends on People with Disabilities in STEM – Paul Upchurch
- **Synopsis:** Today, fostering a workplace culture of diversity, equity, and inclusion is critical to attract and retain innovative talent. Millennials are expected to make up 75 percent of the workforce by 2025 and are twice as likely to pursue a science, technology, engineering, and math (STEM) career as other generations, according to a recent KQED study. Generation Z is not far behind, representing the most diverse generation in United States history. STEM organizations need to prepare to embrace this more diverse workforce. This session explores how federal agencies, industry, and research institutes have leveraged evidence-based changes in their organizations to build more diverse organizations. This session will highlight cutting-edge perspectives from industry and research communities on the benefits and challenges of organizational change to foster more inclusive work environments that benefit society and the pursuit of knowledge. Speakers will discuss successful open innovation approaches and related outcomes; challenges of creating a workplace culture where all employees can thrive; and examples of how engaging across differences produces more innovative outcomes. The session will share other examples of the challenges, rewards, and positive impact of public and private-sector STEM organizations working to foster more inclusive, equitable STEM work environments.
Resources for Early Career Scientists Catalyzing Policy Change

- **1:00 – 1:45 PM EST**
- **Type:** Workshops
- **Coordinator:** Holly Mayton
- **Presenters:** Christopher Jackson, Adriana Bankston, and Briana Brown
- **Synopsis:** This workshop is for early career scientists feeling energized and passionate about science policy, but unsure how to get started. This panel will discuss resources available through the National Science Policy Network (NSPN), Journal of Science Policy & Governance (JSPG), and Engineers & Scientists Acting Locally (ESAL) that will help build skills, grow a professional network, and make an impact in science policy. Paths range from publishing a policy memo, to publishing a series of local op-eds, to joining a local environmental commission. Bring science policy ideas, and this workshop will give tips and tools to translate them into tangible next steps for impact.

Is It Time to Re-visit the Definition of “Research Misconduct?”

- **2:00 – 2:30 PM EST**
- **Type:** Coffee Chat
- **Moderators:** Shirley Malcom and Joanne P. Carney
- **Synopsis:** In the early 1990s the definition of research misconduct was sufficiently inclusive, at least within the National Science Foundation, that it could accommodate serious cases of sexual and gender harassment. Definitional changes in the late 1990s narrowed the 2000 definition to FFP (fabrication, falsification or plagiarism). The definition matters because the penalties for misconduct can include a range of options, as appropriate, up to and including debarment from receiving federal research support. Many survivors of sexual harassment and their advocates would argue that these penalties need to be in the toolbox of agencies wishing to send a clear message of intolerance for sexual and gender harassment.

Science Policy Barriers and Opportunities for International Scholars

- **2:00 – 2:45 PM EST**
- **Type:** Scientific Sessions
- **Organizers:** Ankita Arora and Holly Mayton
- **Moderator:** Bernat Navarro-Serer
- **Papers:**
  - Science Policy Barriers, Opportunities as An International Early Career Scientist – Marga Gual Soler
  - Navigating Science Policy Fellowships and Field as an International Scholar – Jay Chatterjee
  - International Scholars as Science Diplomats and Potential National Security Issues – E. William Colglazier
- **Synopsis:** The United States profits immensely from international graduate and postgraduate scholars in science, technology, engineering, and mathematics (STEM). They are the majority of full-time graduate students in STEM, accounting for 54 percent of U.S. master’s degrees and 44 percent of doctorate degrees. 2020 was the first time in the last 20 years in which economic contribution by international scholars dropped. The U.S. must tap into the ability of international STEM graduate students and early career researchers to contribute culturally, organizationally, diplomatically, and scientifically. Immigration laws and national security policies restrict the ability of international scholars to gain diverse experiences and professional development outside of their field of study, such as in science policy. This problem should be addressed, for reasons of equity and justice as well as
pragmatically. The session will discuss barriers international scholars face while pursuing a career in science policy at different stages of their careers and ways to overcome them and create additional opportunities for their engagement in this field. It will take into account the government perspective by including a former U.S. State Department official that will weigh on security issues. It will also emphasize the potential of international scientists for building diplomatic bridges with their countries of origin, brain circulation, as another way to understand international scholar presence in science policy.

Closing the Transparency Gap: Advancing Evidence-Informed Decision-Making

- 2:00 – 2:45 PM EST
- Type: Workshops
- Coordinator: Rachael Maxwell
- Presenters: Rachael Maxwell and Farah Qaiser
- Synopsis: All benefit when governments make decisions informed by evidence. Yet, conversations on evidence-informed decision-making devote little focus to the public's ability to grasp what goes into decisions, creating a transparency gap. Communicating about evidence isn't a bonus for when resources permit. For the public, it's a chance to understand how governments arrive at decisions and to consider if they're working. For researchers, it's an opportunity to identify knowledge gaps. A framework for looking at how evidence informs policy in the U.K. was adapted by Evidence for Democracy in Canada. The session examines transparency of evidence in Canada, highlights a framework from the U.K., and identifies ways to improve access to evidence.

Out of the Lab and into Elected Office

- 3:00 – 3:45 PM EST
- Type: Workshops
- Coordinator: Sarah Smaga
- Presenters: Shaughnessy Naughton, Liz Snyder, and Sarah Smaga
- Synopsis: From the COVID-19 pandemic to climate change and artificial intelligence, the challenges facing elected officials are tremendously complex. And while many science, technology, engineering, and mathematics (STEM) professionals engage politicians in an advisory capacity, few serve in elected office. This workshop seeks to demystify the ways that scientists can engage in the democratic process, whatever their career stage, comfort level, or free time. Participants will learn the nuts and bolts of a political campaign, hear firsthand experiences from a scientist-legislator, and leave with a concrete action plan of how to get involved in the 2022 elections and beyond.

Panel: Does Science Communication Still Work?

- 4:00 – 5:15 PM EST
- Type: Plenary Sessions
- Moderator: Holden Thorp
- Speakers: Jane Lubchenco, Kathleen Hall Jamieson, Joelle Simpson, and Katie Mack
- Synopsis: The failure of science to communicate basic facts about the pandemic, coupled with the ongoing failures to communicate about climate change, suggests that science communication is no longer working. Over the past three days, many sessions have addressed numerous aspects of science communication. Many of the principles that underpin today's philosophy stem from decades-old ideas of the scientist's necessary skill set. These ideas did not anticipate the power of social media and quantitative political polling, which have made it easier for anti-science forces to penetrate the public discourse. So how should science communication change?