

**Advisory Committee (AC) to the Directorate for Social, Behavioral, and Economic Sciences (SBE)**  
**National Science Foundation (NSF)**  
**Room E 2020, 2415 Eisenhower Avenue, Alexandria, VA 22314**  
**May 2-3, 2019**  
**Meeting Summary**

**SBE AC Members Present:** Dr. Karen Cook, AC Chair, Department of Sociology, Stanford University; Dr. Joseph Altonji, Department of Economics, Yale University; Dr. Christopher Bail, Department of Sociology, Duke University; Dr. Ann Bostrom, Daniel J. Evans School of Public Policy & Governance, University of Washington (and Advisory Committee for Environmental Research and Education (AC-ERE) Liaison); Dr. Nilanjana Dasgupta, Department of Psychological and Brain Sciences, University of Massachusetts at Amherst; Dr. Catherine Eckel, Department of Economics, Texas A&M University; Dr. Christopher Kuzawa, Department of Anthropology, Northwestern University; Dr. Jennifer Richeson, Department of Psychology, Yale University; Dr. William Riley, Office of Behavioral and Social Sciences Research, National Institutes of Health (NIH; *Ex officio*); Dr. Lydia Villa-Komaroff, Intersections SBD (and Committee on Equal Opportunities in Science and Engineering (CEOSE) liaison); Dr. Sandra Graham, Department of Education, University of California-Los Angeles; Dr. Dominique Brossard, Department of Life Sciences Communication, University of Wisconsin-Madison; Dr. Rocío Titiunik, Department of Political Science, University of Michigan; and Dr. Duncan Watts, Microsoft Research. Dr. Christine Hunter, NIH Office of Behavioral and Social Sciences Research, attended on behalf of Dr. Riley on May 2<sup>nd</sup>.

**NSF Staff in Attendance:** Dr. F. Fleming Crim, Chief Operating Officer, NSF; Dr. Arthur Lupia, Assistant Director (AD), SBE; Dr. Kellina Craig-Henderson, Deputy AD, SBE; Dr. Alan Tomkins, Acting Division Director (DD), SBE/Division of Social and Economic Sciences (SES); Dr. Bernice Smith, Acting Deputy Division Director (DDD), SES; Ms. Emilda Rivers, DD, SBE/National Center for Science and Engineering Statistics (NCSES); Dr. Marc Sebrechts, DD, SBE/Division of Behavioral and Cognitive Sciences (BCS); Dr. Tamera Schneider, DDD, BCS; Dr. Deborah Olster, Senior Advisor, SBE/Office of the Assistant Director (OAD); Mr. John Garneski, Staff Associate for Budget and Program Analysis, SBE/OAD; Mr. Anthony Teolis, SBE Administrative Coordinator, SBE/OAD; Ms. Clarissa Johnson, IT Specialist, SBE/OAD; Mr. Philip Johnson, IT Specialist, SBE/OAD; and Dr. Joseph Whitmeyer, Program Director, SBE/SES; and others.

### **Summary**

This was the first meeting of the SBE AC in 2019. It was attended by NSF staff and interested members of the public. The agenda included the following items: an SBE Directorate update; a presentation titled “To Secure Knowledge” (Dr. Alondra Nelson, Columbia University and Social Science Research Council); an SBE Distinguished Lecture by Dr. Dan Kahan (Yale University), small group discussions on SBE research to address Office of Management and Budget/Office of Scientific and Technology Policy (OMB/OSTP) scientific priorities and on pursuing effective SBE partnerships; contributions of the SBE sciences to national security; NSF’s Big Ideas; and updates of CEOSE and AC-ERE activities.

### **Thursday, May 2, 2019**

#### **Welcome, Introductions, Review of Draft Summary from December 2018 SBE AC meeting, and Preview of Agenda** (Dr. Karen Cook, SBE AC Chair)

Dr. Cook welcomed everyone to the meeting and introduced three new AC members: Dr. Dominique Brossard, Chair and Professor, Department of Life Sciences Communication, University of Wisconsin-

Madison; Dr. Sandra Graham, Professor, Department of Education, University of California-Los Angeles; and Dr. Rocío Titiunik, Professor, Department of Political Science, University of Michigan. Following around-the-table introductions, the AC voted to accept the summary of the fall 2018 AC meeting. Dr. Cook then previewed the current meeting [agenda](#).

#### **SBE Directorate Update** (Dr. Arthur Lupia, AD, SBE)

SBE AD Dr. Lupia updated the AC on the recent FY 2019 lapse in appropriations and its impact on the Foundation, including the required actions needed to restart NSF's mission activities. He then described SBE's repositioning, a three-pronged plan that entails developing a more proactive communications strategy, rescoping and modernizing several SBE programs, and creating new partnerships. These changes are designed to continue and build on the Directorate's history of supporting high quality, fundamental research in the SBE sciences and make the impact and value of that research more apparent to a variety of stakeholders.

During the ensuing discussion, AC members expressed their support for the SBE repositioning effort. They noted the importance of a thoughtful communications strategy to announce the programmatic changes. AC members also pointed out that prospective Principal Investigators submitting proposals to NSF would benefit from more guidance on describing the broader impacts of their projects, and that proposal reviewers would benefit from additional training to evaluate broader impacts appropriately.

#### **To Secure Knowledge** (Dr. Alondra Nelson, Columbia University and Social Science Research Council)

Dr. Alondra Nelson presented [To Secure Knowledge. Social Science Partnerships for the Common Good](#). This report issued by the Social Science Research Council (SSRC) "To Secure Knowledge" Task Force explores how rapidly-accelerating technological and institutional changes have impacted social sciences research. The report's core finding focuses on the urgent need for new partnerships and collaborations among several key players: the federal government, academic institutions, donor organizations, and the private sector. To address this need, the Task Force identified and made recommendations for improvements in five action areas: funding, data, ethics, research quality, and research training. Dr. Nelson also described the Social Data Initiative, a partnership among SSRC, several foundations, Social Science One (an LLC), and Facebook, to support research examining social media's impact on society, the responsible use of social network data, and to generate insights to inform solutions to problems. The first set of grantees were announced in April.

The discussion following the presentation focused largely on the Social Data Initiative. AC members posed questions about the review and funding processes, award success rates, partnering with industry, accessing industry data, protecting privacy, the types of research questions being addressed by the grantees, and the portability of this model to potential collaborations with other industry partners.

#### **NSF Distinguished Lecture in the Social, Behavioral, and Economic Sciences: Science Comprehension Without Curiosity is No Virtue, and Curiosity Without Comprehension No Vice** (Mr. Dan Kahan, Yale University Law School)

Mr. Kahan presented his "Identity Protective Cognition" model and its relationship with biases, perception, reasoning, and science curiosity/ communication.

#### **Small Group Discussions** (SBE AC Members)

AC members broke out into small groups to discuss the following:

- SBE Research to Address OMB/OSTP Scientific Priorities; and
- Pursuing Effective SBE Partnerships.

The reports from the small group discussions are described below.

**Contributions of the SBE Sciences to National Security** (Dr. Erin Fitzgerald-Rey, University of Maryland; Dr. Lisa Troyer, U.S. Army Research Office; and Dr. Noshir Contractor, Northwestern University)

Dr. Contractor started the session by discussing the National Academies of Sciences, Engineering, and Medicine (NASEM) consensus study report, [Decadal Survey of the Behavioral and Social Sciences: A Research Agenda for Advancing Intelligence Analysis](#). The NASEM committee was charged to: 1) assess progress in addressing selected major social and behavioral scientific (SBS) challenges that might prove useful to national security; 2) identify SBS opportunities that can be used to guide security community investment decisions and application efforts over the next 10 years; and 3) specify approaches to facilitate productive interchange between the security community and the external social science research community. In its report, the Committee recommended that the intelligence community (IC) should make sustained collaboration with researchers in the SBS a key priority as it develops research objectives for the coming decade. The Committee advised the IC to focus specifically on identifying and building on successful collaborations; strengthening bridges between the SBS community and the IC; and provide opportunities for IC analytic staff to build SBS knowledge and for researchers to improve their understanding of the IC; and draw on principles of human-systems integration.

Dr. Troyer's presentation focused on the overall research landscape at the Department of Defense (DoD) and opportunities for the SBE sciences in potential partnerships and collaborations. She noted in particular the urgency to understand "non-kinetic" domains, i.e., issues such as conflict and human and social dynamics. These have been recognized as increasingly important to DoD, as evidenced by the consideration of topics such as mass disruption of social systems/institutions, coalition building, and human-agent interactions in DoD's national defense strategy.

Dr. Fitzgerald-Rey provided a summary of the DoD [Minerva Research Initiative](#) and DoD investments in social sciences for security. Minerva supports policy relevant, policy accessible, and policy actionable research. Key areas of SBE sciences that are critical to the DoD enterprise and that have received investments in recent years include: learning, organizational effectiveness, leadership development, system interfaces, individual motivations, and trustworthiness as related to issues such as insider threats. Challenges to the inclusion of SBE sciences in DoD programs stem from perceived weaknesses in the SBE sciences' rigor and reproducibility; the lack of explainable, computational results (models); and data and results that are region-specific and therefore not generalizable – or conversely, too general and consequently, not useful.

The discussion following the presentations touched on several topics: lessons learned from the Minerva Initiative that could inform other potential NSF-DoD collaborations; structuring inter-agency partnerships; barriers to collaboration; NSF serving a convening or matchmaking role to foster collaborations; and the military's interest in workforce questions.

**CEOSE Update** (Dr. Lydia Villa-Komaroff, SBE AC member and CEOSE Liaison)

Dr. Lydia Villa-Komaroff provided a brief report on [CEOSE](#), a committee established in 1980, and mandated to provide a report to Congress on the state of expanded opportunities in science and engineering every two years. Dr. Villa-Komaroff described recent CEOSE activities, including the release of the [2015-2016 CEOSE Biennial Report](#) (focused on accountability), drafting of the [2017-2018 CEOSE Biennial Report](#), and recent CEOSE discussions about the NSF Big Ideas.

**AC-ERE Update** (Dr. Ann Bostrom, SBE AC member and AC-ERE Liaison)

Dr. Bostrom provided an overview on the [AC-ERE](#), a cross-directorate Advisory Committee that focuses on environmental research and education activities across the Foundation. She updated the AC on the Committee's recent meetings, its [Sustainable Urban Systems \(2018\) report](#), a report on Environmental Security and Research that is currently in development; and upcoming AC-ERE meeting agendas topics.

**Friday, May 3, 2019**

**SBE Sciences and NSF's Big Ideas** (Dr. Lupia, AD, SBE; SBE AC members, Drs. Christopher Kuzawa, Duncan Watts, Nilanjana Dasgupta; and Dr. Joseph Whitmeyer, SBE Sociology Program Director)

Dr. Lupia provided an overview and summary of NSF's [10 Big Ideas](#) with an emphasis on how they represent a new collaborative approach across NSF's directorates. He noted that the SBE sciences are paramount in several of the Big Ideas

Dr. Kuzawa discussed the [Understanding the Rules of Life. Predicting Phenotypes](#) (URoL) Big Idea, the goal of which is to understand the general principles or theoretical constructs that explain and predict the characteristics of living systems. He noted opportunities for SBE sciences to contribute to this effort through research on epigenetics, the microbiome, and the use of big data, and suggested several specific improvements to the current solicitations to make them more inviting to SBE scientists. Dr. Kuzawa questioned the notion of "scale-invariant" rules in living systems (a proposed topic for future URoL investments), noting that metabolism may be the primary, if not the only, example of scale invariance in living systems.

Dr. Watts described the new [Convergence Accelerator program](#) that launched with a [Dear Colleague Letter](#) inviting proposals for pilot projects. He suggested that NSF could convene academia and industry around particular grand challenges of interest to both and noted the need to identify the critical resource gaps.

Dr. Dasgupta presented on the [Future of Work at the Human Technology Frontier](#). She highlighted the Big Idea's goals, that have strong and direct linkages to SBE sciences: to understand and influence the impact of Artificial Intelligence (AI) on workers and work; to design new technologies that augment human performance; and to illuminate socio-technological landscape of work and understand its risks and benefits. She suggested that NSF create mechanisms for SBE scientists to enter this space outside of the current solicitations, perhaps by convening targeted workshops on particular topics or issuing a Dear Colleague Letter inviting proposals through standing core programs.

Dr. Whitmeyer provided an overview of the [Midscale Research Infrastructure \(MSRI\)](#) Big Idea, which is designed to bridge the gap between the Major Research Instrumentation program and projects supported through the Major Research Equipment and Facilities account. He also discussed SBE's support of infrastructure, primarily through its surveys, and how to increase SBE scientist participation in MSRI.

**Small Group Report: SBE Research to Address OMB/OSTP Scientific Priorities** (SBE AC Members)

AC members provided the following examples of SBE research that supports current federal research priorities:

- Investigation of data privacy, risks, hazards, decision-making, and threats, all of which are relevant to national security;

- Studies of American energy dominance, including research to understand the social, psychological, and economic factors that impact the adoption of new energy technologies;
- Health-related research, including understanding the human dimensions of medical innovations to foster human-centered design, adherence to medical treatments, and the adoption of healthy behaviors;
- Research to ensure the creation of a 21<sup>st</sup> century capable workforce, including studies related to understanding what types of education and training might be valuable for future industries and the science of broadening participation.

The group also questioned which funding mechanisms used by NSF/SBE would be most appropriate for or adaptable to addressing changing research priorities (e.g., Dear Colleague Letters; the Big Ideas, Harnessing the Data Revolution and the Future of Work at the Human-Technology Frontier), and noted the need for team science and partnerships between academia and industry to best advance work in these areas.

**Small Group Report: Pursuing Effective SBE Partnerships (SBE AC Members)**

SBE AC members provided the following recommendations to SBE for pursuing effective partnerships:

- Issue joint solicitations and funding announcements (e.g., [NSF Program on Fairness in Artificial Intelligence \(AI\) in Collaboration with Amazon \(FAI\)](#));
- Develop cooperative research centers (similar to the [Industry-University Cooperative Research Center Program](#) and [Engineering Research Centers](#));
- Co-fund infrastructure investments; and
- Utilize in-kind support (e.g., data) from industry.

The group also noted that the success of partnerships depends on all partners benefitting from the effort and on equal treatment of all partners. AC members suggested a potential partnership between NSF/SBE and NIH, focused on training, communications, or doctor-patient or patient-machine interactions; with NASEM on the science of science communications; and with private foundations on topics of mutual interest.

**Meeting with NSF Leadership (Dr. F. Fleming Crim, Chief Operating Officer, NSF)**

The AC and Dr. Crim discussed current and future SBE and NSF activities. AC members highlighted the discussions they’d had at the current SBE AC meeting: pursuing effective partnerships; SBE sciences contributions to NSF’s Big Ideas; SBE research addressing federal priorities; and the science of science communications.

**Wrap-up, Assignments, Planning for Next SBE AC Meeting (Dr. Karen Cook, SBE AC Chair, and Dr. Arthur Lupia, AD, SBE)**

Drs. Cook and Lupia briefly recapped the AC meeting, led a discussion of potential agenda items and topics for future meetings and offered concluding remarks. The next SBE AC Meeting is scheduled for December 12-13, 2019 at NSF Headquarters in Alexandria, VA. Dr. Lupia presented Dr. Jennifer Richeson with a certificate and token NSF souvenir to thank her for her service as AC member.

The meeting adjourned at 12:30 pm.

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The SBE AC voted to accept this summary at its fall 2019 meeting, December 12-13, 2019.