

**COMMITTEE ON EQUAL OPPORTUNITIES IN
SCIENCE AND ENGINEERING (CEOSE)
National Science Foundation**

**CEOSE 2017 June Meeting
June 8 - 9, 2017**

MEETING MINUTES

MEETING PARTICIPANTS

CEOSE Members Present

Dr. Ira Harkavy, CEOSE Chair, University of Pennsylvania, Philadelphia, PA
Dr. Louis Martin-Vega, CEOSE Vice Chair, North Carolina State University
Dr. Mary M Atwater, The University of Georgia
Dr. Nancy Cantor, Rutgers University – Newark
Dr. Peter Eden, Landmark College
Dr. Jose Fuentes, Pennsylvania State University
Dr. C. Michael Gooden, Integrated Systems Analysts, Inc.
Dr. Charles Isbell, Georgia Institute of Technology, GA
Dr. Alicia Knoedler, University of Oklahoma
Dr. Daniela Marghitu, Auburn University
Dr. Robert Eugene Megginson, University of Michigan
Dr. Loretta Moore, Jackson State University
Dr. Nai-Chang Yeh, California Institute of Technology

CEOSE Members Absent

Dr. Garikai Campbell, Morehouse College
Dr. Lydia Villa-Komaroff, Cytonome/ST
Dr. Robert Jones, University of Illinois, IL

Federal Agency Liaisons Present/Remote Participants

Dr. Lisa Evans, U.S. National Institutes of Health (NIH)
Dr. Jim Johnson, U.S. Environmental Protection Agency (EPA)
Dr. Katie Blanding, Department of Education (DOE)

Speakers/Panelists

Dr. Suzanne Iacono, CEOSE Executive Liaison and Head of Office of Integrative Activities (OIA)/
Office of Director (OD)/NSF
Dr. James Kurose, Assistant Director/Directorate for Computer & Information Science & Engineering
(CISE)
Dr. Emilda Rivers, Deputy Division Director/National Center for Science and Engineering Statistics
(NCSES)

CEOSE Designated Federal Officer – Executive Liaison

Dr. Suzanne Iacono, Office Head, OIA/OD/NSF

CEOSE Executive Secretary

Dr. Bernice Anderson, Senior Advisor, OIA/OD/NSF

CEOSE Scientific/Technical/Administrative Staff

Dr. Joan Burrelli, Science Resources Analyst, OIA/OD/NSF

Ms. Victoria Fung, Program Analyst, OIA/OD/NSF

Mr. Steven Buhneing, Communication Specialist, OIA/OD/NSF

1st Day, June 8, 2017

CEOSE Chair Report

Dr. Ira Harkavy, CEOSE Chair, welcomed members and guests and gave a brief summary of the agenda for the meeting. He reported on the recent teleconference with Dr. Córdova which touched on the CEOSE report, the committee's plans going forward, and the need for new committee members in the coming year. He informed the committee that, during the teleconference, Dr. Córdova reported on her recent activities and on the FY2018 NSF budget.

NSF Executive Liaison Report

Dr. Suzanne Iacono, CEOSE Executive Liaison, welcomed Dr. Eden, who was attending the meeting for the first time in person. After noting that she is looking forward to the meeting and to finalizing the CEOSE report, she began her discussion with a focus on the NSF budget. The NSF FY2018 budget request is an 11.2% reduction (approximately \$800 million) from the FY2016 actual investment and thus required some tough choices by NSF in terms of cuts. She also reported on the May 9 and 10 National Science Board meeting which discussed NSF's Big Ideas. Several awards were given at the meeting, including the Vannevar Bush award to Dr. Rita Colwell, former NSF Director, "for her leadership in strengthening the nation's science enterprise, research contributions, and commitment to protect humanity; particularly her ground breaking discoveries that helped prevent cholera epidemics, saving countless lives." Dr. Iacono also reported on a number of other issues including: recent data on the NSF Graduate Research Fellowship Program (GRFP) awards, recent presentations by Dr. Córdova, a recent event on implicit bias, the annual Broader Impacts summit, and the impending NSF move. She mentioned that this CEOSE meeting would be the last one in the current NSF building.

CEOSE members asked whether breakouts by discipline and by institutional type were available for the GRFP. Dr. Iacono said she would obtain those data. They also discussed the various budget cuts in the FY2018 budget request, including cuts to the GRFP.

NSF Big Ideas: INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science)

Dr. Iacono presented an update of NSF INCLUDES, emphasizing that the effort is all about cooperation through building a national network and leveraging change. Her presentation covered: characteristics of successful launch pilots, the three essential components of NSF INCLUDES (launch pilots, alliances, and coordination hubs), recent data on INCLUDES launch pilot and conference awards, an upcoming Dear Colleague Letter that will provide funding for linking the NSF Broadening Participation portfolio to the INCLUDES launch pilots, results of the INCLUDES portfolio analysis, and the need to keep all of the stakeholders engaged. Future activities include solicitations for the coordination hub, the alliances, and the on-ramping activities.

CEOSE discussion included suggestions for NSF partnering with other organizations to fund INCLUDES, questioning the diversity of the projects in terms of HBCU and HSI involvement as lead institutions, questioning the diversity of the project in terms of focus on persons with disabilities, the role of coordination hubs, and the possibility of leveraging with the Department of Defense.

NSF Big Idea: Work at the Human-Technology Frontier: Shaping the Future Working Session

Dr. James Kurose, Assistant Director of the Computer and Information Sciences and Engineering Directorate, and Dr. Howard Nusbaum, Division Director, Behavioral and Cognitive Sciences, briefed the committee on “Work at the Human-Technology Frontier: Shaping the Future”, which is one of the NSF Big Ideas. Dr. Kurose explained that artificial intelligence, machine learning, the internet of things, and robotics, among other things, are changing the world of work. We are moving toward an evolving human-technology ecosystem that has consequences for employment, productivity, economic growth, competitiveness, national security, and global leadership. The NSF Human-Technology Frontier Big Idea has four thrusts: 1) to understand and build human-technology partnerships, 2) to design new technologies to augment human performance, 3) to illuminate the emerging socio-technical landscape, and 4) to foster lifelong and pervasive learning. The effort emphasizes thinking about design-use-impact feedback loops, convergent research, and interdisciplinarity. They are starting with workshops and planning grants and recently were one of the four areas specifically called out in the Dear Colleague Letter—Growing Convergent Research at NSF.

Questions and comments from CEOSE members included: how technology could increase the participation of underrepresented groups, how broadening participation can be a core part of research and not just an add on, the need for training or guidance in convergence research, the need to help people understand the pros and cons of advances in technology, especially in the workplace, and the need to create humane workplaces.

Working Session: 2015 – 2016 CEOSE Biennial Report to Congress

CEOSE members, led by Drs. Charles Isbell and Alicia Knoedler, discussed revisions to their draft 2015 – 2016 CEOSE Biennial Report to Congress. They focused on suggested changes to the Executive Summary and Chapter 3 (Accountability) and, after much discussion, the committee

strengthened several important points, improved organization and flow, provided greater clarification, expanded and improved data presentation, and revised terminology.

2nd Day, June 9, 2017

Opening Remarks

Dr. Harkavy opened the second day of the meeting with thanks for the progress made the previous day. He informed the committee that the next steps would be to review Chapter 4 (CEOSE Activities, Outcomes, and Plans for the Future) of the draft report. Following the meeting, a final draft document will be reviewed by the chair, co-chair, and report authors, and then will be sent to the full committee. The committee then turned to a discussion of questions and topics to address in their afternoon meeting with Dr. Córdova, including what is in the draft CEOSE report, what CEOSE plans are going forward, what the FY 2017 budget process was, the impact of the FY 2017 budget request on broadening participation, what CEOSE could do to encourage the wider community to make the case for broadening participation, and the potential for collaboration with other agencies (e.g., DOD).

2017 Women, Minorities, and Persons with Disabilities in Science and Engineering Digest

The committee heard a presentation by Emilda Rivers, Deputy Division Director of the NSF's National Center for Science and Engineering Statistics, on the congressionally-mandated *Women, Minorities, and Persons with Disabilities in Science and Engineering* report. She focused on the Digest report, which is divided into five topical areas (enrollment, field of degree, occupation, employment status, and early career doctorate holders) and presented some data on participation of women, minorities, and persons with disabilities in STEM education and employment.

CEOSE members were grateful for the data and its usefulness. Comments and questions concerned the definition of persons with disabilities, the level of detail available on some subgroups of people, and a desire for more analytical reports on trends, especially for subgroups, e.g., women or persons with disabilities, in some STEM fields or in some types of institutions in order to highlight interesting stories of fields or institutions with gains or losses in participation.

Discussion about Future CEOSE Activities

Rather than having smaller breakout sessions, the committee decided to have the discussion as a group, thus providing all with some historical context regarding previous reports. They discussed particularly the 2011-12 CEOSE report which called for a bold new initiative, the 2013-14 report which laid out five specific components of a plan for implementing the bold new initiative, and the draft 2015-16 report which is calling for accountability as a crucial means to accomplish the bold new initiative. The three reports were a trilogy, but going forward, the committee felt the need for a continuation of these ideas rather than calling for a new issue. Several ideas emerged including: what concrete steps can be taken; determining how accountability can be spread; engaging populations, as well as institutions, affected; building pathways; encouraging iterative processes; helping NSF leverage higher education to broaden participation; and integrating broadening participation and accountability in all the Big Ideas from the very beginning of the process.

Discussion of Federal Liaisons Reports by CEOSE Federal Liaisons

Dr. Lisa Evans of the National Institutes of Health and Dr. Jim Johnson of the Environmental Protection Agency updated the committee on what their agencies are doing with regard to broadening participation. Dr. Evans reported that NIH opportunities for new researchers promote workforce diversity. She promised to inform the committee at the next meeting on how NIH's new grant prioritization would impact diversity. Dr. Johnson reported on a number of diversity outreach activities by EPA.

Discussion of the Committee Reports by CEOSE Liaisons to NSF Advisory Committee

CEOSE Liaisons to NSF Advisory Committees reported on meetings of the Business and Operations, CISE, ACERE, BIO, ACCI, ENG, GEO, MPS, and OISE Advisory Committees. Highlights included: the NSF move; interest in bringing in a range of stakeholders into research, e.g., citizen science; a broadening participation panel at the annual meeting of the National Organization of Research Development Professionals; efforts to broaden participation and increase the number of students in cyberinfrastructure; the flat representation of underrepresented groups in geosciences and negative attitudes about broader impacts by geoscientists; OISE funded international programs “Partnerships for International Research & Education” (PIRE) and “International Research Experiences for Students” (IRES); and a recent study finding a strong correlation between research impact and international collaborations.

Meeting with NSF Director and Acting Chief Operating Officer

Following introductions around the table, Dr. Córdova welcomed committee members and announced that Dr. Joan Ferrini-Mundy is now the Chief Operating Officer of NSF. Dr. Córdova then engaged with CEOSE in a discussion of the draft Executive Summary of CEOSE biennial report, in particular the recommendation for an accountability framework, including the three levels at which accountability must be addressed. Committee members noted that the full report includes suggestions for NSF's, universities', and principal investigators' roles in ensuring accountability. Committee members also noted that in the next few years, they will continue to focus on realizing the bold new initiative and that they will seek to find ways to help NSF embed broadening participation into everything that NSF does, including the Big Ideas.

In response to questions about the FY 2017 budget request and about how to get the larger community involved, Dr. Córdova noted the 11.3% cut, and the NSF-wide input into the strategic, principle-driven process that determined where cuts would be made. She also stressed the need for leveraging partnerships across NSF and the need for collaborating and partnering with other federal agencies.

Announcements and Final Remarks

The CEOSE Chair announced that the October 12 meeting would be a four-hour virtual meeting, that committee revisions of the draft report would be worked on and shared with the committee, and that dissemination of the final report would be discussed by phone and email.

ADJOURNMENT

The meeting adjourned at 3:15pm.