Broadening Participation

NSF AND BEYOND

MPS CEOSE LIAISON
ROBERT MEGGINSON
Committee on Equal Opportunities in Science and Engineering (CEOSE)

- CEOSE
- Congressionally mandated advisory committee to the NSF that reports to Congress biennially
- 13-16 members, mostly from universities
- Diverse in gender, race/ethnicity, position; discipline, region, age, disabilities
Committee on Equal Opportunities in Science and Engineering (CEOSE)

- Provides advice concerning:
  - Implementation of the provisions of the Science and Engineering Equal Opportunities Act
  - Other policies and activities to encourage full participation of women, minorities and persons with disabilities in STEM

- Has 3 meetings per year

- 166 CEOSE recommendations beginning with first biennial report to Congress in 1996
Committee on Equal Opportunities in Science and Engineering (CEOSE)

Leadership:
- Dr. Ira Harkavy, Chair (Associate Vice President and Founding Director, Barbara and Edward Netter Center for Community Partnerships, University of Pennsylvania)
- Dr. Louis Martin-Vega, Vice-Chair, Professor and Dean, College of Engineering, North Carolina State University

Membership (13–16):
- Members serve as a CEOSE liaison to another advisory committee (13 besides CEOSE itself) within NSF
  - Bob Megginson, Professor of Mathematics, University of Michigan – MPS AC

CEOSE Federal Liaisons – Reps from other federal agencies
Every two years, the Committee prepares and transmits to the NSF Director a report on its activities during the previous two years and proposed activities for the next two years.

The Director transmits to Congress the report, unaltered, together with such comments as the Director deems appropriate.
Lays the groundwork for a new direction: To better address 
emerging challenges and the limited progress being made in 
improving broadening participation in STEM, as well as the 
findings in this report and other national reports, the Committee 
on Equal Opportunities in Science and Engineering recommends 
that NSF implement a bold new initiative, focused on broadening 
participation of underrepresented groups in STEM, similar in 
concept and scale to NSF’s centers, that emphasizes institutional 
transformation and system change; collects and makes 
accessible longitudinal data; defines clear benchmarks for 
success; supports the translation, replication and expansion of 
successful broadening participation efforts; and provides 
significant financial support to individuals who represent the very 
broadened participation that we seek.
CEOSE elaborates on how to implement the bold initiative through a framework of **five essential practical components** for successful implementation:

- Develop and implement an effective preK-20+ system of STEM pathways that significantly increase participation of underrepresented individuals at every stage of schooling and across all STEM fields;

- Provide stable and sufficient direct support for individuals who represent the very broadened participation that we ultimately seek;
2013-2014 CEOSE Report

- **Support the further development of a science of broadening participation grounded in empirical research;** obviously requires involvement of the social sciences

- Conduct field experiments including assessment of interventions and outcomes to understand and mitigate the barriers to broadening participation; and

- Recognize the field-specific nature of the broadening participation challenge by embedding and engaging the bold initiative within and across all NSF directorates and divisions. (All hands on deck, but the oars may be different.)
What is NSF doing with Broadening Participation in Response to the CEOSE Recommendation for a Bold Initiative?

- Broadening Participation Working Group
  - Established April 2007; predates CEOSE 2011–2012 report

- Pathways to Broadening Participation in Response to the CEOSE 2011-2012 Recommendation
  

- Contains an appendix with an extensive list of resources for those served by MPS
Coming Soon:
https://www.nsf.gov/mps/broadening_participation/index.jsp

**MPS Broadening Participation Resources**

NSF has a strong commitment to [broadening participation](https://www.nsf.gov/mps/broadening_participation/index.jsp). Groups underrepresented in MPS research include women, African Americans, Hispanic Americans, Native Americans, and persons with disabilities.

The links below provide a sampling of information that may help Principal Investigators and others in broadening participation in their activities. This list is not meant to be exhaustive or to imply any special endorsement by MPS (or NSF).

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<thead>
<tr>
<th>Recruitment</th>
<th>RETENTION and MENTORING</th>
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<tr>
<td>- NSB Report: The Science and Engineering Workforce - Realizing America’s Potential 03–69</td>
<td>- Preparing Women and Minorities for the IT Workforce [retention of students]</td>
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<tr>
<td>- NSB Report on Broadening Participation 04–41</td>
<td>- MentorNet [mentoring students through untenured faculty]</td>
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<tr>
<td>- Race-Neutral Approaches to Diversity [student recruitment]</td>
<td>- Optimizing the Learning Environment for Students with Disabilities [including links to laws and other resources, broken down by disability type]</td>
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<tr>
<td>- Finding Qualified Minorities and Women [faculty recruitment]</td>
<td>- Visual Impairment Links [employee retention, with links to other resources]</td>
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<tr>
<td>- Faculty Recruitment Handbook (U MII) [faculty recruitment]</td>
<td>- American Psychological Association Minority Recruitment, Retention, and Training [faculty recruitment]</td>
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<tr>
<td>- Disabilities Workshop Final Report</td>
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<td>- Sloan Manual [student recruitment]</td>
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<th>RESOURCES</th>
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<td>- NSF Statistics: Science and Engineering Indicators</td>
<td>- National Federation for the Blind (NFB) Learning Resources [includes link to NSF supported National Center for Blind Youth in Science]:</td>
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<tr>
<td>- Implicit Association Tests</td>
<td>- Society for Advancement of Chicanos and Native Americans in Science (SACNAS)</td>
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<td>- Diversity Myths and Realities</td>
<td>- National Organization for the Professional Advancement of Black Chemists &amp; Chemical Engineers (NOBCChE)</td>
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<td>- 2007 Diversity Update</td>
<td>- National Society of Black Physicists (NSBP)</td>
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<td>- Land of Plenty report: Diversity as America’s Competitive Edge in Science, Engineering and Technology</td>
<td>- American Indian Science &amp; Engineering Society (AISES)</td>
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<td>- NSF-Funded Science Diversity Center</td>
<td>- National Society of Hispanic Physicists (NSHP)</td>
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<td>- Gender Equity Indicators in the USA</td>
<td>- Women in Engineering Programs and Advocates Network (WEPAN)</td>
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<td>- National Institutes of Health (NIH) The Office of Research on Women's Health (ORWH)</td>
<td>- Association for Women in Science (AWIS)</td>
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<td>- NIH Women of Color</td>
<td>- American Association of University Women (AAUW)</td>
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<td>- National Academies' Committee on Women in Science, Engineering, and Medicine (CWSEM)</td>
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NSF INCLUDES

- Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science

- FY16 Budget Request - $15.5 million and FY17 Budget Request - $16.0 million

- Mobilize the STEM communities to bring renewed focus to solving broadening participation (BP) challenges by addressing a set of “bold visions for inclusion” at the national level, collectively.
NSF INCLUDES

Theme: Building an Accountability System for Broadening Participation

February 2016 CEOSE Meeting

- Five new members: Dr. Garikai Campbell, Morehouse College; Dr. Peter Eden, Landmark College; Dr. Jose Fuentes, Pennsylvania State University; Dr. Loretta Moore, Jackson State University, and Dr. Nai-chang Yeh, California Institute of Technology

- Co-Chairs of the NSF INCLUDES (Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science) updated CEOSE on what has happened with the INCLUDES initiative over the past year (e.g., Internal and external stakeholder input; Science and Technology Policy Institute’s (STPI’s) work on the broadening participation portfolio across NSF; a Dear Colleague Letter notifying universities and other interested parties about the solicitation for pilots)
The Science and Technology Policy Institute discussion with CEOSE revolved around how to measure the value and/or impact of the programs, whether there are patterns of success, how to measure impact through sustained collaboration, and whether there are pathways or connections between or among programs.

The Chair of CEOSE focusing on what implementation science is and the need for participatory action research to promote the inclusive involvement of individuals affected in all stages of the research process.
Panel Discussion: Evaluation of NSF BP Programs in CISE (Directorate for Computer and Information Science and Engineering) focused on evaluation challenges. Challenges include different goals, methods, approaches, scales (national, local, etc.) of the projects funded, documenting at the institution level, variations in aggregation of alliance data at the program level, and measuring institutional change and infrastructure development outcomes as well as individual level outcomes.

CEOSE members’ discussion with the Director focused on the next CEOSE report, which will focus on accountability—what it means for NSF to hold a community accountable, what it means to hold individual institutions accountable, and what it means for NSF to hold itself accountable.
Part of the broadening participation discussion that CEOSE is having with the ADs is to determine what worked and what didn’t. We need access to relevant evaluation programs at the project and program levels. Such information will help CEOSE’s efforts in developing an accountability framework.

The next CEOSE meeting will be held June 8-9, 2016 and the following meeting October 13-14 will be an on-site rather than virtual meeting and will follow the accountability workshop.
Focus on Accountability and Metrics
- NSF
- Institutions and Investigators funded by NSF

Focus on “What has worked” and “How to Scale”

NSF Evaluation and Assessment Capability
- Key partner in this effort
Thank You!