Broadening Participation

NSF AND BEYOND

ENG CEOSE LIAISON

LOUIS A. MARTIN-VEGA

Committee on Equal Opportunities in Science and Engineering (CEOSE)

- CEOSE
- Congressionally mandated advisory committee to the NSF
- http://www.nsf.gov/od/oia/activities/ceose/index.jsp
- 13-16 members, mostly from universities (http://nsf.gov/od/oia/activities/ceose/members.jsp)
- 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 recommendation since inception

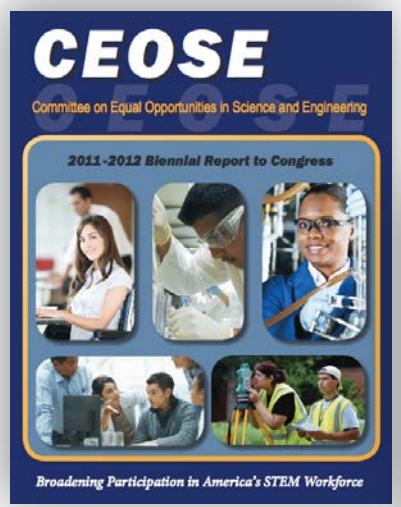
Committee on Equal Opportunities in Science and Engineering (CEOSE)

- Leadership:
  - Dr. Wendy Raymond, Chair
  - Dr. Ira Harkavy, Vice Chair
- Membership: visit the website
  - Members serve as a CEOSE liaison to another advisory committee within NSF
    - Dr. Louis Martin-Vega – ENG AC
- CEOSE Federal Liaisons – Reps from other federal agencies

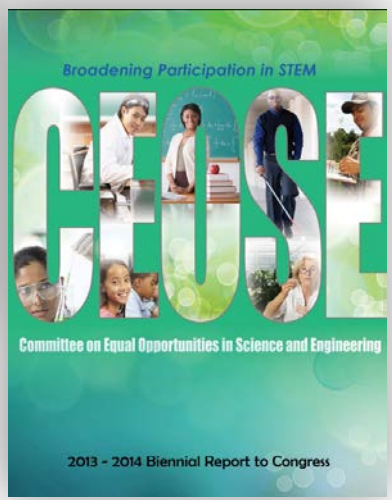
CEOSE Reports

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.



2011-2012 Report



2013-2014 Report

Reports from 1996-2014: http://www.nsf.gov/od/oia/activities/ceose/index.jsp

2011-2012 CEOSE Report

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.

2013-2014 CEOSE Report

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;
- 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.

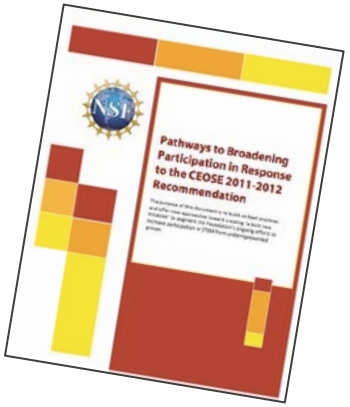
2015-2016 CEOSE Report

- 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

What is NSF doing with Broadening Participation?

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

  https://www.nsf.gov/od/broadeningparticipation/PathwaysToBroadeningParticipationInResponseToCEOSE2011-2012Recommendation_Nov2014.pdf



- NSF INCLUDES - **I**nclusion across the **N**ation of **C**ommunities of **L**earners that have been **U**nderrepresented for **D**iversity in **E**ngineering and **S**cience

Broadening Participation Working Group (2014-2015)

- Array of options for NSF to augment its ongoing activities in broadening participation in STEM and respond to the 2011-2012 CEOSE recommendation
- Near term, low cost activities
- Mid-scale activities
- Large-scale activities

BOLDNESS	POTENTIAL IMPACT: LOW	POTENTIAL IMPACT: MEDIUM	POTENTIAL IMPACT: HIGH
FY16 High	• Call for Community Design Projects in response to the 2011-2012 CEOSE recommendation • Provide funding for BP infrastructure that PIs could "plug in" to for meaningful BP Broader Impacts	• Call for BP Institutes/Centers conducting BP research and increasing the number of UR scientists and engineers • Call for Partnerships/Centers that can translate BP research into scalable programs for widespread dissemination[1]	• Call for large-scale BP partnerships that cover research, implementation and scaling across preK-20+, focusing on institutional and systemic outcomes[2]
FY15 Medium	• Increase the availability of BP Supplements via DCLs from directorates • Make available BP data by subfields • Encourage PIs/faculty to participate in diversity meetings • Form a Rotator Corps for BP • Expand Science: Becoming the Messenger Workshop to have a BP focus	• Support additional replication of successful implementations[3] or additional partnering with model BP programs[4] • Leverage efforts like REU, I-Cubed (I^3), PULSE, etc. • Make supplemental funding available to all NSF research centers for BP goals (contingent on strong existing efforts) • Engage STEM Diversity Organizations and have an NSF BP presence at their national meetings	• Increase in number of Emphasis and other programs reaching the 50% threshold[5] • Offer support for mid- and large-scale BP theoretical studies with potential for large scale implementation • Identify strategic goals for BP for NSF that address all directorates. • Increase the prominence of BP language in the merit review criteria and in Annual and Final reporting
Immediate Implementation	• Provide BP Memo to NSF Staff from the Director • Enhance BP website with best/promising practices • More systematically inform NSF staff about best practices in BP • Form an agency-wide BP advocacy group to increase communication and identify cross-agency BP goals	• Provide Important Notice to Community about BP • Establish BP Policies for Workshops Agency-wide (see BIO) • More systematically inform panelists and reviewers about best practices in BP • Support NSF-wide workshops on BP from experts in the BP field	• Increase the prominence of BP language in solicitations, on NSF website and via social media used by OLPA • Use community blogs to promote BP discussions • Create BP IdeaShare for gathering ideas/input, etc.

NSF INCLUDES

- **I**nclusion across the **N**ation of **C**ommunities of **L**earners that have been **U**nderrepresented for **D**iversity in **E**ngineering and **S**cience
- FY16 Budget Request - $15 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

- The initiative will support two of NSF's Strategic Goals and associated objectives:
  - Goal 1: Transform the Frontiers of Science and Engineering – Objective 2: Integrate education and research to support the development of a diverse STEM workforce with cutting edge capabilities and
  - Goal 2: Stimulate Innovation and Address Societal Needs through Research and Education – Objective 1: Strengthen the links between fundamental research and societal needs through investments and partnerships.

NSF INCLUDES

- Pilot two new models:
  - The first (Network Pilot) will impact inclusion at large-scale via professional and social networks and effective technologies designed for collective impact.
  - The second (Youth Empowerment Pilot) will create a new approach to empowering youth by engaging them directly in STEM, and will catalyze innovative discipline-specific initiatives.
- External Evaluation

CEOSE

Thank You!