

Symposium on the Science of Broadening Participation February 25 & 26, 2016, Arlington, VA

The need to develop and nurture a diverse and strong science, technology, engineering, and mathematics (STEM) workforce has occupied prominent positions on research and policy agendas in the United States. The presence of a qualified and agile STEM workforce for academia, government, and industry has long been recognized as central to economic progress, and the underrepresentation of particular groups in related fields increasingly has been problematized as wasted resources for building and maintaining a talented and innovative workforce. Referring especially to minorities, women, and persons with disabilities, related discussions have been linked directly to issues of productivity and growth, as well as to questions of social justice, inclusion, and fairness. However, how can academic institutions, government agencies, and various businesses appropriately design incentives, opportunities, and organizational structures to engage a diverse group of individuals in STEM for improved productivity and innovation?

“NSF should 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.”

—NSF-CEOSE Recommendation, 2011-12
Biennial Report

Necessary for positive change is a **Science of Broadening Participation** (SoBP), an assembled knowledge ready for use for broadening participation in STEM education and the STEM workforce. While a large and rich body of research exists relevant to this issue, related policy and programmatic interventions have faced a variety of challenges. Moreover, in practical terms, they are not one-size-fits-all. Recognizing the complexity and urgency attending this matter, the National Science Foundation’s (NSF) Committee on Equal Opportunities in Science and Engineering has recommended that “NSF should implement a bold new initiative focused on broadening participation of underrepresented groups in STEM.” This symposium is convened to engage the newly emerging SoBP in response to and in the spirit of that recommendation for “a bold new initiative.”

Convening scholars, researchers, practitioners, representatives from funding organizations, and policy analysts with relevant expertise and knowledge, the symposium is aimed at determining the scope and analytical features of the SoBP and related practice. In consideration of various stakeholder interests and positions, an important symposium goal is the development of research and action agendas based on an in-depth understanding of the role and interaction of stratifying forces relative to educational and professional processes and outcomes. The basic idea is to inform approaches relative to the SoBP for motivating the pursuit of STEM education and training and for removing barriers and improving access to quality education and to occupational opportunity and mobility. The symposium aims to explore strategies for capacity building and broadening STEM participation. Accordingly, key tasks for symposium participants include delineating and engaging SoBP as a critical issue for authentically transformative dialogue and action.

Symposium Themes:

1. Why is there a **need** for a *scientific* approach to broadening participation in STEM fields?
2. What are the **frameworks** that *should* inform assessment of underrepresentation relative to employment, education, and policy processes and outcomes?
3. What are the evaluative **measures** that should be used to identify underrepresentation in STEM fields? Is there a need for new data and new metrics?
4. To what extent is **education** both means and ends in STEM participation?
5. How has the U.S. **workforce** been affected by underrepresentation of minorities, women, and people with disabilities?
6. What are the social **implications** of broadening participation in STEM?
7. What are clear **pathways** to broadening participation in STEM fields within and across academia, industry, and government?

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