



**National Science Foundation**

4201 Wilson Boulevard  
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NSF 11-023

## Dear Colleague Letter: Stimulating Research Related to the Science of Broadening Participation

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National Science Foundation

Directorate for Social, Behavioral and Economic Sciences

Division of Behavioral and Cognitive Sciences

Division of Social and Economic Sciences

Dear Colleague:

The Division of Behavioral and Cognitive Sciences (BCS) and the Division of Social and Economic Sciences (SES) within the Social, Behavioral and Economic Sciences Directorate (SBE) wish to bring to your attention our goal of stimulating research related to the Science of Broadening Participation (SBP). A *Science of Broadening Participation* will employ the cognitive, behavioral, social and economic sciences to inform approaches to broadening participation and will strengthen our national science, technology, engineering, and mathematics (STEM) capabilities and competitive advantage. Ultimately, the SBP can provide policy makers with the evidence needed for informed decisions.

In FY 2011, BCS and SES will support research that utilizes the theories, methods and analytical techniques of the social, behavioral and economic sciences to better understand the barriers as well as factors that enhance our ability to broaden participation in STEM. Supported research may identify from an empirical standpoint those strategies most likely to improve the representation and participation of women, minorities and persons with disabilities who are under-represented in STEM fields. This is important because it would provide an opportunity to understand from an evidence-based perspective what works to increase the scientific talent pool.

SBP involves the development and testing of theories aimed at discovering and understanding the causality, components and contingencies for social interactions and behavioral processes. The focus within SBP is on the psychological, sociological, behavioral and economic causes and consequences associated with effectively broadening participation, and is broader than a focus on a particular program or policy as in program evaluation.

Within the social, behavioral, and economic sciences, there is a rich tradition of research that can be used to inform the SBP. Investing in scientific research that informs the SBP involves almost all of the SBE sciences. Furthermore, because efforts to broaden participation in the natural and physical sciences have emphasized attracting students from underrepresented groups into the STEM “pipeline,” there are unique opportunities for collaboration between scientists in these fields with those engaged in the actual science of broadening participation.

Prospective research proposals in the Science of Broadening Participation might be guided by the following types of research questions:

- *What role does geographic and demographic change play in the way that racial, ethnic and cultural groups interact socially at the individual, and group level?*
- *Under which conditions do social, economic and socio-legal factors influence recruitment and retention into STEM education at both the individual, meso and macro levels?*

- *What aspects of learning environments and workplace culture moderate the effects of the underrepresentation of minorities, women, and/or persons with disabilities?*
- *What data sources are needed for identifying and tracking the progress of underrepresented minorities in STEM fields, and for hypothesis testing, and how can we make them accessible to researchers?*
- *What approaches are successful in ensuring that women do not lose interest in science during adolescence?*
- *How do social, political, economic, psychological or other forces affect the identity and aspirations of underrepresented groups?*
- *How can an understanding of explicit and implicit attitudes held by both majority and minority individuals be useful in attempting to reduce prejudice and discrimination in the recruitment, and retention of underrepresented groups in STEM fields?*
- *What socio-cultural and developmental variables impact parental involvement in children's education, and what is the evidence that can be applied to affect these influences?*
- *What behavioral processes result in economic outcomes that are associated with success in STEM?*
- *What are the implications of linguistic relativity for interest and achievement in STEM?*

Ultimately, the findings from research within the SBP will enable identification of pathways that provide particular underrepresented groups with access to participation in and beyond STEM in the United States. It will also be useful in identifying the barriers to broadening the participation of underrepresented groups in science. Sustained research in the SBP will permit development of strong theory and methods for studying broader participation in science, as well as the potential for elucidating the relation between broader participation and social innovation. The latter is critical for America's scientific preeminence.

Scholars with research proposals that contribute to the Science of Broadening Participation should submit proposals to the most relevant standing programs of the Social, Behavioral and Economic Sciences (SBE) Directorate and designate the proposal as SBP by including "SBP" at the beginning of the proposal title. The SBE division web sites provide information about the standing programs:

<http://www.nsf.gov/div/index.jsp?div=SES> and <http://www.nsf.gov/div/index.jsp?div=BCS>.

Successful research proposals will have scientifically sound research plans that are rooted in relevant theory and literature. SBE programs will evaluate these proposals along with other proposals submitted to the standing programs.

Sincerely,

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