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

DATE: December 4, 2012

Building on the previous investments of the Social, Behavioral and Economic Sciences Directorate (SBE) to stimulate research related to the Science of Broadening Participation (SBP), SBE and the Directorate for Education and Human Resources (EHR) are partnering to announce our joint interest in supporting the Science of Broadening Participation (SBP). The Science of Broadening Participation will employ the social, behavioral, economic and education sciences to inform approaches to increasing the access and involvement of underrepresented groups in science, technology, engineering, and mathematics (STEM) and to strengthen our national STEM capabilities and competitive advantage. Ultimately, the SBP research is intended to inform STEM educators, STEM employers, and policy makers and provide the evidence needed for informed decisions and the design of programs and interventions.

In FY 2013, EHR and SBE will partner to support research that uses the theories, methods, and analytic techniques of the social, behavioral, economic, and educational sciences to better understand the barriers as well as factors that enhance our ability to broaden participation in STEM.

NSF is particularly interested in SBP research proposals that will contribute to the overall understanding of the positive and negative factors impacting the participation of underrepresented individuals in STEM education and careers. SBP research proposals may focus on the following types of empirical research projects:

- **Institutional and organizational factors** (e.g., studies of organizational structural, cultural or climate factors that impact STEM participation)

- **Cultural and social factors** (e.g., studies of psychological or behavior factors that affect STEM participation and achievement rates)

- **Economic and policy-related factors** (e.g., studies of economic factors that impact STEM participation and the relationship between broader participation and social innovation)

- **Intervention strategies** (e.g., studies of strategies that when implemented can improve the representation and participation of women, minorities and persons with disabilities who are under-represented in STEM fields)

- **Translational and applied factors** (e.g., studies of translational variables and processes that can be implemented in educational and organizational settings)

We anticipate that research proposals in the Science of Broadening Participation will come from each of the fields represented within both SBE and EHR. Some examples of potential research questions related to the SBP include but are not limited to:

- What are the underlying psychological and social issues affecting the different participation and
graduation rates in STEM of women, men, persons with disabilities, and racial and ethnic minorities?
- Under which conditions do behavioral, economic, and socio-legal factors influence recruitment and retention in STEM education at the individual, meso, and macro levels?
- What aspects of preK-12, informal, and higher education learning environments and workplace culture enhance the positive factors and moderate the negative factors impacting underrepresented minorities, women, and/or persons with disabilities?
- What are effective methods of increasing the capacity of minority-serving institutions and community colleges to produce more STEM graduates who are highly qualified for the STEM workforce and graduate school?
- What behavioral or economic processes result in outcomes that are associated with success in STEM?
- How does cultural integration with the STEM curriculum affect student success?
- What approaches are successful in ensuring that young people do not lose interest in science during adolescence?
- What are the impacts of a diverse STEM workforce on scientific productivity and innovation and the national economy?

Proposals should be based on a research design that derives from theory and incorporates appropriate and proven methodologies and strategies to: (1) formulate appropriate research questions; (2) implement the collection and analysis of data; (3) interpret the resulting measures and findings generated by the study, and if appropriate (4) outline steps for successful dissemination or implementation efforts.

Collaborations between social scientists, natural scientists, education researchers, and engineers on SBP research projects are welcomed. In FY 2013, SBP proposals will be accepted by existing EHR and SBE programs:

**EHR:** Scholars may submit SBP proposals to any of the EHR education research programs (http://www.nsf.gov/dir/index.jsp?org=EHR. In particular, scholars may be interested in the Broadening Participation Research strand in the Research on Education and Learning (REAL) program in the Division of Research on Learning in Formal and Informal Settings (DRL) http://www.nsf.gov/div/index.jsp?div=DRL and the Broadening Participation Research in STEM Education (BPR) track in most of the Division of Human Resource Development (HRD) program solicitations found at http://www.nsf.gov/div/index.jsp?div=HRD. Successful research proposals will have scientifically sound research plans that are rooted in relevant theory and literature and are responsive to the call for proposals in the program solicitation. All SBP proposals will be reviewed by the relevant program to evaluate their scientific merit according to the NSF merit review criteria, and any additional review criteria specified in the program solicitation. SBP proposals may be co-reviewed with other EHR and/or SBE programs, and should have "SBP" at the beginning of the proposal title.

**SBE:** Scholars with research proposals that contribute to the Science of Broadening Participation should submit proposals to the most relevant standing programs of the SBE Directorate and designate the proposal as SBP by including "SBP" at the beginning of the proposal title. The SBE directorate web sites provide information about the standing programs http://www.nsf.gov/dir/index.jsp?org=SBE. Successful research proposals will have scientifically sound research plans that are rooted in relevant theory and literature. SBE programs will evaluate these proposals and will co-review other relevant ones submitted to EHR. Proposals will first be evaluated by the standing program to which they are submitted to evaluate their scientific merit, and then by a subcommittee of program officers and NSF leadership to evaluate their contribution to SBP.

Please direct questions about SBP proposals to SBP@nsf.gov. Specific questions about an EHR or SBE program should be directed to the program director of the standing program.
Sincerely,

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