

How is NSF Broadening Participation?

According to the 2018 National Science Foundation Strategic Plan, the broadening participation investment is a universal commitment across all NSF directorates to “advance the capability of the nation to meet current and future challenges.” NSF’s commitment to broadening participation is embedded in its Strategic Plan through a variety of investment priorities related to the strategic goals and objectives, including:

- Preparing a diverse, globally engaged science, technology, engineering, and mathematics (STEM) workforce;
- Integrating research with education and building capacity;
- Expanding efforts to broaden participation from underrepresented groups and diverse institutions across all geographical regions in all NSF activities; and
- Improving processes to recruit and select highly qualified reviewers and panelists that reflect the Nation’s diversity.



**An overview of
EHR’s contributions
to NSF’s mission
and goal to increase
the representation
of groups and
institutions traditionally
underrepresented in
Science, Technology,
Engineering, and
Mathematics (STEM)
throughout the
United States**

Through its investments, NSF strives to have a national impact on preparing and supporting a diverse STEM workforce and informed citizenry. This commitment to broaden participation in STEM is central to the agency's core values and evident throughout the Foundation.



NSF supports research and programs that focus on the following areas:

Individuals from underrepresented groups in STEM

- STEM Education Researchers and Professionals seeking NSF funding may propose inclusive, nondiscriminatory strategies to broaden the participation of individuals who belong to underrepresented groups, including those who identify as:
 - » African American or Black
 - » Alaska Native
 - » Hispanic
 - » Native American
 - » Native Hawaiian
 - » Other Pacific Islander
 - » Women
 - » Individuals with Disabilities

Institutions that predominantly serve and/or reach individuals from underrepresented groups such as community colleges, minority serving institutions, women's colleges, institutions for persons with disabilities, and informal institutions such as science centers

Geographic rural areas with lower rates of participation in NSF funded STEM research and education programs

Why is Broadening Participation Important?



The Broadening Participation Investment:

- Expands the pool of talented, highly qualified STEM professionals to address the needs of a diverse workforce and nation
- Promotes public engagement by giving all individuals the opportunity to participate in STEM regardless of their age, ethnicity, gender, income, or disability
- Encourages collaborations that leverage diverse expertise and perspectives fostering novel innovations

Building diverse STEM talent is critical and an important aspect of NSF's intellectual and broader impacts merit review criteria. NSF is also keenly aware that there is much to be learned about the science of broadening participation. Thus, the Foundation supports innovative research aimed at understanding broadening participation from interdisciplinary and convergent research perspectives such as sociocultural factors, barriers and breakthroughs, recruitment and retention, and inclusive pedagogical approaches implemented within formal and informal contexts.



EHR Broadening Participation Portfolio



The NSF Broadening Participation Portfolio includes over 20 EHR programs and funding opportunities designed to broaden participation in STEM. These investments range from capacity building, research centers, partnerships, and alliances to the use of co-funding or supplements to existing awards in the core research programs.

The NSF broadening participation portfolio is divided into three categories: focused programs, emphasis programs, and dear colleague letters.

FOCUSED PROGRAMS IN EHR

The programs listed below have an explicit goal to broaden participation in STEM. A majority of the awards' budgets are allocated for broadening participation activities, as well as to conduct research on the science of broadening participation. The numbers following each program name are current solicitations.

- ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE) 19-552
- Alliances for Graduate Education and the Professoriate (AGEP) 16-552
- Centers of Research Excellence in Science and Technology (CREST) and HBCU Research Infrastructure for Science and Engineering (RISE) 18-509
- Historically Black Colleges and Universities Undergraduate Program (HBCU-UP) 18-522
- Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI) Program 19-540
- Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES) - NSF INCLUDES Planning Grants 19-600
- Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES) - NSF INCLUDES Alliances 18-529
- Louis Stokes Alliances for Minority Participation (LSAMP) 17-579
- NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) 17-527
- Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) - apply through paesmem.net
- Tribal Colleges and Universities Program (TCUP) 18-546





EMPHASIS PROGRAMS IN EHR

The programs listed below have additional review criteria on broadening participation. All awards have broadening participation components, along with components not necessarily related to broadening participation.

- Advancing Informal STEM Learning (AISL) 17-573
- Computer Science for All: Researcher Practitioner Partnerships (CSforAll: RPP) 18-537
- Discovery Research PreK-12 (DRK-12) 17-584
- Documenting Endangered Languages (DEL) 18-580
- EHR Core Research (ECR): Building Capacity in STEM Education Research (ECR: BCSER) 19-565
- Graduate Research Fellowship Program (GRFP) 19-590
- Innovative Technology Experiences for Students and Teachers (ITEST) 19-583
- Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) - apply through paemst.org

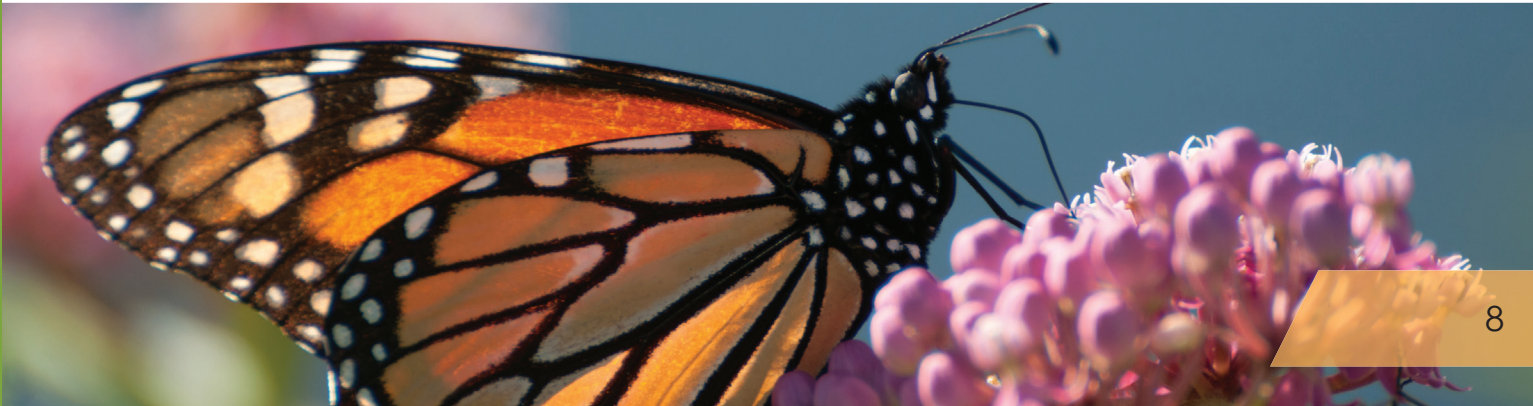




DEAR COLLEAGUE LETTERS IN EHR

Dear Colleague Letters (DCLs) are used to inform the community about upcoming opportunities or special competitions for supplements or to announce EHR's interest in receiving proposals in specified topical areas. Recent DCLs related to specific aspects of broadening participation include:

- Research on Sexual Harassment and Other Forms of Harassment in Science, Technology, Engineering and Mathematics (STEM) Contexts 19-053
- Expanding the NSF INCLUDES National Network 19-042
- Supporting the Re-Entry of Women and Women Veterans in the STEM Workforce through NSF INCLUDES 19-038
- Fundamental Research on Equity, Inclusion, and Ethics in Postsecondary Academic Workplaces and the Academic Profession within the EHR Core Research Program 19-035
- Research to Improve STEM Teaching and Learning, and Workforce Development for Persons with Disabilities 19-033
- Research Experiences for Undergraduates (REU) Supplemental Funding 19-014
- Historically Black Colleges and Universities Excellence in Research Program 17-138



Other Opportunities



Other opportunities to broaden participation exist in many aspects of research:

- International Research Experiences for Students 19-585
- Major Research Instrumentation Program 18-513
- Research Experiences for Undergraduates 19-582
- Science and Technology Centers: Integrative Partnerships 19-567





Resources

- **ADVANCE Resource and Coordination (ARC) Network** – <https://www.equityinstem.org>
- **American Indian Science and Engineering Society (AISES)** – <https://www.aises.org/>
- **Association of American Colleges & Universities, STEM Assessments** – <https://www.aacu.org/node/5623>
- **Beyond Rigor, Improving Evaluations with Diverse Populations** – <http://beyondrigor.org/>
- **Center for Advancement of Informal Science Education (CAISE)** – <https://www.informalscience.org/>
- **Classroom Undergraduate Research Experiences (CURE) survey** – <https://www.grinnell.edu/academics/resources/ctla/assessment/cure-survey>
- **Institute for Broadening Participation (IBP)** – <https://www.pathwaystoscience.org/>
- **National Alliance for Broader Impacts (NABI)** – <https://broaderimpacts.net/>
- **NSF INCLUDES National Network** – <https://www.includesnetwork.org>
- **Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)** – <https://www.sacnas.org/>
- **STEM Learning and Research Center (STELAR)** – <http://stelar.edc.org/>
- **Understanding Interventions that Broaden Participation in Research Careers** – <http://understanding-interventions.org/>

Views expressed on the websites listed above do not necessarily reflect the views of the National Science Foundation.



Reports on Broadening Participation in STEM



- “NSF INCLUDES Report to the Nation” (2018)
- Committee on Equal Opportunities in Science and Engineering (CEOSE) 2015-2016 Biennial Report to Congress (2017)
- From the NSF: The National Science Foundation’s Investments in Broadening Participation in Science, Technology, Engineering, and Mathematics Education through Research and Capacity Building (James & Singer, 2016)
- “Measuring Diversity”: New Guide from NSF, AAAS, Helps Universities Evaluate their Efforts (Lempinen, 2011)
- Framework for Evaluation Impacts of Broadening Participation Projects: Report from a National Science Foundation Workshop (Clewell & Fortenbury, 2009)
- Broadening Participation at the National Science Foundation: A Framework for Action (NSF, 2008)

IMAGE CREDITS

Cover: (clockwise from top left)

Dusit/Shutterstock.com; f11 photo/Shutterstock.com; Lekeah A Durden; PlusONE/Shutterstock.com; Jacob09/Shutterstock.com.

p. 1: RawPixel.com/Shutterstock.com

p. 2: Dan Koeck

p. 3: Nick Romanenko

p. 4: SciGirls, Twin Cities Public Television

p. 5: Photography by Roger Castonguay/Defining Studios

p. 6: Andrew Duffy, Trustees of Boston University (Project Accelerate), Award (1720914)

p. 7: www.jupiter.com

p. 8: Nancy Bauer/Shutterstock.com

p. 9: ATE Centers Impact 2016-2017 (www.atecenters.org)

p. 10: Getty Images/iStockphoto

p. 11: SciGirls, Twin Cities Public Television

p. 12: ATE Centers Impact 2016-2017 (www.atecenters.org)

p. 13: goodluz/Shutterstock.com



www.nsf.gov

National Science Foundation | 2415 Eisenhower Avenue | Alexandria, VA 22314