

NSF INCLUDES

Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science

AMS Committee on Education meeting

October 27, 2017



In a nutshell

NSF INCLUDES is a comprehensive national initiative to enhance U.S. leadership in science and engineering discovery and innovation by seeking and effectively developing STEM talent from all sectors and groups in our society.

The goal of NSF INCLUDES is to transform the STEM enterprise at all levels in order to fully engage the nation's talent for the ultimate improvement of the STEM enterprise and the enhancement of U.S. leadership and innovation capacity.



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The underlying premise

A diverse STEM workforce is one of the specific, desired societal outcomes alluded to in the NSF Broader Impacts evaluation criterion.

- Diversity is essential for excellence in research and innovation in science and engineering.
- America's STEM talent pool has a competitive advantage when it is enriched by diversity of perspectives and approaches.
- Full participation of all of America's STEM talent is critical to the advancement of science and engineering.
- Inclusion of talent from all sectors of American society is necessary for the health and vitality of the science and engineering community and its societal relevance.



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Defining terms

- **STEM workforce** means both education (K-∞) and workforce participation.
- **Diversity/Full participation/all sectors of American society** means that traditionally underrepresented and underserved groups in STEM are represented in the STEM workforce in percentages comparable to their representation in the U.S. population.
- **Traditionally underrepresented and underserved groups in STEM** can mean some or all of the following depending on context: Women, persons with disabilities, African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, Native Pacific Islanders, or persons from economically disadvantaged backgrounds.



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Goal and Objective

- **The long-term goal of NSF INCLUDES** is to support innovative models, networks, partnerships, technical capabilities and research that will enable the U.S. science and engineering workforce to thrive, by ensuring that traditionally underrepresented and underserved groups are represented in percentages comparable to their representation in the US population.
- **The objective of NSF INCLUDES** is to develop national networks that involve representative organizations and consortia from different sectors that are committed to a common agenda that comprehensively solves a specific STEM-inclusion problem.

Success will be evident in the formation and enactment of new policies and practices in institutions, professional societies, and scientific culture that position inclusion and equity as core values for excellence in STEM.

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Funding

NSF INCLUDES will fund new models, networks, partnerships, technical capabilities, and research that *lead to* measurable progress in diversity and inclusion in STEM, and have the ability to expand to the national level. NSF INCLUDES has three components:

- 1 NSF INCLUDES Design and Development Launch Pilots (DDLPs)
- 2 NSF INCLUDES Alliances
- 3 NSF INCLUDES Coordination Hub



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Examples of funded DDLPs (K-16)

- Michael Young, Iowa State University, *Building on Strengths — A Design and Development Launch Pilot to Broaden Participation in Mathematics*
This is a proposal to develop, pilot, and evaluate a Mathematician Affiliates of Color network.
- Mark Filowitz, California State University-Fullerton, *STEM³: Scaling STEM²*
This is a proposal to help facilitate the success of students from underrepresented groups who transfer from two-year to four-year colleges.



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Examples of funded DDLPs (Graduate)

- Judy Walker, University of Nebraska-Lincoln, *WATCH US (Women Achieving Through Community Hubs) in the United States*
This is a proposal to broaden the participation of women and other underrepresented groups in mathematics doctoral programs.
- Monica Plisch, American Physical Society, *A National Network for Access and Inclusion in Physics Graduate Education*
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This is a proposal to develop a best-practices and evidence-based system of pathways from the beginning of college, to the terminal degree, and then into the workforce, for members of underrepresented minorities in the physical sciences and engineering. The focus of this pilot is on institutional readiness for implementation of best practice interventions.



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NSF INCLUDES Dear Colleague Letter (DCL): Announcement of an Effort to Expand the NSF INCLUDES National Network

The purpose of this DCL is to broaden the PI base participating in NSF INCLUDES. Three types of proposals are solicited.

- **EAGER proposals** to study broadening participation activities, including possibly NSF INCLUDES DDLPs.
- **Conference proposals** to build networks.
- **Supplements to existing grants** to build collaborative infrastructure for broadening participation, connecting existing DDLPs, or bringing NSF-funded projects into NSF INCLUDES.



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