



# NSF FUNDING OPPORTUNITIES

## Broadening Participation in STEM through Diversity, Equity, and Inclusion

**WEBINAR**  
September 30, 2020  
2:30 – 4:30 pm



# Webinar Goals

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- Highlight EHR/NSF funding opportunities, especially those aimed at broadening participation in STEM
- Provide a forum for the field to ask Program Officers inquiries regarding funding opportunities
- Share other capacity building and professional development opportunities within EHR and across NSF



# Presentations

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- Overview and Introduction to NSF, EHR, & Broadening Participation
- Division of Human Resource Development (HRD)
- Division of Research on Learning in Formal and Informal Settings (DRL)
- Division of Undergraduate Education (DUE)
- Division of Graduate Education (DGE)
- Capacity Building & Professional Development



# National Science Foundation

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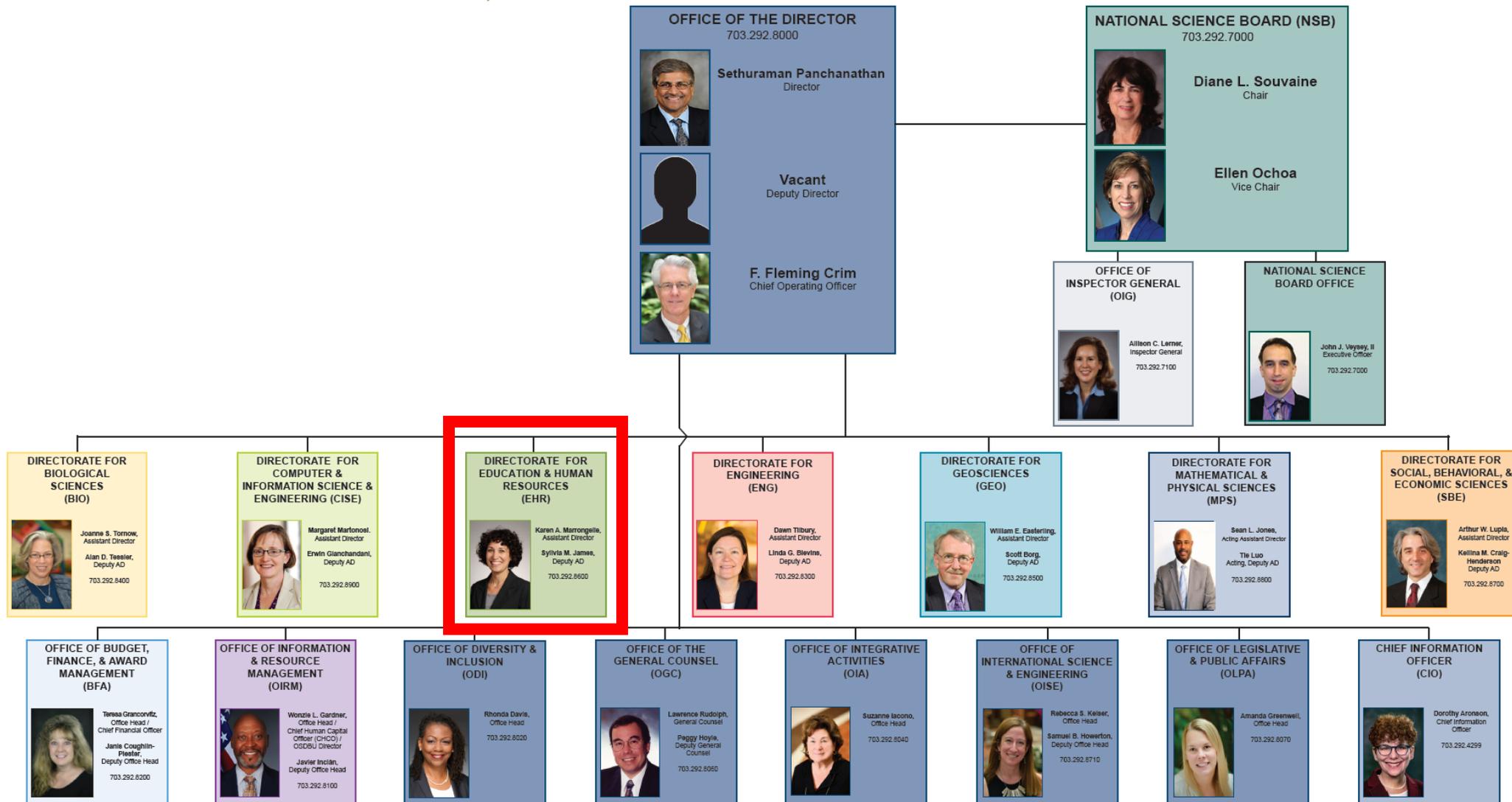
- Established by the National Science Foundation Act of 1950 (Public Law 81-507).
- FY2020 Annual Budget: \$8.3 Billion
- Funds approximately 25% of all federally supported basic research conducted by colleges and universities.
- Funds about 12,000 new awards per year, with an average duration of three years.

NSF vision is a nation that is the global leader in research and innovation.





# NATIONAL SCIENCE FOUNDATION



National Science Foundation  
2415 Eisenhower Avenue  
Alexandria, Virginia 22314

TEL: 703.292.5111 | FIRS: 800.877.8339 | TDD: 800.281.8749

July 2020

## NSF is committed to broadening participation by:

- Preparing a diverse, globally engaged science, technology, engineering, and mathematics 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.

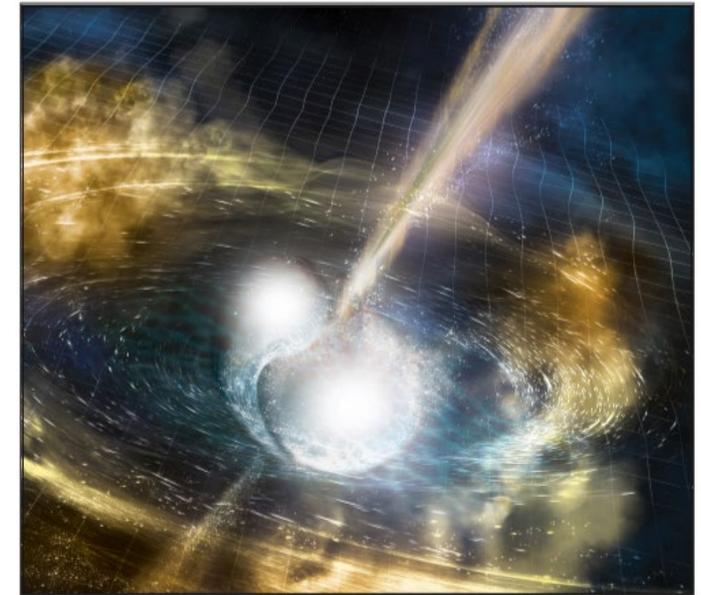
*NSF Strategic Plan for Fiscal Years  
(FY2018-2022) pg.20*



National Science Foundation

## BUILDING THE FUTURE INVESTING IN DISCOVERY AND INNOVATION

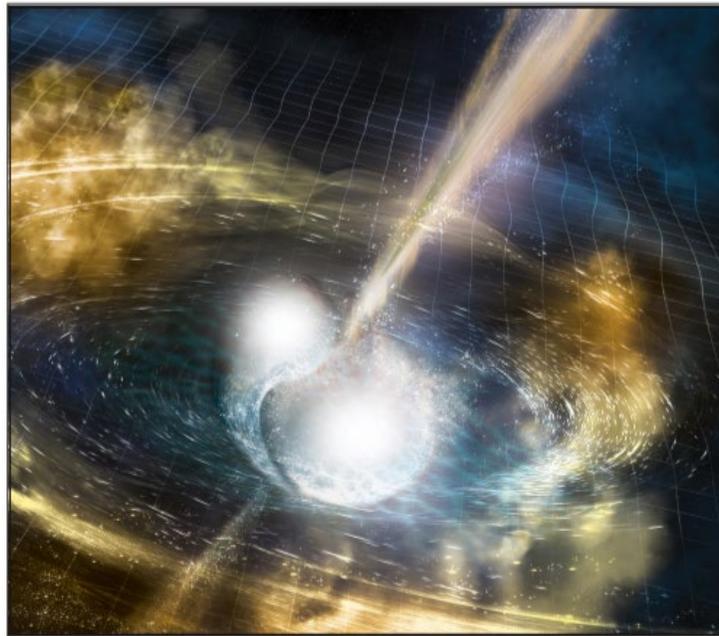
NSF Strategic Plan for Fiscal Years (FY) 2018-2022





# BUILDING THE FUTURE INVESTING IN DISCOVERY AND INNOVATION

NSF Strategic Plan for Fiscal Years (FY) 2018-2022



## IV. CORE VALUES

NSF's core values are essential and enduring tenets that guide everyone in the organization as we support the agency's mission. They have been developed with the active engagement of NSF's staff and the National Science Board. These values identify who we are and what is important to us. They guide how we make decisions, set priorities, address challenges, manage tradeoffs, recruit and develop personnel, and work together with our awardees.

NSF's core values are ExPLICIT in what we do every day:

**Excellence** – We maintain the highest standards in merit review, financial management, and award administration. We use rigorous review by experts to ensure that only the best ideas are funded and that our investments further the national interest.

**Public Service** – We proudly value our role as public servants, enabling the research community to blaze new paths for expanding knowledge and addressing societal challenges.

**Learning** – We take advantage of opportunities to improve our skills and we provide all staff members with opportunities to develop. We question our

assumptions; we evaluate our activities; we learn what is effective and what can be improved.

**Inclusion** – We strive to maintain a staff that is representative of the broader national community. We endeavor to support outstanding researchers and innovative thinkers from across our Nation's diversity of regions, types of organizations, and demographic groups.

**Collaboration** – We work in a collaborative enterprise in which teamwork is essential. We value the perspectives and values of our fellow team members and recognize that combining our knowledge enables us to find more robust solutions; we acknowledge the contributions that we each make to our shared success; we are committed to listening, communicating effectively, and working collegially.

**Integrity** – We hold each other and our awardees to the highest standards of ethical behavior. We strive to ensure the trustworthiness of the results of NSF-funded research by promoting the responsible conduct of research.

**Transparency** – We operate with transparency and openness.

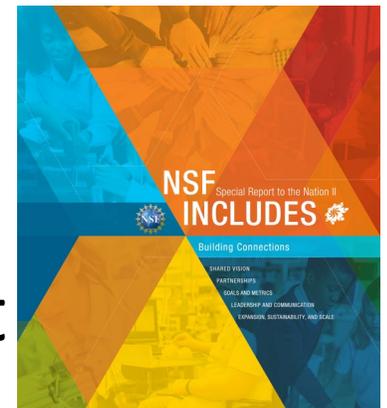
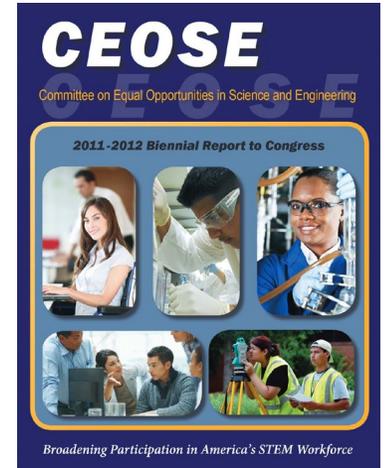


# Broadening Participation in STEM

The Broadening Participation portfolio is divided into three categories:

- programs that are primarily **focused** on broadening participation,
- programs that have broadening participation as one of several **emphases**, and
- Dear Colleague Letters expressing interest in specific aspects of broadening participation.

*NSF is committed to expanding efforts to increase participation from underrepresented groups and diverse institutions throughout the United States in all NSF activities and programs.*



# Broadening Participation in STEM



Home > About NSF

## About the Nation

### NSF AT A GLANCE

The National Science Foundation (NSF) promotes the progress of science; to promote national defense... NSF is vital because it transforms the future. This type of:

- Is a primary driver of the U.S. economy.
- Enhances the nation's security.
- Advances knowledge to sustain global leadership.

With an annual budget of \$7.5 billion (FY 2016), we are the funding source for approximately 24 percent of all federally supported basic research conducted by America's colleges and universities. In many fields such as mathematics, computer science and the social sciences, NSF is the major source of federal backing. [MORE](#)

How NSF determines which research has the greatest potential and would be the most fruitful investment of taxpayer dollars, [NSF's Merit Review Process](#). View a [two-minute video overview](#) of NSF's mission and focus. And, a [five-minute video](#) about NSF support for fundamental research, [Foundation for Innovation](#).

Check out our [NSF Toolkit](#), with resources providing information about the impact of NSF's investments.

Visit NSF's [Open Government Initiative Web site](#).

### WHO WE ARE

NSF leadership has two major components: a [director](#) who oversees [NSF staff and management](#) responsible for program creation and administration, merit review, planning, budget and day-to-day operations; and a 24-member [National Science Board \(NSB\)](#) of eminent individuals that meets six times a year to establish the



# Broadening Participation in STEM



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WHERE DISCOVERIES BEGIN

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## Broadening Participation Portfolio

### Background

NSF has taken a variety of approaches to broaden participation across its many programs. While broadening participation is included in the NSF review criteria, some program announcements and solicitations go beyond the standard criteria. They range from encouraging language to specific requirements. 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 portfolio represented below is divided into three categories: (1) programs that are primarily focused on broadening participation, (2) programs that have broadening participation as one of several emphases, and (3) Dear Colleague Letters expressing interest in specific aspects of broadening participation. You may also review awards made to each program by following the link to the individual program page, then scrolling to the bottom where you will find a link that displays the awards.

### Focused Programs

These programs have an explicit broadening participation program goal. The majority of each award's budget goes to broadening participation activities, and could involve research on the topic.

PROGRAM NAME	Publication No.	Directorate	Division
ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions	20-554	All	All
Alliances for Graduate Education and the Professoriate	16-552	EHR	HRD
Broadening Participation in Engineering	19-7680	ENG	EEC
Centers of Research Excellence in Science and Technology (CREST) and HBCU Research Infrastructure for Science and Engineering (RISE)	18-509	EHR, ENG	HRD
Coastlines and People	20-567	BIO, EHR, ENG, GEO, OIA, SBE	
Disability and Rehabilitation Engineering	20-5342	ENG	CBET
EPSCoR Research Infrastructure Improvement Program Track-1:	20-571	All	All



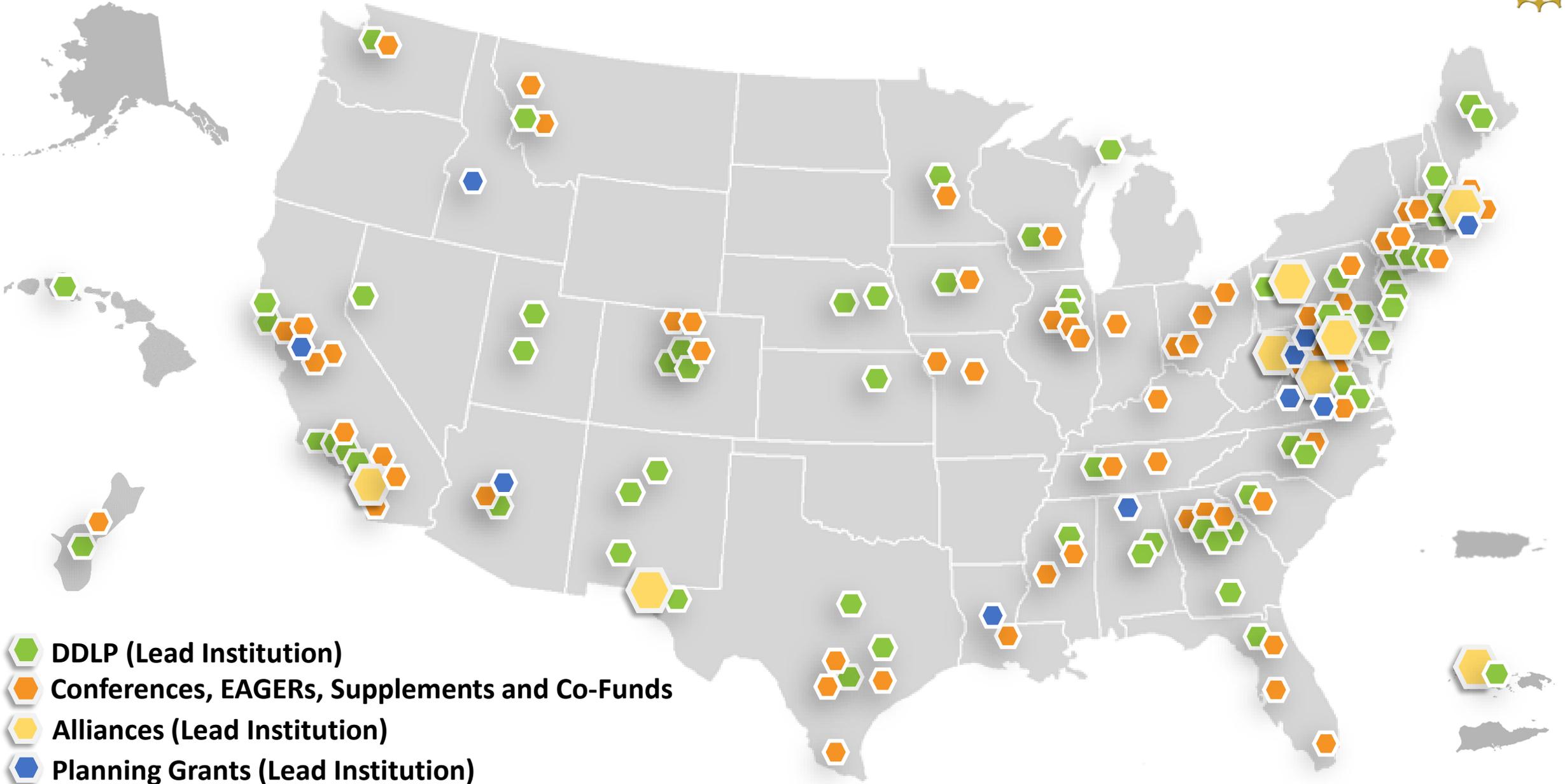
# NSF INCLUDES

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

*Vision: To catalyze the STEM enterprise to work **collaboratively** for inclusive change, resulting in a STEM workforce that reflects the population of the Nation*



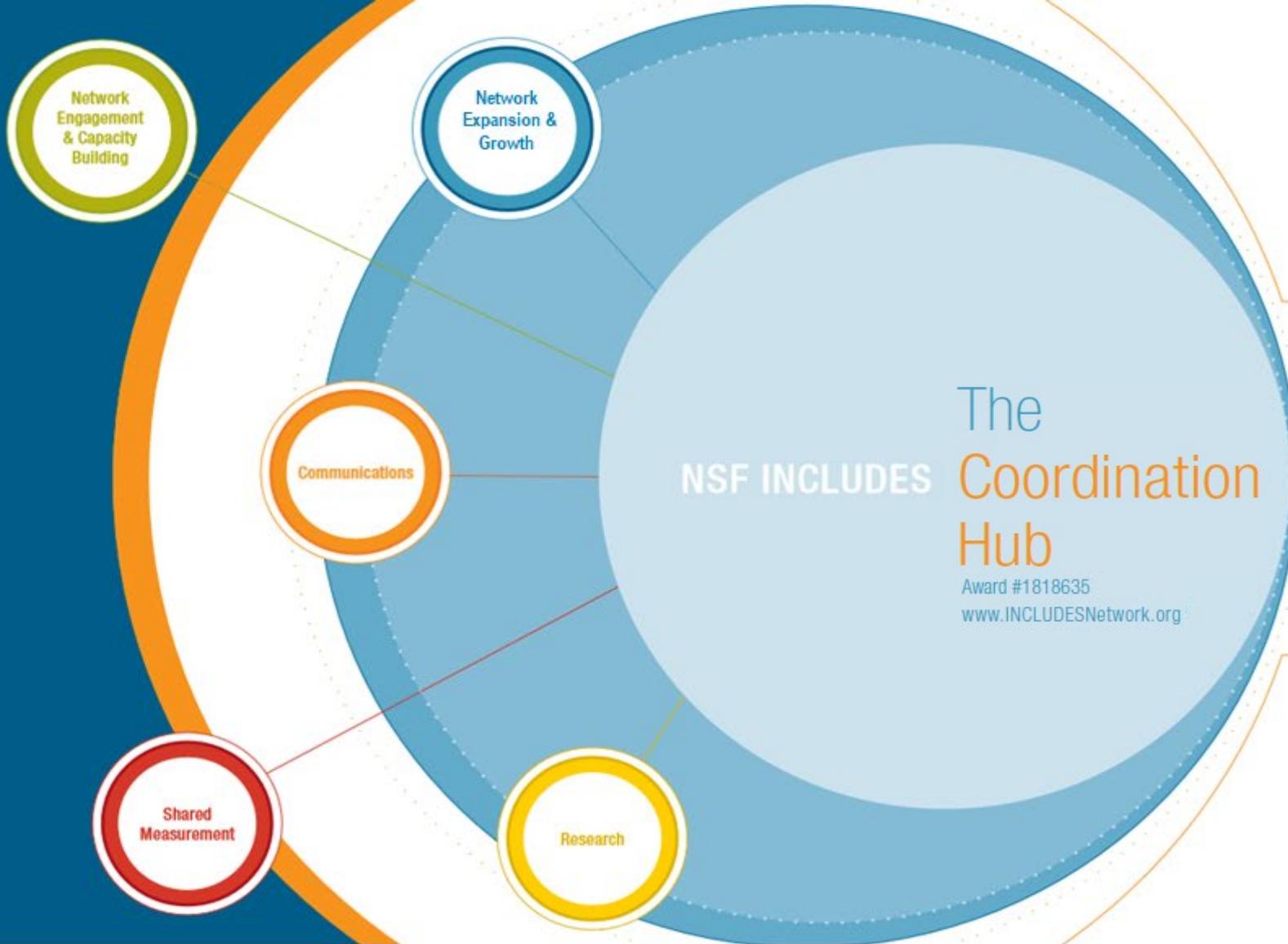
# NSF INCLUDES National Network





Establishing a Network  
Community for Broadening  
Participation of Hispanics  
in Graduate Studies





The NSF INCLUDES Coordination Hub is a collaboration of multiple institutions with SRI International as the lead. The Coordination Hub helps to foster the overarching vision and strategy of the NSF INCLUDES National Network by facilitating the activities needed to build and maintain the network. The graphic to the left illustrates the Coordination Hub's five focus areas.



[www.INCLUDESNetwork.org](http://www.INCLUDESNetwork.org)

*The Hub facilitates activities needed to build and maintain a strong **NSF INCLUDES National Network**, including communications, capacity building, and efforts aimed at increasing visibility. The Hub itself is a collaboration of multiple institutions.*



# NSF INCLUDES Alliance Solicitation 20-569

## Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)

NSF INCLUDES Alliances

### PROGRAM SOLICITATION NSF 20-569

REPLACES DOCUMENT(S):  
NSF 18-529



Letter of Intent Due Date(s) (required) (due by 5 p.m. submitter's local time):

October 05, 2020

October 04, 2021

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

January 26, 2021

January 25, 2022



### IMPORTANT INFORMATION AND REVISION NOTES

- A Letter of Intent is required for all proposal submissions and must be submitted via FastLane by the due dates listed above.
- Prior NSF INCLUDES funding is not required to be eligible to submit an Alliance proposal.
- An NSF INCLUDES Planning Grant is not a prerequisite to submit an Alliance proposal.
- The inclusion of an NSF INCLUDES Design and Development Launch Pilot Project Principal Investigator and/or Co-Principal Investigator is encouraged but not required.
- There are limits on the number of proposals that may be submitted per organization and per PI or Co-PI.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 20-1)*, which is effective for proposals submitted, or due, on or after June 1, 2020.

# NSF INCLUDES

Special Report to the Nation II



## Building Connections

- SHARED VISION
- PARTNERSHIPS
- GOALS AND METRICS
- LEADERSHIP AND COMMUNICATION
- EXPANSION, SUSTAINABILITY, AND SCALE



# CAREER DEVELOPMENT, EDUCATION CORE RESEARCH, AND HSI PROGRAM

Dr. Claudia Rankins

# Faculty Early CAREER Development Program

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- CAREER is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education, and to lead advances in the missions of their departments or organizations.
- EHR encourages **eligible** faculty to submit CAREER proposals in STEM education research.
- Solicitation NSF 20-525 provides details. The annual deadline is the 4th Monday in July.



# Faculty Early CAREER Development Program

Two recent EHR CAREER awardees won the 2019 Presidential Early Career Award for Scientists and Engineers (PECASE) award:



**Christopher Jett**  
Associate Professor  
Mathematics Education  
University of West Georgia



**Maria Coppola**  
Associate Professor  
Psychology  
University of Connecticut



# Education Core Research (ECR)

- The EHR Core Research program (ECR) invites proposals for fundamental research (basic research or use-inspired basic research) that advances knowledge in one or more of the three Research Tracks: **STEM Learning and Learning Environments, Broadening Participation in STEM fields,** and **STEM Workforce Development.** This program cuts across all of EHR's divisions and information can be found at solicitation NSF 19-508.
- Also check out **ECR: Building Capacity in STEM Education** and its solicitation NSF 20-521. Specifically, ECR: BCSER supports activities that enable early and mid-career researchers to acquire the requisite expertise and skills to conduct rigorous fundamental research in STEM education.



# Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program)

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The NSF established the HSI Program to build capacity at HSIs that typically do not receive high levels of NSF grant funding with the goals of enhancing the quality of undergraduate STEM education and increasing the recruitment, retention, and graduation rates of students pursuing associate's or baccalaureate degrees.

**Program Solicitation – NSF 20-599; multiple funding opportunities**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5481](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5481)



*HRD is a focal point for NSF's agency-wide commitment to enhancing the quality and excellence of STEM education and research through broadening participation by historically underrepresented groups - minorities, women, and persons with disabilities.*

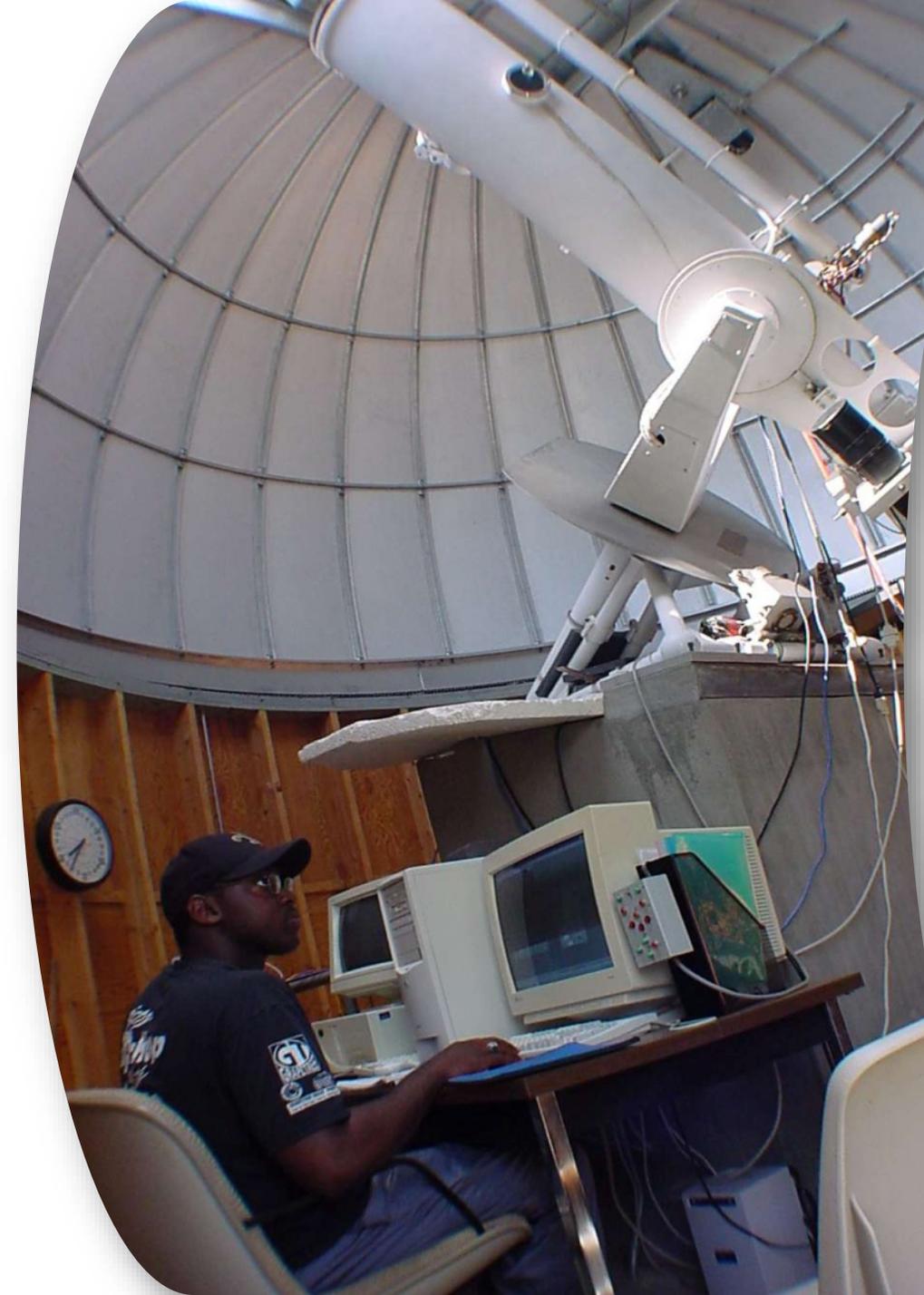
**Drs. E. Tatiana Camacho  
and Claudia Rankins**



## **DIVISION OF HUMAN RESOURCE DEVELOPMENT (HRD)**

# Division of Human Resource Development

The mission of HRD is to grow the innovative and competitive U.S. STEM workforce that is vital for sustaining and advancing the Nation's prosperity by supporting the broader participation and success of individuals currently underrepresented in STEM and the institutions that serve them.

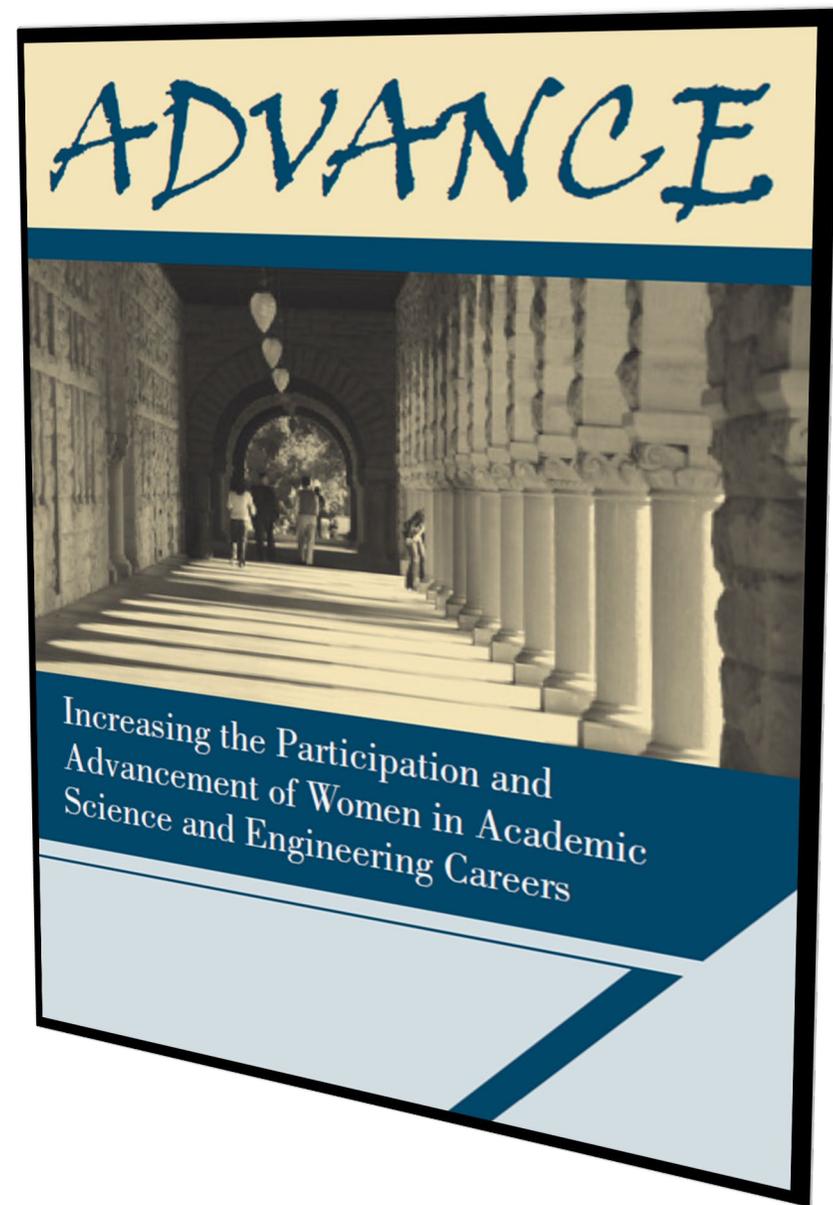


The goal of the **ADVANCE (Organizational Change for Gender Equity in STEM Academic Professions) program** is to broaden the implementation of evidence-based systemic change strategies that promote equity for STEM faculty in academic workplaces and the academic profession.

ADVANCE supports grants that:

- Develop, implement, and evaluate systemic change strategies to transform academic institutional policies, procedures, practices, and culture to create organizations that are inclusive and support diverse STEM faculty; and
- Facilitate the adaptation and scale-up of evidenced-based systemic change strategies by institutions and non-academic organizations.

**Program Solicitation – NSF 20-554; multiple funding opportunities**



# Alliances for Graduate Education and the Professoriate (AGEP)



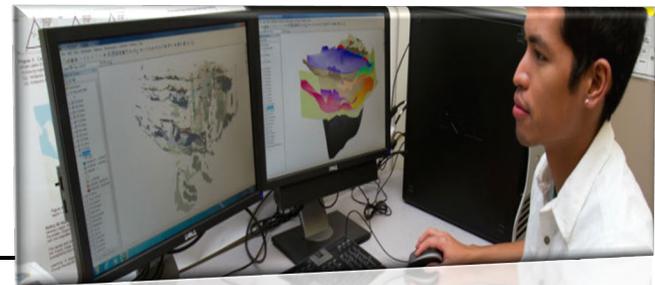
**Program Solicitation – NSF 16-552; annual proposal deadline in December each year**

*AGEP-Brookhaven National Laboratory project Faculty, post-docs, graduate students, administrators.*

AGEP seeks to advance knowledge about models to improve pathways to the professoriate for historically underrepresented minority doctoral students (including those with disabilities), postdoctoral fellows and faculty in specific STEM disciplines and/or STEM education research fields.

New and innovative models are encouraged, as are models that reproduce and/or replicate existing evidence-based alliances in significantly different disciplines, institutions, and participant cohorts.

# Centers of Research Excellence in Science and Technology (CREST)



*CREST project – California State University, Bakersfield - For the study of 21<sup>st</sup> century water resources and subsurface carbon storage in the San Joaquin Valley.*

- The **CREST** program provides support to enhance the research capabilities of minority-serving institutions through the establishment of centers with collaborating partners that effectively integrate education and research.
- Projects must demonstrate a compelling vision for research infrastructure improvement, and a comprehensive to achieve and sustain national competitiveness in a clearly defined area of national significance in science or engineering research.

**Program Solicitation – NSF 18-509; multiple funding opportunities, proposal deadlines throughout the year**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=6668](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6668)



# Historically Black Colleges & Universities Undergraduate Program (HBCU-UP)

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**HBCU-UP** provides support for the development, implementation, and the study of evidence-based, innovative models and approaches to nourish substantial improvements in the preparation and STEM workforce career success of HBCU undergraduates. HBCU-UP also funds research in broadening participation, as well as all NSF supported disciplines. The program has a number of different tracks.

**Program Solicitation – NSF 20-559; multiple funding opportunities, proposal deadlines throughout the year**

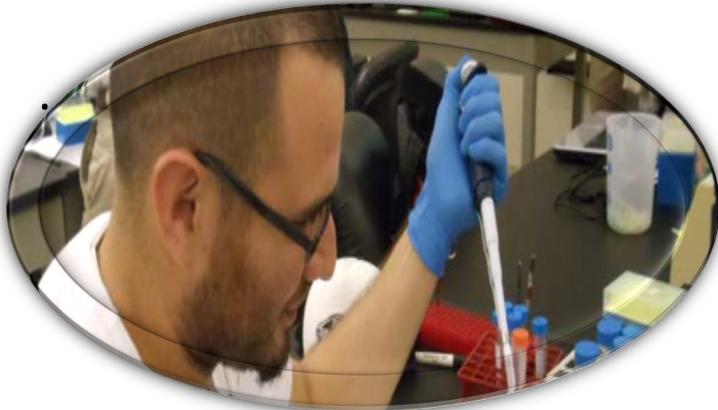
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5481](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5481)



# Louis Stokes Alliances for Minority Participation (LSAMP)

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**LSAMP** was authorized by Congress and established in 1991. The LSAMP program provides funding to alliances that implement comprehensive, evidence-based, innovative, and sustained strategies that ultimately result in the graduation of well-prepared, highly-qualified students from underrepresented groups who pursue graduate studies or careers in STEM.



**Program Solicitation – NSF 20-590; multiple funding opportunities, annual deadlines in January and November each year**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13646](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13646)



# Tribal Colleges and Universities Program (TCUP)

**TCUP** provides awards to Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions to promote high quality STEM education and research in order to support the preparation of a science and engineering workforce that is broadly inclusive and capable of performing in an international research and development environment in order for the U.S. to remain at the forefront of world science and technology.



**Program Solicitation – NSF 18-546; multiple funding tracks, proposal deadlines throughout the year.**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5483](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5483)



# NSF Excellence Awards in Science & Engineering

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**Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST)**



**Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM)**



*DRL invests in projects to improve the effectiveness of STEM learning for people of all ages and from all backgrounds. Its mission includes promoting innovative research, development, and evaluation of learning and teaching across all STEM disciplines by advancing cutting-edge knowledge and practices in both formal and informal learning settings.*

**Dr. Robert Russell**



## **DIVISION OF RESEARCH ON LEARNING IN FORMAL AND INFORMAL SETTINGS (DRL)**

# ITEST Program Overview

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- ITEST promotes PreK-12 student interest and involvement in STEM and ICT careers
- Key elements of ITEST projects:
  - Strengthens knowledge of & interest in STEM & ICT careers
  - Develops and researches innovative use of technology
  - Researches and develops innovative learning experiences
  - Engages students within the PreK-Grade 12 age range
  - Develops Strategic partnerships (schools, industry, higher ed, CBO's, informal orgs)
  - Includes a significant research component
  - Incorporates explicit strategies for broadening participation



## Industry-informed, integrated STEM career pathways

### STEM Pathways for High-School Urban Students ITEST #1855763

Through partnerships with industry, underserved urban high-school students learn STEM and work with STEM professionals through structured STEM career pathways.



ing, and engineering on the autism spec

# Inventing, Designing, and Engineering on the Autism Spectrum

ITEST #1614436

A collaborative co-design project  
engaging participants on the autism  
spectrum in making and fabricating  
3-D objects.



# AISL Solicitation-Specific Review Criteria: Broadening Participation

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To what extent does the proposal:

- Include explicit and effective strategies for recruiting and selecting participants
- Describe approaches that address diversity, access, equity & inclusion
- Describe research-informed instructional approaches to build on the challenges to and strengths of participants
- Explain how innovations with technology are developmentally and age-appropriate



# ITEST Solicitation (NSF 19-583)

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- Three project types: Exploring Theory & Design Principles (ETD), Designing and Testing Innovations (DTI), & Scaling, Expanding & Iterating Innovations (SEI)
- Funded through H1-B Work Visa Revenue
- **Proposals require addressing Solicitation Specific Criteria related to broadening participation.**
- **Proposal Deadline: August 13, 2021**
- Resource Center: STELAR, [www.stelar.edu.org](http://www.stelar.edu.org)
- ITEST questions or inquiries about project ideas (send in a 1 or 2 pager): [DRLITEST@nsf.gov](mailto:DRLITEST@nsf.gov)



# Advancing Informal STEM Learning



*Photo Credits:* Discover Tech Exhibit – Hunstville, AL.  
Credit: NCIL/SSI (NSF 1421427)

# AISL Program Overview

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- Advances new *approaches to and evidence-based understanding of* the design and development of STEM learning in informal environments for public and professional audiences.
- Investments should be of interest and utility to public audiences, informal STEM researchers, developers and practitioners, and decision-makers.
- Priorities: (1) strategic impact, (2) knowledge-building, (3) innovation, (4) collaboration, (5) infrastructure/capacity building and (6) **broadening participation**.



Children Investigating  
Science with Parents &  
Afterschool (CHISPA = spark in  
Spanish)  
AISL #1323518

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Implemented in over 25 sites, the project presented children with a bilingual STEM curriculum with hands-on activities, supported by staff development, family events at the community sites, and family events with partner museums.

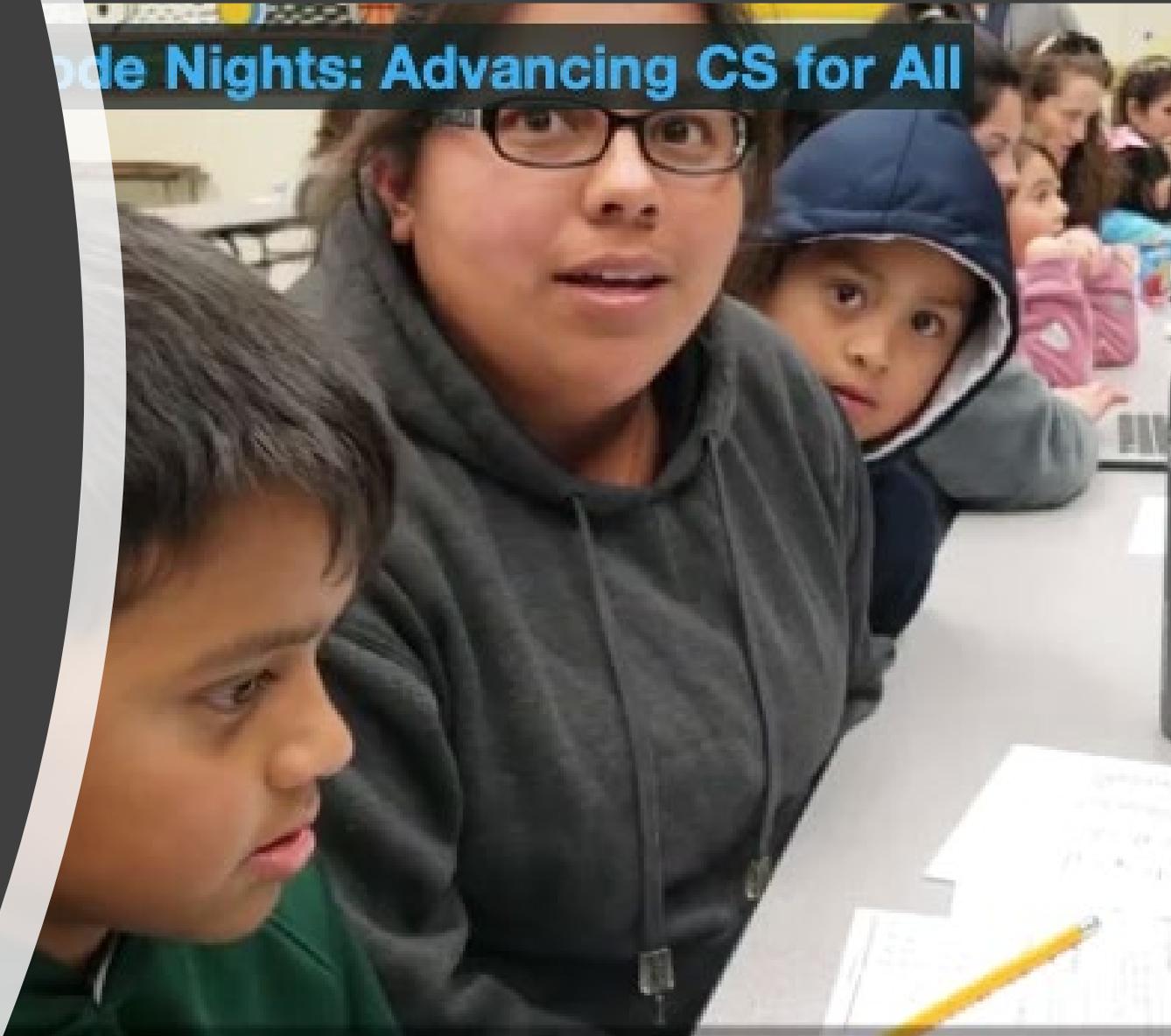


## Code Nights: Advancing CS for All

### Family Code Night AISL #1738814

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The nation-wide project engages children and parents or other caregivers in evening and weekend sessions engaging the whole family in getting some introductory experiences in coding. The project adapted the program to a bilingual Spanish-English format.



# AISL Solicitation-Specific Review Criteria: Broadening Participation

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- Does the proposal identify the characteristics and needs of the targeted underrepresented groups (public or professional) to be served?
- Does the proposal include explicit plans or strategies for addressing or accommodating the specific interests, community or cultural perspectives, and educational needs of participants of the identified underrepresented groups?



# AISL Solicitation (NSF 20-607)

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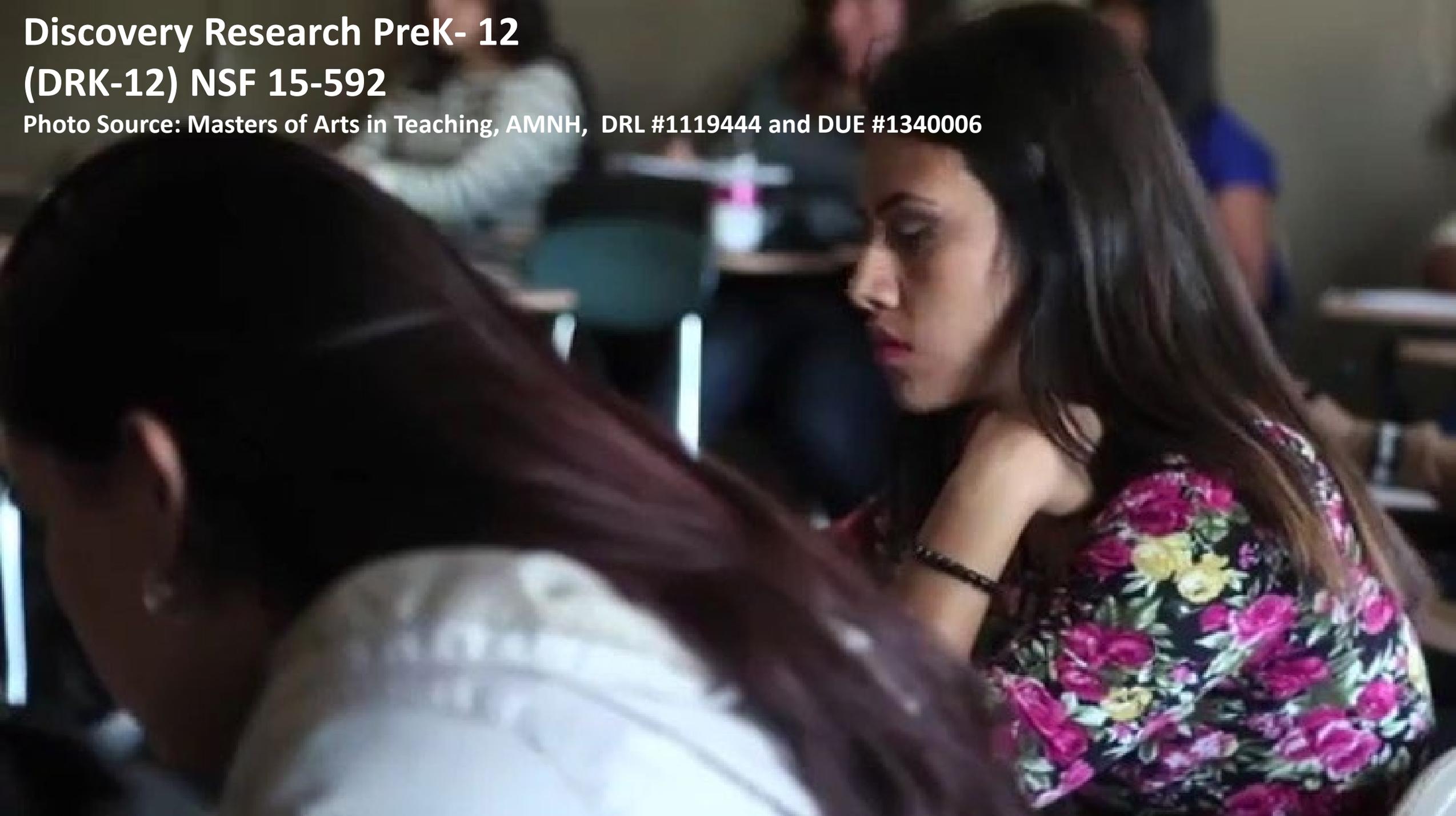
- **Five project types: (1) Pilot & Feasibility Studies, (2) Research in Service to Practice, (3) Innovations in Development, (4) Broader Implementation, (5) Literature Reviews, Syntheses, or Meta-Analyses, and (6) Conferences**
- **Proposal Deadline: Jan. 12, 2021**
- **Send questions or project concepts (1-2 pages) to [DRLAISL@nsf.gov](mailto:DRLAISL@nsf.gov)**
- **Resource Center: Center for Advancement of Informal Science Education (CAISE): [www.informalscience.org](http://www.informalscience.org)**
- **Must address special review criteria.**



**Discovery Research PreK- 12**

**(DRK-12) NSF 15-592**

**Photo Source: Masters of Arts in Teaching, AMNH, DRL #1119444 and DUE #1340006**



# Discovery Research PreK-12 (DRK-12) Program Overview

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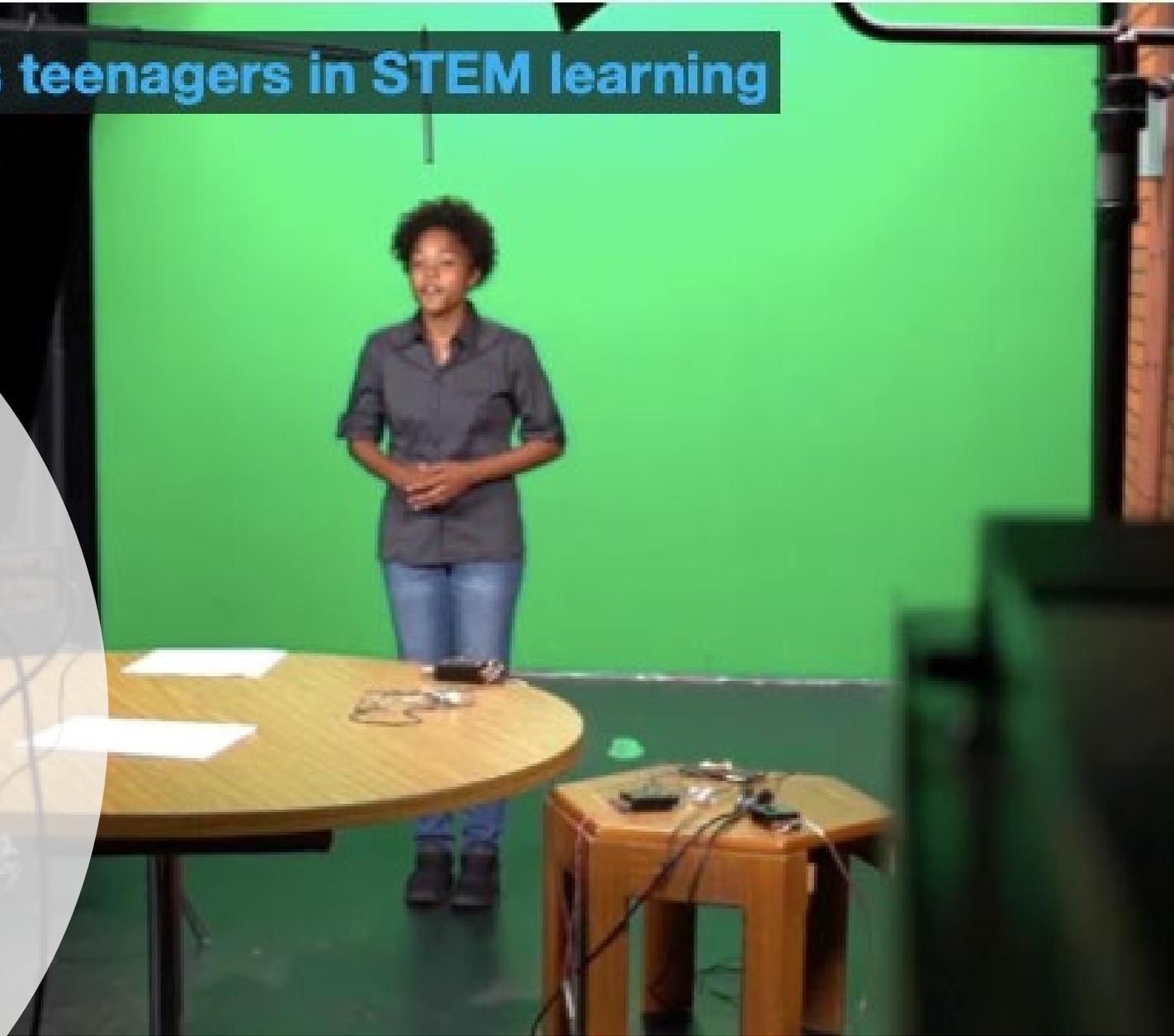
- DRK-12 supports projects that significantly enhance the learning and teaching of STEM by PreK-12 students and teachers through fundamental research and the development of innovative approaches.
- **Goals:** enhanced student achievement in STEM, preparation for the scientific workforce, and improved science literacy.
- **Focus:** learning that takes place during the 12-14 years students are enrolled in the formal classroom learning environments
- The program encourages proposals from minority-serving institution such as HBCU's, Tribal Colleges, Hispanic Serving Institutions, Alaska Native and Native Hawaiian Serving Institutions.
- Collaborations are encouraged with NSF INCLUDES proposals.



# How video storytelling reengages teenagers in STEM learning

## Student Reporting Lab DRK12 #1503315

Students learn STEM through an NGSS-linked curriculum, receive training in journalism, and, create stories with guidance from a mentor.





# Broadening Participation in PreK-12 STEM Education

Engaging Girls in STEM Through Programming Experiences in Games  
NSF Program: Many DRL programs

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Young girls gain in technology interest and identity through play with science- and technology-related toys.

# DRK-12 Strands and Project Types

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- DRK-12 has three major research and development strands: Assessment, Learning and Teaching.
- DRK-12 has six project types: (1) Exploratory, (2) Design and Development, (3) Impact, (4) Implementation & Improvement, (5) Syntheses, and (6) Conferences.
- Proposals specify which Project Type and Strand applies to the proposed project.



# Discovery Research PreK-12 Solicitation (NSF 20-572)

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DRK-12 invites proposals that address immediate challenges that face PreK-12 STEM education as well as proposals that anticipate radically different structures and functions of teaching and learning. The program builds on fundamental research that provides theoretical and empirical justification for proposed projects.

- **Proposal Deadline: Oct. 7, 2020, Oct. 6, 2021 & first Wednesday in October thereafter.**
- Resource Center: [www.cadrek12.org](http://www.cadrek12.org)
- Send questions and project concepts to: [DRLDRK12@nsf.gov](mailto:DRLDRK12@nsf.gov)



# NSF Video Showcase 2020: Watch Hundreds of Short, Fun Videos Showcasing DRL Projects



**STEM FOR ALL** MAY 5 - 12, 2020  
**STEM for All Video Showcase**  
<http://stemforall2020.videohall.com>

VIEW | DISCUSS | VOTE

Browse 171 videos of the latest federally funded projects to transform STEM!

[stemforall2020.videohall.com](http://stemforall2020.videohall.com)



*DUE invests in efforts aimed at strengthening STEM education at two- and four-year colleges and universities by improving curricula, instruction, laboratories, infrastructure, assessment, diversity of students and faculty, and collaborations.*

**Drs. Abby Ilumoka and  
Pushpa Ramakrishna**



## **DIVISION OF UNDERGRADUATE EDUCATION (DUE)**

# Division of Undergraduate Education (DUE)

## **IUSE: EHR**

Improving  
Undergraduate  
STEM  
Education

## **S-STEM**

NSF  
Scholarships in  
STEM

## **ATE**

Advanced  
Technological  
Education

## **Noyce**

Robert Noyce  
Teacher  
Scholarships



# Division of Undergraduate Education

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## **IMPROVING UNDEGRADUATE STEM EDUCATION (IUSE:EHR)**

Solicitation: NSF 19-601



# Improving Undergraduate STEM Education (IUSE: EHR)

Competitive proposals should **build on available evidence and theory, generate evidence, and build knowledge.**

## Solicitation NSF 19-601

### FAQs

<https://www.nsf.gov/pubs/2020/nsf20043/nsf20043.pdf>

Program Goals		
<b>Improve STEM Learning &amp; Learning Environments:</b>	<b>Build the Professional STEM Workforce for Tomorrow:</b>	<b>Broaden Participation &amp; Institutional Capacity for STEM Learning:</b>
Increase the number and diversity of undergraduate students recruited and retained in STEM education and career pathways through improving the evidence base for successful strategies to broaden participation and implementation of the results of this research	Improve the preparation of undergraduate students so they can succeed as productive members of the future STEM workforce, regardless of career path, and be engaged as members of a STEM-literate society	Increase the number and diversity of undergraduate students recruited and retained in STEM education and career pathways through improving the evidence base for successful strategies to broaden participation and implementation of the results of this research





# Improving Undergraduate STEM Education (IUSE) Solicitation NSF 19-601

**Estimated IUSE Funding in FY 20**  
 Amount: \$63 million (105 awards)  
 60 Level 1  
 35 Level 2 & 3  
 10 Capacity-Building projects

## Two Program Tracks

### Engaged Student Learning

*Focus on designing, developing, and implementing research on STEM learning models, approaches & tools*

### Institutional and Community Transformation

*Focus on increasing the propagation of highly effective methods of STEM teaching and learning*

3 levels

3 levels

**Level 1**

**Level 2**

**Level 3**

Up to \$300,000  
Up to 3 yrs

\$300,001 to \$600,000  
Up to 3 yrs

\$600,001 to \$2M  
Up to 5 yrs

**Capacity Building**

**Level 1**

**Level 2**

Up to \$150,000  
single institution  
\$300,000  
multiple institutions  
Up to 2 yrs

Up to \$300,000  
Up to 3 yrs

Single Institution  
\$600,001 to \$2M  
Multiple institutions  
Up to \$3M, 5 yrs

**Deadlines:**  
Feb 2, 2021  
Aug 3, 2021  
1<sup>st</sup> Tues in Feb & Aug Annually

**Deadline:**  
Dec 1, 2020  
1<sup>st</sup> Tues in Dec Annually

**Deadline:**  
Dec 1, 2020  
1<sup>st</sup> Tues in Dec Annually

**Deadlines:**  
Feb 2, 2021  
Aug 3, 2021  
1<sup>st</sup> Tues in Feb & Aug Annually

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Feb 2, 2021  
Aug 3, 2021  
1<sup>st</sup> Tues in Feb & Aug Annually

**Deadline:**  
Dec 1, 2020  
1<sup>st</sup> Tues in Dec Annually

## The Bowman Creek Educational Ecosystem (DUE 1612021, ICT, E&D)



- IUSE ICT E&D project in South Bend, Indiana
- Collaboration between University of Notre Dame, Indiana University South Bend, Ivy Tech Community College, K-12 schools, city government and community organizations
- Name of project refers to Bowman Creek, a badly polluted tributary of St. Joseph River in South Bend, IN
- Impaired waterway is focus of project's activities
- Project built upon "multidimensional diversity" where interns represent a very broad range of schools, ages, majors, and ethnic and racial backgrounds
- Participants identify computer-based projects that will have real community impact, and then work in interdisciplinary teams to implement them
- Project generates knowledge through investigation of research questions that explore how perceptions of identity and possibility together with life experiences shape student choices with regard to STEM as a career



# Division of Undergraduate Education

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## **ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM (NOYCE)**

Solicitation: NSF 17-541

Due Date: Last Tuesday in August  
Annually thereafter



# Robert Noyce Teacher Scholarship Program

**Solicitation NSF 17-541**

<https://www.nsf.gov/pubs/2017/nsf17541/nsf17541.pdf>

Act of Congress (2002)

**GOAL:** to encourage talented STEM majors and STEM professionals to become K-12 STEM teachers

Scholarship, stipend, and fellowship recipients must teach in a high-need school district for a specified number of years

**Track 1 (S&S) Scholarships & Stipends**

Undergraduate STEM majors and/or STEM career changers

**Track 2 (TF) NSF Teaching Fellowships**

STEM career changers

**Track 3 (MTF) NSF Master Teaching Fellowships**

Exemplary, experienced STEM teachers

**Track 4 (Noyce Research) Research on the Preparation, Recruitment, and Retention of K-12 STEM Teachers**

**Deadline (All Tracks):**

**Last Tuesday in August, Annually Thereafter**

# Robert Noyce Teacher Scholarship Program

## Project Title: Supporting Noyce Scholars through Professional Learning Communities University of Colorado Colorado Springs (UCCS), DUE 1660679, NOYCE Track 1

- Addresses STEM teacher shortage across Southern Colorado, particularly in middle and high school classrooms serving economically and ethnically diverse student populations
- Partnership between UCCS and 3 high-need local educational agencies: Colorado Springs School District 11, Falcon School District 49, and Harrison School District 2
- Financial support to 35 talented and highly qualified undergraduate STEM majors & post-baccalaureate STEM professionals, military veterans
- NOYCE scholars to complete requirements for secondary education teaching license in math or science through UCCS' Teach program

### Benefits

- Pre-service STEM teacher training, supplementary field experiences, pre-ternships, Professional Learning Communities
- In-service support for Noyce graduates through Noyce Support Network
- Free conferences designed for teachers, faculty and STEM industry partners



# Division of Undergraduate Education

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## **NSF SCHOLARSHIPS IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS PROGRAM (S-STEM)**

Solicitation: NSF 20-526

Due Date: March 21, 2021



# S-STEM Program Goals



**increase the number** of low-income academically talented **full- and part-time students** with demonstrated financial need obtaining degrees in S-STEM eligible disciplines and entering the workforce or graduate programs in STEM



**improve the education** of future scientists, engineers, and technicians, with a focus on low-income academically talented students with demonstrated financial need



**generate knowledge** to advance understanding of how interventions or evidence-based curricular and co-curricular activities affect the success, retention, transfer, academic/career pathways, and graduation of low-income students in STEM



# S-STEM Program

## Three Program Tracks

**Deadline (All Strands and Types):  
Last Wednesday in March, Annually Thereafter**

### Track 1: Institutional Capacity Building

*For institutions without prior funding from S-STEM or STEP programs*



**Up to \$650K  
Up to 5 yrs**

### Track 2: Design and Development: Single Institution

*Tracks 2 & 3 seek to leverage S-STEM funds with institutional efforts and infrastructure to increase and understand impacts*



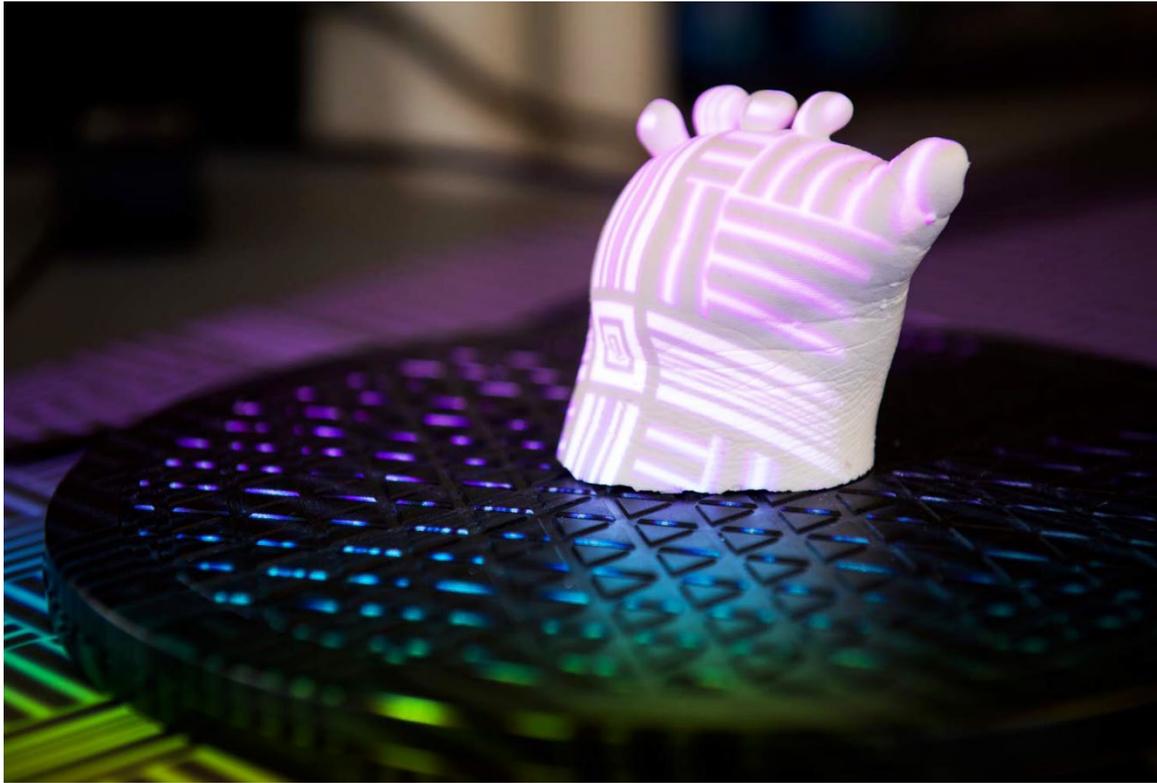
**Up to \$1M  
Up to 5 yrs**

### Track 3: Design and Development: Multi-Institution Consortia



**Up to \$5M  
Up to 5 yrs**





**Virginia Tech Network  
for Engineering  
Transfer Students: NSF  
DUE S-STEM #1644138**

Undergraduate research experience: Integration of electronic sensors with personalized 3D printed prosthetics

# Division of Undergraduate Education

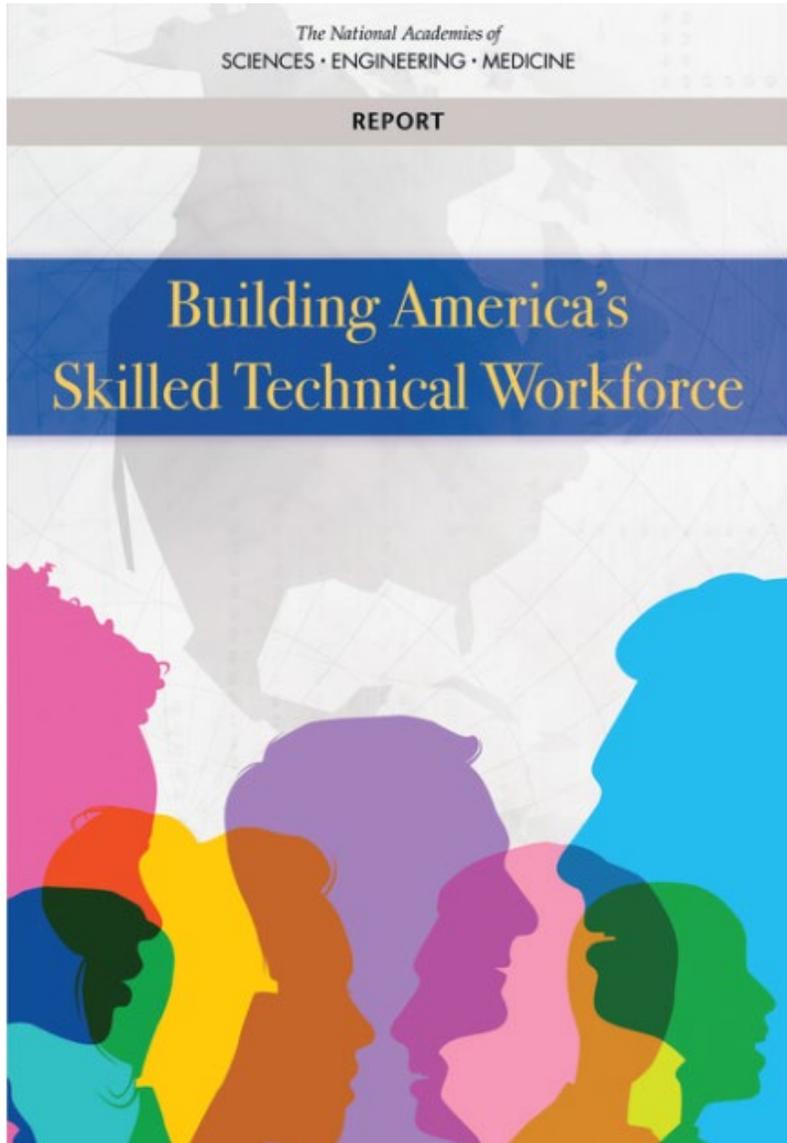
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## **ADVANCED TECHNOLOGICAL EDUCATION (ATE)**

Solicitation: NSF 18-571

Due Date:      October 1, 2020  
                    October 7, 2021



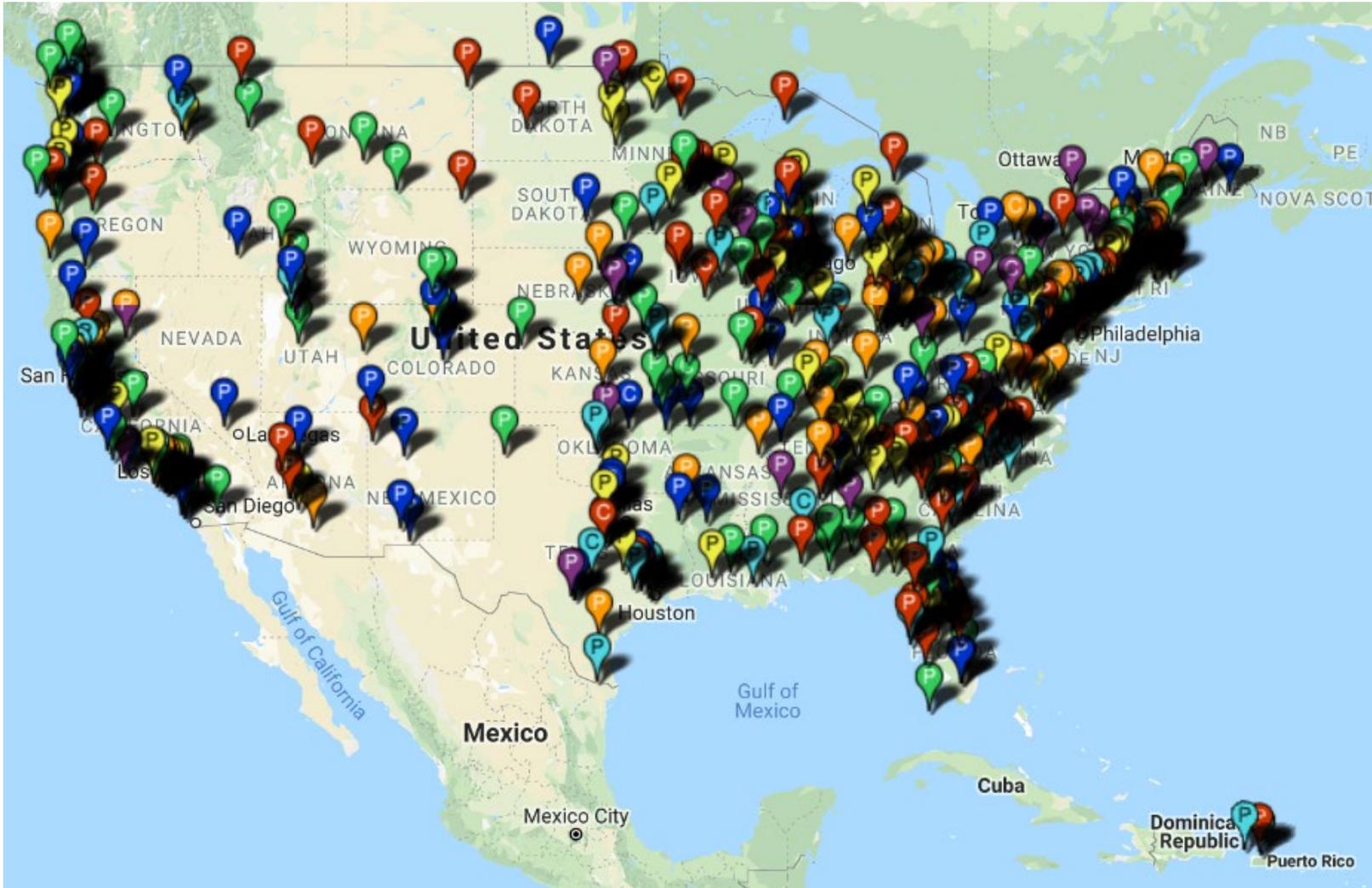


# ATE Program Goals

- Produce more qualified science and engineering technicians to meet workforce demands
- Improve the technical skills and the general science, technology, engineering, and mathematics (STEM) preparation of these technicians and the educators who prepare them



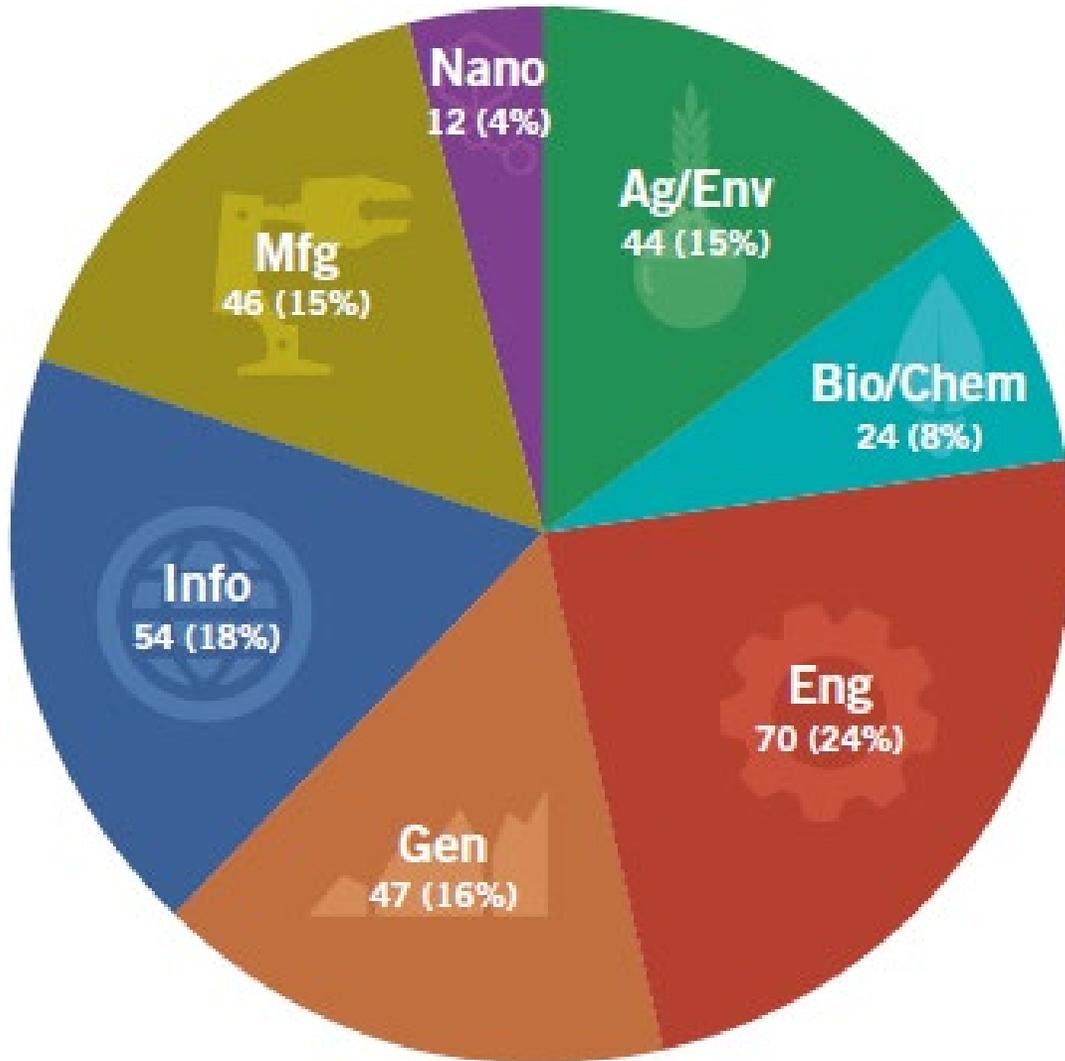
# ATE Projects/Centers in every State and 5 Territories



From 1993  
to 2018 NSF has  
invested **\$1.11 billion**  
in the ATE program,  
funding  
**1,294 projects** and  
**61 centers.**



# ATE Projects and Centers



## NSF-ATE Centers and Projects

 **EDUCATED**

**114,963** students  
(65% at Community Colleges)  
**91%** completed  
or continued in their  
program in 2015

 **SERVED**

**47,090** Underrepresented  
Minority Students (44%)  
**45,830** Educators with **2,190**  
Professional Development Activities

 **DEVELOPED**

**2,430**  
Materials And  
Educational  
Activities

**\$ COLLABORATED**

with **3,890** Businesses and  
Industries and Received  
over **\$20 Million** in Monetary  
and in-kind Support



# Advanced Technological Education

## Projects

≤ \$600K

≤ 3 yrs

Adapt &

Implementation

\$300K to \$400K

Instrumentation

Acquisition

\$400K to \$500K

## Small and New to ATE

\$300K,

3 yrs

## Centers

Two types

## Centers

≤ 7.5M

5 yrs

One renewal  
possible

## Resource Centers

≤ 1.6M

3 yrs

One renewal  
possible

## Targeted Research

\$150K

≤ 2 yrs

\$800K

≤ 3 yrs



Deadline: Oct 1, 2020



**Peralta Community College, CA**

**ATE's Building Efficiency for a Sustainable Tomorrow Center  
Community Colleges in partnership with Lawrence Berkeley National Lab  
NSF DUE ATE #1700705**

A student verifies proper operation of a commercial variable air volume box at a Building Efficiency for a Sustainable Tomorrow (BEST) center.

*DGE advocates for innovative, inclusive, high quality graduate education in the STEM fields. DGE manages innovative cross-Foundation programs that directly or indirectly support U.S. citizens and permanent residents in their quest to become the leading scientists and engineers of the future.*

**Drs. Narcrisha Norman and Daniel Denecke**



## **DIVISION OF GRADUATE EDUCATION (DGE)**

# Division of Graduate Education

## Solicitations and Program Descriptions:

- › CyberCorps(R) Scholarship for Service (SFS)
- › EHR Core Research (ECR)
- › EHR Core Research (ECR): Building Capacity in STEM Education Research (ECR: BCSEER)
- › DGE: Faculty Early Career Development (CAREER)
- › NSF Graduate Research Fellowship Program (GRFP)
- › Innovations in Graduate Education (IGE) Program
- › National Science Foundation Research Traineeship (NRT) Program
- › Secure and Trustworthy Cyberspace (SaTC)/(SaTC Frontiers)
- › Secure and Trustworthy Cyberspace Frontiers Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining)

## Dear Colleague Letters (DCLs)

- › Graduate Research Internship Program (GRIP)
- › Non-Academic Research Internships for Graduate students (INTERN)

MORE INFO ON ALL: <https://www.nsf.gov/funding/programs.jsp?org=DGE>



# Division of Graduate Education

## Solicitations and Program Descriptions:

- › CyberCorps(R) Scholarship for Service (SFS)
- › EHR Core Research (ECR)
- › EHR Core Research (ECR): Building Capacity in STEM Education Research (ECR: BCSEER)
- › DGE: Faculty Early Career Development (CAREER)
- NSF Graduate Research Fellowship Program (GRFP)
- Innovations in Graduate Education (IGE) Program
- National Science Foundation Research Traineeship (NRT) Program
  - › Secure and Trustworthy Cyberspace (SaTC)/(SaTC Frontiers)
  - › Secure and Trustworthy Cyberspace Frontiers Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining)

## Dear Colleague Letters (DCLs)

- › Graduate Research Internship Program (GRIP)
- › Non-Academic Research Internships for Graduate students (INTERN)

MORE INFO ON ALL: <https://www.nsf.gov/funding/programs.jsp?org=DGE>



**Broadening Participation  
with the NSF  
Graduate Research Fellowship  
Program  
GRFP**



# ABOUT NSF GRFP

SINCE 1952



**40+ FELLOWS**  
HAVE GONE ON TO BECOME  
NOBEL LAUREATES

Fellows from every state

**450+ FELLOWS**  
HAVE BECOME MEMBERS OF THE  
NATIONAL ACADEMY OF SCIENCES



**5-YEAR**  
FELLOWSHIP  
PERIOD  
**3 YEARS**  
FINANCIAL  
SUPPORT

NO POST-GRADUATE  
STUDY SERVICE  
REQUIREMENT

**2020 COMPETITION**  
**12,000+** APPLICANTS  
**2,000+** OFFERS

ACADEMIC INSTITUTIONS REPRESENTED  
**500+**  
2020 COMPETITION

## OPEN TO:

GRADUATE STUDENTS WHO  
ARE OR WILL BE PURSUING  
RESEARCH-BASED MASTER'S  
AND DOCTORAL DEGREES  
In Eligible Fields of Study

### ELIGIBLE MAJOR FIELDS OF STUDY



CHEMISTRY



COMPUTER AND  
INFORMATION  
SCIENCES &  
ENGINEERING



ENGINEERING



GEOSCIENCES



LIFE  
SCIENCES



MATERIALS  
RESEARCH



MATHEMATICAL  
SCIENCES



PHYSICS &  
ASTRONOMY



PSYCHOLOGY



SOCIAL  
SCIENCES



STEM EDUCATION & LEARNING RESEARCH

Each major field has numerous sub-fields:



Graduate Research Fellowship Program (GRFP)

[nsfgrfp.org](https://www.nsfgrfp.org)



# INELIGIBLE Degree Programs

- Professional degree programs
  - e.g., MBA, MD, JD, DVM, DDS
- Joint science-professional degree programs
  - E.g., MD/PhD, JD/PhD
- Community, Global, or Public Health (MPH)
- Counseling, Social Work (MSW)
- Education (except STEM education)
- History (except history of science)

See Detailed Eligibility Requirements GRFP Program Description



# Ineligible Fields of Study

- Research with directly health-related goals
  - Etiology, diagnosis, or treatment of disease or disorder
  - Animal models of disease for drug development/testing
  - Epidemiology
  - Disease prevention
  - Public, community, global health
  - Clinical research
  - Patient-oriented research
  - Epidemiological and behavioral studies
- Outcomes research
  - Health services, standard of care, health policy
  - Research directly leading to clinical trials
- Applied research on plant pathology
  - Maximizing agricultural production
- Impacts on food safety



# National Science Foundation

Graduate Research Fellowship  
Program (GRFP)

## DESCRIPTION



# NSF Graduate Research Fellowships

Five Year Awards – \$138,000

Three years of financial support

- \$34,000 Stipend per year to the graduate institution
- \$12,000 Educational allowance directly to graduate institution
- In lieu of tuition and fees

Other NSF Opportunities

- INTERN – non-academic internship program
- FASED Individuals with Disabilities support
- Career-Life Balance Initiative (family leave)



# GRFP Goals

- The OVERALL GOAL of the Graduate Research Fellowship Program is to recruit individuals into Science, Technology, Engineering, and Mathematics (STEM) fields
  - To select, recognize, and financially support individuals who have demonstrated the potential to be high achieving scientists and engineers, early in their careers
  - To broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities, and veterans



# GRFP Features

- **Fellowship:** Awarded to individual, paid through the attended graduate institution
- **Flexible:** Choice of project, advisor, and graduate program
- **Unrestricted:** No service requirement after completion
- **Portable:** Can be used at any accredited, non-profit, US institution of higher education, with campus in US research-based master's and doctoral degrees
  
- **2010 - 2019: ~2,000 Fellowships yearly**
- 2016: ~16,800 Applications - ~12% success rate
- 2017: ~13,200 Applications - ~15% success rate
- 2018: ~12,400 Applications - ~16% success rate
- **2019: ~12,200 Applications - ~16% success rate**

# National Science Foundation

## Graduate Research Fellowship Program (GRFP)

### **ELIGIBILITY**



# GRFP Eligibility - NSF 20-587

- U.S. citizens, nationals, and permanent residents
- Early-career: undergrad & graduate students
- Pursuing research-based master's and/or doctoral degrees (no professional degrees)
- Science, Technology, Engineering, Mathematics (STEM) or STEM Education
- Full-time enrollment in graduate degree program at accredited, non-profit US institution of higher education
- NO foreign institutions

Level 1: Seniors/baccalaureates: no graduate study

Level 2: 1st-year graduate students

- Joint bachelor's-master's (completed 3 years)

Level 3: Second-year graduate students

- No more than 1 academic year completed in 1st graduate degree program
- For joint BS/MS holders ONLY, can apply as 1st year doctoral students if went directly into PhD program, after completing joint bachelor's-master's degree)

Level 4: Returning graduate students

- > 2-year interruption in graduate study
- No doctorates or >1 academic year in graduate program
- NOT ENROLLED in graduate program at application deadline

Only apply  
once in  
grad school



National  
Science  
Foundation

**Graduate Research  
Fellowship Program (GRFP)**

**Application Package**





# GRFP Complete Application

## Complete Application Package:

- 1) Personal Information, Education, Work/Research Experience, Proposed Major Field of Study, Honors, Awards, Publications
- 2) Personal, Relevant Background and Future Goals Statement (3-page PDF)
- 3) Graduate Research Statement (2-page PDF)
- 4) Transcripts (**PDFs; mandatory**)
- 5) Letters of reference (may provide up to five reference letters; **2 mandatory; 3 RECOMMENDED**)



# GRFP Complete Application

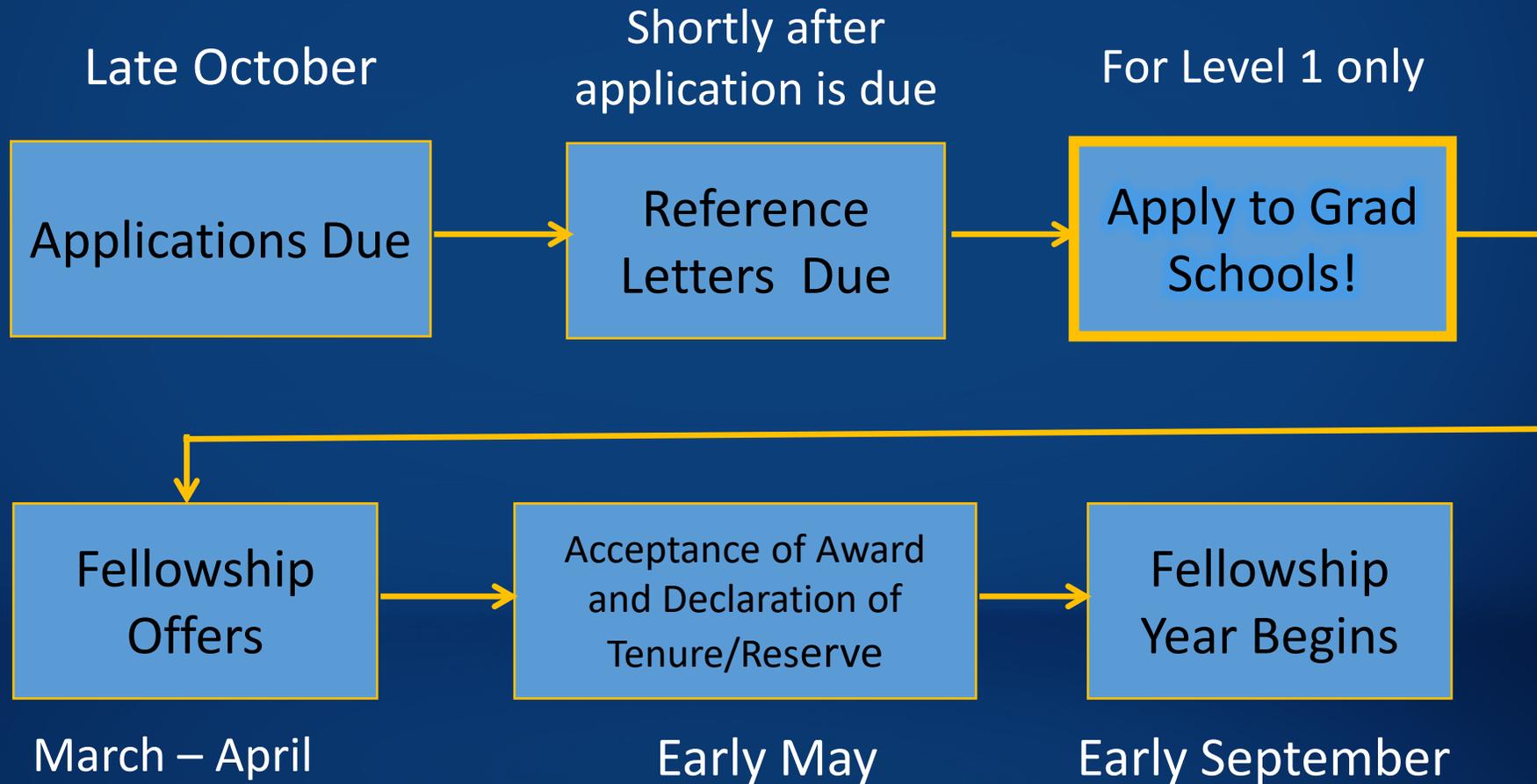
## **DEADLINES (5 p.m. local applicant mailing address):**

- Oct 19: Life Sciences
- Oct 20: CISE, Materials Research, Psychology, Social Sciences, STEM Education and Learning
- Oct 21: Engineering
- Oct 22: Chemistry, Geosciences, Math, Physics & Astronomy

Read GRFP Solicitation for detailed application instructions and requirements **(NSF 20-587)**

If accessibility accommodations are required, please contact [info@nsfgrfp.org](mailto:info@nsfgrfp.org) at least four weeks before the application deadline

# Example GRFP Application Timeline



National  
Science  
Foundation

# Graduate Research Fellowship Program (GRFP)

**Personal and Research  
Statements**



# GRFP Complete Application

- Personal Information, Education, Work/Research Experience, Proposed Major Field of Study, Honors, Awards, Publications
- Personal, Relevant Background and Future Goals Statement (3-page PDF)
- Graduate Research Statement (2-page PDF)
- Transcripts (PDFs; mandatory)
- Letters of reference you are welcome to provide five references (2 mandatory; 3 RECOMMENDED)



## Two Statements

*Personal, Relevant  
Background & Goals  
(3-page PDF)*

Research Statement

### Personal, Relevant Background & Goals

Tell your story; demonstrate your potential for STEM research

Experiences (professional and personal) that contributed to your motivation and preparation for pursuing a STEM career

#### **Career aspirations and future goals**

- How have your experiences shaped your goals?

#### **Previous research/industrial/professional experiences:**

- What was the project, what was your role?
- How did you become involved? Where was it done?
- Why was this project worth doing? What have you learned? Any advanced course work?
- What was your contribution to the project and how did it fit into the whole?

## Two Statements

Personal, Relevant  
Background & Goals

*Research Statement*  
*(2-page PDF)*

### Research Statement

Describe your proposed research plan:

- Communicate your research idea and approach
- Explain your research plan and methods
- What do you expect to learn? How will you know if the project is successful?
- What would you do next?

### **Keep in mind:**

- Avoid jargon
- Communicate clearly for non-specialists
- Make your contributions clear

**Clearly address NSF's Merit Review Criteria –  
Intellectual Merit and Broader Impacts – under  
separate headings**

# Reference Letters and Transcripts



## Reference Letters

- THREE (3) reference letters are STRONGLY RECOMMENDED
- Two (2) reference letters are MANDATORY
- List and rank up to 5 reference letter writers
  - Top 3 will be used

## Transcripts

- All applicants must submit bachelor's degree transcript
- Transcripts are required for all degree-programs
- Graduate transcripts for all graduate degree enrollment
- Official or unofficial transcripts accepted

National  
Science  
Foundation

Graduate Research  
Fellowship Program (GRFP)

Panel Review Criteria



# Comprehensive Review

National Science Board-  
approved merit review criteria:

- **Intellectual Merit**
  - How important is the proposed activity to advancing knowledge within its own field or across different fields?
- **Broader Impacts**
  - How well does the proposed activity benefit society or advance desired societal outcomes?





# Comprehensive Review

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Applicants are reviewed based on:

- Their demonstrated potential for significant achievement in STEM
- Using a comprehensive, holistic approach
- A balanced consideration to all components of the application
  - Including the educational and research record, leadership, outreach, service activities, future plans, individual competencies, experiences, and other attributes

# Intellectual Merit

## Potential to advance knowledge

### **Evidence of potential, such as ability to:**

- Demonstrated intellectual ability (grades, curricula, awards, publications, presentations, etc.)
- Plan and conduct research
- Work as a member of a team as well as independently
- Interpret and communicate research
- Take initiative, solve problems, persist
- The potential of your approach to your major field of study and your Research Plan to advance knowledge

Evidence of Intellectual Merit can be found in all parts of the application: Personal Statement, Research Plan, letters, experiences, awards, achievements, and transcripts



# Broader Impacts

## Potential impact of the individual and/or the research on society; why it's important

Societal benefits may include, but are not limited to:

- Increasing participation of underrepresented groups, women, persons with disabilities, veterans
- Outreach: Mentoring; improving STEM education in schools
- Increasing public scientific literacy; increased public engagement with STEM
- Community outreach: science clubs, radio, TV, newspapers, blogs
- Increasing collaboration between academia, industry, others

Evidence of Broader Impacts can be in all parts of the application: Personal Statement, Research Plan, letters, experiences, awards, achievements





# GRFP

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Graduate Research Fellowship Program  
Division of Graduate Education

Jong-on Hahm, Ph.D., Program Director

Christopher L. Hill, Ph.D., Program Director

Nacrisha Norman, Ph.D., Program Director

[www.nsf.gov/grfp](http://www.nsf.gov/grfp)

[info@nsfgrfp.org](mailto:info@nsfgrfp.org)

[www.nsfgrfp.org](http://www.nsfgrfp.org)





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Broadening Participation Opportunities  
with the NSF Research Traineeship (NRT)  
Program

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# NSF Research Traineeship (NRT) Program Overview

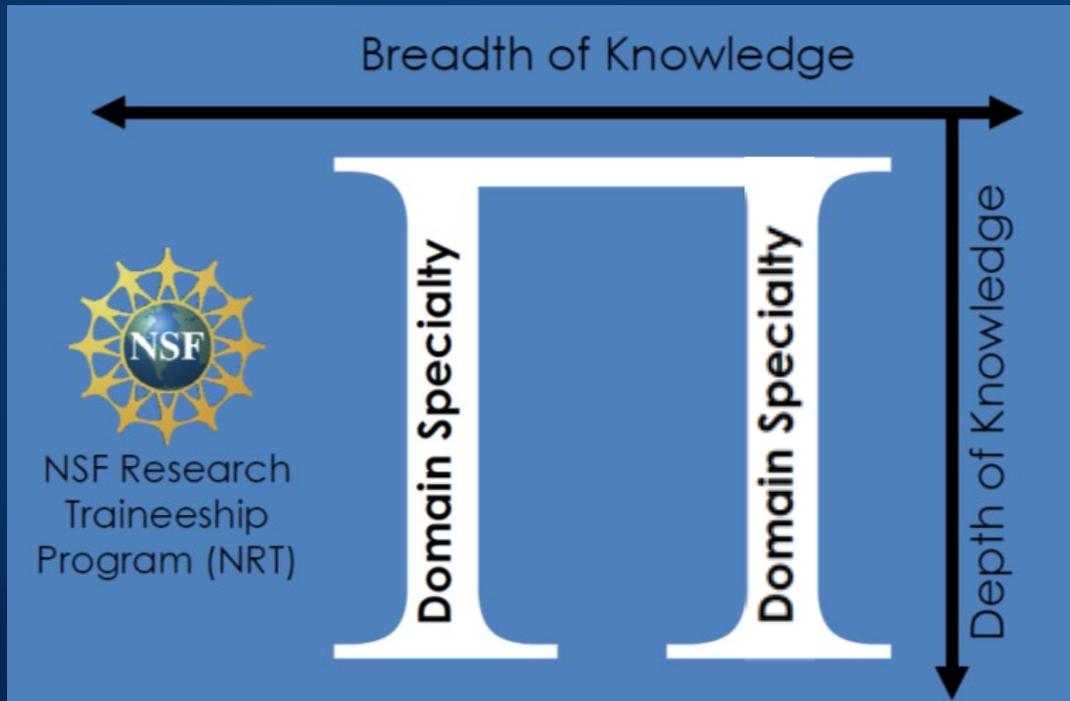
*Encouraging the development of innovative models for  
interdisciplinary/convergent STEM graduate training*

## **Core Elements**

- Interdisciplinary/Convergent Research & Training
- Inclusive Workforce Development
- Institutional transformation



# Key Characteristics of NRT-funded Projects



*Examples*

## FY2020 Review Criteria

### NRT-specific criteria

- Integration of research & education
- Interdisciplinarity/Convergence
- Professional development/training
- Integrating diversity
- Evaluation

### NSF merit review criteria

- Intellectual merit: research & training/evaluation
- Broader impacts: including & beyond diversity

## FY2020 Priority Research Areas

Harnessing the Data Revolution – (HDR)

Future of Work at the Human Technology Frontier (FW-HTF)

Windows on the Universe (WoU)

Navigating the New Arctic (NNA)

Quantum Leap (QL)

Understanding the Rules of Life (URoL)



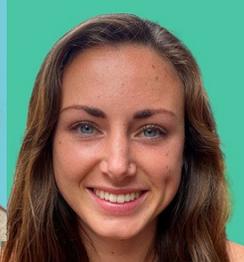


# NRT-INFEWS: Systems Thinking Training for Research ON Geography-based Coastal Food Energy Water Systems (STRONG-CFEWS)

PI: Maya Trotz, University of South Florida (NSF 1735320)

Partnership between University of South Florida (USF) and University of the Virgin Islands (UVI) to develop community-engaged training and research program in Food Energy Water Systems (FEWS). Trainees design innovative solutions to sustainably manage complex and interconnected coastal systems considering the technological, institutional, environmental, and sociocultural factors that shape FEWS. Co-funded by NSF Louis Stokes Alliances for Minority Participation (LSAMP) program.

## Strong Coasts Fellows



# NRT Award Information

- Historically, NRT has typically awarded 14-17 awards per year for 5-year projects up to \$3 million each.
- The NRT solicitation NSF 19-522 is currently being revised. A revised solicitation is expected soon.

## Program Officers:

- Daniel Denecke, [ddenecke@nsf.gov](mailto:ddenecke@nsf.gov)
- Vinod Lohani, [vlohani@nsf.gov](mailto:vlohani@nsf.gov)
- John Weishampel, [jweisham@nsf.gov](mailto:jweisham@nsf.gov)





Broadening Participation Opportunities  
with the Innovations in Graduate Education  
(IGE) Program

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# Innovations in Graduate Education (IGE) Program Overview

Designed to encourage the development and implementation of bold, new, and potentially transformative approaches to STEM graduate education and training.

Seeks proposals that explore ways for graduate students in STEM master's and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers.

IGE is dedicated to:

- piloting, testing, and validating innovative approaches to graduate education, and
- generating the knowledge required for the customization and implementation of the most successful, transformative approaches.



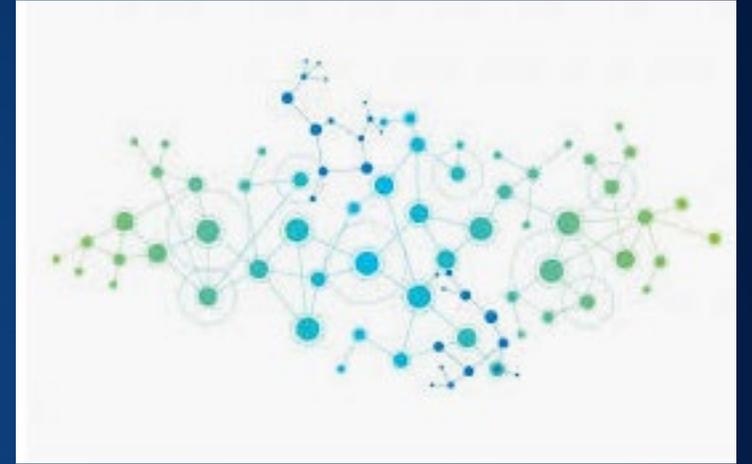
# IGE Program Goals

1. Generate the knowledge base needed to inform the development of models of bold, new, and potentially transformative approaches to graduate education as well as their implementation and adaptability.
2. Catalyze rapid advances in STEM graduate education broadly as well as those responsive to the needs of particular disciplinary and interdisciplinary STEM fields.





Collaborative Research: IGE: Scaling Faculty Development to  
Broaden Participation in Graduate Education  
PI: Julie Posselt, University of Southern California (NSF 1807047)



- Pilot a network of faculty and administrators across six major California universities (the University of Southern California and University of California campuses at Berkeley, Davis, Irvine, Los Angeles, and Santa Barbara) to improve how universities choose the scientists of the future.
- Provide faculty and graduate school administrators with opportunity and incentives to critically reflect upon and change longstanding practices.
- Participating STEM PhD programs receive professional development workshops and learning activities on recruiting, admitting, and mentoring graduate students from diverse backgrounds.
- Leaders that emerge from each program in years 1 and 2 will establish campus-level teams who will deliver similar faculty-to-faculty learning opportunities on their own campuses.
- Research and evaluation involves a sequential multi-method study, including the first-ever clustered randomized experiment to test the impact of faculty development around three outcomes: the admissions practices that PhD programs use, the diversity of their admitted cohorts, and the programs' selectivity.



# What's New in IGE Award Information NSF 20-595

## 1. Broadened STEM degree program emphases

The program now also expands earlier focus on research-based master's and dissertations to include also graduate students in STEM master's and doctoral degree programs more broadly (e.g., Professional Science Master's).

## 2. IGE Innovation Acceleration Hub

This solicitation also includes a one-time award for an IGE Innovation Acceleration Hub. The Hub will facilitate IGE awardee communications about research activities and outcomes and provide a platform for external stakeholder engagement.



# IGE Award Information NSF 20-595

**IGE Project Awards** (6 to 10 anticipated in FY 2021) are expected to be up to three (3) years in duration with a total budget between \$300,000 and \$500,000, subject to the availability of funds.

**IGE Innovation Acceleration Hub:** One award in the form of a cooperative agreement is anticipated. \$500,000 in FY21; remaining funds disbursed in years FY 2022 – FY 2025. The maximum award amount is \$1,000,000 for five years.

**2020 Deadline = November 4 for:**

*both* IGE Project Awards  
*and* IGE Innovation Acceleration Hubs

**Program Officers:**

- Daniel Denecke, [ddenecke@nsf.gov](mailto:ddenecke@nsf.gov)
- Vinod Lohani, [vlohani@nsf.gov](mailto:vlohani@nsf.gov)
- John Weishampel, [jweisham@nsf.gov](mailto:jweisham@nsf.gov)





# CAPACITY BUILDING AND PROFESSIONAL DEVELOPMENT

Dr. Monya Ruffin-Nash

# Capacity Building and Professional Development

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- Attend NSF Informational Events, Workshops, and Webinars
- Get Connected (social media, Science360, Science Nation, Discovery Files Podcast)
- Serve as a proposal reviewer (ad hoc) and panelist (in-person, virtual), Link sent following the webinar (2 weeks to sign up)
- NSF Summer Scholars Internship Program (HACU, QEM)
- Consider joining NSF as a Rotator!
- Contact NSF Program Officers if you have questions about a program
- **Submit Proposals!**





# NSF FUNDING OPPORTUNITIES

## Broadening Participation in STEM through Diversity, Equity and Inclusion

**WEBINAR**  
September 30, 2020  
2:30 – 4:30 pm

