NSF Funding Opportunities for Two-Year Mathematics Faculty

Michael Davis, Program Director
Michael Ferrara, Program Director
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Directorate for Education and Human Resources (EHR)
Division of Undergraduate Education (DUE)
Session Outline

- Introduction to NSF, EHR, and DUE
- Snapshot of 5 DUE Programs
- Additional Conversation and Q & A
National Science Foundation

• Established by the National Science Foundation Act of 1950 (Public Law 81-507).
• FY2021 Annual Budget: $8.5 Billion
• Funds approximately 25% of all federally supported basic research conducted by colleges and universities.
• Funds about 12,000 new awards per year
• Average award duration is three years

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

National Science Foundation
NSF Organizational Structure

- 7 Discipline-based Directorates
  - Biological Sciences
  - Computer & Information Sciences & Engineering
  - Education and Human Resources (EHR)
  - Engineering
  - Geosciences
  - Mathematical and Physical Sciences
  - Social, Behavioral, & Economic Sciences

- Divisions or sections within each Directorate
  - EHR/DUE supports efforts to strengthen STEM education at 2- and 4-yr universities by improving curricula, instruction, laboratories, infrastructure, assessment, & diversity of students and faculty.
The Merit Review Process

**PHASE I**
Proposal Preparation and Submission 90 Days

1. Opportunity Announced
2. Proposal Submitted
3. Proposal Received

**PHASE II**
Proposal Review and Processing 6 Months

4. Reviewers Selected
5. Peer Review
6. Program Officer Recommendation
7. Division Director Review

**PHASE III**
Award Processing 30 Days

8. Business Review
9. Award Finalized
The Merit Review Process

PHASE I
PROPOSAL PREPARATION AND SUBMISSION 90 DAYS
1 OPPORTUNITY ANNOUNCED
2 PROPOSAL SUBMITTED
3 PROPOSAL RECEIVED

PHASE II
PROPOSAL REVIEW AND PROCESSING 6 MONTHS
6 REVIEWERS SELECTED
7 PEER REVIEW
8 PROGRAM OFFICER RECOMMENDATION
9 DIVISION DIRECTOR REVIEW

PHASE III
AWARD PROCESSING 30 DAYS
10 BUSINESS REVIEW
11 AWARD FINALIZED

Your Name Here

National Science Foundation
Overview of Select NSF Undergraduate Education Programs
If you are interested in:

- Making changes at your institution to improve students’ STEM learning and engagement?
- Using assessment to enhance what is known about effective STEM teaching and learning practices?
- Considering the implications of the aforementioned factors for preservice STEM teacher preparation?

... consider submitting a proposal to the IUSE: EHR program.
The IUSE program looks to explore undergraduate STEM education in many ways:

- Improve students’ performance and retention in STEM courses and majors.
- Make institutions and disciplinary communities better places for STEM teaching and learning.
- Generate new knowledge about engaged student learning and institutional/community transformation.
- Broaden participation of women and students from underrepresented groups in undergraduate STEM.
- Prepare students to enter the STEM workforce.
- Increase faculty engagement in STEM teaching.
## Engaged Student Learning Track

<table>
<thead>
<tr>
<th>Level</th>
<th>Amount</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Up to $300,000</td>
<td>Up to 3 yrs</td>
</tr>
<tr>
<td>Level 2</td>
<td>Up to $600,000</td>
<td>Up to 3 yrs</td>
</tr>
<tr>
<td>Level 3</td>
<td>Up to $2,000,000</td>
<td>Up to 5 yrs</td>
</tr>
</tbody>
</table>

### Institutional and Community Transformation Track

- **Capacity Building**
  - Level 1: Up to $300,000; Up to 3 yrs
  - Level 2: Up to $2,000,000 (single institution); Up to $3,000,000 (multiple institutions); Up to 5 yrs

## Deadlines

- **Engaged Student Learning Track**
  - July 20, 2022
  - 3rd Wednesday in July, Annually Thereafter

- **Institutional and Community Transformation Track**
  - January 19, 2022
  - 3rd Wednesday in January, Annually Thereafter

Levels 1,2,3 and Capacity Building

Level 1 and Capacity Building
Scholarships in Science, Technology, Engineering, and Mathematics (S–STEM) NSF 21–550

- S–STEM projects provide scholarships to domestic low-income academically talented students with demonstrated financial need pursuing a degree in one of the S–STEM eligible disciplines.

- Projects:
  - Look to increase retention, student success, and graduation of these low-income students in STEM.
  - Adapt and implement evidence-based curricular and co-curricular activities to support S–STEM Scholars. All projects must specifically involve cohort-building activities and faculty mentoring.

- Test strategies for systematically supporting student academic and career pathways in STEM

- Disseminate findings related to the supports and interventions.
# Scholarships in Science, Technology, Engineering, and Mathematics (S–STEM)

**NSF 21–550**

<table>
<thead>
<tr>
<th>Track 1: Institutional Capacity Building</th>
<th>Track 2: Implementation: Single Institution</th>
<th>Track 3: Inter-Institutional Consortia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open to institutions with no prior S-STEM or STEP funding</td>
<td>Up to 6 years Up to $1,500,000 60% of budget to scholarships</td>
<td>Up to 6 years Up to $5,000,000 Research plan required 60% of budget to scholarships</td>
</tr>
<tr>
<td>Up to 6 years Up to $750,000 60% of budget to scholarships</td>
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</tr>
</tbody>
</table>

**Solicitation Under Revision**
Newest revision available at least 90 days before deadline

| Collaborative Planning Grants to Develop an Inter-Institutional Consortium | Up to 2 years Up to $150,000 |
Hispanic Serving Institutions Program (HSI) 
NSF 20–599

HSI Program Goals

• Enhance the quality of undergraduate STEM education at HSIs.

• Increase the recruitment, retention, and graduation rates of all undergraduate students pursuing STEM degrees at HSIs.

• Promote research on engaged student learning at HSIs and about what it takes to diversify and increase participation in STEM effectively.

• Incentivize institutional or community transformation.

• Build STEM education research capacity at HSIs.
# Hispanic Serving Institutions Program (HSI)
## NSF 20–599

<table>
<thead>
<tr>
<th>Track 1: Planning or Pilot Projects (PPP)</th>
<th>Track 2: Implementation and Evaluation Projects (IEP)</th>
<th>Track 3: Institutional Transformation Projects (ITP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open to PUIs and New to NSF institutions only</td>
<td>3- to 5- year projects, and up to:</td>
<td>Up to 5 years</td>
</tr>
<tr>
<td>Up to 2 years, and up to:</td>
<td>$500,000 - single institution</td>
<td>Up to $3,000,000</td>
</tr>
<tr>
<td>$200,000 - single institution, $300,000 - collaborative</td>
<td>$800,000 - collaborative</td>
<td></td>
</tr>
<tr>
<td>$100,000 incentive to partner with one or more community colleges</td>
<td>$200,000 incentive to partner with one or more community colleges</td>
<td></td>
</tr>
<tr>
<td>Deadline:</td>
<td>Deadline:</td>
<td>Deadline:</td>
</tr>
<tr>
<td>• August 25, 2021</td>
<td>• August 25, 2021</td>
<td>• February 9, 2022</td>
</tr>
<tr>
<td>• Last Wednesday in August, Annually Thereafter</td>
<td>• Last Wednesday in August, Annually Thereafter</td>
<td>• Second Wednesday in February, Annually</td>
</tr>
</tbody>
</table>
ATE Goals
- Produce more qualified science and engineering technicians to meet workforce demands.
- Improve the technical skills and STEM preparation for technicians and the educators who prepare them.

ATE Resources
- ATE Central: (atecentral.net)
- Mentor Connect: (mentor-connect.org)
- EvaluATE (evalu-ate.org)
Advanced Technological Education (ATE)

**Mission:** The education of highly qualified science and engineering technicians for advanced–technology fields that drive the nation's economy.

**Five Available Program Tracks (NSF 21–598)**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small and New to ATE</td>
<td>Stimulate implementation, adaption, innovation.</td>
<td>$350,000 for 3 years</td>
</tr>
<tr>
<td>Projects</td>
<td>Increase the relevance of technician education.</td>
<td>Up to $650,000 for 3 years</td>
</tr>
<tr>
<td>Targeted Research</td>
<td>Support applied research and build partnerships.</td>
<td>$150,000 for 2 years $800,000 for 3 years</td>
</tr>
<tr>
<td>Centers</td>
<td>Support systemic reform and broad outreach.</td>
<td>$1.65M - $7.5M</td>
</tr>
<tr>
<td>Consortia for Innovation</td>
<td>Collaboration between colleges in specific industries</td>
<td>$1.2M - $3M for 3-4 years</td>
</tr>
</tbody>
</table>
Advancing Innovation and Impacts in Undergraduate STEM Education at Two Year Institutions of Higher Education (Two Year College PD)

- Broad goal of advancing undergraduate STEM education at two-year colleges.
  - Making systemic improvements in STEM education
  - Promoting Diversity, Equity, and Inclusion
  - Mitigating the disproportionate impact of COVID-19 on two-year colleges.
- Program Description: No strict solicitation. Proposals must meet the PAPPG requirements.
- No firm deadline for submission.
  - Target date of May 2, 2022
- No limitation on time or budget.
- Encourage reaching out to a program officer with questions/thoughts.
- PD 21–7980
General Tips
General Tips for Effective Proposal Writing

- Don’t try to do too much.
  - *More is not always better!*

- Consistency is key.
  - *Make sure all of your descriptions, budget and supporting information is clear and aligned.*

- Is everyone on board?
  - *Secure letters of commitments from individuals, departments, administrators, companies and community partners as needed.*
General Tips for Effective Proposal Writing

- Check (and recheck) the program solicitation.
  - Be sure you have all required elements for your program!
  - Solicitations can be updated up to 90 days before a deadline.

- Align your proposal with the literature.
  - What informs your work? How is your idea, approach or setting novel?

- Make sure research and evaluation plans (if required) are clear.
  - Include questions, data streams, methods and frameworks as appropriate.
Key Questions for PIs to Consider When Preparing a Proposal

- What has already been done?
- What do you intend to do?
- Why is the work important (to more than you) or unique?
- What do you need besides money to carry out the proposed work?
- Do you have the right team? Resources? Realistic need?
- Is NSF the right funding source? Is the respective NSF program the right program?
- Who should you talk to before, during, and after submission?
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