NSF Calls for Proposals

NSF HSI STEM Hub Summer Grantsmanship Webinar Series
May 12, 2020
Thanks for attending!
This session will be recorded
Please mute your microphones
Use the chat box to ask questions

NSF HSI STEM Hub
Summer Grantsmanship Webinar Series
May 12, 2020
Who (or what) is the NSF?

NSF HSI STEM Hub
Summer Grantsmanship Webinar Series
May 12, 2020
NSF movie inserted here...
NSF Funds All Fields of Science and Engineering

- Biological Sciences
- Computer & Information Science & Engineering
- Integrative Activities
- Education & Human Resources
- Engineering
- Geosciences (including Polar Programs)
- Social, Behavioral & Economic Sciences
- International Science and Engineering
- Mathematical & Physical Sciences
Numbers shown are based on FY 2018 activities.
### NSF Support of Academic Basic Research in Selected Fields
(as a percentage of total federal support)

<table>
<thead>
<tr>
<th>Field</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Science and Engineering Fields</td>
<td>25%</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>44%</td>
</tr>
<tr>
<td>Engineering</td>
<td>44%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>62%</td>
</tr>
<tr>
<td>Social and Psychological Sciences</td>
<td>62%</td>
</tr>
<tr>
<td>Environmental Sciences</td>
<td>63%</td>
</tr>
<tr>
<td>Biology</td>
<td>69%</td>
</tr>
<tr>
<td>Computer Science</td>
<td>85%</td>
</tr>
</tbody>
</table>

**Note:** Biology includes Biological Sciences and Environmental Biology. Biology and Psychological Sciences exclude National Institutes of Health funding from the total amount of federal support.

Directorate for Education and Human Resources (EHR) Goals

✓ Prepare the next generation of STEM professionals and attract/retain more Americans to STEM careers

✓ Develop a robust research community that can conduct rigorous research and evaluation to support excellence in STEM education.

✓ Increase the technological, scientific, and quantitative literacy of all Americans

✓ Broaden participation (individuals, geographic regions, types of institutions, STEM disciplines) and close achievement gaps in all STEM fields.
DUE & HRD Co-Manage the HSI Program

- **Division of Undergraduate Education (DUE)**
  - DUE’s programs are intended to strengthen STEM education at two- and four-year colleges and universities by improving curricula, instruction, laboratories, infrastructure, assessment, diversity of students and faculty, and collaborations.

- **Division of Human Resource Development (HRD)**
  - HRD programs support and promote activities that seek to strengthen STEM education for underserved communities, broaden their participation in the workforce, and add to our knowledge base about programs of inclusion.
NSF HSI Goals

NSF HSI STEM Hub
Summer Grantsmanship Webinar Series
May 12, 2020
Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program) NSF 19-540

- Goals:
  - ✓ **build capacity** in undergraduate STEM education at HSIs that typically do not receive high levels of NSF grant funding
  - ✓ **increase the retention and graduation rates** of students pursuing associate or baccalaureate degrees in STEM fields at HSIs

Website: [https://nsf.gov/ehr/HSIProgramPlan.jsp](https://nsf.gov/ehr/HSIProgramPlan.jsp) contains FAQs, data from listening sessions, and announcements
Consolidated Appropriations Act, 2017
Public Law 115-31

“The agreement also directs NSF to establish an Hispanic Serving Institution (HSI) program at no less than $15,000,000...to use this program to build capacity at institutions of higher education that typically do not receive high levels of NSF grant funding.”

American Innovation and Competitiveness Act,
Public Law 114-329

“The Director shall award grants on a competitive, merit-reviewed basis to Hispanic-serving institutions (as defined in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a)) to enhance the quality of undergraduate STEM education at such institutions and to increase the retention and graduation rates of students pursuing associate’s or baccalaureate degrees in science, technology, engineering, and mathematics.”
## US HSI s By the Numbers

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of HSIs</td>
<td>523</td>
</tr>
<tr>
<td>States + Puerto Rico &amp; D.C. with HSIs</td>
<td>27</td>
</tr>
<tr>
<td>of Latinx students attend HSIs</td>
<td>66%</td>
</tr>
</tbody>
</table>

**GROWTH:**
- 98% increase in HSIs over the last 10 years
- 17% of all institutions meet HSI definition

**ENROLLMENT:**
- 46% of students at HSIs are Latinx
- 62% of HSIs enroll under 5,000 students

**GEOGRAPHY:**
- 62% of HSIs are located in California, Texas, Puerto Rico, and New York

**SECTOR:**
- 42% are public two-year
- 28% are private four-year
- 25% are public four-year

*Source: Excelencia in Education*
HSI PROGRAM
Institutional Eligibility

• Institutions must be accredited and offer undergraduate educational programs in STEM, and satisfy the HSI definition as specified in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a), i.e.,
  a) be an eligible institution; and
  b) have a full-time equivalent enrollment of undergraduates that is at least 25% Hispanic.

• Certification of eligibility is required with submission of a proposal to the HSI Program.
  ➢ https://nsf.gov/ehr/Pubs/HSICertForm.pdf
HSI PROGRAM Tracks

Track 1: Building Capacity

Track 2: HSIs New to NSF
Track 1: Building Capacity

Priority Area 1: Critical Transitions

Priority Area 2: Innovative Cross-Sector Partnerships

Priority Area 3: Teaching and Learning in STEM

• Proposals should focus on one or more of these priority areas, as appropriate to the project goals and the institution capabilities and resources.

• The proposal should identify its priority area(s) in both the overview of the Project Summary and the body of the proposal.
Track 1: Building Capacity

Priority Area 1: Critical Transitions

➢ Lower- to upper-division coursework
➢ Two-year to four-year institutions
➢ Secondary education to undergraduate education of students enrolled in a STEM undergraduate degree-granting program

• Proposals should include institutional data that demonstrates a need for the proposed project.
• The proposed project should identify and investigate factors that affect student success and subsequent graduation.
• Institutional partnerships should have in place or plan to develop articulation agreements for the transfer of students from one institution to another that leads to STEM degree attainment.
• Successful project leadership teams will typically include STEM administrators and those who specialize in higher education issues and processes.
What culturally responsive instructional and curricular practices contribute to successful navigation of critical transition points in undergraduate education?

What institutional indicators or cultural factors should be considered in curricular redesign and alignment efforts that increase STEM degree completion?

How does institutional data indicate the need for the redesign and/or alignment to support transitions in STEM programs?
Track 1: Building Capacity

Priority Area 2: Innovative Cross-Sector Partnerships

➢ Develop cross-sector partnerships that lead to increased student engagement in STEM research and learning experiences while generating knowledge about how cross-sector partnerships contribute to STEM teaching and learning, and workforce development.

• Partners may include industry, government, academic institutions, non-profit organizations, and local communities.
• Projects should prepare students for future STEM careers by increasing access to experiential professional development opportunities.
• Projects may provide opportunities for faculty engagement in interdisciplinary and cross-sector STEM research.

These projects are expected to inform best practices for STEM workforce development in higher education.
Track 1: Building Capacity

Priority Area 2: Innovative Cross-Sector Partnerships

Sample Questions for Investigation

• What new knowledge can be generated about how cross-sector partnerships contribute to STEM teaching and learning and workforce development?

• How do cross-sector partnerships develop and/or apply culturally competent approaches to enhance the undergraduate STEM experience?

• How do cross-sector student research experiences lead to increased recruitment and retention of a diverse STEM workforce?
Projects should generate new knowledge about teaching and learning strategies and curricular models that improve undergraduate STEM education for a culturally diverse student population at HSIs.

Projects may also create and adapt learning materials and teaching strategies to enhance STEM learning that lead to measurable gains and implementable models.

Projects enhance understanding of how students learn STEM topics and how faculty adopt culturally relevant instructional approaches in STEM.

Projects may include investigators (internal or external to the institution) with expertise in education research and/or social science research methods, as well as knowledge about STEM programs.
Track 1: Building Capacity

Priority Area 3: Teaching and Learning in STEM

Sample Questions for Investigation

• How does training in implicit bias or cultural competence contribute to teaching effectiveness of faculty and staff, student sense of belonging and learning, and institutional culture at all levels?

• What kinds of faculty development lead to increased use of innovative, culturally relevant, and evidence-based teaching approaches? What aspects of faculty development lead to student engagement, learning and degree attainment?

• How does teaching support (such as graduate or undergraduate teaching assistants, near-peer mentoring, or learning assistants) contribute to student learning and engagement and degree attainment?
Track 2: HSIs New to NSF

• Build capacity in undergraduate STEM education at HSIs that either have never received NSF funding or have not received funding from NSF in the five years prior to the proposal deadline.

• Stimulate implementation, adaptation, and innovation in one or more of the three priority areas identified in Track 1.

• Projects will develop evidence-based innovative models that address retention and graduation rates of students pursuing associate or baccalaureate degrees in STEM.

• Anticipated new knowledge to be generated from the project should be described.

• It is expected that some of the funded Track 2 projects will serve as pilots for ideas that may be expanded in future proposals in Track 1 or other NSF programs.
Conferences

• Proposals for conferences addressing critical challenges in undergraduate STEM education at HSIs may be submitted at any time following consultation with a program officer.

• Conference proposals that address increasing the diversity of institutions and faculty participating in the HSI Program are encouraged.

• Proposals may involve collaborations of education researchers and scientists in the STEM disciplines to ensure that undergraduate STEM education addresses the cultural differences of diverse student populations.

• Information about preparing a Conference Proposal is contained in PAPPG Chapter II.E.7.
Research Design

- The **research design** addresses a research question and/or hypothesis that is important to the project and the field, and is appropriate to the **size** and **scope** of the project.

Project Evaluation: Measures to Assess Success

- The **evaluation plan** examines all aspects of the project activities to inform the project's progress towards its goals and is appropriate to the **size** and **scope** of the project.

- **Successful proposals** will have well-aligned research questions/hypotheses, methods, analyses, project activities, and project evaluation.
Research vs. Evaluation

Soup as a metaphor

• Research
  • What happens to the soup’s flavor when I use different ingredients?
  • How does the rate of cooling change when I use different bowls?

• Evaluation
  • Did I use appropriate procedures to make the soup?
  • Did I adequately consider the possible ingredients I might use?
FORMATIVE SUMMATIVE

WHEN THE CHEF TASTES THE SOUP

WHEN THE GUESTS TASTE THE SOUP

FROM STEVE WHEELER'S BLOG "THE AFL TRUTH ABOUT ASSESSMENT"
For the NSF HSI Program

• **Letters of Commitment** that document what is being committed that is of significance to the project must be provided.

• Letters that merely endorse the project or offer nonspecific support for project activities should not be included and the proposal may be returned without review if general support letters are included.
Anatomy of a program solicitation

NSF HSI STEM Hub
Summer Grantsmanship Webinar Series
May 12, 2020
Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program)

PROGRAM SOLICITATION
NSF 19-540

REPLACES DOCUMENT(S):
NSF 18-524

National Science Foundation

Directorate for Education & Human Resources
Division of Human Resource Development
Division of Undergraduate Education

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

March 06, 2019

September 18, 2019

Third Wednesday in September, Annually Thereafter  (September 16, 2020)
IMPORTANT INFORMATION AND REVISION NOTES

For Track 1 (Building Capacity), an eligible institution may submit only one proposal. The award limit and duration for Track 1 are up to $2,500,000 over a period of up to 5 years.

For Track 2 (HSIs New to NSF), there are no restrictions or limits on the number of proposals submitted. The award limit and duration for Track 2 are up to $300,000 over a period of up to 3 years.

Proposals for a Resource Hub are not accepted.

An institution that is part of a larger system is considered separate for proposal submission purposes if it is geographically separate from the other campus(es) and has its own chief academic officer.

For Track 1 (Building Capacity), Priority Area 3 has been renamed from “Research on Broadening Participation in STEM” to “Teaching and Learning in STEM.”

Conference proposals may be submitted in consultation with a program officer.

Webinar. The HSI Program team, in collaboration with the NSF Division of Grants and Agreement (DGA), will host webinars after the release of this solicitation. Key features and expectations of the HSI Program as well as guidance on proposal preparation and submission will be discussed with potential PIs and their authorized organizational representatives responsible for submitting proposals to the HSI Program. Information regarding the webinar will be posted to the HSI Program webpage: https://nsf.gov/ehr/HSIProgramPlan.jsp.

The HSI Certification Form signed by the authorized organizational representative must be included as a supplementary document with the proposal.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 19-1), which is effective for proposals submitted, or due, on or after January 28, 2019.
SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

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

Synopsis of Program:

The Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program) seeks to enhance the quality of undergraduate STEM education at HSIs and to increase retention and graduation rates of undergraduate students pursuing degrees in science, technology, engineering, and mathematics (STEM) at HSIs. In addition, the HSI Program seeks to build capacity in undergraduate STEM education at HSIs that typically do not receive high levels of NSF grant funding. The National Science Foundation (NSF) established the HSI Program in response to the Consolidated Appropriations Act, 2017 (P.L. 115-31) and the American Innovation and Competitiveness Act (P.L. 114-329). The HSI Program is aligned with NSF’s commitment to increase access for underrepresented groups to the Nation’s STEM enterprise.

In designing the HSI Program, NSF sought community input by several mechanisms (https://nsf.gov/ehr/HSIProgramPlan.jsp) and has continued to gather community input to inform future components of, or modifications to, the HSI Program.

To be eligible for HSI Program funding, the institution serving as the awardee organization must, at the time of application, be accredited, offer undergraduate educational programs in STEM, and satisfy the definition of an HSI as specified in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a). Institutions should review the legislation before certifying their eligibility for this program (http://legcounsel.house.gov/Comps/HEA65_CMD.pdf).

The HSI Program will accept proposals in two tracks:

1. **Track 1: Building Capacity** funds projects up to $2,500,000 for up to 5 years and is open to all eligible institutions. This track has three priority areas: Critical Transitions; Innovative Cross-Sector Partnerships; and Teaching and Learning in STEM.

2. **Track 2: HSIs New to NSF** funds projects up to $300,000 for up to 3 years and is open only to eligible institutions that have never received NSF funding, or that have not received NSF funding in the five years preceding the proposal deadline.
Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- For general inquiries, contact: NSF-EHR-HSI@nsf.gov
- Erika Camacho, telephone: (703) 292-2834, email: ecamacho@nsf.gov
- Michelle M. Camacho, telephone: (703) 292-8718, email: mcamacho@nsf.gov
**Award Information**

**Anticipated Type of Award:** Standard Grant or Continuing Grant

**Estimated Number of Awards:** 15

The program estimates making awards for 10 Track 1 (Building Capacity) projects and 5 Track 2 (HSIs New to NSF) projects.

**Anticipated Funding Amount:** $15,000,000

For new HSI Program awards, subject to the availability of funds.

NSF anticipates that approximately $15,000,000 will be available for new and continuing awards in this program in FY 2019. In FY 2019, the HSI Program expect to fund new awards for Track 1 and Track 2 totaling $13,000,000.
Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Eligible institutions must be accredited and offer undergraduate educational programs in STEM and satisfy the HSI definition as specified in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a). The HSI Certification Form is required with submission of the proposal. (See section V of the solicitation.)
- For Track 2 (HSIs New to NSF), proposals will only be accepted from eligible institutions that have never received NSF funding or have not received funding from NSF in the five years prior to the proposal deadline.

Who May Serve as PI:

- The Lead Principal investigator (PI) must be employed by the eligible institution submitting the proposal.

Limit on Number of Proposals per Organization:

- For Track 1 (Building Capacity), an institution can submit only one proposal.
- For Track 2 (HSIs New to NSF), there are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI:

There are no restrictions or limits.
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Program Website: https://nsf.gov/ehr/HSIProgramPlan.jsp

FastLane Help Desk: 1-800-673-6188 or e-mail Fastlane@nsf.gov
Any Questions?

Thank you for your attention!

Ellen M. Carpenter
elcarpen@nsf.gov

Serve as an HSI reviewer & more information in the program website:
https://nsf.gov/ehr/HSIProgramPlan.jsp