# EHR
Division of Human Resource Development

HRD's mission is to grow the innovative and competitive U.S. science, technology, engineering and mathematics (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.

Division of Human Resource Development (HRD)

- **Institutional Change**
- **Capacity Building**
- **Research & Development**
- **Model Development**
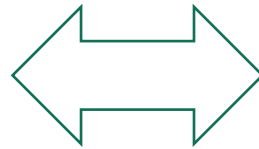
- **ADVANCE**
- **AGEP**
- **CREST**
- **EASE**
- **ECR/BCSER**
- **HBCU-UP**
- **HSI**
- **LSAMP**
- **NSF INCLUDES**
- **TCUP**
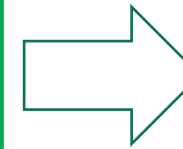
BROADENING PARTICIPATION IN STEM

"Missing Millions"

- **AGEP** – Alliances for Graduate Education and the Professoriate

- **CREST** – Centers for Research Excellence in Science and Technology and HBCU Research Infrastructure for Science and Engineering

- **HBCU-UP** – Historically Black Colleges and Universities Undergraduate Program

- **LSAMP** – Louis Stokes Alliances for Minority Participation

- **TCUP** – Tribal Colleges and Universities Program

- **HSI** – Improving Undergraduate STEM Education: Hispanic-Serving Institutions

- **ADVANCE** - Organizational Change for Gender Equity in STEM Academic Professions

- **NSF INCLUDES** - Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science

- **ECR/BCSER** – EHR Core Research and Development/Building Capacity in STEM Education Research

- **EASE** – Excellence Awards in Science and Engineering
  - Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST)
  - Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM)

Partnering with NSF Directorates

External Partnerships

DOE

EPA

NASA

DOD

EHR/HRD

USDA-NIFA

NSF

HHMI

NIH
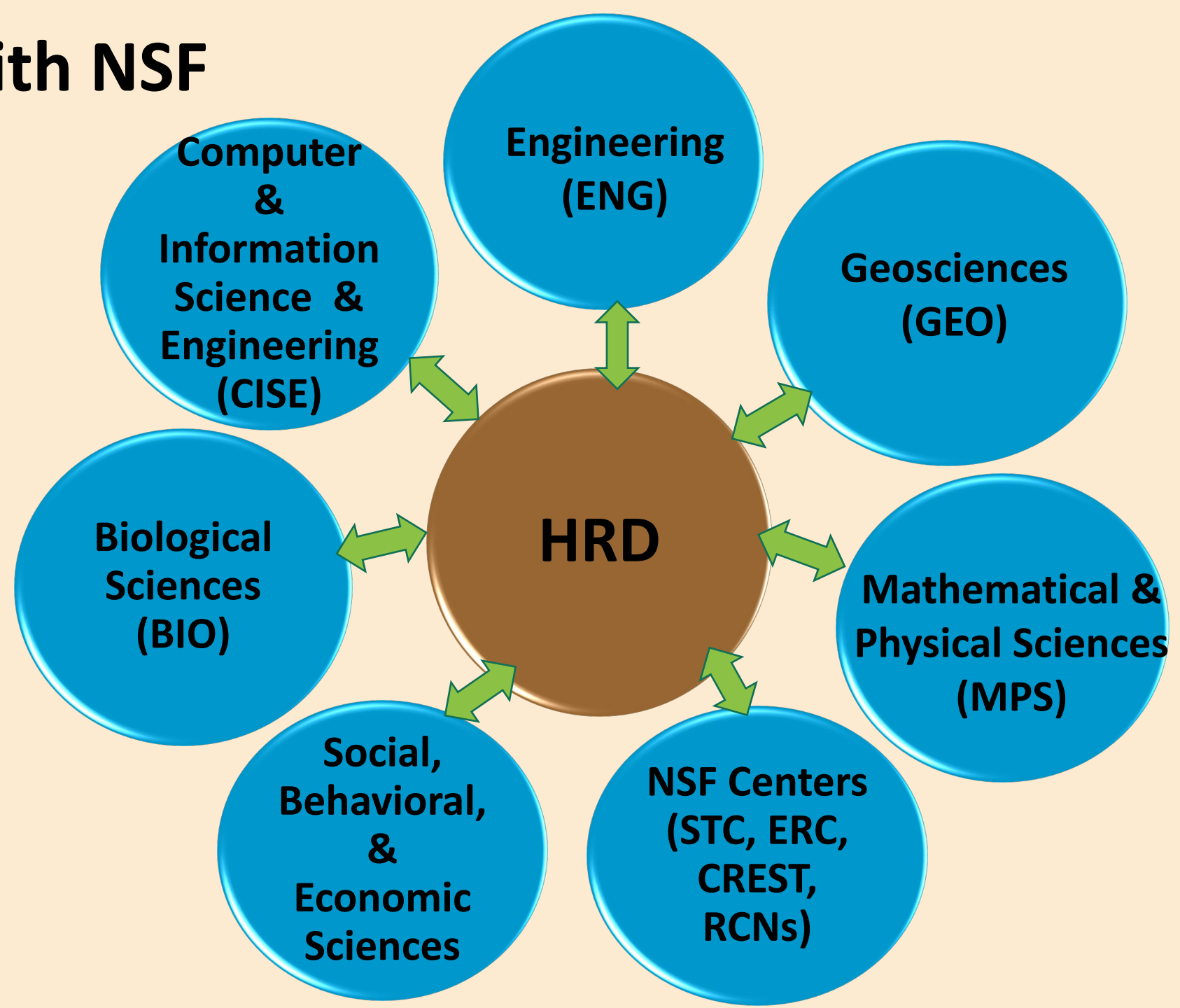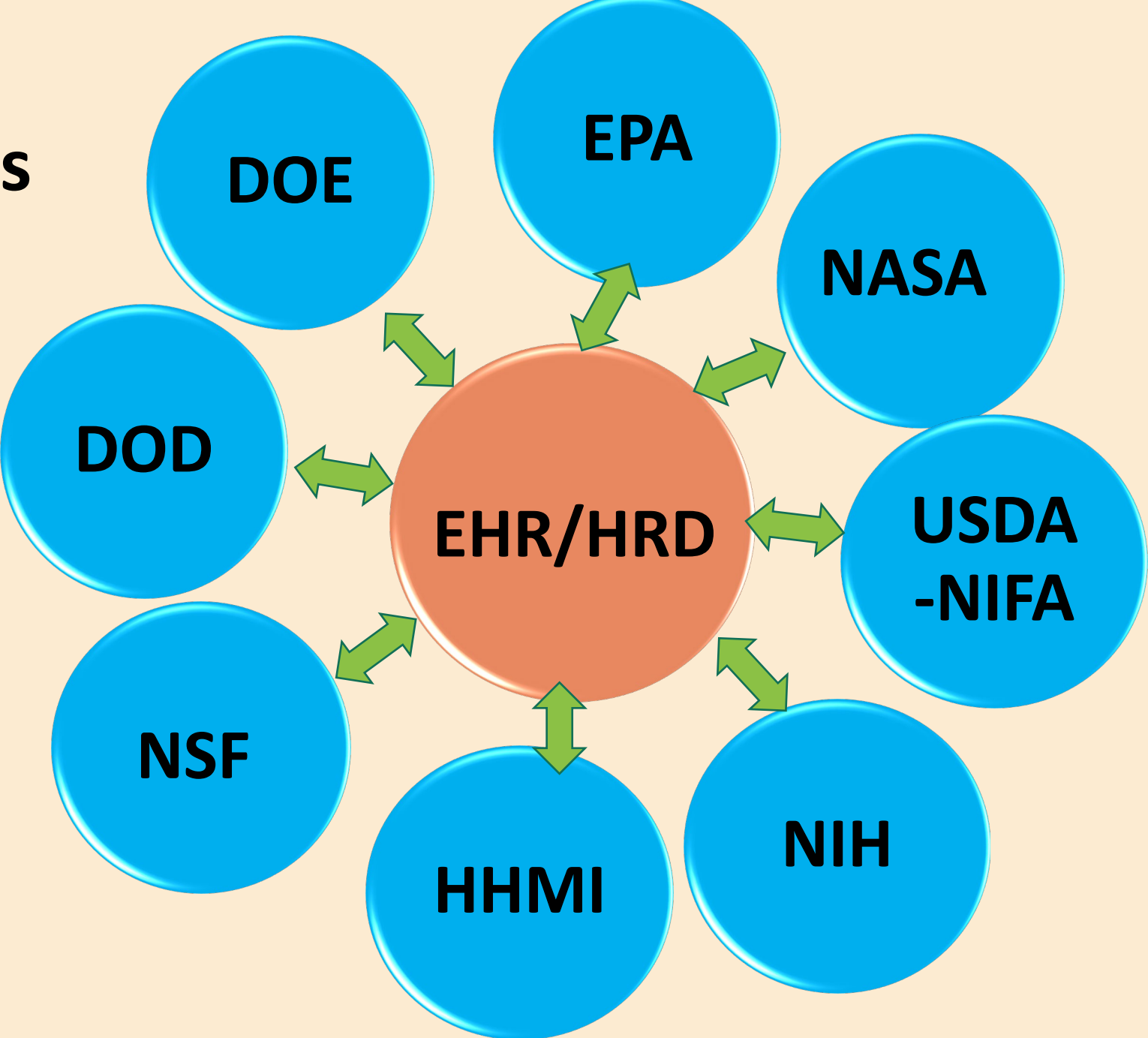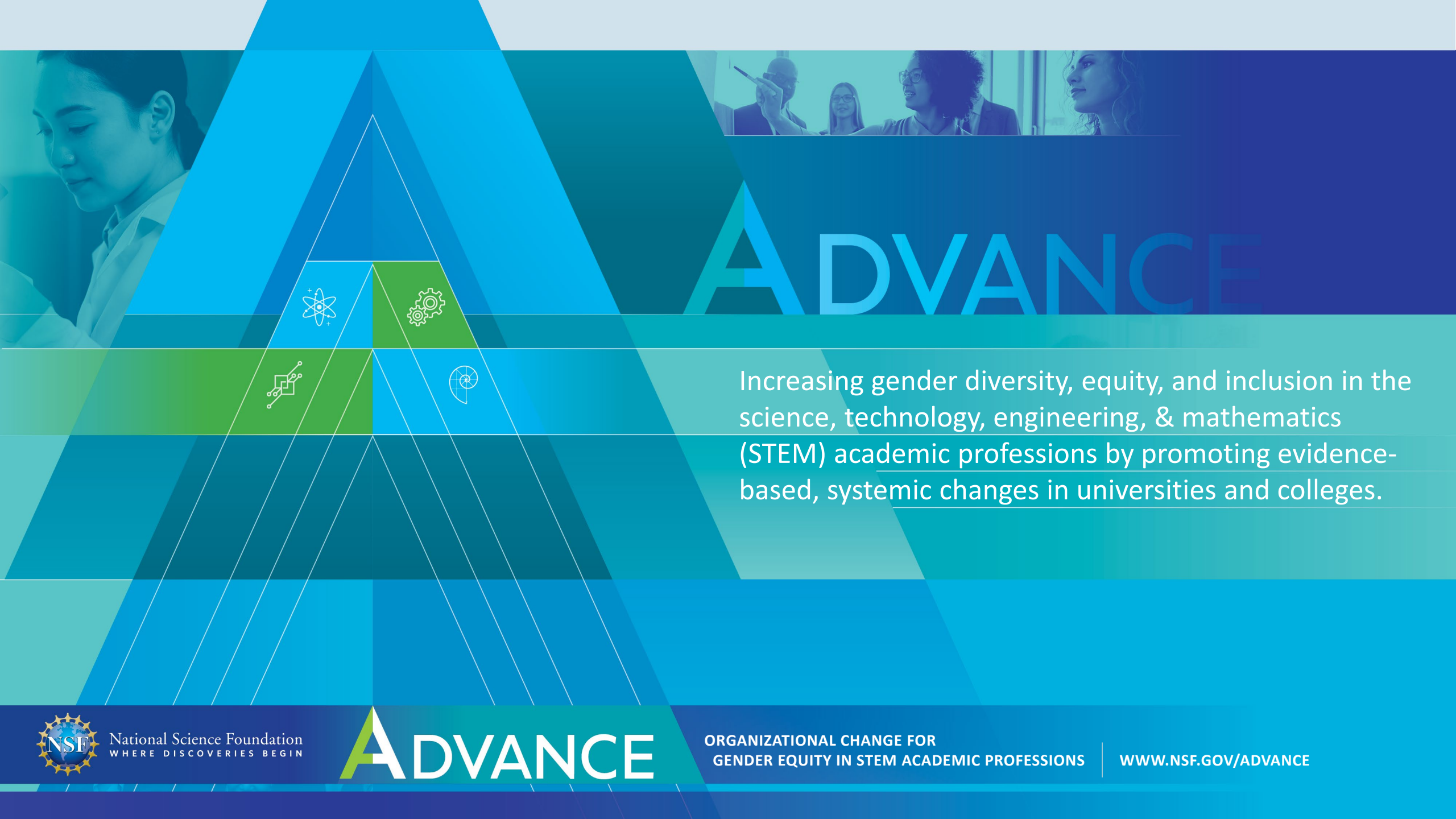
ADVANCE

Increasing gender diversity, equity, and inclusion in the science, technology, engineering, & mathematics (STEM) academic professions by promoting evidence-based, systemic changes in universities and colleges.

National Science Foundation WHERE DISCOVERIES BEGIN

ADVANCE

ORGANIZATIONAL CHANGE FOR GENDER EQUITY IN STEM ACADEMIC PROFESSIONS | WWW.NSF.GOV/ADVANCE

ADVANCE focuses on "fixing" the systems and organizations that impact **STEM academic careers.**

Examples of potential organizational and systemic issues:

- Recruitment, retention, tenure, and promotion policies *and practices*
- Work-life balance and career flexibility policies and programs *and usage*
- Salaries, start-up packages, and access to resources
- Institutional service allocations and requirements (committees, mentoring, etc.)
- Culture and climate of organizations and departments
- Accountability of STEM leadership and commitment to diversity
- Narrow definitions of academic STEM excellence
- Non-critical reliance on traditional ideals

Systemic and organizational change is most likely to result in **long-term change** in STEM academics.

GRANT TYPES FOR IHES

Catalyst

- Institutional self-assessment, investigate and pilot potential organizational change strategies, and develop five-year STEM faculty equity plan

- Up to $300K over 2 years

- Single IHE that has not had IT or Adaptation before

- Scope includes all STEM disciplines at the IHE

Target date*

- August 5, 2022

*Proposals accepted before and after target date

Adaptation[+$]

- Adapt proven organizational gender equity strategies to an IHE

- Up to $1M over three years

- **+$** can increase to $1.25M with collaboration with NSF project

- Single IHE that has not had IT or Adaptation before

- Scope includes all STEM disciplines at the IHE

Due Dates

- Letter of Intent August 1, 2022 (required)

- Full Proposal Nov 2, 2022

Institutional Transformation (IT)

- Develop, implement, and study **innovative** organizational change strategies to foster gender equity; conduct original research;

- Up to $3M over five years

- Single IHE that has never had IT

- Scope includes all STEM disciplines

Target dates*

- IT-Preliminary proposal: April each year (required); Next submission due date April 28, 2022

- IT Full proposal Oct. each year **only** if encouraged after IT-Preliminary proposal; Next due date Oct. 6, 2022

*Proposals accepted before and after target date

NSF ADVANCE Program Directors:

Drs. Jessie DeAro, E. Tatiana Camacho, Chrystal A. S. Smith

AAAS Science and Technology Fellow: Dr. Utibe Bickham-Wright

ADVANCE@nsf.gov

National Science Foundation
WHERE DISCOVERIES BEGIN

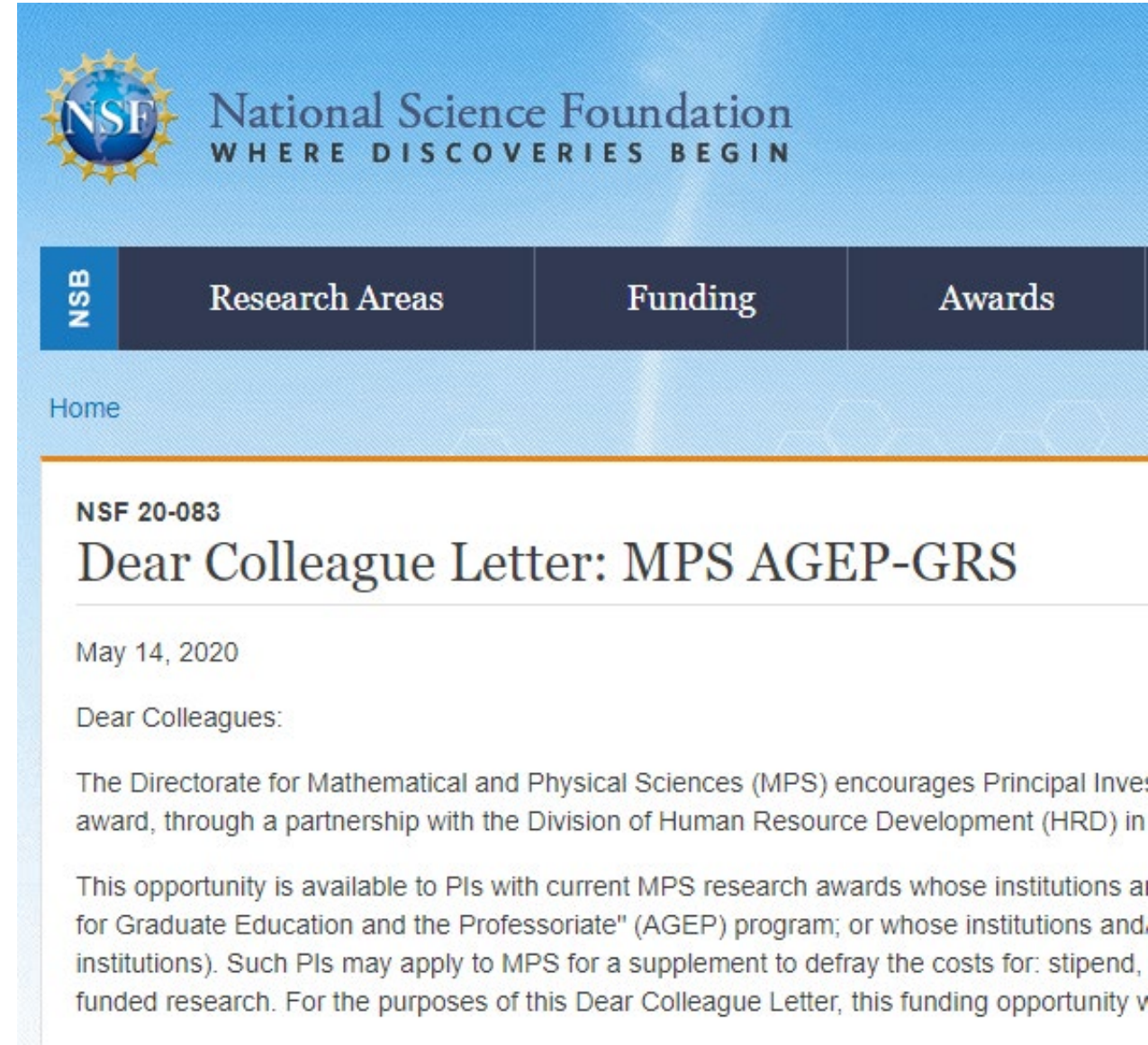# Alliances for Graduate Education and the Professoriate (AGEP)

More STEM faculty who are African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, Native Pacific Islanders

- ✓ Targets systemic racism using institutional transformation to address the "missing millions"
- ✓ Collaborating universities and colleges are similar in Carnegie classifications, geography & student/faculty demographics
- ✓ $400K 2-yr planning awards: AGEP Catalyst Alliances
- ✓ $4.4M 5-year Institutional Transformation Alliances
- ✓ Solicitation NSF 21-57

Mark Leddy: mleddy@nsf.gov 703-292-4655

MPS AGEP-Graduate Research Supplements

- Request by PI of active MPS award
- Institution must be a current or legacy AGEP funded Alliance
- 12 months funding for 1 PhD student, renewable up to 3 years
- AGEP-GRS student candidates must be United States citizens, nationals, or permanent residents
- Review the Dear Colleague Letter (DCL): NSF 20-083
- Contact current awards program director or one named in the DCL

National Science Foundation
WHERE DISCOVERIES BEGIN

| Research Areas | Funding | Awards |

Home

NSF 20-083

Dear Colleague Letter: MPS AGEP-GRS

May 14, 2020

Dear Colleagues:

The Directorate for Mathematical and Physical Sciences (MPS) encourages Principal Inves award, through a partnership with the Division of Human Resource Development (HRD) in

This opportunity is available to PIs with current MPS research awards whose institutions a for Graduate Education and the Professoriate" (AGEP) program; or whose institutions and institutions). Such PIs may apply to MPS for a supplement to defray the costs for: stipend, funded research. For the purposes of this Dear Colleague Letter, this funding opportunity w

Directorate for Education & Human Resources
DIVISION OF HUMAN RESOURCE DEVELOPMENT
National Science Foundation • Alexandria, VA

Louis Stokes Alliances for Minority Participation

Louis Stokes Alliances for Minority Participation

- Authorized by Congress in 1991

- Significantly increase the quality and quantity of underrepresented minority (URM) students successfully completing STEM BS degree programs to diversify workforce

- Implement strategies that focus on critical transition points

- Alliances are composed of universities and colleges, government labs, industry and not for profit partners

Targeted Groups & Disciplines

✓ Blacks

✓ Hispanics

✓ American Indians

✓ Alaska Natives

✓ Pacific Islanders

✓ Agricultural Sciences
✓ Chemistry
✓ Computer Science
✓ Engineering
✓ Environmental Science
✓ Geosciences
✓ Life/Biological Sciences
✓ Mathematics
✓ Physics/Astronomy

LSAMP Model

Institutions of Higher Education

The Tinto Model of Student Retention

ACADEMIC INTEGRATION ⟷ SOCIAL INTEGRATION → Academic and Social Integration → *Student Retention and Graduation*

Entry into Graduate School or STEM Workforce

PROFESSIONALIZATION

Socialization into Science

LSAMP
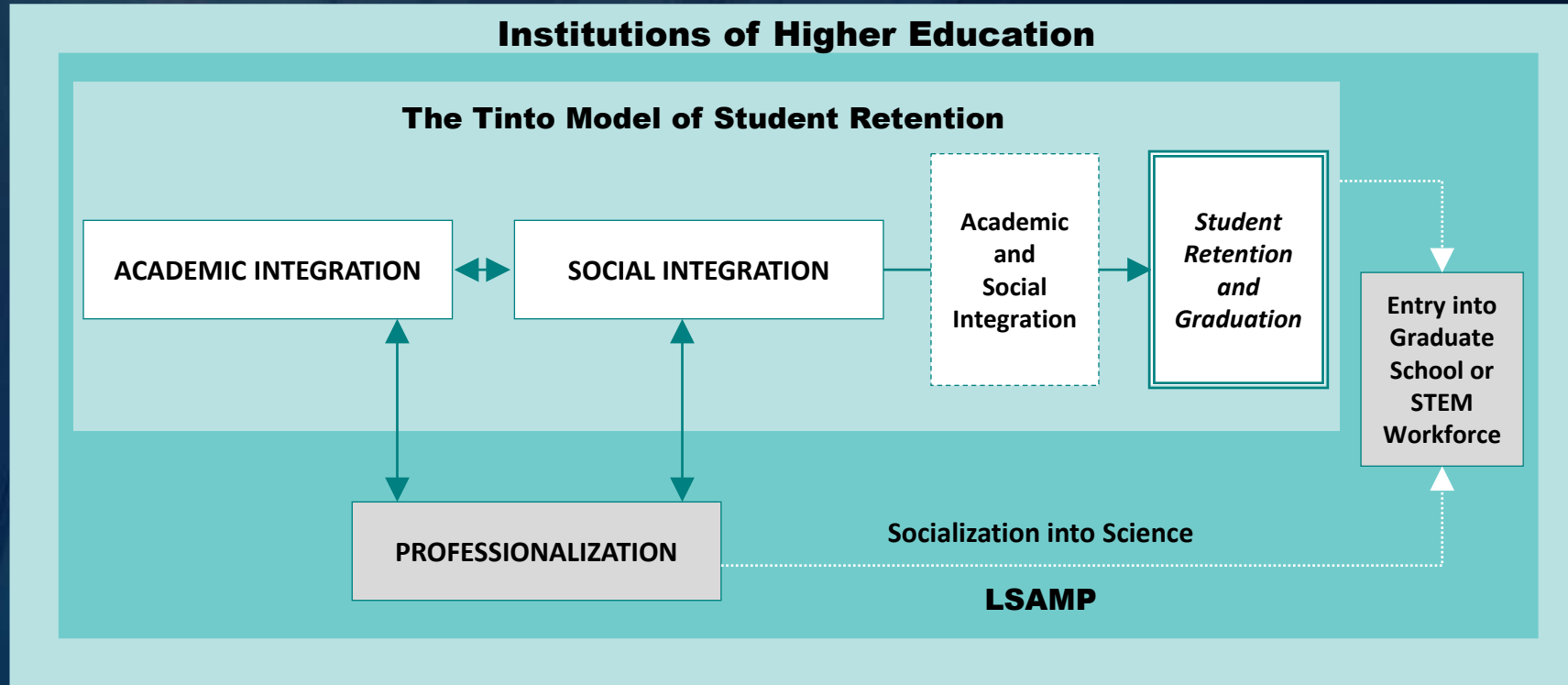
✓ Academic – Academic performance and faculty/staff interactions

✓ Social – Extracurricular activities and peer group interactions

✓ Professionalization – Skills, culture and attitudes of STEM discipline

Source: Adapted from Revitalizing the Nation's Talent Pool in STEM, Washington DC
The Urban Institute, 2006

TYPES OF PROJECTS SUPPORTED in FY2022 Solicitation NSF 20-590

Alliances

- **Bridge to the Baccalaureate (B2B) Alliances**

- **STEM Pathways Implementation-Only Alliances (SPIO)**

- **STEM Pathways and Research Alliances (SPRA)**

Other

- **Bridge to the Doctorate (BD)**
  (Eligibility is limited to alliances supported consecutively for ten or more years)

- **Conferences (Limited)**

2018-2022 LSAMP REGIONAL CENTERS OF EXCELLENCE

Centers of Excellence

- **Midwest Regional Center of Excellence – LSMRCE**
  Leads: Chicago State University/IUPUI

- **Florida-Caribbean Regional Center of Excellence – FL-C-LSRCE**
  Leads: Santa Fe College/Univ. of the Virgin Islands

- **Fisk-Vanderbilt Bridge Program Regional Center of Excellence (FVBP)**
  Lead: Fisk University

- **NSF International Center of Excellence – LSAMP-NICE**
  Lead: Salish Kootenai College

Centers of Excellence (Cont'd)

- **Center for Promotion of Academic Careers (LS-PAC-MODELS)**
  Lead: Louisiana State University

- **Southeastern Center for Nanotechnology Education**
  Lead: Norfolk State University

- **Mar-Sci-LACE – Center for Marine Sciences**
  Lead: Mote Marine Laboratory

- **Center for the Study of STEM Interventions – LSAMP-SOSI**
  Leads: Univ. of Missouri-Columbia/Understanding Interventions Non-Profit

- **Colorado-Rockies Center for STEM Mentoring**

LSAMP Team

Martha James: mjames@nsf.gov
Lead/Program Officer

LeRoy Jones II: ljones@nsf.gov
Program Director

Sonja Montas-Hunter: smontash@nsf.gov

Sandra Romano: sromano@nsf.gov
Program Director

Cynthia Douglas: cdouglas@nsf.gov
Program Specialist

Al Wilson: awilson@nsf.gov
Division Analyst

Frances Carter-Johnson: frajohns@nsf.gov
Data Scientist

Alliance
Private/Public
Partnership

Program Goals

CREST

Enhance the research capabilities of minority-serving institutions

HBCU-RISE

Support the development of research capability at Historically Black Colleges and Universities that offer doctoral degrees in science and engineering disciplines.

CREST-PRF

Provide research experience and training for early career scientists at active CREST Centers.

Program Information

Project Duration

CREST: Five years

HBCU-RISE: Three years

CREST-PRF: Two years

Budget

CREST: $1,000,000 annually (i.e., a maximum of $5,000,000)

HBCU-RISE: Not exceed $1,000,000 during a three-year period

CREST-PRF:
- Annual stipend of $70,000/yr
- Annual fellowship allowance of $30,000/yr
- Up to $50,000 for research and travel expenses at a non-CREST Center institution

Eligibility criteria

CREST:
Preliminary and invited full CREST Center proposals may be submitted by minority-serving institutions of higher education in the United States.

This denotes institutions that have undergraduate enrollments of 50% or more (based on total student enrollment) of members of minority groups underrepresented among those holding advanced degrees in science and engineering field

HBCU-RISE:
Historically Black Colleges and Universities that offer doctoral degrees in STEM

CREST-PRF:
- Be a U.S. citizen, national, or permanent resident
- Have earned the doctoral degree, or expect to have earned the doctoral degree prior to the start date
- Show proof of CREST Center funding as a graduate student for at least one year
- Not have worked for more than 24 full-time-equivalent months in positions that require the doctoral degree
- May not have previously been a principal investigator or co-principal investigator of an NSF award
- Submit a project plan that falls within the purview of the CREST Center host institution's research priorities
- Not have submitted concurrently the same project to another NSF program

Key Strategies

The **strategies** to achieve these goals are to:

1. build capacity at HSIs through innovative approaches;

2. incentivize institutional and community transformation; and

3. promote fundamental research on

    i. engaged student learning,

    ii. what it takes to diversify and increase participation in STEM effectively, and

    iii. how to build institutional capacity at HSIs.

HSI Program Tracks

Track 1:	Track 2:	Track 3:
Planning or Pilot Projects (PPP)	**Implementation and Evaluation Projects (IEP)**	**Institutional Transformation Projects (ITP)**
2-year-long projects	**3- to 5- year-long projects**	**5-year-long projects**
Funding amount:	**Funding Amount:**	**Funding Amount:**
$200,000 - single institution, $300,000 - collaborative $100,000 incentive to partner with one or more community colleges	**$500,000 - single institution $800,000 - collaborative $200,000 incentive to partner with one or more community colleges**	**Up to $3,000,000**
Upcoming Deadlines:	**Upcoming Deadlines:**	**Upcoming Deadlines:**
• **March 28, 2022** • **August 31, 2022** • **February 8, 2023**	• **March 28, 2022** • **February 8, 2023**	• **March 28, 2022** • **August 31, 2022** • **February 8, 2023**

Conference proposals may be submitted by institutions of higher education, including non-HSIs, and non-profit organizations.

There are track-specific eligibility criteria

| Track 1: PPP	Track 2: IEP	Track 3: ITP
An institution must • satisfy the definition of an HSI as specified in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a) and submit the HSI Certification Form; • be PUI or New to NSF and does not need to currently offer STEM degrees or certificates. An institution cannot have more than two active PPP awards or a Track 1 award under the previous solicitations NSF 18-524 and NSF 19-540 .	An institution must • satisfy the definition of an HSI as specified in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a) and submit the HSI Certification Form; • offer undergraduate STEM educational programs that result in certificates or degrees. An institution cannot have more than two active IEP awards or two Track 1 awards under the previous solicitations NSF 18-524 and NSF 19-540 .	An institution must • satisfy the definition of an HSI as specified in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a) and submit the HSI Certification Form; • offer undergraduate STEM educational programs that result in certificates or degrees. One submission per institution is allowed. Previous ITP awardees are not eligible to submit a proposal in the ITP track.

Historically Black Colleges and Universities Undergraduate Program (HBCU-UP) NSF 20-559

Supports development, implementation, and the study of evidence-based, innovative models and approaches to prepare HBCU undergraduates for STEM workforce.

- ✓ Innovation in instruction and curriculum development
- ✓ STEM research experiences for undergraduates
- ✓ Critical transitions (K-12 to undergraduate, 2-year to 4-year, retention from freshman to sophomore, undergraduate to graduate)
- ✓ STEM faculty professional and leadership development
- ✓ Enhance STEM faculty research
- ✓ Research capacity building
- ✓ Broadening participation research in STEM Education
- ✓ STEM teacher preparation

Accredited HBCUs in the U.S.

Powered by Bing
© GeoNames, Microsoft, TomTom

NSF
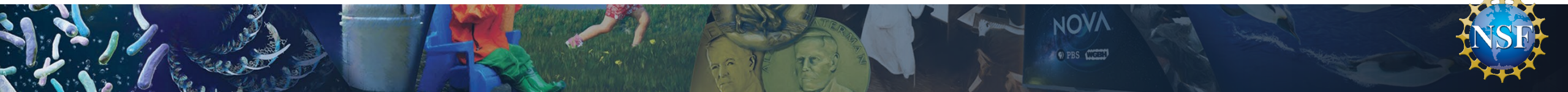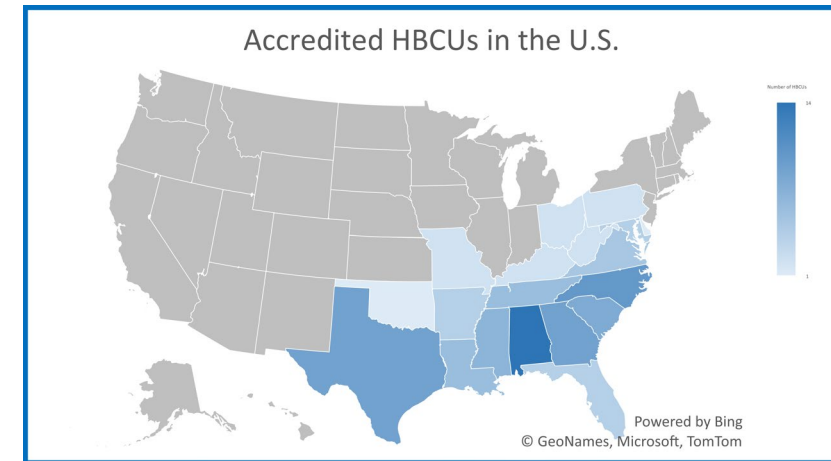
Faculty Research

- **Research Initiation Awards (RIA) - $300K**
  - LOI: July 26, 2022
  - Full Proposal: October 4, 2022
- **Broadening Participation Research in STEM (BPR) - $350K**
  - LOI: September 13, 2022
  - Full Proposal: November 10, 2022

Institutional Capacity Building

- **Targeted Infusion Proposals (TIP) - $400K**
  - LOI: September 13, 2022
  - Full Proposal: November 10, 2022
- **Implementation Projects (IMP) - $1.25-2.25 M**
  - LOI: September 13, 2022
  - Full Proposal: November 10, 2022
- **Achieving Competitive Excellence (ACE) - $3 M**
  - LOI: September 13, 2022
  - Full Proposal: November 10, 2022

Intellectual Hub and National Resource

- **Broadening Participation Research Centers (BPRCs) - $9 M**
  - Preliminary Proposals: March 22, 2022
  - Full Proposal: November 22, 2022
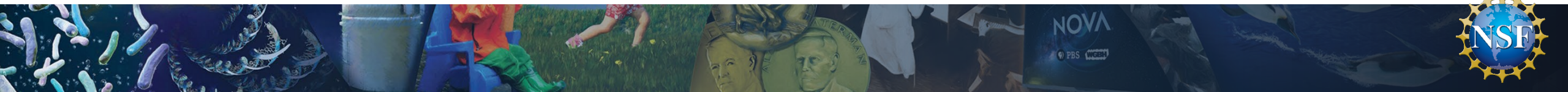
Tribal Colleges and Universities Program (TCUP)
Solicitation #21-595, various deadlines

TCUP Eligible Institution:

- ✓ Tribal Colleges and Universities

- ✓ Alaska Native-serving Institutions of Higher Education

- ✓ Native Hawaiian-service Institutions of Higher Education

Goal:

Supporting **transformative capacity-building** projects that increase the participation of Indigenous peoples in STEM careers and improve the quality of STEM education at TCUP-eligible institutions.

Tribal Colleges and Universities Program (TCUP) #21-595

Institutional Transformation

- ICE-TI (Instructional Capacity Excellence in TCUP Institutions)
- TSIP (Targeted STEM Infusion Projects)
- Pre-TI (Planning for TCUP Implementation)
- CHAI (Cyberinfrastructure Health, Assistance, and Improvements)

Faculty Research

- SGR (Small Grants for Research)

Community Focus

- TEA Centers (Tribal Enterprise Advancement Centers)
- TSETS (TCUP for Secondary and Elementary Teachers in STEM)

Tribal Colleges and Universities Program (TCUP) #21-595

<u>Previous Formal Partnerships</u>

- GEO: PArtnerships for GeoScience Education (PAGE)

- ENG: Pre-Engineering Education Collaboratives (PEEC)

- SBE: Partnerships for Documenting Linguistics Education (PADLE)

Collaboration Model: TCUP institution(s) are supported by TCUP, non-TCUP institution(s) are supported by another NSF entity.

<u>TCUP Partnerships Strand</u> – open to any field supported by NSF

Contacts

Jeremy Guinn – jguinn@nsf.gov

Lura "Jody" Chase – lchase@nsf.gov

Regina Sievert – rsievert@nsf.gov

Native Science Report – https://nativesciencereport.org/

A reminder about Chemistry Programs

[Broadening Participation Resources in Chemistry](#)

MPS-Ascend Postdoctoral Fellow Program (NSF 22-501):

- To support postdoctoral fellows who will broaden the participation of groups that are underrepresented in MPS fields as future leaders.
- To provide experience in research that will broaden perspectives, facilitate interdisciplinary interactions and help broaden participation within MPS fields.
- Cohort-based mentoring experience to facilitate transition to and retention in future career pathways

Partnerships for Research and Education in Chemistry (NSF 21-620):

Collaborative efforts supporting broadening participation and strengthening research infrastructure at Minority Serving Institutions (MSI) *via* partnerships between MSIs and designated CHE-funded Centers, Facilities and/or Institutes

Re-Entry to Active Research (RARE, NSF 20-586):

- To catalyze the advancement along the academic tenure-track of highly meritorious individuals who are returning from a hiatus from active research

LEAPS-MPS – Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences (NSF 22-503): To initiate the research careers of pre-tenure faculty in tenure-track positions, particularly those at MSIs, including HBCUs, HSIs, TCUs, AANAPISIs, PUIs, and R2s.

Supplements to Existing Awards

Once funded, look for opportunities for supplemental funding that expand the opportunities of your project. Examples include:

INTERN (NSF 21-013): Supplements support non-academic research internships for graduate students

MPS-AGEP-GRS (NSF 20-083): Supplements support additional graduate researchers to broaden participation by members of underrepresented groups

FASED (PAPPG II.E.7): Supports persons with physical disabilities by providing special equipment and assistance under NSF awards

MPS-GRSV (NSF 20-097): Graduate Research Supplement for Veterans