

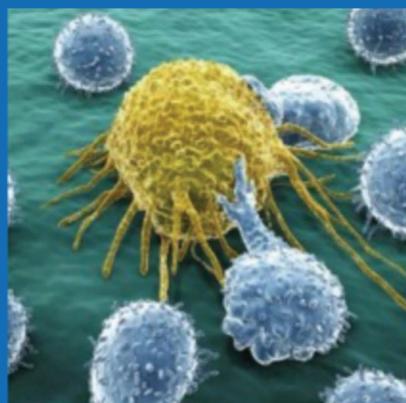
U.S. National Science Foundation

NSF is:

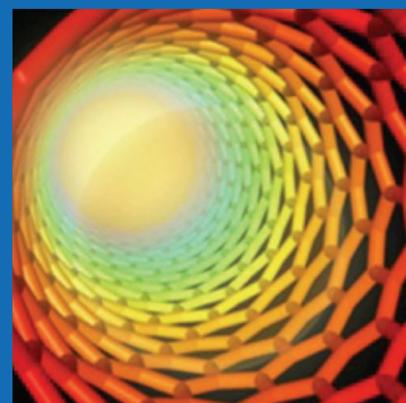
- Federal agency created by Congress in 1950 to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense.
- Only federal agency to invest in all fields of science, engineering, and education research.
- Invests in cutting-edge research and people who explore the unknown and advance the frontiers of research and technology to improve lives.



NSF Directorates and Offices



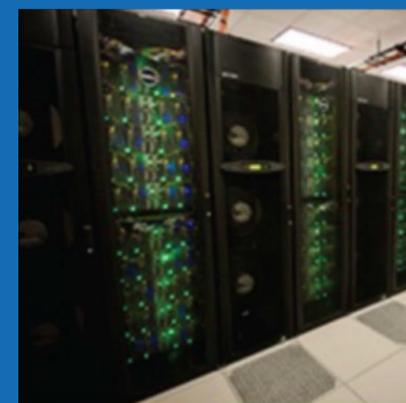
Biological Science



Engineering



Mathematical & Physical Sciences



Computer & Information Science & Engineering



Geosciences (Including Polar Program)



Integrative Activities



STEM Education



Social Behavioral & Economic Sciences



International Science & Engineering



Technology, Innovation and Partnerships





The HSI Program aims to support organizational capacity building

As encouraged by Congress, the HSI Program is concerned with

building capacity which should involve developing structures that foster students' and/or faculty growth while meeting the students where they *are* in their college careers academically, financially, and socially.

These institutional structures may include socio-cultural supports and collaborative processes that promote effective learning environments and inclusiveness as well as mechanisms to support personal development and professional learning for students.



HSI:ETSE Deadlines (NSF 24-578)

Focuses on Transformation that leads to Equity in STEM Education

Tracks	Department/Divisional Transformation	Institutional Transformation	Emerging Faculty Research	HSI Resource Hubs
Duration	Up to 5 Years	Up to 5 years	Up to 3 years	Up to 5 years
Amount:	Up to \$1,000,000	Up to \$3,000,000	Up to \$200,000	Up to \$3,000,000
Deadline	September 11, 2024			

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



HSI:ELPSE Tracks

Enriching Learning, Programs, and Student Experiences (HSI:ELPSE)

NSF 24-551

Tracks	Implementation and Evaluation: Level 1	Implementation and Evaluation: Level 2	Educational Instrumentation
Duration	Up to 3 Years	Up to 5 years	Up to 2 years
Funding Amounts	Up to \$500,000	Up to \$1,000,000	Up to \$200,000
Deadline	February 12, 2025	February 12, 2025	June 4, 2024 February 12, 2025

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



IUSE Hispanic Serving Institution Program

Goals:

- (1) to enhance the quality of undergraduate science, technology, engineering, and mathematics (STEM) education
- (2) to increase the recruitment, retention, and graduation rates of students pursuing associates or baccalaureate degrees in STEM.

Interesting facts:

- Co-managed by the Division of Undergraduate Education (DUE) and the Division of Equity for Excellence in STEM (EES).
- Congressionally mandated program (Consolidated Appropriations Act, 2017 Public Law 115-31).
- Has funded 24.6% of the HSIs (26% of all HSIs in states with awards). These states account for 95% (n=517) of the 545 HSIs in the USA as of 2022 (data from Dept Ed).



HSI Program Award Themes





WHERE DISCOVERIES BEGIN



Directorate for STEM Education (EDU) Vision, Mission & Investments

EDU Vision: A Nation where excellence in **STEM education is without limits or barriers.**

EDU Mission: To invest in high-quality research and promising practices in STEM education to ensure an inclusive, well-prepared **STEM workforce and STEM literacy for a diverse nation.**

STEM Learning
and Learning
Environments



Broadening
Participation &
Institutional
Capacity



STEM
Professional
Workforce
Development



Programs in the Division of Undergraduate Education (DUE)

Scholarships in STEM Program (S-STEM)
Focus on supporting academically talented, low-income STEM students.

Advanced Technological Education : (ATE)
Focus on educating technicians to meet industry needs

Robert Noyce Teacher Scholarship Program (Noyce) supports talented STEM undergraduate majors and professionals to become effective K-12 STEM teachers.

Improving Undergraduate STEM Education: IUSE
Focus on improving student learning in STEM

Innovation in Two Year Institutions: (ITYC)
Focus on engaging students and capacity building in two-year institutions





WHERE DISCOVERIES BEGIN



Improving Undergraduate STEM Education (IUSE:EDU)

IUSE: EDU is a core STEM education program that seeks to promote novel, creative, and transformative approaches to improve STEM education for all undergraduates.

To build knowledge about STEM teaching and learning at the undergraduate level

- Develop novel, creative, and transformative approaches to undergraduate STEM teaching and learning

To incorporate evidence-based practices in STEM teaching and learning for all undergraduates

- Adapt, improve, replicate, and include evidence-based practices in STEM teaching and learning

To build and understand systemic change in undergraduate STEM education

- Lay the groundwork for sustained departmental, institutional, or community transformation and improvement

NSF 23-510

Questions: iuse@nsf.gov

Submission Deadlines: 3rd Wednesdays
in January & July

Number of Awards per Year: 135ish

The Alliances for Graduate Education and the Professoriate (**AGEP**) **NSF Solicitation 21-576**

- Increasing the number of people from AGEP population in STEM faculty positions
- Evidence-based systemic or institutional change initiatives to promote equity & professional advancement
- Addressing intersectionality & collaboration are essential to system changes in policies & practices



AGEP Catalyst Alliance (ACA) and Institutional Transformation Alliance (ITA) Tracks

ACA

- Up to **\$400,000**
- 2-year collaboration
- 3-4 IHEs
- Project description: 15-page limit
- **Due March and August each year**

ITA Preliminary

- At least one IHE must have already received an ACA award
- Same 3-4 IHEs as full proposal
- Project description: 8-page limit
- **Due February each year**

ITA Full

- Up to **\$4.4 Million**
- 5-year collaboration
- Must be invited to submit
- Same 3-4 IHEs as preliminary proposal
- Project description: 20-page limit
- **Due August every year**

NSF 21-576



The AGEP Program Team – AGEP@nsf.gov

Any Questions?



Dr. Carrie Hall
Co-Lead Program
Director
carhall@nsf.gov
703-292-4641



**Dr. Keri Ann Sather-
Wagstaff**
Program Director
ksatherw@nsf.gov
703-292-2534



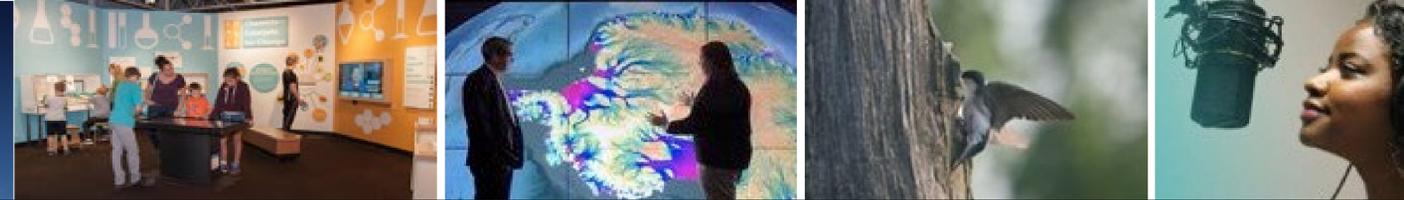
Maurice Dues
Program Specialist
mdues@nsf.gov
703-292-7311

NSF AGEP Website: <https://beta.nsf.gov/funding/opportunities/alliances-graduate-education-and-professoriate-agep>





WHERE DISCOVERIES BEGIN



Education Core Research Program (ECR)



ECR next deadline is October 3, 2024
And the first Thursday in October annually thereafter.

***Email: ECR@nsf.gov with questions**





The ECR Program (NSF 21-588)

Supports **fundamental research**: curiosity-driven basic research or use-inspired basic* research on core scientific questions in:

- STEM Learning and Learning Environments
- Broadening Participation in STEM Fields
- STEM Workforce Development

Focuses on **Science, Technology, Engineering, and/or Mathematics** learning (not learning in general)

Funds projects that advance basic STEM education research literatures

*Stokes, Donald (1997). Pasteur's Quadrant – Basic Science and Technological Innovation. Washington D.C.: Brookings Institution Press.



ECR Proposals:

- are due first Thursday in October;
- are 3-5 years in duration;
- may fall into any of the 3 funding levels;
 - Level 1 (up to \$500,000)
 - Level 2 (up to \$1.5 million)
 - Level 3 (up to \$2.5 million)
- must clearly justify the level of funding and duration; and
- may include—in addition to standard research proposals—pilot studies, syntheses, or conference proposals.

Building Capacity in STEM Education Research (BCSER) (NSF 22-548)

- Supports projects that enable researchers to expand their areas of expertise and acquire the requisite knowledge and skills to conduct rigorous research in STEM education
- **Proposal Types:**
 - Individual Investigator Development (IID) – for building the investigator’s capacity (knowledge and skills) to do high quality STEM education research, including those *new* to STEM education research and those *w/experience*. *Up to \$350K for 3 years.
 - Institutes for Methods and Practice (IMP) – for institutes that provide participants with training and support in methodological techniques and/or practice in STEM Education research . *Up to \$1M for 3 years.
 - Conferences and Workshops *\$25K-\$100K.

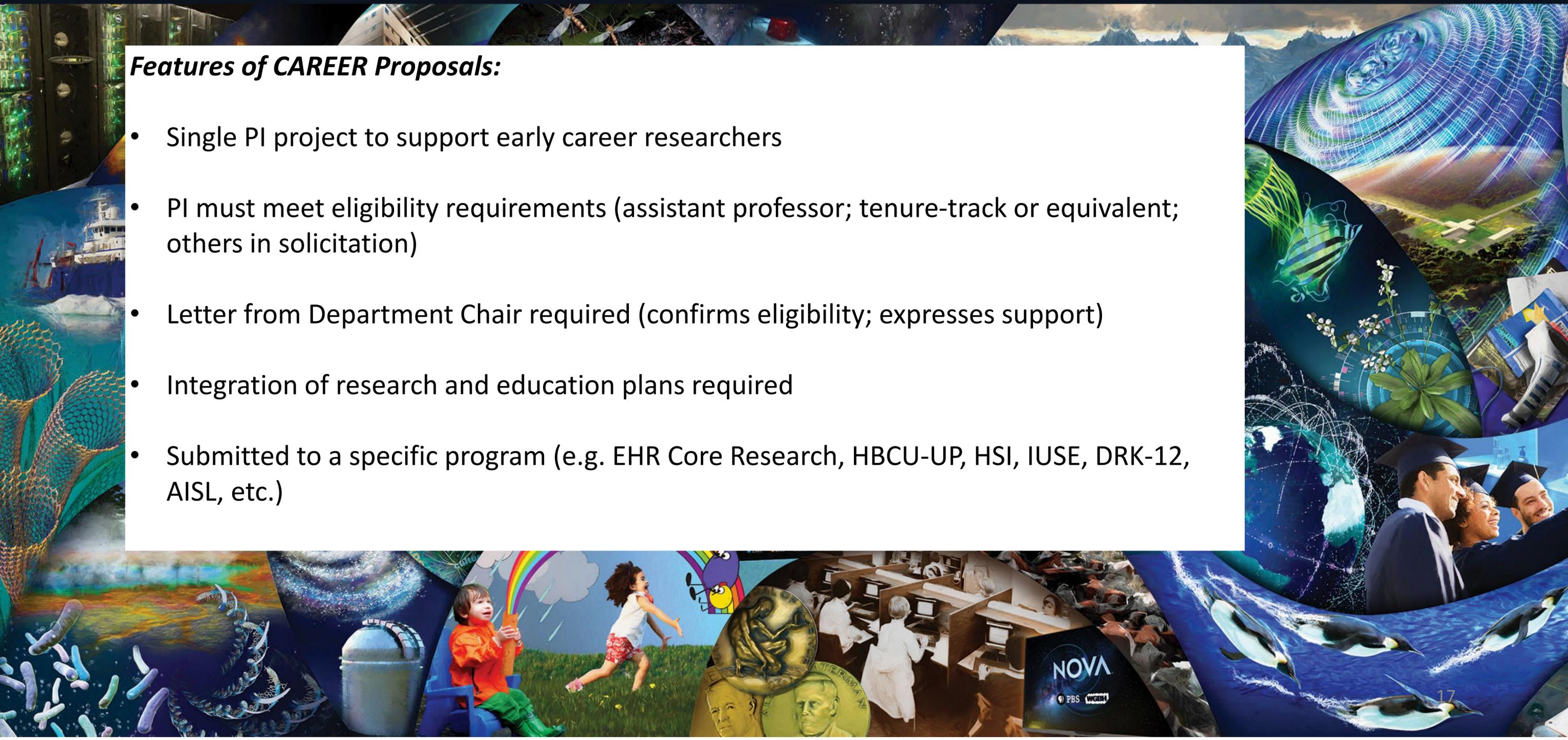




NSF CAREER: Faculty Early Career Development Program

Features of CAREER Proposals:

- Single PI project to support early career researchers
- PI must meet eligibility requirements (assistant professor; tenure-track or equivalent; others in solicitation)
- Letter from Department Chair required (confirms eligibility; expresses support)
- Integration of research and education plans required
- Submitted to a specific program (e.g. EHR Core Research, HBCU-UP, HSI, IUUSE, DRK-12, AISL, etc.)



ADVANCE PROGRAMS 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 Catalyst, Adaptation, or IT before
- Scope includes all STEM disciplines at the IHE

Target dates*

- IT-Preliminary proposal: April each year (required)
- IT Full proposal Oct. each year **only** if encouraged after IT-Preliminary proposal

*Proposals accepted before and after target date (no deadline)

Adaptation^{+\$}

- Adapt proven organizational gender equity strategies to an IHE (or system)
- Up to \$1M over three years
- Single IHE that has not had IT or Adaptation before
- Scope includes all STEM disciplines at the IHE

Due Dates:

- Letter of Intent first Friday in August annually (required)
- Full Proposal first Wednesday in November annually

^{+\$} can increase to \$1.25M with collaboration with some NSF projects to align IHE's gender-equity and systemic change efforts.

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 an IT
- Scope includes all STEM disciplines at the IHE

Target dates*

- IT-Preliminary proposal: April each year (required)
- IT Full proposal Oct. each year **only** if encouraged after IT-Preliminary proposal

*Proposals accepted before and after target date (no deadline)

ADVANCE Programs for Non-Academic Organizations

Adaptation

A single non-profit, non-academic, organization with STEM faculty related mission.

Partnership

Two or more partner non-profit, organizations with STEM faculty related mission - can include IHE partners.

Deadlines and Funding

Due Dates

- Letter of Intent 1st Monday in August annually (required)
- Full Proposal 1st Wednesday in November annually

+\$ Budget request can increase to \$1.25M

If project includes a collaboration with an NSF initiated projects to align and leverage intersectional, gender-equity and systemic change efforts

Scope and Size of Adaptation and Partnership

Projects must diffuse and scale-up the adaptation and implementation of proven organizational change strategies to address intersectional gender-based inequities for STEM faculty.

- Must have a **national or regional impact and significant reach**
- Up to \$1M^{+\$} over 3-5 years
- Focus can be one or more STEM disciplines

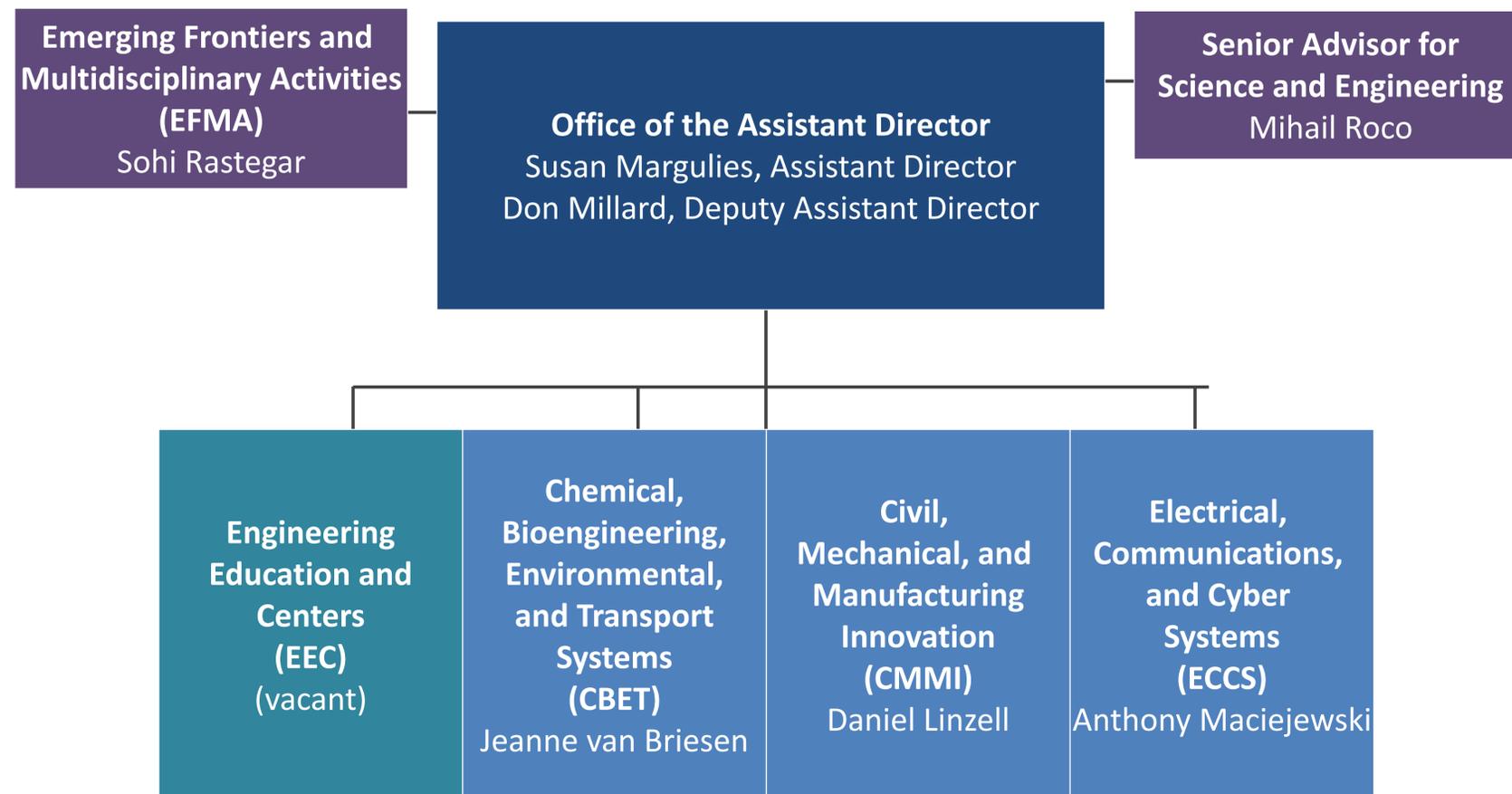
Division of Civil, Mechanical
and Manufacturing Innovation
(CMMI)



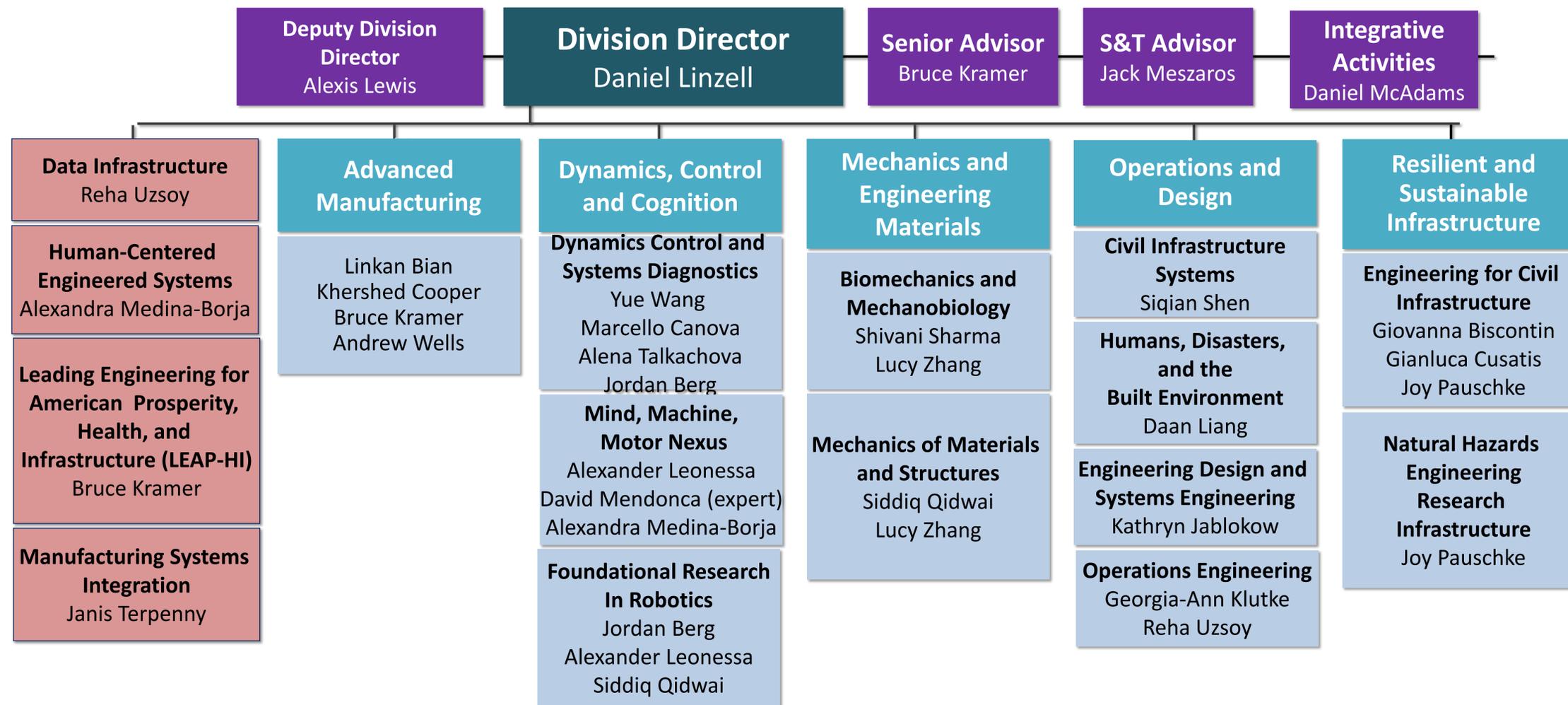
**Alexandra Medina-Borja,
Ph.D.**

September 24, 2024

Directorate for Engineering (ENG)



Civil, Mechanical and Manufacturing Innovation (CMMI) Division



Engineering Research Initiation (ERI)

- **Support new investigators as they initiate their research programs and advance in their careers as researchers, educators, and innovators.**
- **Broaden the base of investigators involved in engineering research.**
 - Researchers at non-R1 institutions who have not yet received federal research funding over \$200k.
 - Non-R1 = R2 and "smaller" (see latest Carnegie Classifications)
 - Participating Divisions: CBET, CMMI, ECCS
 - Scoping: Single PI, 2 years, \$200K, shorter proposal (10 pages)
 - Read solicitation for other special features (e.g., Senior Personnel *are* allowed this year)
 - Deadline for next year's proposals is **October 9, 2024**

<https://beta.nsf.gov/funding/opportunities/engineering-research-initiation-eri>





The Dynamics, Control and Cognition Cluster

Core programs & Solicitations

DCC Cluster



Dynamics, Control and Systems Diagnostics (DCSD)

- Supports fundamental research to augment our understanding of dynamical systems (measurement, analysis, control, etc.)

Including Human-in-the-loop controls



Mind, Machine and Motor Nexus (M₃X)

- Supports research on the reciprocal interactions — mediated by sensorimotor manipulation — between human cognition and embodied and intelligent engineered systems.



Foundational Research in Robotics (FRR)

- Supports research on robotic systems that exhibit significant levels of both computational capability and physical complexity.

Including Human-Robot
Interaction Research
Questions

DCC Program Directors and Experts



Jordan Berg
Program Director
FRR / DCSD



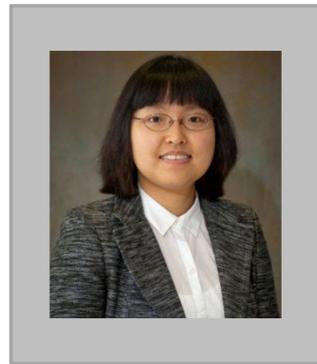
Alexander Leonessa
Program Director
M3X / FRR / DCSD



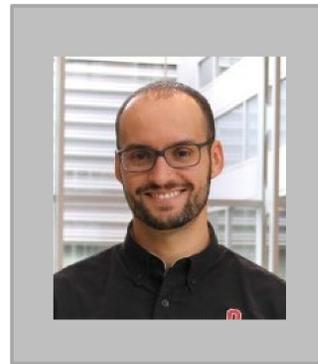
Alexandra Medina-Borja
Program Director
M3X



David Mendonça
Expert
M3X



Yue Wang
Program Director
DCSD / FRR



Marcello Canova
Program Director
DCSD



Alena Talkachova
Program Director
DCSD



Robert Landers
Expert
DCSD



Sandipan Mishra
Expert
DCSD



No deadlines, proposals received at any time

3-4 years duration

No budget limit, but ask what you really need. Average around \$600K

Important DCC insights



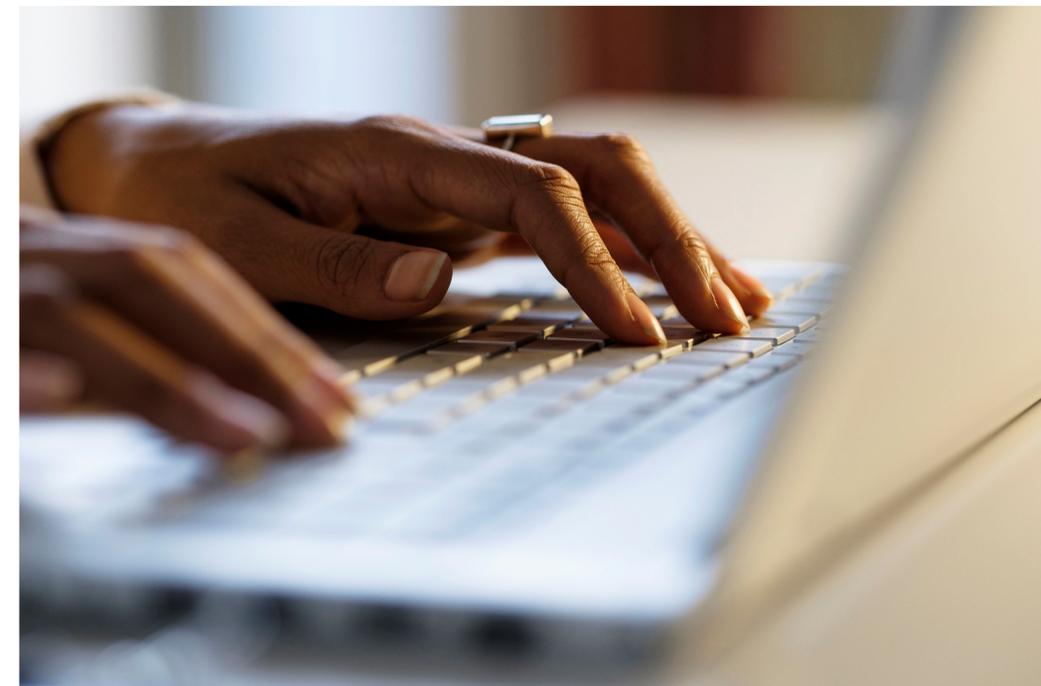
To ensure that a project is appropriate for a program in the DCC cluster prior to the submission of a full proposal, principal investigators are strongly encouraged to prepare a one-page draft Project Summary and send this to:

DCSD: dcsd@nsf.gov (Yue Wang, Marcello Canova, Jordan Berg, Alexander Leonessa)

M3X: m3x@nsf.gov (Alexander Leonessa, Alexandra Medina-Borja, David Mendonça)

FRR: robotics@nsf.gov (Jordan Berg, Alexander Leonessa, Yue Wang)

Subscribe to the DCSD Newsletter by sending a blank email to:
dcsd-subscribe-request@listserv.nsf.gov



The NSF CREST Program: Developing a Diverse Workforce

Tomasz Durakiewicz – Acting Program Lead

Nicole Gass – Program Specialist

Regina Sievert – Program Director

Luis Cubano – Former Program Lead

Centers of Research Excellence in Science and Technology (CREST)

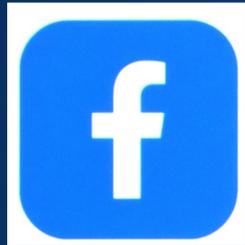


Program Overview

- Provides support to enhance the research capabilities of minority-serving institutions (MSIs) and emerging research institutions in all NSF-supported areas of research
- Promotes the development of new knowledge, enhancements of the research productivity of individual faculty and postdoctoral scholars, and an expanded presence of students who are members of groups underrepresented in STEM.
- Three programs in one – **CREST Centers, CREST RISE, CREST PRP**



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beta.nsf.gov/science-matters



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Tips

- START EARLY
- Get acquainted with FastLane (www.FastLane.nsf.gov) and Research.gov (www.research.gov)
- **Read** the Program Solicitation
- Know the program's specific guidelines and follow them!
- **Contact** a Program Officer to discuss your idea
- Provides useful information and may help you refine your idea
- May also prevent you from applying to the wrong program
- *E-mail* is best
- Become an NSF **reviewer**. (And then become an NSF **rotator**!)
- Subscribe to Custom News Services at NSF - <http://www.nsf.gov/mynsf/>

