

# Oportunidades de Fondos Externos

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LA MEJOR EDUCACIÓN A TU ALCANCE

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UPR external funding success is of utmost importance to strengthen the connection between its investigators/faculty and funding entities who have the potential to sponsor their research and academic endeavors. This publication has been developed in order to summarize funding opportunities and promote the participation of faculty and collaborative research groups in their intent to apply for external funds. Such efforts are aligned with the UPR Strategic Plan 2017-2022: A New Era of Innovation and Transformation for Student Success; Certification 50 (2016-2017) of the Governing Board, December 19, 2016. Strategic Area: Research and Creative Work. Goal 2: Increase Applications for and awards of external funds for research and creative work.

## SELECTED FUNDING OPPORTUNITIES

This is a selection of identified funding opportunities for the period ending 6/26/2024 and is in no way all-inclusive of funding opportunities available. Further information has been shared with External Resource Coordinators and Research Coordinators at each UPR campus.

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# 1. Cyber-Physical Systems (CPS), NSF

## Submission Window Date(s):

- **Small and Medium Proposals: June 01, 2024 - May 31, 2025**
- **Frontier: August 14 - September 3, 2024**

## Award Amount:

- **Small Projects: up to \$600,000 for a duration of up to 3 years**
- **Medium Projects: ranging from \$600,001 to \$1,200,000 for a duration of up to 3 years**
- **Frontier: ranging from \$1,200,001 to \$7,000,000 for a duration of up to 5 years**

The CPS program aims to develop the core research needed to engineer these complex CPS, some of which may also require dependable, high-confidence, or provable behaviors.

Core research areas of the program include control, data analytics, and machine learning including real-time learning for control, autonomy, design, IoT, mixed initiatives including human-in- or human-on-the-loop, networking, privacy, real-time systems, safety, security, and verification. By abstracting from the particulars of specific embodiments and applications, the CPS program seeks to reveal cross-cutting fundamental scientific and engineering principles that underpin the integration of cyber and physical elements across all domains. The program additionally supports the development of methods, tools, and hardware and software components based upon these cross-cutting principles, along with validation of the principles via prototypes and testbeds. This program also fosters a research community that is committed to advancing education and outreach in CPS and to transitioning CPS research into the real world.

To achieve these aims, the program supports:

- Cross-disciplinary, collaborative research that will lead to new fundamental insights.
- Projects that take a coordinated approach, balancing theory with experimentation.
- New perspectives on existing systems yielding breakthroughs as well as revolutionary new system concepts opening up new CPS research horizons.
- Projects that address important basic research needs for synergistic collaboration with mission agencies as described in Section II.D below.
- Promising innovations that have the potential for accelerated maturation, demonstration, and transition to practice.

The program also supports effective use of testbeds that spur innovations and accelerate research by providing scalable and open environments for experimentation. Researchers should consider using existing testbeds that include virtual simulation environments for early experimentation, higher fidelity hardware-in-the-loop environments, and live platforms. The program strongly encourages proposers to describe how their research may take advantage of such testbeds as a means for experimental validation and maturation in realistic environments. In addition, proposals may explore creation of testbeds for external use. In that case, the testbed concepts must also show their value through integration with research explorations, and the proposal must address how the proposers plan to establish a constituency of users that reaches beyond the developing organization(s). A separate review criterion has been added for proposals whose primary research outcome is creation/construction of a testbed. Simply stating that a testbed will be useful for other researchers does not satisfy this criterion.

## Research Areas and Challenges

This solicitation seeks to address foundational issues that are central across core CPS dimensions including science, engineering, and technology as well as application domains. Research topics that span the lifecycle of CPS are encouraged, including design, synthesis, integration, and real-time operation and performance, including integration with humans. CPS projects are frequently motivated by challenge problems in application domains, including but not limited to: aeronautics, agriculture, automotive, manufacturing and transportation systems, energy, and health and wellness, including medical devices. Researchers must focus on one or more core CPS research area(s), including: control, data analytics, and machine learning including real-time learning for control, autonomy, design, IoT, mixed initiatives including human-in- or on-the loop, networking, privacy, real-time systems, safety, security, and verification. Proposals

focused on cyber manufacturing should be submitted to the cyber manufacturing theme of the NSF Future Manufacturing program solicitation which strongly aligns with the CPS research community.

It is essential that proposals not simply describe the development of a CPS, but also emphasize the areas of CPS-focused research contributing to this development in which novel and foundational research contributions are being made. Systems of interest will be at the same time transformative and translational, demonstrating inventive new ideas and multi-disciplinary technical approaches to address societal challenges. Challenge applications can range from highly focused inventions enabled by CPS technology to revolutionary approaches for next-generation infrastructures. The program strongly encourages projects that address concerns shared by other federal agencies such as agriculture, transportation, health, energy, and national security.

### Classes of Projects

- **Small Projects:** They are well suited to exploration of emerging and innovative ideas with substantial potential for impact
- **Medium Projects:** They are well suited to multi-disciplinary efforts that accomplish clear goals requiring an integrated perspective spanning the disciplines. Proposals for medium projects are required to clearly describe why the research to be undertaken requires this multi-disciplinary approach. The research plan must include validation of theory through empirical demonstration in a prototype or testbed.
- **Frontier Projects:** The proposal must clearly identify and address critical CPS science, engineering, and/or technological challenges that cannot be achieved by a set of smaller projects. Furthermore, Frontier projects should also look to push the boundaries of CPS well beyond today's systems and capabilities. The goal, scale, and degree of integration of the proposed research must clearly require this major investment. The research plan must include validation of theory through empirical demonstration in a prototype or testbed. There must be a plan for sharing results, including testbeds and artifacts, with the CPS research community, including through the CPS Virtual Organization (CPS-VO). Frontier projects are expected to go beyond simply sharing PI meeting artifacts (such as slides) via the CPS-VO, and to have concrete plans for sharing results, testbeds, and/or artifacts. In addition, Frontier proposals must describe education approaches that prepare students for careers in CPS practice and research, and how these education goals extend beyond the participating organization(s). Frontier projects must include actionable components that seek to increase participation of underrepresented groups in computing.

**Link to Additional Information:** <https://new.nsf.gov/funding/opportunities/cyber-physical-systems-cps/nsf24-581/solicitation>

## 2. T32 Training Program for Institutions That Promote Diversity (T32 Clinical Trial Not Allowed), NIH

### Application Deadline:

- **Letter of Intent: 30 days prior to the application due date**
- **Full Proposal: September 13, 2024**

**Award Amount: budgets are not limited, but need to reflect the actual needs of the proposed project**

The goal of this program is to enhance training opportunities at institutions that have a documented historical institutional mission of educating underrepresented students and/or institutions that provide clinical services to populations that experience health disparities. As noted in the Notice of NIH's Interest in Diversity (NOT-OD-20-031), NIH's ability to help ensure that the nation remains a global leader in scientific discovery and innovation is dependent upon a pool of highly talented scientists from diverse backgrounds who will help to further NIH's mission. NIH encourages institutions to diversify their student and faculty populations, through means consistent with applicable law, to enhance the participation of individuals from groups that are underrepresented in the biomedical, clinical, behavioral and social sciences, such as:

- A. Individuals from racial and ethnic groups that have been shown by the National Science Foundation to be

underrepresented in health-related sciences on a national basis (see data at <http://www.nsf.gov/statistics/showpub.cfm?TopID=2&SubID=27> ) and the report Women, Minorities, and Persons with Disabilities in Science and Engineering).

- B. Individuals with disabilities, who are defined as those with a physical or mental impairment that substantially limits one or more major life activities, as described in the Americans with Disabilities Act of 1990, as amended. See NSF data at, <https://www.nsf.gov/statistics/2017/nsf17310/static/data/tab7-5.pdf> .
- C. Individuals from disadvantaged backgrounds, defined as those who meet two or more of the following criteria:
1. Were or currently are homeless, as defined by the McKinney-Vento Homeless Assistance Act (Definition: <https://nche.ed.gov/mckinney-vento/> );
  2. Were or currently are in the foster care system, as defined by the Administration for Children and Families (Definition: <https://www.acf.hhs.gov/cb/focus-areas/foster-care> );
  3. Were eligible for the Federal Free and Reduced Lunch Program for two or more years (Definition: <https://www.fns.usda.gov/school-meals/income-eligibility-guidelines> );
  4. Have/had no parents or legal guardians who completed a bachelor's degree (see <https://nces.ed.gov/pubs2018/2018009.pdf> );
  5. Were or currently are eligible for Federal Pell grants (Definition: <https://www2.ed.gov/programs/fpg/eligibility.html> );
  6. Received support from the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) as a parent or child (Definition: <https://www.fns.usda.gov/wic/wic-eligibility-requirements> ).
  7. Grew up in one of the following areas:
    - a. a U.S. rural area, as designated by the Health Resources and Services Administration (HRSA) Rural Health Grants Eligibility Analyzer (<https://data.hrsa.gov/tools/rural-health> ),
    - b. a Centers for Medicare and Medicaid Services-designated Low-Income and Health Professional Shortage Areas (qualifying zip codes are included in the file). Only one of the two possibilities in #7 can be used as a criterion for the disadvantaged background definition.

Students from low socioeconomic (SES) status backgrounds have been shown to obtain bachelor's and advanced degrees at significantly lower rates than students from middle and high SES groups and are subsequently less likely to be represented in biomedical research.

- D. Literature shows that women from the above backgrounds (categories A, B, and C) face particular challenges at the graduate level and beyond in scientific fields. (See, e.g., From the NIH: A Systems Approach to Increasing the Diversity of Biomedical Research Workforce <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5008902/> ).

Women have been shown to be underrepresented in doctorate-granting research institutions at senior faculty levels in most biomedical-relevant disciplines and may also be underrepresented at other faculty levels in some scientific.

For purposes of this program, it is expected that institutions will seek to recruit potential trainees from diverse backgrounds, including women and individuals from groups that have been shown to be nationally underrepresented in health-related research.

The NHLBI T32 Training Program for Institutions that Promote Diversity's goals and objectives are to: (1) enhance

training opportunities at institutions with a documented historical institutional mission of educating underrepresented students in research areas of interest to the NHLBI in the biomedical science enterprise and/or institutions that provide clinical services to populations that experience health disparities, (2) increase trainee competitiveness for peer-review research funding, (3) strengthen trainee publication records, and (4) foster institutional environments conducive to professional development in the biomedical sciences.

**Link to Additional Information:** <https://grants.nih.gov/grants/guide/pa-files/PAR-24-199.html>

### **3. Community Level Interventions to Improve Minority Health and Reduce Health Disparities (R01 - Clinical Trial Optional, NIH)**

**Application Deadline:**

- **Letter of Intent: 30 days prior to the application due date**
- **Full Proposal: October 5, 2024**

**Award Amount: up to \$1,000,000 direct costs annually for a duration of 5 years**

This initiative will emphasize research priorities that can be addressed through community-engaged research approaches and that utilize the NIMHD Research Framework to assess and intervene on health determinants beyond the individual level, at the interpersonal, family, organizational, neighborhood, community, and societal levels. Recommendations generated from the NIMHD Science Visioning process indicated the need for a shift from individual-level and researcher-derived interventions to more community-derived, structural, multi-level, and multi-sectoral interventions to improve minority health effectively and sustainably and reduce and ultimately eliminate health disparities. Community-level interventions, in which interventions target determinants associated with the overall community, such as physical, built, or sociocultural environments; resources; or functioning, address many of these identified priorities, and by necessity, require community engagement to develop and/or evaluate them.

This initiative will support research projects to develop and test prospective community-level interventions to improve minority health and decrease health disparities. Community-level intervention projects are expected to have the following features:

- Are led by or conducted in full partnership with appropriate community partners, such as community-based organizations, faith-based organizations, local businesses, neighborhood associations, labor unions, patient or consumer advocacy groups, public health departments, healthcare systems, school systems, law enforcement or criminal justice agencies, social service agencies, or departments of commerce, labor, transportation, housing, recreation. Multi-sectoral collaborations involving partnerships with multiple types of organizations in the public and private sector are strongly encouraged.
- Are focused on improving health outcomes or reducing health disparities in one or more NIH-designated health disparity populations in the US.
- Are focused on the entire population in communities (e.g., an intervention to increase the availability of fresh produce or walkable green spaces) or a specific population within communities (e.g., an intervention to improve physical activity among high school students or older adults within the community).
- Are guided by a conceptual model identifying hypothesized pathways between the community-level intervention, community-level determinants, and health outcomes.
- Collect or obtain data beyond individual self-report to determine how the intervention is impacting community-level determinants of health.
- Are supported by relevant preliminary data. It is not required for the community-level intervention to have been pilot tested in multiple communities.
- Prospectively test the impact of interventions on self-reported or measured health outcomes. Retrospective analysis of existing or past community-level interventions or initiatives are not responsive to this initiative.
- Include health outcomes at the individual, interpersonal/organizational, or community level, or a combination.
- Use appropriate measures and analytic methods appropriate for examining community-level mechanisms of

action and health outcomes.

- Test interventions that have the potential to be sustainable in the community after project funding is over.

### Specific Areas of Research Interest

Community-level intervention targets of special interest include but are not limited to the following:

- Increasing affordable healthy food options and opportunities for physical activity outside the home.
- Changing community norms and reducing structural barriers related to health promoting behaviors, such as breastfeeding, vaccination, physical activity, and preventive health screening.
- Improving community attitudes (e.g., reducing prejudice, stigma, or discrimination) towards sociodemographic groups (e.g., racial/ethnic minorities, sexual and gender minorities) or towards individuals with certain health conditions (e.g., HIV, mental illness) that are detrimental to the health and well-being of these populations.
- Promoting screening, detection, help-seeking, and self-management related to acute or chronic illnesses (e.g., COVID-19, cancer, HIV, stroke, diabetes, cardiovascular disease, depression, substance use disorders).
- Enhancing the ability of community-dwelling older adults to age in place or individuals with disabilities to live independently and maintain health and well-being.
- Promoting community re-integration and health of individuals returning to the community after incarceration or institutionalization.
- Promoting healthy transition of individuals returning to the community after acute or chronic hospitalization.
- Preventing accidental injury, interpersonal violence, or suicide and suicide thoughts and behaviors especially with use of firearms.

**Link to Additional Information:** <https://grants.nih.gov/grants/guide/pa-files/PA-24-231.html>

## 4. Early Career Faculty (ECF), NASA

### Application Deadline:

- **Mandatory Preliminary Proposal: July 15, 2024**
- **Full Proposal (by invitation only): October 24, 2024**

### Award Budget: up to \$750K for a maximum project period of 3 years

The ECF seeks to tap into that talent base, challenging early-career faculty to examine the theoretical feasibility of new ideas and approaches that are critical to making science, space travel, and space exploration more effective, affordable, and sustainable. It is the intent of the STRG Program and this Early Career Faculty opportunity to foster interactions between NASA and the awarded university PIs and their teams. Therefore, interaction with NASA researchers should be expected while conducting space technology research under these awards.

This Appendix seeks proposals to develop unique, disruptive, or transformational space technologies that have the potential to lead to dramatic improvements at the system level—performance, weight, cost, reliability, operational simplicity, or other figures of merit associated with space flight hardware or missions. The projected impact at the system level must be substantial and clearly identified. Although system-level demonstrations are likely not possible nor expected under an ECF award, meaningful TRL advancement is required.

This exclusively seeks proposals that are responsive to one of the two topics:

1. **Topic 1 – Transformational Advanced Energetic Propulsion** - The goal of this topic is to develop innovative low-TRL technologies for Advanced Energetic Propulsion (AEP) concepts by performing research to address identified challenges and knowledge gaps.

Closing Shortfall 707 will require significant research and technology investments over a broad, low-TRL

technology portfolio of concept areas including, but not limited to:

- Multi-MW low-alpha NEP (nuclear electric propulsion)
- Advanced thermal fission (including advanced gas core, solid core, and/or pulsed fission concepts)
- Directed energy (direct and indirect drive modes, including applications of directed energy to sails)
- Low-alpha fusion
- Other advanced nuclear technologies for advanced energetic propulsion, including antimatter propulsion concepts
- Breakthrough physics research enabling new AEP concepts

2. **Topic 2 – Power Systems to Enable Small System Operations in Permanently Shadowed Lunar Regions -**

The goal of this topic is to develop innovative technologies for lunar power systems; specifically, power systems that can enable operations of small systems in permanently shadowed regions of the Moon, by performing research to address identified challenges and knowledge gaps.

Missions leveraging these small systems may span from short duration to multiyear timelines in the challenging environment of the Moon [3]. Examples include but are not limited to:

- Near-term needs for these small systems to provide key strategic capability for Artemis in-situ-resource-utilization (ISRU) development in the understanding of the distribution of water ice in the PSRs of the Lunar South Pole [4].
- Longer-term needs include providing power to distributed sensor payloads for long-duration science investigations.

Power system technology concept areas of interest from the Envisioned Future [1] that may address these shortfalls include, but are not limited to:

- Wireless power transmission
- Low-temperature secondary battery modules
- Radioisotope energy sources (including power conversion technologies that utilize alternative isotopes to plutonium)
- Heliostats and solar reflectors
- Superconducting cable transmission

**Link to Additional Information:** <https://tinyurl.com/NASA-ECF24>

## **5. Summer Research Education Experience Program (R25 Clinical Trial Not Allowed), NIH**

**Application Deadline:**

- **Letter of Intent: 30 days prior to the application due date**
- **Full Proposal: March 18, 2025**

**Award Amount: up to \$1,000,000 direct costs annually for a duration of 5 years**

The NIH Research Education Program (R25) supports research educational activities that complement other formal training programs in the mission areas of the NIH Institutes and Centers.

The overarching goal of this R25 program is to support educational activities that complement and/or enhance the training of a workforce to meet the nation’s biomedical, behavioral and clinical research needs.

To accomplish the stated over-arching goal, this NOFO will support creative educational activities with a primary focus on:

- **Research Experiences:** For high school students, undergraduate students, and/or high school science teachers during the summer academic break. Proposed programs should provide authentic "open-ended", hands-on exposure to research in a laboratory or a field setting as part of a comprehensive program based in sound

educational practices designed to stimulate the interest and advance the knowledge base of participants. In addition to hands-on research experiences, programs are expected to include complementary activities that support the participants' scientific development, such as scientific writing and presentation skills and training in rigor and reproducibility. Programs should consider the needs of the intended participants and the likelihood of improving their knowledge and/or skills when designing the research program. Programs should have clear goals and objectives appropriate for the educational level of the audience to be reached (high school and/or undergraduate students or high school science teachers), including the content to be conveyed, and the intended outcome(s). Outcomes for high school and college students may include: to reinforce their intent to graduate with a science degree, prepare them for graduate or medical school admissions, and/or prepare them for careers in research. Support for high school science teachers will be limited to those programs with a clear plan for how teachers will utilize their summer experience in their teaching during the school year, such as enhancing the STEM curriculum or increasing number of STEM courses taught.

R25 programs that propose at least 8 weeks, but fewer than 15 weeks, of full-time research experiences during the summer may request continued part-time support for the participants to work on their research projects during the school year, up to the equivalent of a total of 15 weeks of full-time participation, as long as the entire research experience is completed within a 12-month period.

The proposed program needs to align with the mission of the Institute or Center (IC) to which the application is submitted and not have a general STEM focus.

- National Institute of Neurological Disorders and Stroke (NINDS)
- National Eye Institute (NEI)
- National Institute of Dental and Craniofacial Research (NIDCR)
- National Institute on Drug Abuse (NIDA)
- National Institute of Environmental Health Sciences (NIEHS)

*It is strongly recommended that potential applicants consult scientific/research staff at the intended Institute or Center (IC).*

**Link to Additional Information:** <https://grants.nih.gov/grants/guide/pa-files/PAR-24-204.html>

## **6. Humanities Connections, NEH**

### **Application Deadline:**

- **Optional Draft: July 25, 2024**
- **Full Proposal: September 5, 2024**

### **Award Amount:**

- **Planning: up to \$50,000 for a project period of 6 to 12 months**
- **Implementation: up to \$150,000 for a project period of 18 to 36 months**

The National Endowment for the Humanities (NEH) Division of Education Programs is accepting applications for the Humanities Connections program. This program seeks to expand the role of the humanities in undergraduate education at two- and four-year institutions by encouraging partnerships between humanities faculty and their counterparts in other areas of study. Humanities Connections projects should plan or implement a curriculum connecting the humanities to one or more non-humanities fields, including but not limited to the physical and natural sciences; pre-service or professional programs, including law and business; or computer science, data science, and other technology-driven fields. Projects must incorporate the approaches and learning activities of both the humanities and the non-humanities disciplines involved.

Competitive Humanities Connections proposals will demonstrate:

- how your project expands the role of the humanities in your institution's undergraduate curriculum;



- how your proposed curriculum would substantively and purposefully integrate the subject matter, approaches, and learning activities of two or more disciplines (with a minimum of one in and one outside of the humanities);
- how faculty from each relevant discipline would collaborate to plan, implement, and/or deliver the curriculum;
- how your institution would sustain the curriculum over the long term, whether through interdisciplinary minors or certificates; curricular pathways such as concentrations within majors or general education programs; or other models appropriate to your institution

### **Funding levels**

NEH evaluates applications for each stage of a project independently. An award at the Planning level does not commit the agency to funding the project at the Implementation level. An Implementation proposal may be for a project that has not received prior NEH support, or it may continue work begun with a previous award. In either case, your Implementation proposal must show evidence of prior planning and cannot include costs for the same activities supported by another NEH proposal.

- **Planning awards** - provide the opportunity to create a firm foundation for an interdisciplinary undergraduate curricular program or initiative. You may develop an entirely new program or initiative, or build on an existing one, including those currently managed by a single department.

You may use a Planning award to:

- establish and convene a collaborative team representing the disciplines involved
  - set project goals and outcomes
  - consult outside experts on curriculum design or interdisciplinary collaboration
  - develop interdisciplinary learning opportunities (including but not limited to undergraduate research projects, field or laboratory research, and community-based, project-based, or site-based learning)
  - organize workshops or other professional development for faculty and administrators on substantive issues related to the success of the project
  - coordinate focus or discussion groups, which may include students, around issues central to the project's rationale
  - design or revise courses, instructional models, and/or learning activities
  - work with institutional leadership to establish long-term support
  - complete other tasks that introduce your interdisciplinary initiative or curriculum to your campus
- **Implementation awards** - support the introduction or revision of sustainable and interdisciplinary undergraduate curricula or initiatives. An Implementation award provides the opportunity to build on faculty, administrative, or institutional partnerships and to develop and refine the project's intellectual content, design, and scope.

You may use an Implementation award to:

- develop, implement, assess, and refine curricula (such as pathways, majors, minors, and certificates), courses, course modules, and assignments
- convene a core faculty team and develop working groups on issues central to project rationale
- engage outside experts on issues pertinent to project content, design, and sustainability
- create and implement outreach strategies to attract students
- conduct mid- and long-range feasibility studies
- complete other tasks that prepare your interdisciplinary curriculum or initiative to enroll students

### **Program Outputs**

The output of a successful Planning award should be a preliminary proposal that clearly defines the steps necessary to develop your interdisciplinary curriculum or initiative. Those steps may include approval by a faculty senate or other institutional body. The output of a successful Implementation award should be a sustainable curriculum or initiative ready to enroll students.

**Link to Additional Information:** <https://www.neh.gov/grants/education/humanities-connections>

## 7. NINDS Faculty Development Award to Promote Diversity in Neuroscience Research (K01 Independent Clinical Trial Not Allowed), NIH

**Application Deadlines: October 12, 2024**

**Award Information: budgets are composed of salary and other program-related expenses**

The overall goal of the NIH Research Career Development program is to help ensure that a diverse pool of highly trained scientists is available in appropriate scientific disciplines to address the Nation's biomedical, behavioral, and clinical research needs. NIH Institutes and Centers (ICs) support a variety of mentored and non-mentored career development award programs designed to foster the transition of new investigators to research independence and to support established investigators in achieving specific objectives. Candidates should review the different career development (K) award programs to determine the best program to support their goals.

The objective of this NIH Mentored Research Scientist Development Award (K01) is to provide salary and research support for a sustained period of “protected time” (up to 5 years) for intensive research career development, under the guidance of an experienced mentor, or sponsor, in the biomedical, behavioral or clinical sciences. This award provides support for faculty development, sponsorship, and the promotion and tenure process. The expectation is that, through this sustained period of faculty-level research career and skill development, candidates will accelerate their research careers and secure competitive new research project grant (e.g., R01) funding.

The purpose of the Faculty Development Award to Promote Diversity in Neuroscience Research is to foster career, research, and professional advancement for promising junior investigators from diverse backgrounds, including those from groups underrepresented in biomedical research, who are either 1) in first 3 years of a faculty tenure track or equivalent position at the time of application or 2) have an offer for a first-time tenure-track or equivalent faculty position that will begin by time of award. The proposed career development experience is expected to substantially contribute to the research capabilities of the candidate, provide protected time from teaching/other duties, and provide resources to hone skills in grant writing and publication of high impact research.

The expectation is that through this sustained period of protected research time and career development exposure, recipients will be able to accelerate their independent research careers and become competitive for new research project grant (R01, R15, or equivalent) funding. Candidates must justify the need for this award and make a convincing case that the proposed period of support will substantially enhance their careers as independent investigators in neuroscience research. Additionally, mentoring and sponsorship is expected to be appropriate for this stage of career and should focus on enhancing tenure track (or equivalent) activities or metrics (i.e., helping the junior faculty member to navigate institutional expectations, scientific networks, and practices that are relevant to productivity and advancement at the institution). A sponsor provides strong commitment and possesses the power and influence within the institution to substantively support the faculty member. A sponsor's role extends beyond that of a mentor with respect to advocacy, active tracking, and proactive outreach to those who can affect the career success of the candidate. The sponsoring institution must also be able to demonstrate a strong commitment to the development of the candidate as a productive, independent investigator by providing protected research time, access to appropriate research equipment, and space needed to perform the proposed research.

*Prior to preparing an application, individuals are strongly encouraged to contact the program official listed at the end of this announcement to discuss their institutional commitment, area of research focus, and career development needs.*

**Link to Additional Information:** <https://grants.nih.gov/grants/guide/pa-files/PAR-24-228.html>

## 8. Advanced Technological Education, NSF

Application Deadline: October 3, 2024

### Award Amount:

- **Track 1: Small scale projects: up to \$475,000, typically spread over three years**
- **Track 2: Projects: up to \$1,000,000, with a duration of up to three years**
- **Track 3: Consortia for Innovations in Technician Education: ranging from \$1,200,000 to \$3,000,000 typically spread over 3-4 years**
  - **Consortia of two, two-year IHEs have a maximum budget of \$1,200,000**
  - **Consortia of three or more two-year IHEs have a maximum budget of \$3,000,000**
- **Track 4: ATE Center: up to \$7,500,000 spread over five years**

The Advanced Technological Education (ATE) program supports the education of the skilled technical workforce at the undergraduate and secondary school levels. Proposals to the program may aim to affect specialized technology courses or core science, mathematics, and technology courses that serve as immediate prerequisites or co-requisites for specialized technician education courses/programs. The curricular focus and the activities of all projects should demonstrably contribute to the ATE program's central goals: producing more qualified science and engineering technicians to meet workforce demands, and improving the technical skills and the general science, technology, engineering, and mathematics (STEM) preparation of these technicians and the educators who prepare them. It is required that courses developed or updated be credit-bearing courses with the potential to contribute to or result in an academic credential. Institutions may also make use of their non-credit bearing offerings if they can demonstrate increased opportunities to engage incumbent workers and convert these offerings to academic credit.

The ATE program focuses on IHEs that award two-year degrees in advanced technology fields and requires these IHEs and their faculty to have significant leadership roles on all projects. It is recommended that two-year IHEs serve as the fiscal lead on proposals with four-year IHEs being sub-awardees. When a four-year IHE submits as the fiscal lead, then two-year IHE faculty must be PI or Co-PIs. Effective technological education programs should involve partnerships in which two-year IHEs work with four-year IHEs, secondary schools, business, industry, economic development agencies, and government.

Fields of technology supported by the ATE program include, but are not limited to, advanced manufacturing technologies, agricultural and bio- technologies, energy and environmental technologies, engineering technologies, information technologies, micro- and nano-technologies, security technologies, geospatial technologies, autonomous technologies, as well as applied research on technician education that informs all supported areas. It is expected that emerging areas such as artificial intelligence (AI) and quantum information sciences will be supported as industry defines their needs for skilled technical workers in these areas. The ATE program is interested in projects addressing issues in: 1) rural technician education; 2) projects that broaden the participation of the full spectrum of diverse talent that society has to offer in the entry-level technical workforce including strategies to recruit veterans into technician education programs; 3) projects that focus on recruiting, retaining and completing students with disabilities into STEM technician education programs; and 4) projects that support emerging industry needs for skilled technical workers, for example, industry needs for technicians with AI knowledge and skills.

The ATE program supports proposals in four major tracks:

- **Track 1: Small Scale Projects** - supports projects that are smaller in scale and may be of shorter duration than Track 2 Projects. It is recommended that institutions and/or PIs with limited prior experience in the ATE program use this track as an entry point into the program. Projects in this category may also serve as prototypes or pilots for an idea that may be expanded in a future ATE proposal.
- **Track 2: Projects** - supports a diversity of project areas focused on improving the education of the skilled technical workforce, and these projects are usually larger in scope than those proposed under Track 1.

- **Track 3: Consortia for Innovations in Technician Education** - supports collaborations to strengthen partnerships between two-year IHEs and industry to be responsive to industry needs and regional economic development. A consortium must address either a specific industry area or address a challenge where the convergence of technologies is changing the skills and competencies needed by the skilled technical worker.
- **Track 4: Centers** - will support a center in each of the following areas: Advanced Manufacturing Technologies, Agricultural Technologies, Autonomous Technologies, Biotechnology, Energy Technologies, Environmental Technologies, Engineering Technologies, Information Technologies, Security Technologies, and Micro- and Nano-Technologies. Proposals may be considered for an emerging advanced technology field that is not included in the previous list, if that field has a high potential for career opportunities for two-year IHE graduates.

For all Tracks, proposals may focus on one or more of the areas described below. Multifaceted projects that cut across areas are encouraged.

- **Program Development and Improvement:** These projects should align technician education with modern practices and assure an increased number of students with an enhanced STEM theoretical understanding and technical skills and competencies enter the high-performance workplace.
- **Curriculum and Educational Materials Development:** A project may focus on curriculum and materials development with the intent of broadly disseminating the developed products. Proposed project activities should affect the learning environment, course content, and experience of instruction for students preparing to be science and engineering technicians and for their faculty. Projects may develop new print, electronic, and multimedia resources, including simulations, scenarios, and web-based collections as well as laboratory experiments and manuals.
- **Professional Development for Educators:** ATE supports projects that provide current secondary school teachers and IHE faculty with opportunities for continued professional growth in areas that directly impact technician education. These projects should be designed to enhance the educators' disciplinary capabilities, teaching skills, understanding of current technologies, practices, and employability skills.
- **Leadership Capacity Building for Faculty:** The vitality and growth of the ATE community is closely linked to industry trends and needs as well as the acumen of the PIs and their institutions. As such, faculty must: 1) work with their institutional administration; 2) effectively manage both programs and project/center activities; 3) maintain industry connections that include local, statewide, and national economic development efforts; and 4) maintain and cultivate networks with other recipients across funding agencies.
- **Teacher Preparation:** The foundation for advanced technological education is grounded in strong STEM education in K-12 schools. ATE teacher preparation projects help prepare a future teaching workforce that is skilled in teaching science and mathematics, understands the technological workplace, and can prepare students to use a variety of approaches to solve real-world technology-related problems using design processes and principles.
- **Entrepreneurial Skills Development for Students:** In addition to technical skills and disciplinary content, students entering the advanced technological industries environment need skills that allow them to work effectively in industry.

**Link to Additional Information:** <https://new.nsf.gov/funding/opportunities/advanced-technological-education-ate/nsf24-584/solicitation>

## Forecasted Opportunities

### 1. Research and Development, NEH

The Research and Development program supports projects that address major challenges in preserving or providing access to humanities collections and resources. These challenges include the need to find better ways to preserve materials of critical importance to the nation's cultural heritage—from fragile artifacts and manuscripts to analog recordings and digital assets subject to technological obsolescence—and to develop advanced modes of organizing, searching, discovering, and using such materials.

**Link to Additional Information:** <https://www.neh.gov/grants/preservation/research-and-development>

### 2. Preservation and Access Education and Training, NEH

This program supports projects that develop and implement educational programs for professionals who preserve and provide access to humanities collections. Such materials include but are not limited to paper-based, photographic, archaeological, ethnographic, artistic, audiovisual, digitized, and born-digital collections. Advancing long-term access to these materials for scholars, students, and the public requires skilled professionals from varied backgrounds and communities working in organizations large and small.

**Link to Additional Information:** <https://www.neh.gov/grants/preservation/preservation-and-access-education-and-training>

### 3. Cultural and Community Resilience, NEH

This program supports community-based efforts to address the impacts of climate change and COVID-19 by safeguarding cultural resources and fostering cultural resilience through identifying, documenting, and/or collecting cultural heritage and community experiences. The program prioritizes projects from disadvantaged communities in the United States or its jurisdictions, and NEH encourages applications that employ inclusive methodologies.

**Link to Additional Information:** <https://www.neh.gov/program/cultural-and-community-resilience>

### 4. Digital Projects for the Public, NEH

The Digital Projects for the Public program support projects that interpret and analyze humanities content in primarily digital platforms and formats, such as websites, mobile applications and tours, interactive touch screens and kiosks, games, and virtual environments.

**Link to Additional Information:** <https://www.neh.gov/grants/public/digital-projects-the-public>

## Proposals Accepted Anytime

1. Division of Environmental Biology, NSF  
<https://new.nsf.gov/funding/opportunities/division-environmental-biology-deb/nsf24-543/solicitation>
2. Computational and Data-Enabled Science and Engineering in Mathematical and Statistical Sciences, NSF  
<https://beta.nsf.gov/funding/opportunities/computational-and-data-enabled-science-and-engineering-mathematical-and>
3. Condensed Matter and Materials Theory (CMMT), NSF  
[https://www.nsf.gov/pubs/2022/nsf22610/nsf22610.htm#pgm\\_desc\\_txt](https://www.nsf.gov/pubs/2022/nsf22610/nsf22610.htm#pgm_desc_txt)

4. Division of Materials Research: Topical Materials Research Programs (DMR: TMRP), NSF  
<https://www.nsf.gov/pubs/2022/nsf22609/nsf22609.htm>
5. Research in the Formation of Engineers, NSF  
<https://beta.nsf.gov/funding/opportunities/research-formation-engineers-rfe>
6. Computer and Information Science and Engineering (CISE): Core Programs, NSF – Small Projects  
<https://www.nsf.gov/pubs/2022/nsf22631/nsf22631.htm>
7. Manufacturing Systems Integration (MSI), NSF  
<https://beta.nsf.gov/funding/opportunities/manufacturing-systems-integration-msi>
8. Cybersecurity Innovation for Cyberinfrastructure (CICI), NSF  
<https://www.nsf.gov/pubs/2023/nsf23532/nsf23532.htm>
9. Division of Molecular and Cellular Biosciences Core Programs (MCB), NSF  
<https://new.nsf.gov/funding/opportunities/division-molecular-cellular-biosciences-core/nsf24-539/solicitation>
10. Division of Integrative Organismal Systems Core Programs, NSF  
<https://www.nsf.gov/pubs/2023/nsf23547/nsf23547.htm>
11. Electronics, Photonics and Magnetic Devices (EPMD), NSF  
<https://beta.nsf.gov/funding/opportunities/electronics-photonics-magnetic-devices-epmd-0>
12. Plant Genome Research Program (PGRP), NSF  
<https://www.nsf.gov/pubs/2023/nsf23559/nsf23559.htm#elig>
13. Communications, Circuits, and Sensing-Systems (CCSS), NSF  
<https://beta.nsf.gov/funding/opportunities/communications-circuits-sensing-systems-ccss-0>
14. Fluid Dynamics, NSF  
<https://beta.nsf.gov/funding/opportunities/fluid-dynamics-2>
15. Biophotonics, NSF  
<https://beta.nsf.gov/funding/opportunities/biophotonics-2>
16. Environmental Sustainability, NSF  
<https://beta.nsf.gov/funding/opportunities/environmental-sustainability-2>
17. Particulate and Multiphase Processes, NSF  
<https://beta.nsf.gov/funding/opportunities/particulate-multiphase-processes-2>
18. Interfacial Engineering, NSF  
<https://beta.nsf.gov/funding/opportunities/interfacial-engineering-0>
19. Nanoscale Interactions, NSF  
<https://beta.nsf.gov/funding/opportunities/nanoscale-interactions-0>
20. Combustion and Fire Systems (CFS), NSF  
<https://new.nsf.gov/funding/opportunities/combustion-fire-systems-cfs>

21. Infrastructure Innovation for Biological Research (Innovation), NSF  
<https://www.nsf.gov/pubs/2023/nsf23578/nsf23578.htm>
22. Infrastructure Capacity for Biological Research (Capacity), NSF  
<https://www.nsf.gov/pubs/2023/nsf23580/nsf23580.htm>
23. Energy, Power, Control, and Networks (EPCN), NSF  
<https://new.nsf.gov/funding/opportunities/energy-power-control-networks-epcn-0>
24. Engineering of Biomedical Systems, NSF  
<https://new.nsf.gov/funding/opportunities/engineering-biomedical-systems-0>
25. Catalysis, NSF  
<https://new.nsf.gov/funding/opportunities/catalysis-2>
26. Process Systems, Reaction Engineering, and Molecular Thermodynamics, NSF  
<https://new.nsf.gov/funding/opportunities/process-systems-reaction-engineering-molecular-2>
27. Disability and Rehabilitation Engineering (DARE), NSF  
<https://new.nsf.gov/funding/opportunities/disability-rehabilitation-engineering-dare-2>
28. Cellular and Biochemical Engineering, NSF  
<https://new.nsf.gov/funding/opportunities/cellular-biochemical-engineering-0>
29. Facility and Instrumentation Request Process (FIRP), NSF  
<https://www.nsf.gov/pubs/2023/nsf23602/nsf23602.htm>
30. Research Infrastructure in the Social and Behavioral Sciences (RISBS), NSF  
<https://new.nsf.gov/funding/opportunities/research-infrastructure-social-behavioral-sciences>
31. Secure and Trustworthy Cyberspace (SaTC), NSF  
<https://www.nsf.gov/pubs/2024/nsf24504/nsf24504.htm>
32. Mind, Machine and Motor Nexus (M3X), NSF  
<https://new.nsf.gov/funding/opportunities/mind-machine-motor-nexus-m3x>
33. Cyberinfrastructure for Public Access and Open Science, NSF  
<https://new.nsf.gov/funding/opportunities/cyberinfrastructure-public-access-open-science-ci>

### **Announcing Previous Important Funding Opportunities**

1. Advancing Genomic Medicine Research (R21 Clinical Trial Optional), NIH  
**Deadline: July 8, 2024**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-HG-23-033.html>
2. Media Projects, NEH  
**Deadline: July 10, 2024 (Optional Draft); August 14, 2024 (FP)**  
<https://www.neh.gov/program/media-projects>
3. Public Humanities Projects, NEH  
**Deadline: July 10, 2024 (Optional Draft); August 14, 2024 (FP)**  
<https://www.neh.gov/grants/public/public-humanities-projects>

4. Mechanistic Studies on Social Behavior in Substance Use Disorder (R01 Clinical Trial Optional), NIH  
**Deadline: July 14, 2024 (LOI); August 14, 2024 (FP)**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-25-032.html>
5. Mechanistic Studies on Social Behavior in Substance Use Disorder (R01 Basic Experimental Studies with Humans (BESH) Required), NIH  
**Deadline: July 14, 2024 (LOI); August 14, 2024 (FP)**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-25-033.html>
6. Cultural Resources Management Services, National Park Service  
**Deadline: July 15, 2024**  
<https://www.grants.gov/search-results-detail/353005>
7. Student Support Services Program, Dept. of Education  
**Deadline: July 15, 2024**  
<https://www.govinfo.gov/content/pkg/FR-2024-05-01/pdf/2024-08328.pdf>
8. University Research & Development (R&D) Projects & Capstone Projects, Naval Surface Warfare Center Dahlgren Division  
**Deadline: July 17, 2024**  
<https://www.grants.gov/view-opportunity.html?oppId=349325>
9. Fund for The Improvement of Postsecondary Education (FIPSE): Centers of Excellence for Veteran Student Success, Assistance, Dept. of Education  
**Deadline: July 29, 2024**  
<https://www.govinfo.gov/content/pkg/FR-2024-05-28/pdf/2024-11658.pdf>
10. Developmental Sciences, NSF  
**Deadline: July 30, 2024**  
<https://new.nsf.gov/funding/opportunities/developmental-sciences-ds/nsf24-544/solicitation>
11. Measurement Science and Engineering (MSE) Research Grant Programs, National Institute of Standards & Technology (NIST)  
**Deadline: Applications will be accepted and considered on a rolling basis as they are received.**  
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=347512>
12. Agriculture and Food Research Initiative Competitive Grants Program Education and Workforce Development, USDA / NIFA  
**Deadline: see website**  
<https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-education-workforce-development>
13. Dialogues on the Experiences of War, NEH  
**Deadline: August 1, 2024 (Optional Draft); September 17, 2024 (FP)**  
<https://www.neh.gov/grants/education/dialogues-the-experience-war>
14. Centers of Research Excellence in Science and Technology - Research Infrastructure for Science and Engineering, NSF  
**Deadline: August 2, 2024**  
<https://new.nsf.gov/funding/opportunities/centers-research-excellence-science-technology-0/nsf24-562/solicitation>



15. Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed), NIH  
**Deadline: August 12, 2024**  
<https://grants.nih.gov/grants/guide/pa-files/PA-24-141.html>
16. ECosystem for Leading Innovation in Plasma Science and Engineering (ECLIPSE), NSF  
**Deadline: August 13, 2024**  
<https://new.nsf.gov/funding/opportunities/ecosystem-leading-innovation-plasma-science>
17. Research Training Groups in the Mathematical Sciences, NSF  
**Deadline: August 13, 2024**  
<https://new.nsf.gov/funding/opportunities/research-training-groups-mathematical-sciences-rtg/nsf24-570/solicitation>
18. Correctness for Scientific Computing Systems, NSF  
**Deadline: August 13, 2024**  
<https://new.nsf.gov/funding/opportunities/correctness-scientific-computing-systems-cs2/nsf24-571/solicitation#elig>
19. Specialized Programs of Research Excellence (SPOREs) in Cancer Health Disparities and Minority Health (CHD-MH) (U54 Clinical Trial Optional), NIH  
**Deadline: August 25, 2024 (LOI); September 26, 2024 (FP)**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-CA-24-020.html>
20. Public Scholars, NEH  
**Deadline: August 28, 2024**  
<https://www.neh.gov/grants/research/public-scholar-program>
21. Biodiversity on a Changing Planet (BoCP), NSF  
**Deadline: September 5, 2024**  
<https://new.nsf.gov/funding/opportunities/biodiversity-changing-planet-bocp/nsf24-574/solicitation>
22. IUUSE/Professional Formation of Engineers: Revolutionizing Engineering Departments (IUUSE/PFE: RED), NSF  
**Deadline: September 10, 2024**  
<https://new.nsf.gov/funding/opportunities/iuseprofessional-formation-engineers/nsf24-564/solicitation>
23. Hispanic Serving Institutions: Equitable Transformation in STEM Education (ETSE), NSF  
**Deadline: September 11, 2024**  
<https://new.nsf.gov/funding/opportunities/hispanic-serving-institutions-equitable/nsf24-578/solicitation>
24. Education Research and Special Education Research Grant Programs, Dept. of Education  
**Deadline: September 12, 2024**  
<https://www.govinfo.gov/content/pkg/FR-2024-05-28/pdf/2024-11650.pdf>
25. Probability, NSF  
**Deadline: September 17, 2024**  
<https://new.nsf.gov/funding/opportunities/probability>
26. Precision Mental Health: Develop Tools to Inform Treatment Selection in Depression (UG3/UH3 Clinical Trial Optional), NIH  
**Deadline: September 18, 2024 (LOI); October 18, 2024 (FP)**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-25-190.html>

27. BRAIN Initiative: Research on the Ethical Implications of Advancements in Neurotechnology and Brain Science (R01 Clinical Trial Optional), NIH  
**Deadline: September 29, 2024 (LOI); October 11, 2024 (FP)**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-25-170.html>
28. Advanced Scientific Computing Research (ASCR), Department of Energy  
**Deadline: September 30, 2024**  
<https://science.osti.gov/ascr>
29. Biological and Environmental Research (BER), Department of Energy  
**Deadline: September 30, 2024**  
<https://science.osti.gov/ber>
30. F24AS00431 FY24 Recovery Implementation, Fish and Wildlife Service  
**Deadline: September 30, 2024**  
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=350612>
31. Basic Energy Sciences (BES), Department of Energy  
**Deadline: September 30, 2024**  
<https://science.osti.gov/bes/>
32. Fusion Energy Sciences (FES), Department of Energy  
**Deadline: September 30, 2024**  
<https://science.osti.gov/fes/>
33. Mathematical Foundations of Artificial Intelligence, NSF  
**Deadline: October 10, 2024**  
<https://new.nsf.gov/funding/opportunities/mathematical-foundations-artificial-intelligence>
34. Mentored Career Development Award to Promote Faculty Diversity in Biomedical Research (K01 Independent Clinical Trial Not Allowed), NIH  
**Deadline: October 14, 2024**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-HL-25-009.html>
35. Education Activities for Responsible Analyses of Complex, Large-Scale Data (R25 - Clinical Trial Not Allowed), NIH  
**Deadline: November 18, 2024 (LOI); December 18, 2024 (FP)**  
<https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-25-039.html>
36. Molecular Foundations for Sustainability: Sustainable Polymers Enabled by Emerging Data Analytics, NSF  
**Deadline: December 5, 2024 (LOI); January 16, 2024 (FP)**  
<https://new.nsf.gov/funding/opportunities/molecular-foundations-sustainability-sustainable/nsf24-567/solicitation>
37. Focus on Recruiting Emerging Climate and Adaptation Scientists and Transformers, NSF  
**Deadline: January 29, 2025 (Track 1); April 30, 2025 (Track 2)**  
<https://new.nsf.gov/funding/opportunities/focus-recruiting-emerging-climate-adaptation/nsf24-558/solicitation>
38. Science, Technology, Engineering and Mathematics (STEM), Office of Naval Research  
**Deadline: April 4, 2025**  
<https://www.nre.navy.mil/work-with-us/funding-opportunities/onr-science-technology-engineering-and-mathematics-stem-program>

39. Computer and Information Science and Engineering (CISE): Core Programs, Large Projects, NSF  
**Submission Window Date(s): September 15, 2025 - September 29, 2025**  
<https://new.nsf.gov/funding/opportunities/computer-information-science-engineering-core-0/nsf24-572/solicitation#elig>



# Universidad *de Puerto Rico*

**LA MEJOR EDUCACIÓN A TU ALCANCE**

VICEPRESIDENCIA DE RECURSOS EXTERNOS  
ADMINISTRACIÓN CENTRAL