

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 11/8/2023 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 by e-mail.

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1. Innovative Technology Experiences for Students and Teachers (ITEST) Resource Center, NSF

Application Deadline: January 22, 2024

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

This solicitation calls for an ITEST Resource Center that is visionary in actualizing equity in STEM learning environments that inspire and prepare youth to pursue careers in the STEM workforce of the future. The Resource Center leadership team will facilitate dialogue across stakeholders as it actively elicits new perspectives on potentially transformative approaches to workforce development among communities and organizations that have been overlooked or under-consulted in this work. This team should reflect a commitment to equity and should include thought leaders with demonstrated expertise, experience, and research regarding equity in STEM learning and teaching.

The ITEST Resource Center will engage individuals and organizations who seek to expand their capacity to design, carry out, and communicate research on equitable, innovative technology experiences for all pre-k through 12th grade learners and their teachers, which will prepare the next generation of the STEM workforce to meet global and societal challenges of the future. These audiences include but are not limited to:

1. **Current ITEST Principal Investigators (PIs) and project partners** on ITEST-funded awards.
2. **Prospective ITEST PIs and project partners** who seek to develop competitive ITEST proposals and enact their projects through equitable partnerships and practices. Prospective PIs include those who are currently unaware of the ITEST program, but whose perspectives on STEM teaching and learning have the potential to transform the STEM workforce of the future and preparation for this workforce.
3. **Other innovators who seek to use equity- and evidence-based approaches to innovative technology experiences**, such as educators in formal and informal settings; community-based organizations; professional networks and organizations; industry stakeholders; policymakers; and STEM educational research communities.

The Resource Center for the ITEST program is invited to envision, design, and develop innovative and promising approaches to providing the following four functions:

1. **Cultivate a nationwide, multi-sector community dedicated to promoting equity in STEM education among pre-K-12 youth, and their educators, in ways that inspire and prepare youth to pursue future career opportunities in STEM.**
 - a. Strengthen networking, partnerships, and synergies among organizations, institutions, networks, and/or industries with distinct strengths, resources, and areas of expertise. These networks should strengthen the capacity of the field to deliver equitable, innovative technology experiences that prepare the future STEM workforce.
 - b. Strengthen community-building and capacity among STEM educational researchers and practitioners, and their partners, to drive change relative to STEM education that prepares youth for future STEM careers.
 - c. Enlist the interest and support of stakeholders and decision-makers, including industries, creators of educational technologies and media, policymakers, administrators, educational researchers, educators in formal and informal settings, and other sectors to amplify the impact of efforts to advance equity through innovative technology experiences for youth in formal and informal settings.
2. **Raise the visibility and impact of equity-based research and practice in STEM education, which has the demonstrated potential to foster a diverse STEM workforce of the future.**
 - a. Develop and promote compelling communications about equity-based educational approaches that increase youths' interest in, and preparation for, STEM careers of the future.
 - b. Provide ITEST recipients (PIs and project partners) with opportunities to highlight their work to a broad range of stakeholders.
 - c. Synthesize and disseminate ITEST projects' findings nationally to inform and influence stakeholders. This includes conducting comprehensive analyses of the ITEST portfolio for internal and external stakeholders

annually and as needed. It also includes enacting a comprehensive dissemination plan to communicate ITEST outcomes and resources to formal and informal STEM education professional organizations, policymakers, industry stakeholders, and STEM educational researchers.

3. Support ITEST PIs, prospective PIs, and partners in designing and researching STEM learning environments that contribute to equitable or expansive workforce preparation efforts and outcomes.

- a. Provide ITEST recipients (PIs and project partners) with opportunities to deepen connections across projects and to participate in continuous learning, reflection, and action, with a specific focus on equitable educational practices that have the potential to transform the STEM workforce of the future.
- b. Provide assistance relative to the design and enactment of equitable research and evaluation methods that will build the collective evidence base relative to equitable STEM learning environments.
- c. Provide technical assistance to prospective ITEST PIs and prospective partners, with emphases on developing competitive proposals that enact equity in their preparation and project design. The Resource Center should envision and enact a plan to provide technical assistance in proposal development to organizations that are currently under-served by the ITEST program, including those in EPSCoR states and rural areas, through regional workshops and other formats. Under-served organizations also include cultural institutions, community colleges, and Minority-Serving Institutions (as listed and defined by the US Department of Education list of MSIs: <https://www2.ed.gov/about/offices/list/ocr/edlite-minorityinst.html>), among others.

4. Promote equitable practices that support the ITEST program.

- a. Provide visibility and support for the ITEST program, its funding calls, and other NSF funding opportunities and policies relevant to the ITEST program. The Resource Center will provide enhanced supports for groups, communities, and organizations that seek greater participation in vision-setting around the STEM workforce of the future, and the educational opportunities in pre-K through 12th grade that can help to make this workforce a reality.
- b. Broaden participation in the ITEST PI community, such that it includes more people from diverse geographic regions, organizations, and communities. This includes those that are underrepresented or not-yet-represented in the ITEST portfolio. This postures NSF to leverage the full spectrum of diverse talent across society.
- c. Host biennial ITEST Awardee Meetings to share emerging findings and challenges with respect to equitable research and practice relative to innovative technology experiences for youth. The meetings will be organized in collaboration with NSF.
- d. Host webinars and in-person workshops that support organizations and individuals in dialogue, reflection, and action relative to strategies for equity in STEM education, partnerships for career and workforce preparation, and innovative use of technologies in teaching and learning.

It is requested that one of the mechanisms to fulfill these functions should be a virtual infrastructure, which may include elements such as a website, a digital resource repository, social media, and/or other means to connect stakeholders to resources, the ITEST program, and one another. Outside of this request, the ITEST program has intentionally left unspecified the mechanisms for fulfilling these functions in order to encourage creative approaches driven by proposers.

Link to Additional Information: <https://www.nsf.gov/pubs/2024/nsf24500/nsf24500.htm>

2. Ethical, Legal and Social Implications (ELSI) Research (R01 Clinical Trial Optional), NIH

Application Deadlines: February 20, 2024

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

The purpose of this NOFO is to solicit applications for research projects that identify, examine, and address the ELSI of advances in genomics for individuals, families, communities, groups, institutions, and society.

To address the broad scope and reach of genomics and corresponding ELSI issues, applications are invited from investigators representing a wide range of academic disciplines, including, but not limited to, bioethics, the humanities (e.g., history, religion, philosophy, literature), behavioral and social sciences (e.g., psychology, sociology, anthropology, political science, economics, communication science), law, genetic and genomic science, genetic counseling, clinical medicine, health services and implementation science research, health disparities and inequities research, health communication, public health, and data science.

Applications are encouraged from multidisciplinary investigator teams who represent a broad range of disciplines, lived experiences and perspectives.

Applications may propose studies using either single or mixed methods. Approaches may include, but are not limited to, conceptual, legal, and normative analyses, and empirical qualitative and quantitative methods. Applied research conducted to address real-world ELSI issues facing genomics or to facilitate the uptake of ELSI findings may also be proposed.

NIH encourages applicants to consider the use of variables provided in the PhenX Toolkit which provides recommended standard measures for use in biomedical research. These measures have been selected by domain experts using a consensus process. The Toolkit provides protocols for collecting data, and tools to help investigators incorporate protocols into their studies. Using protocols from the PhenX Toolkit facilitates cross-study analysis, potentially increasing the scientific impact of individual studies. Of note, the Social Determinants of Health (SDOH) Collections may be important for some ELSI projects to consider. In addition to protocols for core SDOH measures, the collection includes measures at individual and structural levels.

Population Descriptors

For the purpose of this NOFO, population descriptors are defined as variables used to describe or distinguish people from each other based on perceived or actual differences. Population descriptors may be used for example, to describe who is participating in a study, what groups are being compared, or to whom particular study findings may apply.

To enhance the rigor and replication of proposed research, applications to this notice should be transparent in the Research Plan about the use of population descriptors. Applications should also be transparent about the use of race, ethnicity or ancestry as proxies for other contributing factors, and acknowledge the challenges and limitations of doing so.

Community and Stakeholder Involvement

There are a variety of communities and stakeholders whose knowledge, perspectives and experiences can inform and improve the field of genomics. Community or stakeholder involvement in any and all phases of a research project is encouraged where appropriate, but not required. Community and stakeholder involvement may include a range of methods or approaches that vary in level and intensity including, but not limited to, establishment of advisory boards or panels, stakeholder-driven research, community-oriented research, or community-based participatory research.

Applicants are strongly encouraged to contact NIH Scientific/Research Staff at the relevant participating ICO(s) listed at the end of this NOFO, prior to developing an application to discuss whether their application is responsive.

Link to Additional Information: <https://grants.nih.gov/grants/guide/pa-files/PAR-23-293.html>

3. Spurring Projects to Advance Energy Research and Knowledge Swiftly (SPARKS) – Concept Papers, Department of Energy

Application Deadline: applications will be accepted any time while this FOA remains open

Award Information: up to \$500,000 for a project period of up to 18 months

This Funding Opportunity Announcement (FOA) provides a continuing opportunity for the rapid support of early stage

applied research to explore innovative new concepts with the potential for transformational and disruptive changes in energy technology. Spurring Projects to Advance Energy Research and Knowledge Swiftly (SPARKS) awards are intended to be flexible and may take the form of analyses or exploratory research that provides the agency with useful information for the subsequent development of focused technology programs. SPARKS awards may also support proof-of-concept research to develop a unique technology concept, either in an area not currently supported by the agency or as a potential enhancement to an ongoing focused technology program. Applications must propose concepts that are not covered by open ARPA-E focused FOAs and that do not represent incremental improvements over existing technology.

Applicants will submit Concept Papers (4 pages maximum), and selected Applicants will then be invited to submit Full Applications.

Program Objectives

The broad objective of this FOA is to identify disruptive concepts in energy-related technologies that challenge the status quo and represent a leap beyond today's technology. An innovative concept alone is not enough; the idea must also have the potential to be impactful. This FOA seeks concepts that, if successful, would represent a fundamentally new paradigm in energy technology with the potential to make a significant impact on ARPA-E's statutory goals (see Section I.A).

Concepts of particular interest have the potential to:

1. achieve percentage-level reductions in U.S. energy consumption, energy-related imports, or greenhouse gas emissions.
2. improve the resilience, reliability, and security of energy infrastructure.
3. improve the management, clean-up, and disposal of nuclear byproducts.

Awards under this program may take the form of analyses or exploratory research that provide the agency with information useful for the subsequent development of focused technology programs. Alternatively, awards may support proof-of-concept research for a particular new technology, either in an area not currently supported by the agency or as a potential enhancement to an ongoing focused technology program.

Technical Categories

Applicants may propose any high-risk idea that addresses one or more of ARPA-E's statutory goals through the type of research described in Section I.A of this FOA. Each Applicant must explain how the proposed concept represents a transformative approach to more efficiently, economically, or sustainably utilize energy for useful work. Concepts may span multiple disciplinary boundaries.

- **Category 1: GRID** - Technologies for (1) the planning, construction, and/or operation of electricity transmission and/or distribution systems, including both AC and DC systems and (2) improving the resilience, reliability, and security of the grid.
- **Category 2: TRANSPORTATION** - Technologies for (1) improved propulsion and energy storage systems (e.g., electric motors, electrical distribution, power electronics, batteries, fuel cells, and engines) specifically for air, ground, and/or marine transportation applications, (2) yielding energy and/or emissions reductions in the above, and (3) lower-emission fuels that are substitutes for traditionally fossil-derived fuels (e.g., kerosene, diesel, gasoline).
- **Category 3: BUILDINGS & CONSTRUCTION** - Technologies that reduce the net energy usage and/or emissions associated with the construction and/or operation of buildings or other human-made structures.
- **Category 4: ELECTRICITY GENERATION AND STORAGE** - Technologies that facilitate (1) the high-efficiency, low-emission, and low-cost generation of electricity (e.g., wind, geothermal, hydro, solar, fission, fusion, biofuels, reduced fossil fuel usage) and/or (2) the storage of intermittent renewable energy.

- **Category 5: CARBON CAPTURE, SEQUESTRATION, AND UTILIZATION** - Technologies for (1) carbon capture from the ocean and/or atmosphere, (2) utilization of captured carbon, and/or (3) storage of carbon, including agricultural carbon management.
- **Category 6: INDUSTRIAL EFFICIENCY & DECARBONIZATION** - Technologies that improve the energy efficiency of or reduce emissions from production of industrial materials (e.g., glass, paper, iron, steel, plastics, aluminum, cement)
- **Category 7: OTHER ENERGY TECHNOLOGIES** - Technologies that are supportive of ARPA-E's mission described in Section I.A of the FOA that do not fit into one of the other categories.

Prior to submitting a Concept Paper to this FOA, Applicants are encouraged to contact an ARPA-E Program Director or an ARPA-E Fellow to discuss their research concept and its potential responsiveness to this FOA. While initial engagement with an ARPA-E Fellow may be appropriate, engagement with an ARPA-E Program Director is highly encouraged prior to submission.

Link to Additional Information: <https://www.grants.gov/search-results-detail/350904>

4. Humanities Research Centers on Artificial Intelligence, NEH

Application Deadlines:

- **Optional Draft: January 10, 2024**
- **Full Proposal: February 14, 2024**

Award Amount: up to \$500,000 with a maximum of \$200,000 per year for a project period of 36 months

AI is one of the most powerful technologies of our time and will have profound consequences for civil rights and civil liberties, safety and security, and democratic values. Questions about the ethical, legal, and societal implications of AI are fundamentally rooted in the humanities, which include ethics, law, history, philosophy, anthropology, sociology, media studies, and cultural studies. In fall 2023, NEH will launch a major research initiative titled Humanities Perspectives on Artificial Intelligence to support research and development in the humanities to understand and address the ethical, legal, and societal consequences of AI. NEH is particularly interested in projects that explore the risks of AI-related technologies on truth, trust, and democracy; safety and security; and privacy, civil rights, and civil liberties.

In your application to this program, you must propose to create a Center with a specific research focus related to the ethical, legal, and societal implications of AI. A Center is a sustained collaboration among scholars focused on exploring a specific topic, the humanities implications of AI, through two or more related scholarly activities. NEH particularly encourages Centers interested in equity, privacy, and civil-rights topics. Existing AI research centers are not eligible in this competition.

Centers must involve more than one scholar. A Center may or may not have a physical location, but as part of your project you should establish a leadership structure, develop a mission statement, and create a strategy to sustain the Center beyond the period of performance.

NEH welcomes international collaboration, but scholars at U.S. institutions must contribute significantly to the project. Centers should leverage the visionary nature of their research to promote a more informed public discourse about AI through education and outreach efforts and to actively build the next generation of scholars. Centers should aim to advance humanities research on their chosen topic beyond the period of the grant.

In addition to the establishment of the Center, your project should engage in at least two activities that support research into the ethical, legal, and social implications of AI. Appropriate activities may include, but are not limited to, collaborative research and writing efforts; workshops or lecture series; education and mentoring; and the creation of digital tools to increase or advance scholarly discourse about AI. You must present a plan to disseminate the results of

each activity. Allowable costs include, but are not limited to, salary replacement; compensation of collaborators, post-doctoral students, consultants, and research assistants; fringe benefits; and travel, lodging, and per diem costs for lecturers or convening participants.

Outcomes and performance indicators

You must propose outcomes that contribute to the creation and long-term development and sustainability of your Humanities Research Center. All project outcomes must address the Center's chosen thematic focus and convey interpretive humanities work.

Your project must result in a leadership structure, a mission statement, and an institutional plan for long-term sustainability by the end of the first year of the period of performance. Additional outcomes may include, but are not limited to:

- a lecture series extending beyond the period of performance.
- a workshop series, colloquia, or summer institute to explore the impact of AI.
- digital infrastructure for enabling multi-disciplinary or multi-institutional research about the humanistic implications of AI curriculum development or training courses for AI literacy in the humanities.
- a multi-authored book, peer-reviewed articles in academic journals, or articles for the general public, or both.

To be competitive for this program, you should propose to accomplish at least two such outcomes during the period of performance.

Link to Additional Information: <https://www.neh.gov/program/humanities-research-centers-artificial-intelligence>

5. Secure and Trustworthy Cyberspace (SaTC), NSF

Application Due Dates: Proposals Accepted Anytime

Award Amounts:

- **CORE and TTP:**
 - **Small projects: up to \$600,000 in total budget, with durations of up to three years**
 - **Medium projects: \$600,001 to \$1,200,000 in total budget, with durations of up to four years**
- **EDU: limited to \$400,000 in total budget, with durations of up to three years**

The goals of the SaTC program are aligned with the National Science and Technology Council's (NSTC) Federal Cybersecurity Research and Development Strategic Plan (RDSP) and National Privacy Research Strategy (NPRS) to protect and preserve the growing social and economic benefits of cyber systems while ensuring security and privacy. The RDSP identified six areas critical to successful cybersecurity research and development: (1) scientific foundations; (2) risk management; (3) human aspects; (4) transitioning successful research into practice; (5) workforce development; and (6) enhancing the research infrastructure. The NPRS, which complements the RDSP, identifies a framework for privacy research, anchored in characterizing privacy expectations, understanding privacy violations, engineering privacy-protecting systems, and recovering from privacy violations. In alignment with the objectives in both strategic plans, the SaTC program takes a multidisciplinary, comprehensive, and holistic approach to cybersecurity research, development, and education, and encourages the transition of promising research ideas into practice. SaTC goals are also aligned with the Roadmap for Researchers on Priorities Related to Information Integrity Research and Development, the National Strategy to Advance Privacy-Preserving Data Sharing and Analytics, and the National Cyber Workforce and Education Strategy.

The SaTC program welcomes proposals that address cybersecurity and privacy, drawing on expertise in one or more of these areas: computing, communication, and information sciences; engineering; education; mathematics; statistics; and social, behavioral, and economic sciences. Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both welcome.

The SaTC program spans the interests of NSF's Directorates for Computer and Information Science and Engineering (CISE), Engineering (ENG), Mathematical and Physical Sciences (MPS), Social, Behavioral and Economic Sciences (SBE), and STEM Education (EDU). Proposals must be submitted pursuant to one of the following designations, each of which may have additional restrictions and administrative obligations as specified in this program solicitation.

- **CORE:** This designation is the main focus of the multidisciplinary SaTC research program.
- **EDU:** The Education (EDU) designation is used to label proposals focusing on cybersecurity and privacy education and training.
- **TTP:** The Transition to Practice (TTP) designation will be used to label proposals that are focused exclusively on transitioning existing research results to practice.

Link to Additional Information: <https://www.nsf.gov/pubs/2024/nsf24504/nsf24504.htm>

6. Short Courses in Social Determinants of Health for Research Education in Nursing Research (R25 Independent Clinical Trial Not Allowed), NIH

Application Deadlines:

- **Letter of Intent: December 12, 2023**
- **Full Proposal: January 12, 2024**

Award Budget: limited to \$250,000 direct costs per year for a maximum project period of three 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 educational activities with a primary focus on:

- **Courses for Skills Development:** An educational program for nurse scientists, and scientists in aligned fields, to prepare them to conduct rigorous, innovative, and solutions-oriented nursing research to address social determinants of health (SDOH) and their systematic maldistribution on health and health equity. Learning both in and out of the classroom is important. Acquiring firsthand experience from experts in SDOH research, policy, and practice will enable students to apply the knowledge and skills learned in the classroom toward meaningful research questions that will advance the NINR mission and are aligned with the NINR Strategic Plan.

This program will support the creation and implementation of a short course up to one-year in duration to develop a cohort of nurse scientists, and scientists in aligned fields, equipped to understand and conduct research on SDOH to support the NINR Strategic Plan. Nursing has long appreciated that health must be understood in the context of people's lives and living conditions. SDOH provides a lens to understand and intervene upon midstream and upstream factors that shape individual and population health, with a critical emphasis on health equity. The Future of Nursing 2020-2030 report specifically articulated the need for training in SDOH research. By increasing nurse scientists' access to rigorous multi-disciplinary education and training in SDOH research, this initiative will support the power and potential of nursing to advance health and health equity for all. Therefore, applications that carefully consider program accessibility to nurse scientists and how recruitment and enrollment opportunities for nurse scientists may be optimized are encouraged. In this NOFO, a nurse scientist is a scientist with a degree in nursing (e.g., BSN, MS, PhD).

Social determinants of health (SDOH) are the conditions in which people are born, grow, learn, work, play, live, and age, and the wider set of structural factors shaping the conditions of daily life. These structural factors include social, economic, and legal forces, systems, and policies that determine opportunities and access to high quality jobs, education, housing, transportation, built environment, information and communication infrastructure, food,

and health care; the social environment; and other conditions of daily life.

The program should initiate with broad fundamentals of SDOH research including, but not limited to, conceptual models; state of the current evidence, including contributions from all disciplines, impacts on health disparities and implications for health equity, and knowledge gaps; research methods critical to addressing knowledge gaps; and guidance on engagement of participants in research. Building on the fundamentals, hands-on research experience should be included during the program. Program participants should be made aware of ongoing research directions and opportunities in the SDOH field. Incorporation of researchers from related NIH programs and related societies, to provide opportunities for collaboration and networking, is highly encouraged.

Examples of activities within the application could include:

- Engagement of experts and mentors.
- Recruitment and enrollment of participants.
- Meet and Greet at a research conference.
- A short course on SDOH research concepts, evidence, and methodologies, followed by ongoing research overviews.
- Design of mock SDOH research projects or grant applications, individual or groups.
- Cohort building activities.
- Regular cohort check-ins.
- End-of-year presentations in conjunction with a regional or national meeting.
-

Critical outcomes expected from this program include:

- Ensuring participants have strong foundational knowledge about the core concepts and theories that drive our current understanding about SDOH and the research needs with a solid understanding of the science on which to build new knowledge.
- Training in the methods and tools needed to address critical gaps in evidence on SDOH, the different health consequences across populations and settings, and effective approaches to address these gaps.
- Incorporating multiple research disciplines and a variety of settings into the skills development, learning, and research experiences.
- Publishing course materials for the community to use.

Education projects are expected to be in alignment with the mission of the NINR and its focus on a holistic, contextualized approach to optimizing health for all people.

Link to Additional Information: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NR-24-002.html>

7. Research Experiences for Teachers (RET) in Engineering and Computer Science, NSF

Application Deadlines: January 29, 2024; October 09, 2024

Award Amounts:

- **RET Site: \$600,000 for a duration of up to three years**
- **RET Supplement: up to \$15,000 per teacher and/or community college faculty for a duration of one year**

The RET program encourages the active participation of K-14 educators in ongoing engineering and/or computer science research activities through Site awards and Supplements. RET Sites and Supplements can include pre- and/or in-service K-12 teachers and/or community college faculty as participants.

A RET Site proposal must be submitted by a College, School, or Department of Engineering, Engineering Technology, or Computer and/or Information Science. NSF's Directorates for Engineering (ENG) and Computer and Information Science and Engineering (CISE) strongly encourage all grantees to make special efforts to identify talented K-14 educators for participation in this RET opportunity.

RET projects offer an opportunity to tap the nation's diverse teacher talent pool and broaden participation in engineering and computer science. Partnerships with inner city, rural, or other high-needs schools are especially encouraged. Proposals emphasizing broadening participation of the full spectrum of diverse talents that society has to offer are also encouraged. This includes participation of K-14 educators who are themselves underrepresented in engineering and computer science, or K-14 educators who serve underrepresented students in engineering and computer science.

RET Sites and Supplements should focus on a reciprocal exchange of expertise between K-14 STEM educators and research faculty and/or industry mentors. K-14 STEM educators will enhance their scientific disciplinary knowledge in engineering or computer science. At the same time, the hosting research faculty will deepen their understanding of classroom practices, current curricula, pedagogy, and K-14 educational environments.

RET Sites

RET Sites are based on independent proposals, submitted for an annual deadline date to provide authentic summer research experiences for K-14 STEM educators and foster long-term collaborations between universities, community colleges, school districts, and industry partners. As part of the long-term partnership arrangements, involvement of undergraduate/graduate students with the integration of the RET curricular materials into classroom activities in the follow up academic year is particularly encouraged.

RET Sites must involve 8-10 or more K-14 educators in an engineering and/or computer and/or information science research project for a duration of at least six weeks during the summer. RET Sites must have a well-defined research focus, with clearly articulated projects and activities, that enables a cohort experience for participants. Sites may be based in a single discipline or academic department or may offer interdisciplinary or multi-department research opportunities with a coherent intellectual theme. A proposal should reflect the unique combination of the proposing organization's interests and capabilities and those of any partnering organizations.

RET Sites must include high-quality mentoring strategies to ensure participants receive consistent and effective support during their research experience. Sites are encouraged to include Co-PIs or senior personnel who have expertise in education research and/or curriculum development and/or broadening participation. RET Sites are also encouraged to include partnerships with industry mentors, particularly those with a regional presence.

RET Supplements

An RET Supplement typically provides support for one or two K-14 STEM Educators to participate in research as part of a new or ongoing ENG or CISE-funded research project. However, centers or large research efforts may request support for a larger number of participants commensurate with the size and nature of the project.

As with RET Sites, high-quality mentoring is important in RET Supplements and investigators should give serious attention to developing participants' research skills, involving them in the culture of research in the discipline, and connecting their research experience with classroom activities and curricula. RET Supplement descriptions must also indicate what type of sustained follow-up will be provided during the academic year to help in translating the teacher's research experience and new understanding of engineering and/or computer science concepts into classroom practice.

Link to Additional Information: <https://www.nsf.gov/pubs/2024/nsf24503/nsf24503.htm>

8. International Research Experiences for Students (IRES), NSF

Application Deadlines: February 5, 2024; October 28, 2024

Award Information: estimated program budget, number of awards and average award size/duration are subject to the quality of proposals and availability of funds

The International Research Experiences for Students (IRES) program provides mechanisms to support U.S. students to

conduct cutting-edge scientific research and engage in high-quality research-related professional development activities abroad, in collaboration with foreign investigators.

IRES projects contribute to the development of a globally competitive and diverse scientific workforce to increase U.S. economic competitiveness. IRES experiences expose U.S. students to the international research community at a critical stage in their careers and serve to establish international networks to bolster their professional development. IRES supports activities designed in partnerships with researchers outside the U.S. and conducted at international sites, leveraging U.S. and international resources for mutual benefit.

The IRES program accepts proposals in any disciplinary field that NSF supports. Topics in multi-disciplinary and convergent areas of science research, training and professional development are encouraged. The IRES program strengthens the pipeline from undergraduate to graduate levels and beyond. In addition, K-12 teachers may take part in IRES Sites projects through the NSF Research Experience for Teachers (RET) program. IRES projects are organized and proposed by U.S. organizations and U.S.-based Principal Investigators who choose the topics and foreign site placements, arrange appropriate foreign mentorship and necessary resources, and recruit and prepare U.S. students to participate in the experiences.

NSF encourages participation from the full spectrum of diverse talent that society has to offer. This includes a focus on recruiting underrepresented minorities, women, first-generation/low-income students, students from institutions with limited exposure to research opportunities, persons with disabilities, and veterans is strongly encouraged. Proposals from non-R1 institutions and minority serving institutions are also strongly encouraged. There is a growing body of literature on ways to recruit a diverse set of students and design effective programs for international STEM engagement at the undergraduate and graduate level. PIs are encouraged to explore relevant literature and utilize those resources in their proposals.

Program Description

IRES projects may involve collaboration within an already-established partnership between a U.S.-based research group and a foreign research group (e.g., an existing lab-to-lab arrangement, U.S. and foreign professional societies, etc.). Alternatively, IRES projects may propose to initiate new international collaborations, or create new international research teams/networks.

Although two-way exchanges of U.S. and foreign students are strongly encouraged, the IRES program provides support only for the U.S. team. The IRES program does not provide salary support for the foreign research mentors, although it supports research and related logistical and other expenses for the U.S. team while in an international location. IRES PIs are welcome to organize exchange visits by foreign students and collaborators, but those expenses cannot be part of the IRES budget.

In all cases, the IRES students/participants will be recruited and trained by the U.S. PI(s). Students/participants will travel to the foreign site to conduct scientific research, participate in training and professional development activities under direct supervision of the foreign research mentor(s). It is expected that a different group of students will participate in the IRES program each year. Active collaboration with the international partner in implementing the project is essential. PIs should consider ways to extend collaboration beyond the international trip, to include on-going engagement of students/participants in planning and synthesis of research and educational activities before and after travel to the foreign site.

IRES proposals should support separate cohorts of students each year and give as many students as feasible, within budgetary constraints, the opportunity for a meaningful scientific research experience abroad. Proposals that include fewer than five U.S. students per year, or whose annual duration of research conducted abroad is less than four weeks, should be justified by exceptional conditions or circumstances. Longer duration and/or more students are generally preferable to shorter duration proposals with fewer students.

The Office of International Science and Engineering (OISE) realizes that the IRES program's goals can be achieved in many different ways. Hence, in addition to the IRES Sites model of faculty-led student cohorts performing scientific research under the mentorship of a foreign researcher, the IRES program welcomes proposals with creative, innovative, and ambitious ideas and concepts to address the IRES goals and objectives. These may include but are not limited to fundamentally new ways to prepare and train a globally-engaged STEM research workforce; relevant workshops; advanced studies institutes for graduate students and/or science teachers; original concepts and mechanisms to maximize impact of the international collaborations; ideas, platforms, or technologies leading to resilient enduring collaborative teams or networks; virtual/hybrid research-relevant events; extended pre-and post-trip activities using virtual collaboration platforms; creative ways to incorporate graduate students into the program even if they cannot travel for the entire duration of the project; or other well-designed activities developed by the PI team.

PIs interested in submitting such proposals should contact the cognizant IRES Program Directors with a 2-page white paper to discuss appropriateness of the proposed activities and feasibility of the required budget before developing the full proposal.

Link to Additional Information: <https://www.nsf.gov/pubs/2024/nsf24506/nsf24506.htm>

9. Sustaining Cultural Heritage Collections, NEH

Application Deadline:

- **Optional Draft: December 7, 2023**
- **Full Proposal: January 12, 2024**

Award Information:

- **Planning: up to \$50,000 for up to two years**
- **Implementation, Level I: up to \$100,000 for up to two years**
- **Implementation, Level II: up to \$350,000 for up to three years**

The SCHC program helps cultural heritage institutions with humanities collections (libraries, archives, museums, and historical organizations) meet the complex challenge of preserving diverse holdings of humanities materials (books and manuscripts, photographs, sound records and moving images, archaeological and ethnographic objects, art, and historical objects) for future generations. The SCHC program supports environmentally sustainable preventive care strategies to reduce energy consumption and costs and strengthen institutional resiliency in the face of a changing climate.

The SCHC program supports environmentally sustainable preventive care, also referred to as preventive conservation or preservation, which includes measures and actions aimed at avoiding, minimizing, and slowing future deterioration or loss of cultural heritage collections, thereby sustaining them for future generations. Cultural heritage institutions may use SCHC awards to manage collections' environment, including aspects such as temperature, relative humidity, pollutants, and light; provide protective storage enclosures and systems for collections; and safeguard collections from theft, fire, floods, and other disasters. Recipients should use environmentally sustainable methods that reduce reliance on fossil fuels and improve institutional resiliency from current and future disasters.

Best practices for planning and implementing environmentally sustainable preventive care include understanding the local climate, the collection materials and associated risks and vulnerabilities, the current and desired environmental conditions of the collection storage and/or display spaces, the building envelope housing the collection, the environmental impact of maintaining a preservation environment for collections, passive methods to improve the preservation environment of collections, and current and future disaster risks to the collection.

Funding categories

- **Planning** - provides funding for institutions of any size to develop and assess environmentally sustainable preventive care strategies in collection spaces. You might use a Planning award to:
 - reevaluate environmental parameters for collections and establish realistic and achievable targets based on

- current recommendations and standards of dynamic control rather than strict set points.
- study the performance characteristics of buildings and building envelopes to understand how they could better moderate collection environments.
- evaluate improvements to the building envelope for better climate control efficiency.
- examine passive (nonmechanical) and low-energy alternatives to conventional energy sources and energy-intensive mechanized systems for managing environmental conditions, such as preservation microclimates like retrofitting existing storage furniture or using enclosures to buffer against unsafe relative humidity fluctuations.
- evaluate the feasibility of and develop installation plans for on-site renewable energy sources such as solar panels, wind turbines, geothermal, and heat pumps.
- analyze and optimize existing climate control systems to enable improved operation, effectiveness, and energy efficiency.
- explore the potential of actively managed mechanical systems to achieve desired conditions along with energy and cost savings, such as planned shutdowns, setbacks, seasonal setpoints, reducing outside air, and adjusting fan speeds.
- conduct a risk assessment to improve institutional resilience in the face of disasters resulting from current and future effects of climate change or other disasters.
- examine options and develop strategies for lighting collection spaces that protect collections while improving energy efficiency and reducing heat load.
- evaluate the effectiveness of previously implemented preventive care strategies, including energy-efficient upgrades to existing systems and performance upgrades to buildings and building envelopes.

You may also use a Planning award to perform testing, modeling, or project-specific research to better understand conditions and formulate environmentally sustainable preventive care strategies. Testing, modeling, or project-specific research might include: measuring energy consumption and greenhouse gas emissions; thermal imaging of buildings; testing building performance during extended power outages or other emergency situations; testing building performance during purposeful, planned, mechanical system shutdowns, setbacks, and changing seasonal set points; reducing outside air, or reducing fan speeds to reduce energy use; using blower door tests to identify air leaks in buildings; creating mock-ups of lighting options; testing natural ventilation methods; testing the effect of storage enclosures on moderating fluctuating environmental conditions; recommissioning or tuning small-scale climate control systems; and adjusting the operating protocols for climate control systems.

- **Implementation Level I** - provides funding for small to mid-sized institutions to implement environmentally sustainable preventive care projects that address specific, discrete preservation challenges that have been identified through an assessment. You might use an Implementation Level I award to:
 - manage interior relative humidity, temperature, and light by passive methods, such as controlling moisture at its sources, or improving the thermal and moisture performance of a building envelope by installing film, UV blocking window filters or shades, sealing windows and doors, sealing ducts, weatherproofing, insulation, or vapor barriers.
 - install renewable energy sources such as solar panels, wind turbines, geothermal, or heat pumps.
 - reorganize collections by material type, locating more vulnerable collections in spaces that are more naturally stable.
 - install storage systems and rehouse vulnerable collections to reduce risk and/or improve energy efficiency and allow for greater temperature and relative humidity fluctuations in building-wide spaces.
 - create preservation microclimates for vulnerable collections, such as retrofitting existing storage furniture or using enclosures to buffer against unsafe relative humidity fluctuations.
 - improve security.
 - protect collections from fire, floods, pollutants, and other disasters.
 - upgrade lighting systems and controls such as installation of LED lighting, to achieve energy efficiency and light levels suitable for collections.

Level I awards support projects that derive from a general preservation needs assessment, risk assessment, or

other targeted collections assessment conducted by internal or consulting professionals who have identified preservation challenges and priorities and prepared an assessment report or summary. You should apply for this level of funding if you are ready to implement small-scale improvements to environmental conditions in collection spaces and other environmentally sustainable preventive care measures as a result of such assessments.

- **Implementation Level II** - provides funding for institutions of any size to implement environmentally sustainable preventive care projects that address large or multifaceted preservation challenges that have been identified through assessments and planning conducted by a multidisciplinary collaborative professional team appropriate to the goals of the project. You might use an Implementation Level II award to:
 - manage interior relative humidity, temperature, and light by passive methods, such as controlling moisture at its sources, or improving the thermal and moisture performance of a building envelope by installing film, UV blocking window filters or shades, sealing windows and doors, sealing ducts weatherproofing, insulation, or vapor barriers.
 - upgrade a building automation system to enable more active management of a heating, ventilating, and air conditioning system to improve energy efficiency.
 - recommission or install heating, ventilating, and air conditioning systems to improve energy efficiency.
 - install on-site renewable energy sources such as solar panels, wind turbines, geothermal, or heat pumps.
 - reorganize collections by material type, locating more vulnerable collections in spaces that are more naturally stable.
 - install storage systems or rehouse vulnerable collections to reduce risk and/or improve energy efficiency and allow for greater temperature and RH fluctuations in building-wide spaces.
 - create preservation microclimates for vulnerable collections, such as retrofitting existing storage furniture or using enclosures to buffer against unsafe relative humidity fluctuations.
 - improve security.
 - protect collections from fire, floods, pollutants, and other disasters.
 - upgrade lighting systems and controls, such as installation of LED lighting, to achieve energy efficiency, reduce heat load, and provide light levels suitable for collections.

The primary differences between Implementation Level I and Implementation Level II are:

1. The **scope and size of the project**. Level I projects are typically smaller, distinct projects while Level II projects can be large and/or multifaceted.
2. The **planning pre-requisites**. Both levels require a preservation needs assessment or other focused assessment that informs the project. For Level II projects, that assessment should be performed by a multidisciplinary collaborative team appropriate to the project.

Link to Additional Information: <https://www.neh.gov/grants/preservation/sustaining-cultural-heritage-collections>

10. Advancing Technologies to Improve Delivery of Pharmacological, Gene Editing, and other Cargoes for HIV and SUD Mechanistic or Therapeutic Research (R01 Clinical Trial Optional), NIH

Application Deadlines:

- **Letter of Intent: October 15, 2024**
- **Full Proposal: November 15, 2024**

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

The development of combination antiretroviral therapy (ART) for HIV has transformed HIV/AIDS into a chronic disease by suppressing viral replication to undetectable levels. However, even with effective ART, HIV reservoirs reside within the body (gut, bone marrow, brain, and other tissues), where cells harboring HIV provirus could reestablish active HIV infection with poor adherence or cessation of ART. Thus, no cure has been found for HIV infection and no effective vaccine for HIV exists.

While progress has been made in developing antiretroviral formulations that are longer acting and with improved

compliance, problems related to toxicity, bioavailability, and reservoir penetration remain. Effective long term sustained delivery is needed among people with substance use disorders (SUDs) where compliance with an ART regimen may be problematic. To address these issues, the development of improved reagents or technologies that enable targeted delivery of reagents (e.g., small molecules, biologics, gene editing reagents, etc.) to specific central nervous system (CNS) regions or cell types is needed. Such delivery systems would improve our ability to monitor or manipulate HIV and SUD processes and could serve as the foundation for improved future therapeutics for HIV and/or SUD.

Research Objectives

The purpose of this notice of funding opportunity (NOFO) is to support milestone-driven preclinical research that will advance the development of new technology or tools to improve the delivery of pharmacological, gene editing, or other cargoes for HIV and SUD therapeutic and mechanistic research.

Some examples of research project appropriate for this NOFO include, but are not limited to:

- Development of a new technology or tool to improve the delivery of pharmacological, gene editing, or other cargoes for HIV and SUD therapeutic and mechanistic research.
- Nano formulations to reduce toxicity, improve bioavailability, and provide vehicles for sustained delivery of pharmacological, gene editing, or other cargoes to the CNS.
- Strategies to selectively permeabilize the blood brain barrier for delivery of novel HIV therapies.
- Strategies to identify and selectively target brain cells harboring HIV provirus.
- Strategies to target and regulate neuroinflammation and neurotoxic immune cell phenotypes, independent of the HIV status of the cell.
- Research to test and generate evidence for effectiveness of non-opioid pain management strategies in aging adults living with HIV.
- Technologies or tools to optimize HIV and SUD care that minimizes the risks of polypharmacy among PLWH.

In order to be responsive to the NOFO, applicants **MUST**:

- Propose to develop or significantly improve technologies for the delivery of cargoes for HIV and SUD research, as the major thrust of the work.
- Include at least one aim involving either (1) opioid, cannabinoid, nicotinic, dopaminergic, or other signaling pathways relevant to addictive substance use, or (2) exposure to addictive substances, or (3) analysis of samples from patients that have used addictive substances or have SUDs. Substances of interest include: nicotine, cocaine, methamphetamine, stimulants, xylazine, opioids, addictive prescription drugs, cannabinoids, or combinations of these drugs. Studies proposing long term exposure to addictive substances are encouraged.
- Focus on brain, tissues or cells relevant to the CNS OR well-justified studies using blood or lymphoid systems.
- Include one aim or sub-aim on humans or primates, animals with humanized immune systems and/or cells (including organoids) derived from human or primates.

Other application considerations

- Despite the use of the R01 activity code, this NOFO supports high-risk/high-payoff projects. Applicants may wish to propose high-risk/high-payoff projects with a more limited scope, in which case they should align the proposed budget and/or project period with the proposed scope.
- The research strategy must include a timeline with quantitative SMART (Specific, Measurable, Achievable, Realistic, and Timely) milestones that will be achieved yearly. Investigators should consider milestones to be Go/No-Go decision points that are used to determine if the proposed approaches are feasible and attainable during the award period. The application must include well-defined milestones: e.g., critical steps to achieving development of the new technology, sequential assessment criteria for success of new technology, expected quality performance measures to be reached each year. If selected for funding, applicants will work with NIH

staff to develop more granular milestones which will be included in their Notice of Award. Progress towards completion of these milestones will be assessed yearly.

- Patient samples should be well-characterized for stage/trajectory of SUD, type(s) of drug used, co-occurring conditions, gender, and age.
- Newly formed collaborations or teams to foster sharing of expertise between the fields of HIV, SUDs, and other research areas are encouraged.
- Studies leveraging biospecimens from other studies including National Institute on Drug Abuse (NIDA)-supported cohorts are encouraged.

Link to Additional Information: <https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-25-022.html>

11. Exploratory Grant Award to Promote Workforce Diversity in Basic Cancer Research (R21 Clinical Trial Not Allowed), NIH

Application Deadlines: June 18, 2024

Award Amount: up to \$275,000 in direct costs for a project period of two years

The purpose of this Notice of Funding Opportunity (NOFO) is to promote diversity in the basic cancer research workforce through recruiting and supporting New Investigators and Early-Stage Investigators (ESIs) from diverse backgrounds, including those from nationally underrepresented groups, who have entered the research pipeline and are interested in developing innovative studies in cancer biology. These include but are not limited to, those individuals who have been supported by programs under the Continuing Umbrella of Research Experiences (CURE) such as the Career Development Awards, Diversity Supplements, and those investigators participating as project leaders or co-investigators on research projects in the Partnerships to Advance Cancer Health Equity (PACHE). This initiative will also provide a bridge to investigators who have completed their training and may need extra time and/or support to develop a larger research project grant (e.g., R01) application.

Specific Research Objectives

NCI's Division of Cancer Biology (DCB) and CRCHD offer this exploratory grant (R21) mechanism to encourage eligible investigators to submit R21 applications focused on basic cancer biology. Research applications should focus on basic cancer biology or the biological basis of cancer health disparities, consistent with the research interests of both the DCB and CRCHD.

DCB supports research in a broad range of cancer biology topics, including cancer cell biology, cancer etiology, cancer immunology and hematology, DNA and chromosome aberrations, structural biology, systems and computational biology, the tumor microenvironment, and tumor metastasis.

CRCHD supports cancer health disparity research that is focused on basic, hypothesis-driven studies that explicitly address the unequal burden of cancer amongst racial/ethnic minorities or other underserved populations across the cancer continuum (prevention, early detection, diagnosis, treatment, and survivorship). CRCHD also supports research into the underlying causes of cancer.

Research topics of interest include, but are not limited to the following:

- Investigations of biology and mechanisms by which intrinsic cancer cell processes, extrinsic microenvironment pressures, and/or systemic host processes, including cancer cachexia, contribute to or promote tumor metastasis across steps of the metastatic cascade — invasion, dissemination, colonization, dormancy and outgrowth.
- Investigations of the underlying dynamic biological relationship between early lesion/tumor cells and microenvironmental elements, including stroma, that influence tumor initiation, progression, and response to therapy.
- Investigations of the fundamental mechanisms that initiate the pre-cancer state, early lesion, and oncogenic transformation, and support tumor growth and behavior, including the role of aging, gender, and ethnic

disparities.

- Investigations of innate and adaptive anti-tumor immune responses, including mechanisms of resistance (immune suppression, immune exhaustion, immune evasion) that lead to the development and spread of cancers and mechanisms underlying immune-related adverse events (irAEs) that limit the effectiveness of cancer immunotherapy. In addition, understanding the origins of blood cell cancers (including leukemia, lymphoma, multiple myeloma) and graft versus host (GVH)/graft versus leukemia (GVL) research.
- Investigations of biological agents, primarily viruses and bacteria (including bacterial communities), that are etiological factors or co-factors involved in the initiation and promotion of cancer or mechanisms of resistance and basic studies to identify possible targets for preventive or therapeutic measures.
- Investigations of the genetic and epigenetic mechanisms underlying cancer onset and progression to malignancy, including regulation of gene expression, DNA damage/repair, genomic instability, and related molecular, cytogenetic, and chromosomal effects.
- Investigations of genes, proteins, and signaling networks responsible for observed cancer-relevant disparities among human populations in any of the topics listed above.
- Investigations into cancer as a complex system using computational or mathematical approaches and/or ex-vivo engineered systems.
- Investigations that seek to understand the combination of biological factors and environmental, social or other systemic factors that may relate to cancer health disparities.

The program will provide successful candidates with professional development workshop opportunities and mock review experiences to enhance knowledge and understanding of the NIH peer review system and to develop the skills required to prepare competitive research project grant applications to the NIH and other funding agencies. To this end, NCI CRCHD will:

- Monitor the implementation of the Exploratory Grant Award to Promote Workforce Diversity in Basic Cancer Research (R21) program to determine its impact on individual awardees.
- Track and maintain an updated census of the status of funded R21 grantees.
- Encourage the development and testing of metrics that can be used to assess the impact of the program on scientific and workforce diversity.

Link to Additional Information: <https://grants.nih.gov/grants/guide/pa-files/PAR-24-039.html>

12. Psychedelics Treatment Research in Substance Use Disorder (UG3/UH3 Clinical Trials Optional), NIH

Application Deadlines:

- **Letter of Intent: January 28, 2024**
- **Full Proposal: February 28, 2024**

Award Amount: up to \$2M per year for direct costs for a maximum project period of two years for UG3 phase and three years for UH3 phase

The objectives of this NOFO are to support preclinical and clinical research and evaluation of the safety and efficacy of psychedelics for the treatment of patients with substance use disorders (SUD).

Applications should focus on the development of psychedelics for the treatment of SUDs including opioids, methamphetamine, cocaine, nicotine, cannabis or any other illicit substance use, except alcohol.

The medications investigated for SUDs may target one or more of the neuropathological mechanisms, the various clinical stages, and/or the medical/psychiatric complications of one or multiple SUDs. Applications should provide a Target Product Profile where appropriate, of the expected clinical indication for which the compound will be developed. For example, abstinence initiation, reduction of substance use, relapse prevention, reduction of substance craving, psychiatric comorbidities, etc.

Applications must provide the entry and exit points of the proposed research plan in the FDA regulatory approval pathway.

Applications may focus on evaluating:

- Lead compound optimization, creation/expansion of small molecular libraries, high-throughput screening, medicinal chemistry, formulation or drug-delivery technology.
- Preclinical Development: drug interaction studies between psychedelics and drugs of abuse and evaluation of safety and/or efficacy in established animal models, as well as pharmacokinetic and pharmacodynamic studies of potential treatments for SUDs.
- Clinical Development:
 - Phase I - Evaluation of pharmacokinetics, safety, tolerability, dose-ranging, and/or initial efficacy in target population.
 - Phase II - Proof-of-concept, pilot studies, safety and efficacy testing in a larger sample of target patient population.
 - Phase III - Safety and efficacy of medications tested in a large sample of patients.

Applications expected to involve individuals seeking treatment must include a behavioral therapy component. However, the scope of this NOFO does not include the evaluation of the safety and/or efficacy of psychosocial interventions.

Milestones

NIDA Program Officials and Program Scientists may be substantially involved in the scientific direction of the award in a collaborative role. The NIDA Program Scientists will collaborate in developing clinical protocols, monitor study progress, ensure disclosure of conflicts of interest and adherence to NIDA and NIH policies, and may participate in data analysis and manuscript preparation as appropriate.

Because psychedelic clinical research and treatment development is a high technical risk project, the UG3/UH3 grant mechanism is being used as a phased funding approach. Grant applications must provide clear milestones to be accomplished by the end of the UG3 part of the grant (2 years of funding). Completion of the milestones and go/no-go rules where applicable, if successful, will determine funding decisions regarding the UH3 part of the grant (3 years of funding duration). It is anticipated that there will be attrition of some projects that do not meet the milestones at the end of the UG3 phase.

If the research application includes a psychedelic agent that is classified as a Schedule I Controlled substance a DEA license must be obtained, the DEA must be contacted, compliance with all its requirements must be ensured and, where applicable, all relevant international regulations must be followed.

For clinical studies with this NOFO, please see below some examples of what the milestones may look like:

- Lead Candidate Identified: Single compound identified with adequate affinity, selectivity, pharmacokinetics, and toxicological properties to initiate advanced toxicology/safety/Drug-Drug Interaction studies.
- File Investigational New Drug (IND) application without clinical hold imposed by the FDA.
- No significant objections that may require additional studies by the FDA following Investigational New Drug filing.
- FDA agreement (where appropriate) that study endpoints are acceptable to support further development.
- Completion of Phase I single and/or multiple ascending dose clinical studies without significant medical safety or pharmacokinetic issues identified.
- Completion of initial clinical efficacy testing in a pilot phase 1b or phase 2A study in patients without significant safety issues identified and with study endpoints ascertained.
- Completion of the pilot clinical trial assessing a certain endpoint of interest as a primary objective, where the

objectives were fulfilled and Go/No-Go criteria were answered.

- Meeting with the FDA for advice on specific clinical drug development plan configuration is requested.
- Completion of the Proof-of-Concept trial with study objectives attained.
- Completion of clinical study in intermediate-size patient groups with safety and efficacy demonstrated.
- Phase 3 Clinical study(s) successfully completed.

Link to Additional Information: <https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-25-058.html>

13. Bidirectional Influences Between Adolescent Social Media Use and Mental Health (R01 Clinical Trial Optional), NIH

Application Deadline:

- **Letter of Intent: February 1, 2024**
- **Full Proposal: March 1, 2024**

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

This Notice of Funding Opportunity (NOFO) focuses on understanding relationships between social media use and adolescent mental health, psychiatric symptoms, and risk or resilience for psychopathology. For the purposes of this NOFO, social media are defined as internet-based communication platforms and applications that enable interactions between users by sharing or consuming information. Importantly, adolescents (broadly defined here as 10-20 years of age) have increasing access to social media and greater autonomy in their use of digital platforms.

Research submitted to this NOFO is expected to focus on the positive and negative impacts of social media on adolescent mental health and/or how adolescent psychopathology influences social media use. Interactions via social media play an increasingly important role in adolescent development, but little is known about the mechanisms by which social media use may impact risk or resilience for psychopathology. Identifying individual and contextual factors that may serve as modifiable targets for intervention is a high priority.

This NOFO prioritizes rigorous research studies that utilize sophisticated and fine-grained approaches to assess social media use and that move beyond simple assessments of time spent on social media. Applications are expected to define and justify the social media platforms examined, social media data collection methods (e.g., content type, exposure levels, mode of use, etc.), and age range of participants in the proposed research. For example, projects may quantify social behavior and social media use across one or more avenues of social media (e.g., platforms, texting, gaming, chats, videos) and across hardware platforms (e.g., phones, computers, gaming systems with social interaction) as needed to fit a project's conceptual framework and hypotheses. Collection of passive digital trace data, such as text analysis or movement and GPS data, is encouraged, as it offers an opportunity to study social media use by adolescents in their usage context and enrich our understanding of how they are utilizing social media.

Some adolescent participants may currently have, or have a history of, a mental illness diagnosis, like ADHD, anxiety, depression, and/or an eating disorder. Diagnostic documentation and current symptomatology are important factors to consider for studies examining issues of risk/resilience. Research that provides insight into clinical and societal interventions that might mitigate potential harms of social media are particularly encouraged.

Applications are encouraged to include a youth advisory board consistent with participant age to provide input on how proposed research fits adolescent experiences with social media and best avenues for dissemination of findings to adolescents and their communities. Applications may also consider incorporating an ethical research component or collaborations with ethics consultants to advance understanding of the ethical considerations and implications of social media research in adolescents, such as privacy of participants and their peers, parental consent vs. waiver, and reporting requirements for researchers, among others.

For NIMH, areas of interest include, but are not limited to:

- Potential neurodevelopmental mechanisms underlying social media experiences and their positive and/or negative associations with adolescent mental illness.
- The role of online social interactions in adolescent social development and their contributions to risk and resilience for psychopathology. For example, it will be important to understand which aspects of social media are simply another mode in which normative developmental processes occur or if there are unique aspects of social media that make these social experiences distinct and confer risk for psychopathology.
- How social media use interacts with development, including comparisons across different ages or developmental epochs during adolescence, to impact risk for psychopathology, including identification and exploration of sensitive periods.
- Comparison of in-person vs. digital social interactions to understand unique contributions of social media to social connectedness, social isolation, and psychopathology symptoms.
- Identification of neurobiological and psychological risk and protective factors that may serve as modifiable targets in future mental illness intervention development.
- Proximal impacts of adolescent social media engagement with mental illness symptoms (like suicidal thoughts and behaviors) and/or emotional regulation/cognitive control.
- How exposure to age-inappropriate content impacts adolescent psychopathology and factors promoting risk and resilience.
- How current/past mental illness diagnosis, age of symptom onset, and current symptomatology interacts with social media use.
- Experimental paradigms that test potential mechanisms through which social media use impacts risk or resilience for psychopathology.

Potential applicants are strongly encouraged to consult with NIMH staff as early as possible when developing plans for an application. This early contact will provide an opportunity to clarify NIH policies and guidelines and help to identify whether the proposed project is consistent with NIMH program priorities and NOFO goals.

Link to Additional Information: <https://science.osti.gov/ber>

14. NIAID Research Education Program Advancing the Careers of a Diverse Research Workforce (R25 Clinical Trial Not Allowed), NIH

Application Deadline:

- **Letter of Intent: 30 days prior to the application due date**
- **Full Proposal: January 25, 2024; May 25, 2024**

Anticipated Funding Amount: up to \$351,000 in direct costs per year for a maximum project period of five 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 goals of the NIH R25 program are to: (1) complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs; (2) encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research; (3) help recruit individuals with specific specialty or disciplinary backgrounds to research careers in biomedical, behavioral and clinical sciences; and (4) foster a better understanding of biomedical, behavioral and clinical research and its implications.

The overarching goal of this R25 program is to support educational activities that encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research.

NIAID seeks to develop research training and education programs for undergraduate, graduate, health professional students, postdoctoral fellows, and early career investigators from diverse backgrounds, including those from groups that are underrepresented in the biomedical, clinical, behavioral and social sciences, such as those identified in the Notice of NIH's Interest in Diversity, NOT-OD-20-031. Through these educational activities, NIAID strives to support current and future research investigators from diverse backgrounds, including from groups underrepresented within NIAID mission areas, and facilitate the career advancement and/or transition to the next step in their scientific careers.

The mission of the National Institute of Allergy and Infectious Diseases (NIAID) is to conduct and support basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases. In addition, NIAID has a unique mandate which requires the Institute to respond to emerging public health threats. Furthermore, the mission includes educational activities that complement the training of future scientists in NIAID-related research areas. NIAID is committed to the development of a diverse biomedical research workforce. Thus, NIAID seeks to promote diversity in all of its training and research programs and to recruit prospective participants from underrepresented groups in order to develop a highly competent and diverse scientific workforce capable of conducting state-of-the-art research in NIAID mission areas.

Program Approach

This NIAID Research Education Program Advancing the Careers of a Diverse Research Workforce is a specialized program designed to foster the development of research scientists from different career stages and diverse backgrounds, including those from underrepresented groups. Thus, the NIAID encourages applications from applicant organizations that propose innovative courses for skills development, research experiences, and mentoring activities and that focus on factors that have been shown to affect retention of groups nationally underrepresented in biomedical research, including, but not limited to scientific networks, mentoring, and attention to structural and institutional environments regarding inclusion. Programs that target more than one career stage and/or career transitions for career progression and advancement are strongly encouraged. Programs in response to this NOFO should focus on asset models and leadership opportunities, rather than solely on deficit models of approach and remediation.

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

- **Courses for Skills Development:** For example, to provide advanced courses or curricula in a specific discipline, research technique, or research area, clinical procedures for research, specialized research techniques, grant writing, scientific writing, or research methodology, and/or courses or workshops to develop scholarly potential to prepare participants for graduate school admissions, successful completion of a research-focused doctoral-level degree, and careers in the biomedical research workforce to facilitate the development of a sophisticated cadre of investigators with the requisite scientific research skills to advance the mission of NIAID. Courses or curricula may include elements that promote research skills and career skills of the participants. The format of the courses may involve a traditional in-person approach, online and/or virtual activities, a hybrid of both approaches, or other methods. NIAID expects that the course(s) for skills development provide innovative, state-of-the-art, evidence-based education that relates to the mission of NIAID, and is derived from biomedical, behavioral, or clinical research findings. The courses may include didactic and hands-on elements that promote the research and career skills of the participants.
- **Research Experiences:** For example, to provide hands-on exposure to research, to prepare participants for graduate and health professional school admissions, successful completion of research-focused doctoral-level degrees, and careers in the biomedical research workforce; and/or for graduate and medical, dental, nursing, and other allied health professional participants to become acquainted with the important role of health professionals in the biomedical research enterprise, and to enhance knowledge, interest, and entrance into basic biomedical, translational, or applied clinical research as a career related to the NIAID mission; to provide research experiences and related training not available through formal NIH training mechanisms; to provide hands-on authentic research experiences that reflect ownership of a project and provide opportunity for meaningful contribution to the research in question. NIAID expects that the research experiences supported by this NOFO are related to the participants' area of science, tailored to the needs and career levels of participants, and sufficiently different such

that the experience expands or extends their skills, and addresses some area of NIAID extramurally supported research. NIAID expects that mentoring will be provided in conjunction with planned research experiences and participants will design individualized development plans (IDPs) that are compatible with their needs and experience.

- **Mentoring Activities:** This NOFO will support the development, implementation and evaluation of mentoring activities and mentoring networks that reflect the research priorities of the NIAID. While there is no universally accepted definition of scientific mentoring, it is widely recognized as an important element for career development. Proposed programs are, therefore, expected to contribute to building a skilled cadre of investigators in requisite areas to advance the NIAID mission. For example, mentoring may include dedicated efforts at providing not only technical expertise, but also advice, insight, and professional guidance on the development of career skills. Such activities may include periodic scheduled contacts with participants through a variety of methods, including the use of various mentoring materials, webinars, phone calls/videoconferencing, or email follow-ups, development of mentoring networks that facilitate scholarly writing and grantsmanship, promoting successful transitions from one career stage to another, providing leadership development, helping to identify potential research collaborators; and/or helping to establish multidisciplinary, translational collaborations in order to foster and nurture a career trajectory towards an independent research career within a NIAID-related mission area.
 - Where applicants are planning to propose mentoring networks, NIAID expects them to be structured to provide significant new opportunities, and should comprise efforts substantially beyond any ongoing mentoring, networking, or research education within academic programs, institutions, or pre-existing networks; or educational collaborations among institutions. Proposed mentoring networks are expected to enhance the participants' professional development and to nurture their career development and trajectory towards independent research in NIAID mission areas. Mentoring networks may propose to include individuals from a single career stage or may bridge several career stages.
 - Expected outcomes for individuals participating in mentoring networks include, but are not limited to, subsequent involvement in research; subsequent employment in NIAID mission areas; subsequent independent grants support from NIH or other sources; and/or authorship of scientific publications. Mentoring networks may be regional or national, or designed to link complementary organizations or institutions. For example, an applicant organization may wish to partner with other organizations to develop a national training network.
 - This NOFO welcomes programs aimed at improving the caliber of mentorship. Examples include but are not limited to workshops to educate mentors on establishing and sustaining effective research mentoring relationships (e.g., summer course or a workshop accompanying a scientific meeting within the mission of NIAID in which case-based scenarios may be used to educate mentors on various relevant ethical, professional and cultural issues facing students today for example, effective communication and mentoring compacts, or addressing cultural awareness, among others).

Applicants are strongly encouraged to contact the Scientific/Research Contact(s) for information about priorities and policies before preparing an application.

Link to Additional Information: <https://grants.nih.gov/grants/guide/pa-files/PAR-23-282.html>

15. Designing Synthetic Cells Beyond the Bounds of Evolution (Designer Cells), NSF

Application Deadlines: February 1, 2024

Award Information: award size and duration should be commensurate with the scope of the project

The goal of this solicitation is to support innovative research that used the tools of synthetic biology and cellular engineering to build synthetic cells or cell-like systems for one of the following:

1. to identify and analyze the minimal function units of cellular structures, organelles or processes.
2. to address fundamental questions in the evolution of life on earth or to explore biological diversity beyond that which currently exists in nature.
3. to provide new functionalities for innovative biotechnology applications.

Themes:

1. **Identify and analyze the functional units of synthetic cells:** We seek projects that design and analyze synthetic cell components (ribosomes, mitochondria, membranes, regulatory modules, molecular machines, etc.), or synthetic components that have been integrated into cells or cell-like systems. The project should include a functional analysis of the synthetic component or a functional analysis of a component once it has been integrated into cells or a cell-like system.
2. **Evolution and expanding diversity:** Technologies such as genome rewriting will provide researchers with new ways to explore the evolution of life on this planet and to explore biological diversity that does not currently exist and may never have existed on earth. Projects are solicited that develop synthetically modified prokaryotic and/or eukaryotic cells that will address questions such as, how do regulatory circuits evolve, are 20 canonical amino acids and four nucleotides crucial for life or what are the functions of the dark matter of the genome? Projects to develop synthetic systems that allow researchers to expand cellular diversity into design spaces that evolution has not sampled/or selected for and analyze the new components are also encouraged. Examples would include synthetic systems that allow researchers to expand the number of amino acids available for proteins, protein structural diversity and potentially expand protein functional diversity for purposes such as expanding biochemical diversity. All projects should integrate social, ethical and biosafety/biosecurity dimensions in addressing these issues.
3. **Create synthetic biosystems for innovative biotechnology applications.** We seek projects that incorporate synthetic components into prokaryotic or eukaryotic cells, or design synthetic cell-like systems to generate new functionalities. These new functionalities may include synthetic systems that adapt and respond to specific external stimuli, perform novel computations, or have novel functions not found in natural systems. Projects that have basic research components, such as those described in themes 1 and 2, and leverage the basic research findings for biotechnology applications are of particular interest. The biotechnology application could be in any sector of the economy.

In concert with technology development, educating students and the lay public will also be important to ensure an accurate understanding of the scientific advances resulting from the development and use of designer cells. Responsive proposals must address the social, ethical and/or biosafety/security issues of the proposed research and the resulting biological systems. There will be serious consideration given to proposals that include the expertise of social scientists as a funded collaborator on the project and characterize how social science, ethics, and/or biosafety expertise is integrated to the project.

Summary of Solicitation Requirements

To be responsive to this solicitation, successful proposals will:

- Develop and use synthetic cells or cell-like systems to build and study minimal cellular functional units, to explore the potential for life beyond that which evolution sampled or to create new functionalities with biotechnology applications.
- Address social, ethical, and/or biosafety/biosecurity implications of designer cells as an integral component of the project.

Link to Additional Information: <https://www.nsf.gov/pubs/2024/nsf24505/nsf24505.htm>

16. Incorporating Human Behavior in Epidemiological Models (IHBEM), NSF

Submission Window Date(s): February 1, 2024 - February 14, 2024

Award Budget: up to \$1,000,000 for a maximum period of four years

The purpose of the Incorporating Human Behavior in Epidemiological Models activity is to support interdisciplinary collaborations that integrate research on behavioral and/or social processes in mathematical epidemiological models. Projects supported under this activity should be collaborative in nature and depend for their advancement on the coordinated interaction of two or more PIs/co-PIs, with balanced participation from both the mathematical sciences and the social, behavioral, and economic sciences. Additional participants from other disciplines, especially the biological sciences, are also welcome.

Each project should focus on a significant and well-delineated research challenge that integrates behavioral and social processes into mathematical epidemiological models. Examples of research challenges include, but not are limited to:

1. **Behavioral realism and sensitivity analysis.** A common crucial flaw attributed to epidemiological models of the COVID-19 pandemic has been a failure to incorporate realistic models of behavior. The challenge, therefore, is to incorporate realism while at the same time maintaining the tractability of the models. This realism includes differences in behavioral and social distributions along different characteristics of human populations and their intersections, including income, age, region, religion, race and ethnicity, gender, and education. Accompanying the incorporation of these behavioral models should be sensitivity analyses that determine how and to what extent these characteristics matter for predicting the outcomes of different pandemic-related interventions.
2. **Incorporation of behavioral change.** People's behavior changes over time: it may change as they acquire more information, in strategic response to others' (including organizations' and governments') behaviors, because of fatigue or increasing stress or increasing deprivation, and so forth. The implication is that incorporating fixed assumptions about behavior into epidemiological models may be inadequate for understanding how best to respond to a pandemic. A dynamic approach that embraces how behavior changes over time will be important.
3. **Incorporation of multiple environments: climate, seasonal, political, social.** Climate affects human epidemiology in many ways, one of those being that it affects human behavior. Climate change also affects animal habitats, which can affect human-animal interactions such that some pathogens originally occurring only among animals may become transmissible in a human population. Climate is related to seasonal variation, which again has strong effects on patterns of human behavior. Political and social environments, while fundamentally different from climatic and seasonal environments, also exert a strong influence on behavior. Incorporation of these and other environmental considerations into epidemiological models is essential especially because of how they vary over different localities and how they change over time.
4. **Incorporation of population heterogeneity and policy models.** The COVID-19 pandemic has highlighted that disease may affect different segments of the population differently. Considering this heterogeneity, it may be important to model endogenous mechanisms describing decision-makers' inaction of public health policies (such as social distancing, mask wearing, vaccination) and social policies (for example, eviction moratoria, childcare provisions, and employment flexibility), and how these rules influence public health and welfare. This involves modeling political factors, communication, behavioral responses, and interactions between dynamically coupled processes.
5. **Data needs for rich mathematical epidemiological models.** As rich theoretical models are built with, for example, different possible transmission methods and behavioral responses, it becomes valuable to analyze what data are required to validate the models, and what data are necessary to separate and arbitrate between models, while acknowledging the limitations posed by data that are either observational or unrepresentative.

Projects need not focus on human pathogens or human hosts, although such research must still incorporate human behavior and/or social processes. Examples of research on non-human systems include: how changes in behaviors or

farming practices affect the transmission of foot-and-mouth disease, how economic factors affect the global spread of pathogens through the pet trade, or how hunting affects the spread of prions in white-tail deer.

NIDA is specifically interested in proposals that support scientific research on drug use and its health and social consequences across the spectrum, from occasional use to problematic use and substance use disorders (SUDs), that integrates social, behavioral, or economic processes to respond to the public health crisis such as drug overdose, HIV, and HCV. Some examples of areas of interest include:

- Using technology and advanced statistical methods to inform our understanding of both social, behavioral and neurobiological components of drug use that are strongly influenced by diverse environmental and social factors in the context of responding to public health crisis such as drug overdose, HIV, and HCV.
- The development and validation of technologies, analytics, and models to help individuals gather, manage, and use data and information related to drug use and their personal health in the context of responding to public health crisis such as drug overdose, HIV, and HCV.
- Methods and algorithms for aggregation of data including, but not limited to, electronic health records (EHRs), laboratory generated data, environmental, and/or behavioral data.
- Diagnostic/monitoring tools and technology platforms to optimize drug use interventions and delivery, in the context of responding to public health crisis such as drug overdose, HIV, and HCV.

Link to Additional Information: <https://www.nsf.gov/pubs/2024/nsf24507/nsf24507.htm>

17. Advancing Genomic Medicine Research (R21 Clinical Trial Optional), NIH

Application Deadline: December 01, 2023; July 8, 2024

Award Information: to \$250K direct costs per year for a project period of three years

This Notice of Funding Opportunity (NOFO) invites proposals that stimulate innovation and advance understanding of when, where, and how best to implement the use and sharing of genomic information and technologies in clinical care in all persons irrespective of racial/ethnic background or socioeconomic status. Applications should focus on genomic medicine, defined as using genomic information about an individual as part of their clinical care (e.g., for screening, diagnostic, or therapeutic decision-making) and the health outcomes and policy implications of that clinical use.

NHGRI supports studies that provide generalizable methods and knowledge. Applications for studies relevant only to a particular disease or organ system should be directed to the appropriate Institute or Center. Similarly, projects that focus only on a gene or limited set of genes will not be appropriate for NHGRI funding unless broad applicability is clearly explained and use of a single gene or limited set of genes is well justified. All applications, regardless of focus, should explain how generalizable, broadly useful, and transformative the findings and approaches will be to the field of genomic medicine.

Scope and Objectives

This NOFO centers on addressing research gaps related to the use of genomic information to advance the application of genomics in clinical care.

In the context of their relevance to genomic medicine, the following are some examples of the areas of research studies that would be appropriate for these FOAs, grouped by category:

- **Implementing genomic medicine** - Implementation research projects would elucidate whether use of genomic information about an individual improves clinical care and/or health outcomes, or how best to implement genomic medicine.
 - Understanding facilitators and barriers in implementation of genomic medicine and pharmacogenomics

across broad settings, especially their diffusion and sustainability in diverse clinical settings.

- Identifying and assessing implementation science frameworks that can be used to study genomic medicine in academic clinical settings, non-academic clinical settings, or both.
 - Developing computational, health-economic, or other analytical approaches that identify characteristics of participants likely to derive the greatest (or conversely, the least) value from incorporating various types of genomic data into clinical care.
 - Comparing health care utilization or disease outcomes with and without implementation of clinical decision support tools for genomics.
 - Assessing, innovating, scaling, and/or researching the implementation of novel genetic counseling practices to address the need for more healthcare professionals trained in genetic counseling.
- **Facilitating analysis of clinical genomic data** - The pace and volume of genomic data being generated presents challenges and opportunities for methods and tools that facilitate clinical analysis. Projects could involve building and testing tools.
 - Methods that automate or otherwise improve the efficiency of clinical annotation and interpretation of genomic variants, especially those that allow for dynamic interpretation as knowledge of variants and clinical recommendations evolve.
 - Integrating genomic data from various sources with other data types such as environmental data, family history, social determinants of health, transcriptomics, epigenomics, functional data, or model organism data and assessing genomic data's contributions to and improvements in predictive value, clinical validity, and/or clinical utility.
 - **Improving clinical access and sharing of genomic data** - Clinical access and sharing of genomic data is critical to promoting genomic medicine.
 - Assessing genomic data integration throughout health systems and how genomic information influences healthcare providers, payers, and regulators.
 - Enhancing portability of genomic data that uses standards for genomic information and allows for iterative use (e.g., integration with EHR apps, transporting to other care systems).

NCI areas of interest

- Evaluating the implementation of cancer genomic data in understudied populations and/or assessing the communication of genomic test results and potential uncertainty of interpretation.
- Assessing the implementation of cancer genomic testing in accordance to clinical guidelines and evaluating cancer outcomes among understudied populations.
- Examining utility of germline genetic data for informing cancer screening, prevention and control.
- Integrating cancer specific genomic data from various sources with other data types such as environmental data, family history, transcriptomics, epigenomics, functional data, or model organism data and assessing genomic data's contributions to and improvements in predictive value, clinical validity, and/or clinical utility.
- Assessing cancer genomic data integration throughout health systems and the impact on cancer outcomes.
- Leveraging or enhancing of relevant NCI resources and investments for identifying and recruiting cancer cases, for incorporating data through linkages to existing databases with relevant exposure, administrative, and health-related data, for community engagement, and for cost-effective exposure assessment and genomic profiling.

Investigators new to the field of genomic medicine are encouraged to apply. Genomic medicine research is a multidisciplinary field and research teams may include experts from multiple disciplines, including but not limited to the fields of clinical genetics including genetic counseling and nursing, as well as genetic epidemiology, biostatistics, data science, public health, implementation science, health outcomes research, health economics, health equity and disparities, health policy, and molecular genetics.

To promote progress in the genomic medicine field, awardees will be required to budget for and participate actively and openly in at least one grantee meeting per year with other awardees and NHGRI staff. Substantial information sharing will be required as appropriate and consistent with achieving the goals of the program and is a condition of the award; failure to openly share information may be grounds for discontinuation of funding. These annual meetings will serve as venues to facilitate sharing of research findings; promote the exchange of ideas; enable discussion of opportunities, challenges, and emerging needs; develop expertise and abilities among collaborators newer to genomic medicine; and accelerate progress in genomic medicine. Other investigators in the field may be invited to participate in these grantee meetings.

Link to Additional Information: <https://grants.nih.gov/grants/guide/rfa-files/RFA-HG-23-033.html>

Non-Scientific Forecasted Opportunities

1. Spotlight on Humanities in Higher Education, NEH

This program supports the exploration and development of small projects that would benefit underserved populations through the teaching and study of the humanities at small and medium-sized colleges and universities.

Link to Additional Information: <https://www.grants.gov/search-results-detail/350805>

Scientific Forecasted Opportunities

1. Early Psychosis Intervention Network (EPINET): Learning Health Care Research to Improve Mental Health Services and Outcomes (P01 Clinical Trial Optional), NIMH

The National Institute of Mental Health intends to publish a Notice of Funding Opportunity (NOFO) to solicit applications from scientific hubs to support learning health care research in clinics offering evidence-based Coordinated Specialty Care (CSC) to persons in the early stages of psychotic illness. For this NOFO, early psychosis is defined as the period spanning the onset of an affective or non-affective psychotic disorder and up to 5 years following the first episode of psychosis (FEP). Each scientific hub will link multiple early psychosis service programs through (1) the EPINET Core Assessment Battery (CAB) of early psychosis clinical features, CSC services, and treatment outcomes; (2) informatics tools to collect de-identified, person-level data across sites; and (3) a unified approach for analyzing pooled data and disseminating promising findings rapidly across the network. The P01 mechanism supports research that has multiple distinct but synergistic projects built around a clearly defined unifying central theme or well-defined overall objective. The NOFO is expected to be published in Fall 2023 with an expected application due date in Spring 2024. This NOFO will utilize the P01 mechanism.

Link to Additional Information: <https://www.grants.gov/search-results-detail/350668>

2. Centers of Excellence for Translational Research (CETR) (U19 Clinical Trial Not Allowed), NIH

The National Institute of Allergy and Infectious Diseases intends to publish a Notice of Funding Opportunity (NOFO) to solicit applications from single institutions or a consortium of institutions to participate in the Centers for Excellence in Translational Research (CETR) program. This cooperative agreement program will support multidisciplinary translational research Centers focused on generating, validating, and advancing medical countermeasures against bacteria and/or fungi that have known and emerging resistance to current therapies. Pathogens of interest for the NOFO will be a subset of the

2019 CDC Report on Antibiotic Resistance Threats in the US, <https://www.cdc.gov/drugresistance/biggest-threats.html> . The NOFO is expected to be published in winter 2023 with an expected application due date in spring 2024. This NOFO will utilize the U19 activity code.

Link to Additional Information: <https://www.grants.gov/search-results-detail/350664>

3. National Cancer Institute's Investigator-Initiated Early Phase Clinical Trials for Cancer Treatment and Diagnosis (R01 Clinical Trial Required), NIH

The National Cancer Institute (NCI) intends to reissue the NCI's Investigator-Initiated Early Phase Clinical Trials for Cancer Treatment and Diagnosis (R01 Clinical Trial Required) Notice of Funding Opportunity (NOFO), which will support research projects that propose early phase (Phase 0, I, and II) investigator-initiated clinical trials focused on cancer-targeted diagnostic and therapeutic interventions of direct relevance to the research mission of the NCI's Division of Cancer Treatment and Diagnosis (DCTD), and the Office of HIV and AIDS Malignancies (OHAM, Office of the Director). Interested applicants are strongly encouraged to consult the NCI DCTD website and/or the OHAM website to learn more about the various program goals, research priorities, and strategies developed to fight cancer. The NOFO is a re-issuance of PAR-21-033. The NOFO is expected to be published in late fall 2023 with an expected first application due date in late winter 2024.

Link to Additional Information: <https://www.grants.gov/search-results-detail/350667>

Proposals Accepted Anytime

1. Division of Environmental Biology, NSF
<https://www.nsf.gov/pubs/2022/nsf22541/nsf22541.pdf>
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
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://www.nsf.gov/pubs/2023/nsf23548/nsf23548.htm>
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>

Announcing Previous Important Funding Opportunities

1. Division of Physics: Investigator-Initiated Research Projects (PHY), NSF
Deadlines: November 20 and 22, 2023; December 5 and 12, 2023
<https://www.nsf.gov/pubs/2023/nsf23615/nsf23615.htm>
2. Early-stage Biomedical Data Repositories and Knowledgebases (R24 Clinical Trial Not Allowed), NIH
Deadline: November 26, 2023
<https://grants.nih.gov/grants/guide/pa-files/PAR-23-236.html>
3. Collaborative Research, NEH
Deadline: November 29, 2023
<https://www.neh.gov/grants/research/collaborative-research-grants>
4. Ideas Lab: Personalized Engineering Learning (PEL), NSF
Deadline: November 29, 2023
<https://www.nsf.gov/pubs/2023/nsf23627/nsf23627.htm>
5. National Rural Health Policy, Community, and Collaboration Program, HRSA
Deadline: November 30, 2023
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=349399>
6. Centers of Research Excellence in Science and Technology (CREST Centers), NSF
Deadline: December 1, 2023
<https://www.nsf.gov/pubs/2023/nsf23595/nsf23595.htm>
7. Focused Research Groups in the Mathematical Sciences (FRGMS), NSF
Deadline: December 6, 2023
<https://www.nsf.gov/pubs/2023/nsf23621/nsf23621.htm>
8. Food and Agricultural Non-Formal Education (FANE)
Deadline: December 7, 2023
<https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-education-workforce-development>
9. Limited Competition: Development and Renovation of Facilities for Expanding the Breeding Capacity of Specific Pathogen Free Non-Human Primates to Support HIV/AIDS-related Research (C06 Clinical Trial Not Allowed), NIH
Deadline: December 7, 2023
<https://grants.nih.gov/grants/guide/pa-files/PAR-24-033.html>
10. Food and Agriculture Service-Learning Program, USDA/NIFA
Deadline: December 7, 2023
<https://www.nifa.usda.gov/grants/funding-opportunities/food-agriculture-service-learning-program>

11. Organismal Response to Climate Change, NSF
Deadline: December 13, 2023
<https://www.nsf.gov/pubs/2023/nsf23622/nsf23622.htm>
12. Enabling Partnerships to Increase Innovation Capacity, NSF
Deadline: December 15, 2023
<https://www.nsf.gov/pubs/2023/nsf23625/nsf23625.htm>
13. NIDA REI: Academic Research Enhancement Award (AREA) Training a Diverse Data Science Workforce for Addiction Research (R15 Clinical Trial Not Allowed), NIH
Deadline: December 24, 2023
<https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-24-026.html>
14. Interventions on Health and Healthcare Disparities on Non-Communicable and Chronic Diseases in Latin America: Improving Health Outcomes Across the Hemisphere (R01 - Clinical Trial Required), NIH
Deadline: January 5, 2024
<https://grants.nih.gov/grants/guide/pa-files/PA-23-304.html>
15. Unveiling Health and Healthcare Disparities in Non-Communicable and Chronic Diseases in Latin America: Setting the Stage for Better Health Outcomes Across the Hemisphere (R01 - Clinical Trials Not Allowed), NIH
Deadline: January 5, 2024
<https://grants.nih.gov/grants/guide/pa-files/PA-23-303.html>
16. Digital Humanities Advancement Grants, NEH
Deadline: January 11, 2024
<https://www.neh.gov/grants/odh/digital-humanities-advancement-grants>
17. National Center for Education Research (NCER): Research Training Programs in The Education Sciences, Assistance Listing Number (ALN) 84.305B, D & N, Dept. of Education
Deadline: January 11, 2024
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=350118>
18. Preservation Assistance Grants for Smaller Institutions, NEH
Deadline: January 11, 2024
<https://www.neh.gov/grants/preservation/preservation-assistance-grants-smaller-institutions>
19. National Digital Newspaper Program, NEH
Deadline: January 12, 2024
<https://www.neh.gov/grants/preservation/national-digital-newspaper-program>
20. Cognitive Neuroscience (CogNeuro), NSF
Deadline: January 15 to February 1, 2024
<https://new.nsf.gov/funding/opportunities/cognitive-neuroscience-cogneuro-0>
21. Research and Mentoring for Postbaccalaureates in Biological Sciences (RaMP), NSF
Deadline: January 18, 2024
<https://www.nsf.gov/pubs/2023/nsf23514/nsf23514.htm>
22. Research on Innovative Technologies for Enhanced Learning (RITEL), NSF
Deadline: January 24, 2024
<https://www.nsf.gov/pubs/2023/nsf23624/nsf23624.htm>

23. Ethical and Responsible Research (ER2), NSF
Deadline: January 25, 2024
<https://www.nsf.gov/pubs/2023/nsf23630/nsf23630.htm>
24. National Institute of General Medical Sciences Predoctoral Basic Biomedical Sciences Research Training Program (T32), NIH
Deadline: January 25, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-23-228.html>
25. Cancer Research Education Grants Program - Research Experiences (R25 Clinical Trial Not Allowed), NIH
Deadline: January 25, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-23-277.html>
26. Measures and Methods to Advance Research on Minority Health and Health Disparities-Related Constructs (R01 Clinical Trial Not Allowed), NIH
Deadline: February 5, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-22-072.html>
27. Population Approaches to Reducing Alcohol-related Cancer Risk (R01 Clinical Trial Optional), NIH
Deadline: February 5, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-23-244.html>
28. Leveraging Extant Data to Understand Developmental Trajectories of Late Talking Children (R21 Clinical Trial Not Allowed), NIH
Deadline: February 7, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-24-045.html>
29. Information and Practice Needs Relevant to Late Talking Children (R21 Clinical Trial Not Allowed), NIH
Deadline: February 7, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-24-046.html>
30. Landmarks of American History and Culture, NEH
Deadline: February 14, 2024
<https://www.neh.gov/grants/education/landmarks/highered>
31. Blueprint and BRAIN Initiative Program for Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences (BP BRAIN-ENDURE) (R25 Clinical Trial Not Allowed), NIH
Deadline: February 15, 2024
<https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-24-014.html>
32. Summer Research Education Experience Program (R25 Clinical Trial Not Allowed), NIH
Deadline: February 18, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-21-168.html#>
33. NLM Grants for Scholarly Works in Biomedicine and Health (G13 Clinical Trial Not Allowed), NIH
Deadline: February 26, 2024
<https://grants.nih.gov/grants/guide/pa-files/PAR-23-183.html>
34. Mathematical Sciences Research Institutes, NSF
Deadline: March 14, 2024
<https://www.nsf.gov/pubs/2023/nsf23606/nsf23606.htm>

35. Innovation Corps Pilot, NASA
Deadline: March 29, 2024
<https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId=%7B214C3AE7-5428-D4C1-457A-E00CB2338777%7D&path=open>
36. STEM Program, Office of Naval Research
Deadline: April 2, 2024
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=347274>
37. Coastal Program - FY24, U.S. Fish and Wildlife Service
Deadline: May 30, 2024
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=350418>
38. BRAIN Initiative: Development and Validation of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in the Brain (R01 Clinical Trial Not Allowed), NIH
Deadline: June 7, 2024
<https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-24-280.html>
39. Environmental Education Local Grants Program for Region 2, EPA
Deadline: July 1, 2024
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=350204>
40. 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>
41. 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>
42. Advanced Scientific Computing Research (ASCR), Department of Energy
Deadline: September 30, 2024
<https://science.osti.gov/ascr>
43. Biological and Environmental Research (BER), Department of Energy
Deadline: September 30, 2024
<https://science.osti.gov/ber>
44. F24AS00431 FY24 Recovery Implementation, Fish and Wildlife Service
Deadline: September 30, 2024
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=350612>
45. Basic Energy Sciences (BES), Department of Energy
Deadline: September 30, 2024
<https://science.osti.gov/bes/>
46. Fusion Energy Sciences (FES), Department of Energy
Deadline: September 30, 2024
<https://science.osti.gov/fes/>



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