NSF Funding Opportunities of Interest

Directorate for Biological Sciences (BIO)

U.S. National Science Foundation

About the U.S. National Science Foundation Directorate for Biological Sciences (BIO)

The NSF Directorate for Biological Sciences (BIO) supports research and education that advances understanding of all forms of life at all scales — from cells to ecosystems and across space and time. BIO-supported research advances the frontiers of biological knowledge — at and across organizational, geographic and temporal scales — and provides a theoretical basis for prediction within complex, dynamic living systems through the integration of scientific disciplines.

The directorate also supports several user facilities and centers that create or synthesize data; provide access to tools, technology and expertise; and provide educational and training opportunities.

Division of Biological Infrastructure (DBI) Research Resources Programs

DBI supports the tools and infrastructure necessary to conduct biological sciences research across their lifecycle, including supporting the design or improve research tools and methods with a focus on bioinformatics, instrumentation and research methods; the implementation of, scaling of, or major improvements to research tools, products, and services; and the continued operation of existing research infrastructure—primarily cyberinfrastructure or biological living stocks.

Division of Environmental Biology (DEB) Core Programs

DEB supports research and training on evolutionary and ecological processes acting at the level of populations, species, communities, ecosystems, macrosystems and biogeographic extents. Foci include ecosystem science, evolutionary processes, population and community ecology, and systematics and biodiversity science.

Division of Integrative Organismal Systems (IOS) Core Programs

IOS supports fundamental research aimed at understanding organisms as units of biological organization, encouraging the use of integrative, interdisciplinary approaches to solving complex problems in organismal biology. Foci include behavioral systems, developmental systems, neural systems, physiological and structural systems, and plant genomics.

Division of Molecular and Cellular Biosciences (MCB) Core Programs

MCB supports research on living systems at the molecular, subcellular and cellular levels, including cellular dynamics and function; genetic mechanisms; molecular biophysics; and systems and synthetic biology.

Integrative Research in Biology (IntBIO) Track

Supports integrative biological research that spans subdisciplines and incorporates cutting-edge methods, tools, and concepts from each to produce groundbreaking biological discovery that is synergistic, such that the sum is greater than the parts. Proposals can be submitted to this track in any of the core programs listed above.

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Behavioral Systems

Supports integrative research on the behavior of individuals and groups of animals. Supports species-specific and comparative studies, as well as modeling and theoretical approaches.

Developmental Systems

Supports research on how the properties of organisms emerge from the interactions of developmental processes. Focus areas include plant, fungal and microbial development; animal development; and the evolution of developmental mechanisms.

Neural Systems

Supports mechanistic studies in neuroscience, from structure to function in natural context, that span multiple levels of analysis, from molecular and cellular to complex behavioral aspects of organisms.

Physiological and Structural Systems

Supports research on whole-organism physiology and functional morphology, including mechanisms underlying interactions among viruses, prokaryotes and eukaryotes; organismal structural features; and organismal responses to abiotic/biotic environments.

Plant Genome Research Program

Supports genome-scale plant research and the development of tools and resources that advance functional plant genomics — addressing challenges of biological, societal and economic importance.

Learn More About IOS

Homepage | Programs | Events | Supplement Guidance | Blog

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Additional Funding Opportunities for the Division of Integrative Organismal Systems (IOS) Community

Biodiversity on a Changing Planet (BoCP)

Supports design and implementation projects studying functional biodiversity in the context of unprecedented environmental change. Projects must integrate cellular, organismal, ecological, evolutionary, geological or paleontological approaches.

Biology Integration Institutes (BII)

Supports diverse, collaborative teams performing research, education and training on critical questions spanning multiple disciplines within and beyond biology. The goal is to stimulate creative integration of disparate fields using innovative experimental, theoretical, and modeling approaches to discover underlying principles operating across multiple levels of life, from molecules to cells, organisms, species, ecosystems, biomes and the entire Earth.

Building Synthetic Microbial Communities for Biology, Mitigating Climate Change, Sustainability and Biotechnology (Synthetic Communities)

Supports research into synthetic microbial communities, including how they form and evolve, how to use them to address biological questions, and/or how to build them for biotechnology or bioengineering applications.

Ecology and Evolution of Infectious Diseases (EEID)

Supports research on the ecological, evolutionary, organismal and social drivers that influence infectious diseases and increase quantitative and/or computational understanding of pathogen transmission dynamics.

Enabling Discovery through GEnomics (EDGE)

Supports the development of genomic tools and research to uncover the relationships between genes and phenotypes across environmental, developmental, social and genomic contexts.

Organismal Response to Climate Change (ORCC)

Supports research, research coordination networks and conferences that integrate ecological and evolutionary approaches with genomic, physiological, structural, developmental, neural or behavioral understanding of organismal responses to climate change. The new solicitation also features a track on Microorganism-mediated Organismal Resilience to Climate Change (MMORCC track), offered in part with the Paul G. Allen Frontiers Group and The Paul G. Allen Family Foundation.

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Dear Colleague Letters (DCLs)

DCLs can provide general information to the community, clarify or amend an existing policy or document, or inform the NSF proposer community about upcoming opportunities or special competitions for supplements to existing awards. They also may be used to announce NSF's interest in receiving proposals in specified topical areas.

Advancing Research at the intersection of Biology and Artificial Intelligence (AI)/ Machine Learning (ML)

Encourages proposals that advance biological research through the use of AI/ML or development of AI/ML methods

Advancing Plant Transformation

Invites proposals focused on plant genetic transformation to existing programs at NSF and USDA. Proposals can involve basic research, long-term studies, tool development, or emphasize potential outcomes with societal benefit.

Bioinspired Design Collaborations to Accelerate the Discovery-Translation Process

Aims to facilitate the translation of knowledge generated through research in the biological and engineering sciences to solutions and prototypes needed for societal and economic impacts.

Innovative Use of Scientific Collections (IUSC)

Invites proposals that foster Innovative Use of Scientific Collections and/or associated digital data for novel research, education, and training applications within and across STEM disciplines.

Leveraging Innovation From Evolution (LIFE)

Projects that use comparative approaches to identify evolutionary convergent adaptations to life's challenges and the mechanisms that underlie them. Proposals should include relevance of the proposed work to inform applications towards a sustainable global bioeconomy.

Neurobiology in Changing Ecosystems (NiCE)

In partnership with the Kavli Foundation, invites proposals that apply new, integrative approaches to understand molecular, biophysical, cellular and circuit-level neural processes underlying adaptation and resilience in response to changing environments organisms face due to anthropogenic activity.

Organismal Systems and Infection Biology (OSIB)

Supports research proposals focusing on infection processes in natural systems. All study systems are appropriate except for those that focus solely on human diseases. Comparative approaches to study the immune system are encouraged.

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Plant Synthetic Biology

Highlights existing programs offering support to advance the growing field of plant synthetic biology, including support for basic research, tool development, and applications, and outcomes with benefits to society.

Using Long-Term Research Associated Data (ULTRA-Data)

Encourages projects that use/reuse long-term environmental data to advance understanding of ecological and evolutionary questions.

BIO has also released DCLs on the following topics:

- Collaboration with BioMADE on funding of basic research and fundable manufacturing readiness level (MRL) 4-7 projects
- Posttranscriptional and Postranslational Modification
- Use-Inspired Creativity Extensions for the Bioeconomy

For more information on any DCL, please use the NSF Funding Search Tool.

Broadening Participation in STEM Opportunities

Below are a few examples of NSF funding opportunities aimed at broadening participation in STEM. Many more opportunities can be searched using the QR code to the right.

- Historically Black Colleges and Universities - Excellence in Research (HBCU-EiR)
- Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program)
- Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES)
- Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)
- Growing Research Access for Nationally Transformative Equity and Diversity (GRANTED)
- Tribal Colleges and Universities Program (TCUP)

Network Building Opportunities

Research Coordination Networks (RCN)

Supports networks that foster communication and new collaborations among scientists, engineers, and educators who share a common interest in a new or developing area of science or engineering.

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BIO Support Across Your Career

To ensure a diverse STEM workforce in academia and beyond, BIO supports **students** and **primary investigators** at career transition points across diverse institution types. Many of these programs are managed by DBI's Human Resources Cluster with others being NSF-wide.

K-12	Research Assistantships for High School Students (RAHSS) Supplemental Awards				
Undergrad	Research Experiences for Undergraduates Sites (REU Sites)	Research Experiences for Undergraduates (REU) Supplemental Awards	Research Coordination Networks in Undergraduate Biology Education (RCN-UBE)	Opportunities for Primarily Undergraduate Institutions (PUIs) Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA)	Opportunities for Minority Serving Institutions (MSIs) Historically Black Colleges and Universities - Undergraduate Program (HBCU-UP) and Tribal Colleges and Universities Program (TCUP)
Postbacc	Post-Baccalaureate Research and Training (PBRT) Supplemental Awards				
Grad	Graduate Research Fellowship Program (GRFP)	National Research Traineeship (NRT)	Non-Academic Research Internships for Graduate Students (INTERN)		
Postdoc	Postdoctoral Research Fellowships in Biology (PRFB)				
Early Career Faculty	Faculty Early Career Development Program (CAREER)	Building Research Capacity of New Faculty in Biology (BRC-BIO)			
Mid-Career Faculty	Mid-Career Advancement (MCA) Program				

RAHSS REU RCN-UBE RUI/ROA PBRT GRFP INTERN NRT

PRFB BRC-BIO CAREER MCA

BIO Homepage

Subscribe to news and events emails from BIO

Reviewers are essential! Become one.

NSF Funding Search

Proposal & Award Policies and Procedures Guide

Other Types of Proposals

In addition to standard research proposals, there are other types of proposals that may be submitted to NSF. Each of them is described below, and you can read more about them in NSF's Proposal & Award Policies and Procedures Guide (PAPPG) at https://new.nsf.gov/policies/pappg.

Grants for Rapid Response Research (RAPID)

Supports research having a severe urgency with regard to availability of, or access to, data, facilities, or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events.

Early-Concept Grants for Exploratory Research (EAGER)

Supports exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches.

Research Advanced by Interdisciplinary Science and Engineering (RAISE)

Supports bold, interdisciplinary projects whose scientific advances lie in great part outside the scope of a single program or discipline, such that substantial funding support from more than one program or discipline is necessary.

Grant Opportunities for Academic Liaison with Industry (GOALI)

Seeks to stimulate collaboration between institutions of higher education and industry.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED)

Aims to reduce or remove barriers to participation in research and training by persons with physical disabilities by providing special equipment and assistance.

Career Life Balance Supplements (CLB)

Supplemental funding to support additional personnel (e.g., research technicians or equivalent) to sustain research when the PI is on family leave.