Come meet with us at SICB!

NSF Booth #208 open through Friday at 5pm.

Sign ups available for individual meetings with NSF staff.

Integrative Organismal Systems (IOS)
Behavioral Systems Colette St. Mary, Suzy Renn
Developmental Systems Anna Allen
Neural Systems Paul Forlano, Melissa Coleman
Physiological and Structural Systems Ted Morgan, Kathy Dickson, Miriam Ashley-Ross
Plant Genome Research Program dokamuro@nsf.gov
Leadership Denise Dearing, Michelle Elekonich
Science Advisor Julie Kellner
Science Assistant Liz Wenker

Molecular & Cellular Biosciences (MCB)
Genetic Mechanisms Steve DiFazio
Directorate for Biological Sciences (BIO)

To enable discoveries for understanding life, advance the frontiers of biological knowledge, and provide a theoretical basis for prediction within complex, dynamic living systems through an integration of scientific disciplines.

https://www.nsf.gov/bio/about.jsp
Biological Research Across Scales
(Four BIO Divisions)
# Integrative Organismal Systems (IOS) Core Programs

<table>
<thead>
<tr>
<th>Behavioral Systems</th>
<th>Developmental Systems</th>
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<tbody>
<tr>
<td>Animal Behavior</td>
<td>Plant, Fungal, and Microbial Developmental Mechanisms</td>
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<td>Animal Developmental Mechanisms</td>
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<td>Evolution of Developmental Mechanisms</td>
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<tr>
<th>Neural Systems</th>
<th>Physiological and Structural Systems</th>
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<tr>
<td>Organization</td>
<td>Symbiosis, Infection, and Immunity</td>
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<tr>
<td>Activation</td>
<td>Physiological Mechanisms &amp; Biomechanics</td>
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<tr>
<td>Modulation</td>
<td>Integrative Ecological Physiology</td>
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<td>Plant Biotic Interactions (NSF-NIFA)</td>
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**Plant Genome Research Program**
Molecular & Cellular Biosciences (MCB) Core Programs

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<tr>
<th>Program</th>
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<tr>
<td>Cellular Dynamics and Function</td>
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<td>Genetic Mechanisms</td>
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<tr>
<td>Molecular Biophysics</td>
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<td>Systems and Synthetic Biology</td>
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Environmental Biology (DEB) Core Programs

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<tr>
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<tbody>
<tr>
<td>Ecosystem Science</td>
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<tr>
<td>Evolutionary Processes</td>
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<tr>
<td>Population and Community Ecology</td>
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<tr>
<td>Systematics and Biodiversity Science</td>
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</table>
IntBIO Integrative Research in Biology

Track in BIO core programs (IOS, DEB, MCB)

Supports integrative biological research that spans sub-disciplines 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.

The research should produce a novel, holistic understanding of how biological systems function and interact across different scales of organization, e.g., from molecules to cells, tissues to organisms, species to ecosystems and the entire Earth.

Where appropriate, projects should apply experimental strategies, modeling, integrative analysis, advanced computation, or other research approaches to stimulate new discovery and general theory in biology.
### Biological Infrastructure (DBI)

#### Human Resources
- Postdoctoral Research Fellowships in Biology (PRFB)
- Research Coordination Networks in Undergraduate Biology Education (RCN-UBE)
- Research Experiences for Undergraduates (REU)
- Building Research Capacity for New Faculty in Biology (BRC-BIO)
- Research and Mentoring for Postbaccalaureates in Biological Sciences (RaMP)
- Research Experiences for Teachers Sites in Biological Sciences (BIORETS)
- Leading Culture Change through Professional Societies of Biology (BIO-LEAPS)

#### Research Resources
- Infrastructure Innovation for Biological Research (Innovation)
- Infrastructure Capacity for Biological Research (Capacity)
- Sustaining Infrastructure for Biological Research (Sustaining)
- Major Research Instrumentation Program (MRI)

#### Centers, Facilities, and Additional Research Infrastructure
- Biology Integration Institutes (BII)
- Center for Advancement of Synthesis of Open Environmental Data and Sciences
- Management of Operations and Maintenance of the National Ecological Observatory Network (NEON)
- Mid-scale Research Infrastructure-1 and 2
National Ecological Observatory Network

81 field sites across 20 eco-climatic regions, including Alaska, Hawaii, and Puerto Rico

Data Products, Education & Training
including data for teaching, data science workshops, and a code hub

Research Support & Assignable Assets to support community research incl. access to infrastructure.

https://www.neonscience.org/

Long-Term Ecological Research Network

28 sites support ecological discovery on the influence of long-term and large-scale phenomena

40 years of data available

https://lternet.edu/using-lter-data/
Building a Resilient Planet
Advancing the Bioeconomy
Integration Across the Biological Sciences
Creating Opportunities Everywhere
IOS Synthesis Center for Understanding Organismal Resilience

Establishes a center to advance our ability to explain and predict organismal resiliency and plasticity in response to complex and dynamic environmental circumstance encountered over a lifespan through the synthesis of varied data sets at multiple scales and levels.

Preliminary proposals due January 12, 2024

Contact: Anna Allen (here at SICB) or email IOS-SynCenter@nsf.gov
Organismal Response to Climate Change (ORCC)

Biodiversity on a Changing Planet (BoCP)

Ecology and Evolution of Infectious Diseases (EEID)

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

Dear Colleague Letter
UKRI/BBSRC - NSF/BIO Lead Agency Opportunity in Biological Informatics, Systems Understanding of Host-Microbe Interactions, Synthetic Cells and Cellular Systems, and Synthetic Microbial Communities (NSF 23-143)

Dear Colleague Letter
Organismal Systems and Infection Biology (OSIB)
Advancing the Bioeconomy

- Health
- Climate Change
- Energy
- Food Security
- Agriculture
- Supply Chain Resilience
- National and Economic Security
Advancing the Bioeconomy

- Health
- Climate Change
- Energy
- Food Security
- Agriculture
- Supply Chain Resilience
- National and Economic Security
CASA Bio Catalyzing Across Sectors to Advance the Bioeconomy

Working to create a unified approach to advancing the U.S. bioeconomy across government, private sector, and research communities

Phase 1 – Stakeholders identify synergistic priorities
Phase 2 – Community input on areas of R&D exploration within priorities

How to get involved:
Phase 1: Visit www.casa-bio.net
Phase 2: April 2024 workshops in TBA

NSF 24-023 DCL: Global Centers 2024 Program Competition

Anticipated Topic: Addressing Societal Challenges through the Bioeconomy

Anticipated Priority Goals
Leveraging Biodiversity Across the Tree of Life to Power the Bioeconomy
Biofoundries (also called the Design-Build-Test-Learn process)
Integration Across the Biological Sciences

- Enabling Discovery through GEnomics (EDGE)
- Dear Colleague Letter Bio Inspired Design (BIODesign)
- Designing Synthetic Cells Beyond the Bounds of Evolution (Designer Cells)
- Collaborative Research in Computational Neuroscience (CRCNS)

- Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS)
- Opportunities for Promoting Understanding through Synthesis (OPUS)
- Transitions to Excellence in Molecular and Cellular Biosciences Research (Transitions)
International Collaboration Opportunities
NSF Office of International Science and Engineering (OISE)

- **AccelNet** Accelerating Research through International Network-to-Network Collaborations
- **GC** Global Centers
- **IRES** International Research Experiences for Students
- **PIRE** Partnerships for International Research and Education

Examples of Current International Collaboration Dear Colleague Letters

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<th>Country</th>
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<td>Ireland</td>
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<td>Czech Republic</td>
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<td>Romania</td>
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<td>France</td>
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<td>Germany</td>
<td>Ukraine</td>
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<tr>
<td>India</td>
<td>United Kingdom</td>
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Broadening Participation in STEM

The U.S. National Science Foundation is committed to expanding the opportunities in STEM to people of all racial, ethnic, geographic and socioeconomic backgrounds, sexual orientations, gender identities and to persons with disabilities.

Funding search

Search
All fields
Search

162 filtered results

You can find active funding opportunities on this page. Or, access archived opportunities or search funded awards.

Filter

Reset all filters

Advancing diversity: Show only Programs included in NSF 'Broadening Participation Portfolio'

Limited submissions
Award type

Advancing diversity
Directorate

Division
Education level

Show only NSF-wide/cross-directorate opportunities (27)
Broadening Participation in STEM

Example Programs
• HBCU - EiR Historically Black Colleges and Universities - Excellence in Research
• HSI Program Improving Undergraduate STEM Education: Hispanic-Serving Institutions
• ADVANCE Organizational Change for Gender Equity in STEM Academic Professions
• INCLUDES Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science Initiative

Example Dear Colleague Letters
• STEM-APWD STEM Access for Persons with Disabilities
• RAHSS Research Assistantships for High School Students: Funding to Broaden Participation in the Biological Sciences
• VRS Veterans Research Supplement Program
EPSCoR Established Program to Stimulate Competitive Research
Supporting Researchers Throughout Their Career

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<tr>
<th>K - 12</th>
<th>Undergrad</th>
<th>Postbacc</th>
<th>Grad</th>
<th>Postdoc</th>
<th>New Faculty</th>
<th>Mid-Career Faculty</th>
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Leading Culture Change Through Professional Societies of Biology (BIO-LEAPS)
BRC-BIO Building Research Capacity of New Faculty in Biology

Who: Tenure-track assistant professors (within the first 3 years of their appointment) from MSIs, PUIs, and other non-R1 universities and colleges.

What: Provides support to initiate and build independent research programs. Projects should enable the establishment of sustainable research programs for faculty and enrich undergraduate research experiences to help grow the STEM workforce.

ROA Research Opportunity Awards

Who: Faculty at PUIs (awarded ≤20 PhDs in last 2 years)

What: ROAs enable PUI faculty to pursue research as part of a collaborative research team as visiting scientists at other NSF-supported institutions.
Essential Documents

PAPPG
(new version effective Jan 30, 2024)

+ Solicitation

Division of Environmental Biology (core programs) (DEB)
PROGRAM SOLICITATION
NSF 21-904
REPLACES DOCUMENT(S):
NSF 20-902

IMPORTANT INFORMATION AND REVISED NOTES

MISPRINT CORRECTION:
In the February 1, 2020 proposal requirements document, the solicitation text specified a deadline of May 15, 2020 for proposals to be considered for funding; however, the transportation of proposals to the NSF for review and evaluation does not occur until May 1. As a result, the revised solicitation text specifies a deadline of July 30, 2020 for proposals to be considered for funding.

NSF retains the right to close the solicitation statement of support after the deadline for receipt of proposals has passed, at its discretion.

NSF continues to make every effort to fund proposals submitted under this solicitation. However, due to the current fiscal environment, NSF cannot guarantee that proposals will be funded unless an appropriations act is passed by the Congress that authorizes funding for the program.

General Information

Program Title:
Division of Environmental Biology (DEB)

DEB Solicitation

DEB Program Solicitation

The DEB Division of Environmental Biology (DEB) focuses on research on natural communities and the processes that sustain them. DEB supports research on the structure and function of the communities, the processes that drive the communities, and the role of the communities in the functioning of the ecosystems in which they live. DEB is committed to supporting the research community in its efforts to understand the fundamental processes that govern the structure and function of natural communities, and to strengthen the connection between these fundamental processes and the ecosystems in which they exist.

DEB supports research on the structure and function of natural communities, as well as research on the processes that sustain these communities. DEB is committed to supporting the research community in its efforts to understand the fundamental processes that govern the structure and function of natural communities, and to strengthen the connection between these fundamental processes and the ecosystems in which they exist.

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Safe and Inclusive Work Environments Plan
BIO/GEO pilot

For participating solicitations, a required 2-page supplement including*:

1. a brief description of the field setting and unique challenges for the team;

2. the steps the proposing organization will take to nurture an inclusive off-campus or off-site working environment, including processes to establish shared team definitions of roles, responsibilities, and culture;

3. communication processes within the off-site team and to the organization(s) that minimize singular points within the communication pathway; and

4. the organizational mechanisms that will be used for reporting, responding to, and resolving issues of harassment if they arise.

*plan is in lieu of AOR certification when submitting to programs included in the pilot
BIO Virtual Office Hours (VOH)

Informational webinars focused on:
• New and ongoing funding opportunities
• Topics of general interest
• Open questions from audience to be answered live

Dates & Times (all Eastern Time Zone)
Division of Biological Infrastructure – 3rd Tuesday from 3-4 p.m.
Division of Environmental Biology – 2nd Monday from 1-2 p.m.
Division of Integrative Organismal Systems – 3rd Thursday from 1-2 p.m.
Division of Molecular and Cellular Biosciences – 2nd Wednesday from 2-3 p.m.
BIO Blogs

News, features, highlights, virtual office hour topics, and more from OAD and the BIO Divisions

BIO Buzz (OAD): https://oadblog.nsfbio.com/
DBInfo (DBI): https://dbiblog.nsfbio.com/
DEBrief (DEB): https://debblog.nsfbio.com/
IOS in Focus (IOS): https://iosblog.nsfbio.com/
BIO News and Updates

Sign-up for emails on new solicitations; events; due date reminders; and BIO’s quarterly newsletter, including information on new priorities and solicitations, highlights from the community, and more!

Visit www.nsf.gov and scroll down until you see the Sign up and social media banner, click on the yellow box, and follow the prompts.
NSF Needs You!

Program Directors
Division Directors
Ad hoc Reviewers
Advisory Panelists
Questions? Come meet with us at SICB!

NSF Booth #208 open through Friday at 5pm.

Sign ups available for individual meetings with NSF staff.

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