Research Experiences for Undergraduates (REU) and International Research Experiences for Students (IRES)

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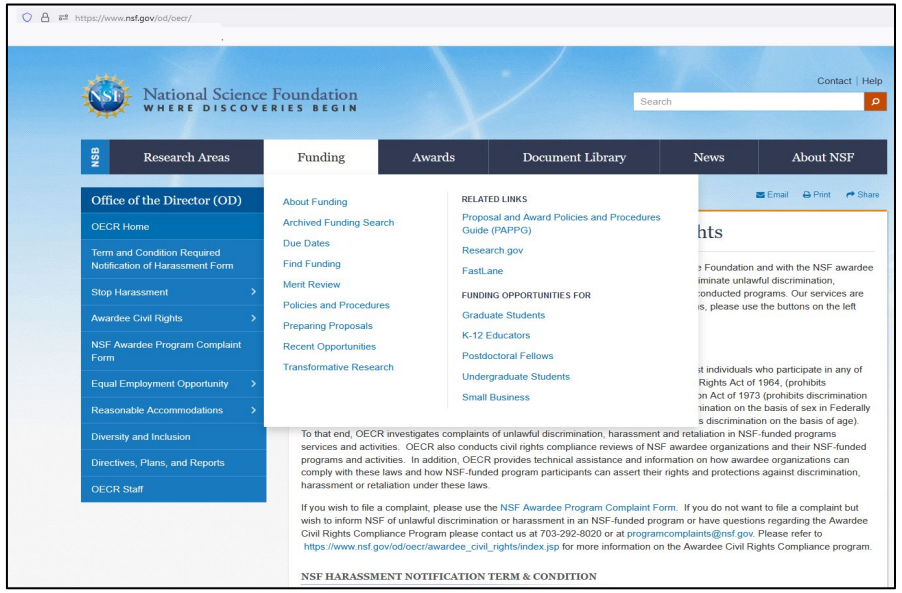
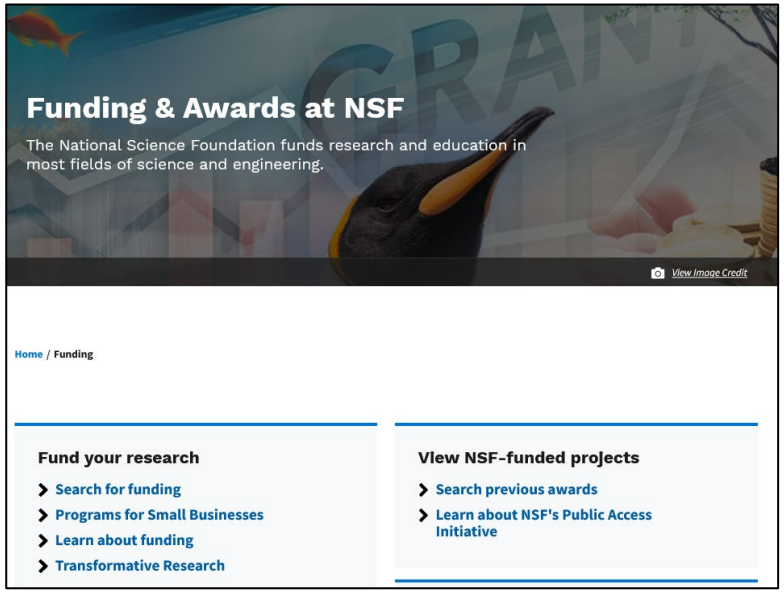
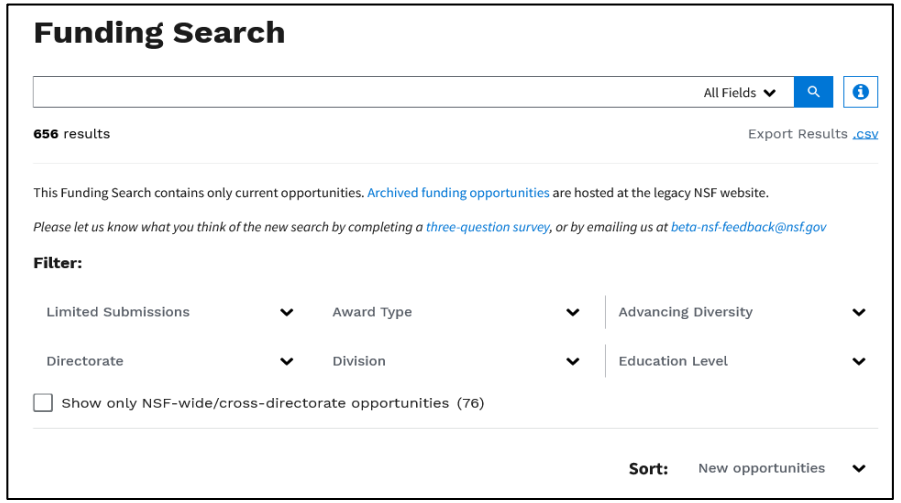
Slides and recaps will be posted on nsf.gov and the DBI blog, dbiblog.nsfbio.com

How to Find Funding Opportunities

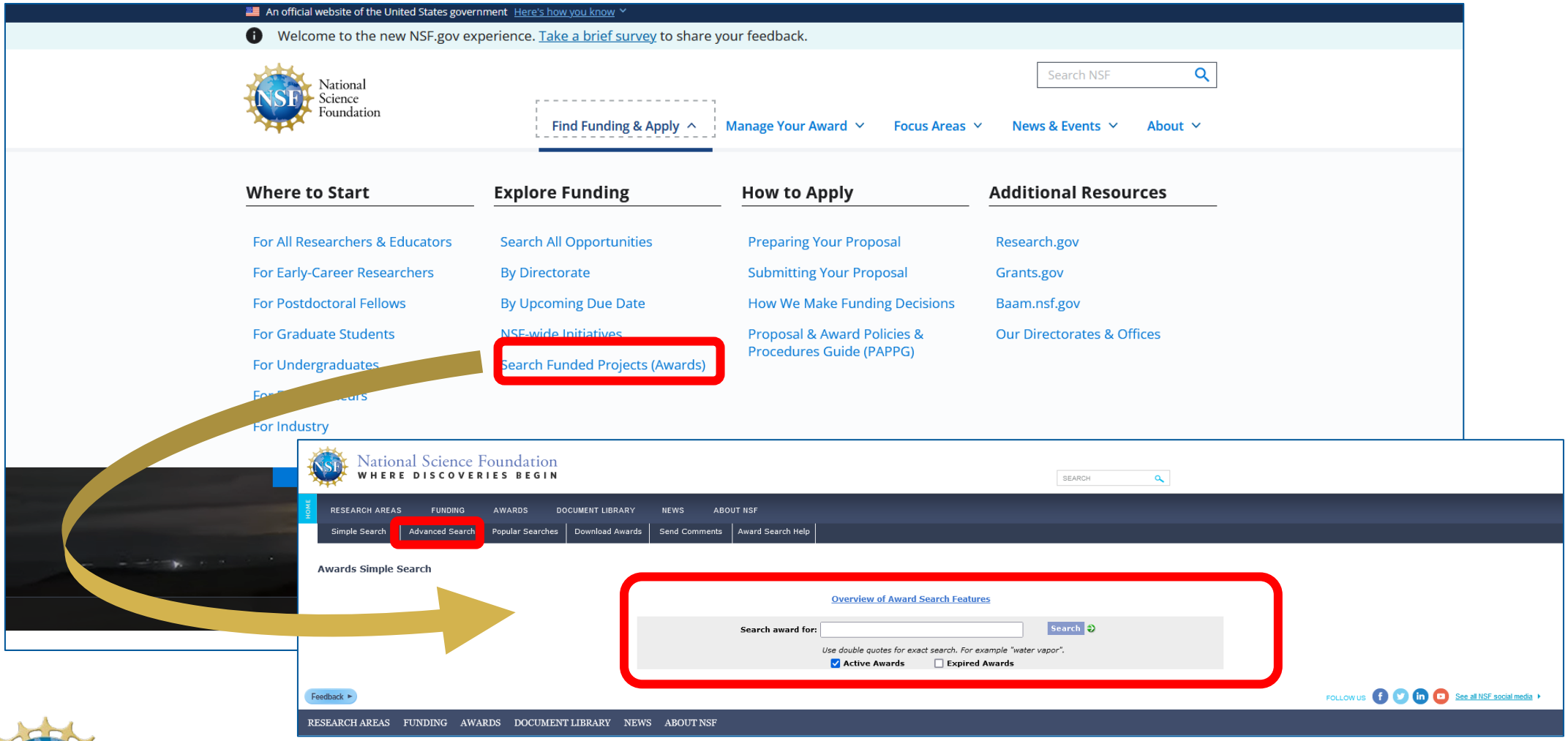






https://beta.nsf.gov/funding/opportunities

Where Does My Research Fit?



Directorate for Biological Sciences (BIO)

Division of Environmental Biology (DEB)

- Ecosystem Sciences
- Evolutionary Processes
- Population and Community Ecology
- Systematics and Biodiversity Science

Division of Integrative Organismal Systems (IOS)

- Behavioral Systems
- Developmental Systems
- Neural Systems
- Physiological and Structural Systems
- Plant Genome Research Program

Division of Molecular and Cellular Biosciences (MCB)

- Cellular Dynamics and Function
- Genetic Mechanisms
- Molecular Biophysics
- Systems and Synthetic Biology

Division of Biological Infrastructure (DBI)

- Research Resources
- Human Resources
- Centers, Facilities, and Additional Research Infrastructure

"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."

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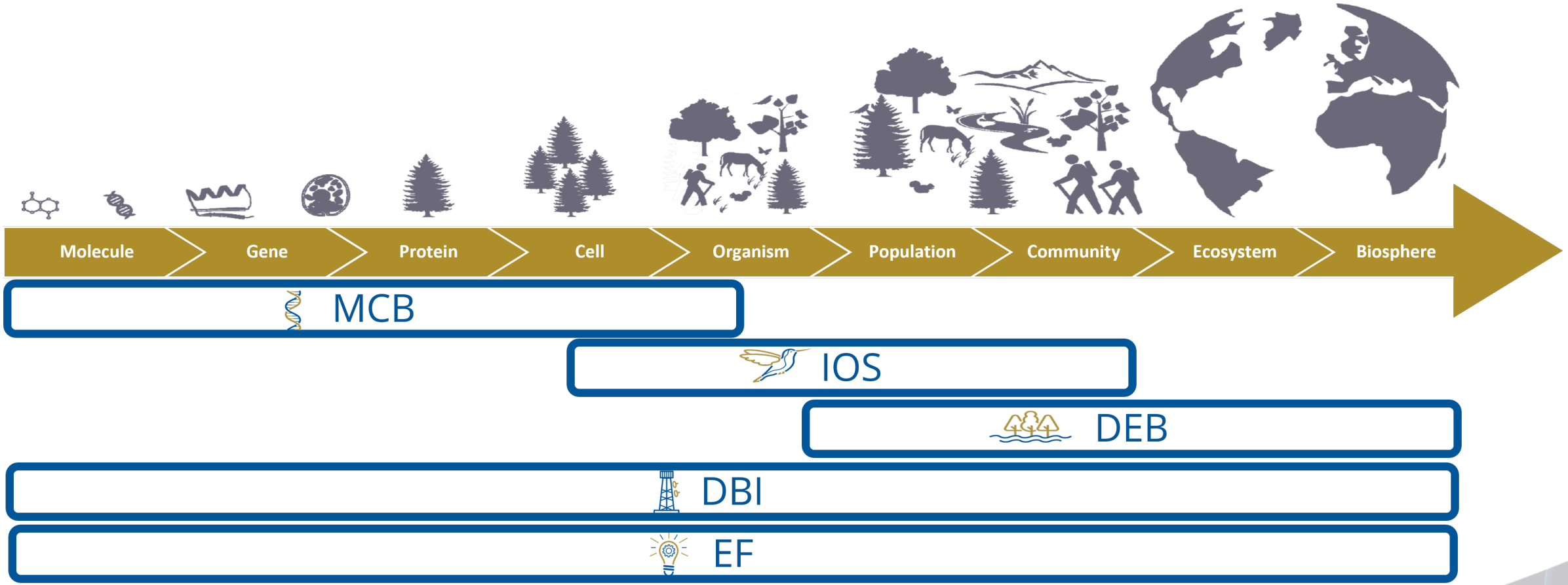
How the BIO Divisions Support Research Across Scales



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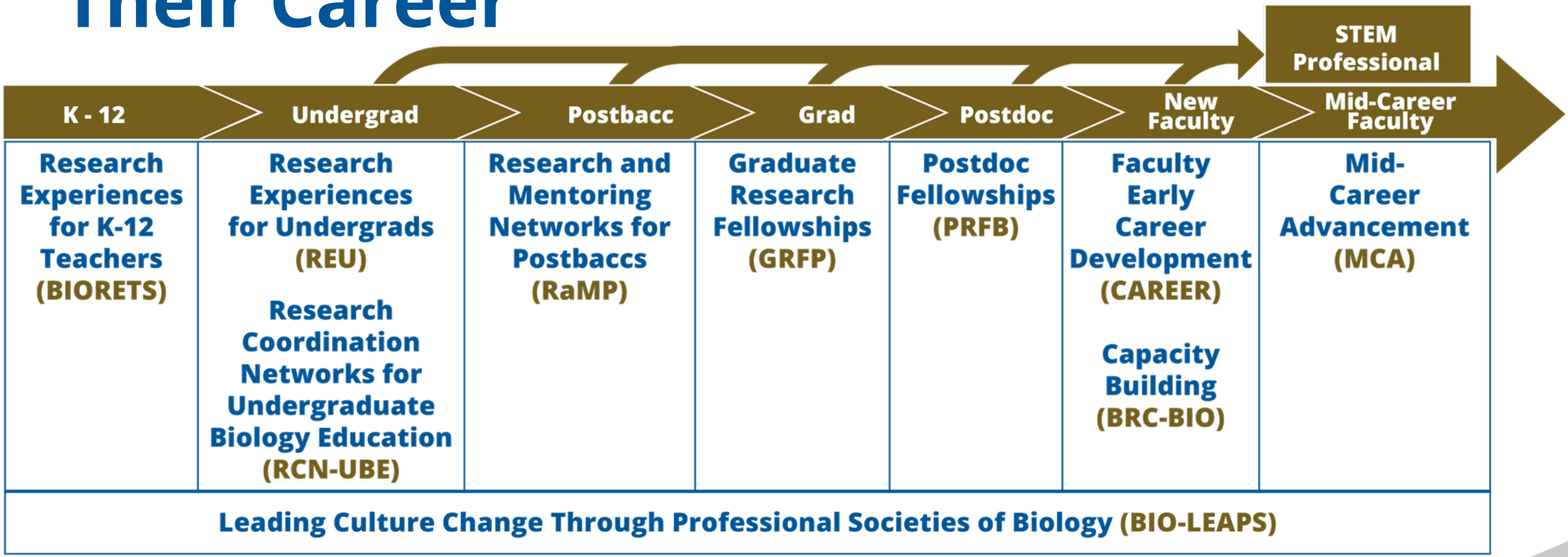
BIO Supports Researchers Throughout Their Career



Research Experiences for Undergraduates: BIO REU Sites

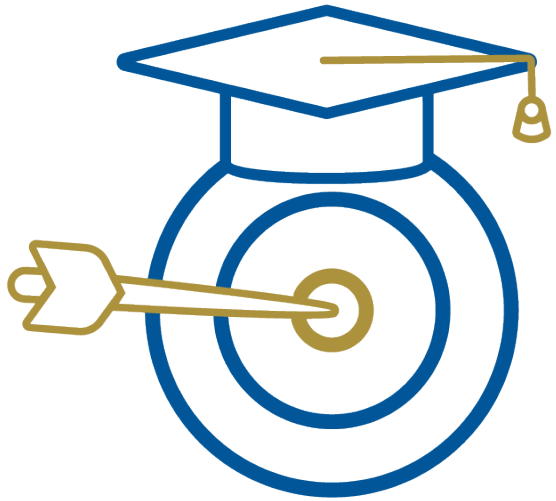
BIO-REU Sites Program Officers

Andrea Holgado Ph.D.
Amanda Simcox Ph.D.

Contact us at: reu.bio@nsf.gov

Goals of the BIO-REU Sites program

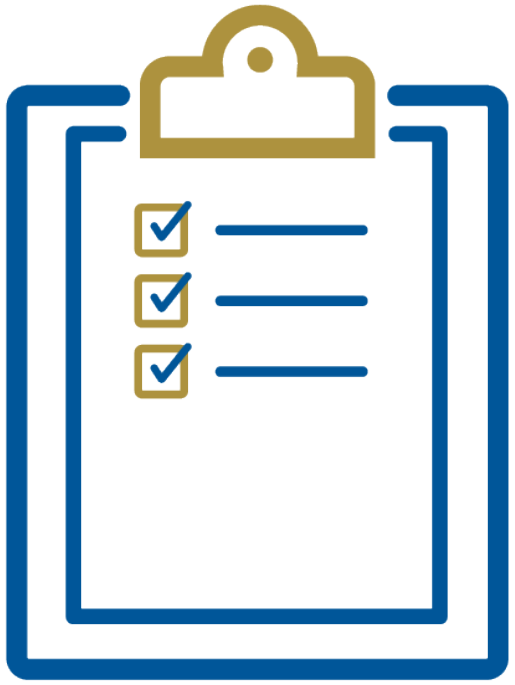
- Provide appropriate and valuable educational experiences for undergraduate students through participation in research.
- Extend high-quality research environments and mentoring to diverse groups of students, particularly those from academic institutions with limited research programs in STEM.
- Engage a group of undergraduates in a theme-focused bioscience research program that includes an immersive dive into science and professional development.



From the solicitation for BIO-REU Sites

- Typically supports 8-10 students for a 10-week summer program
- A significant fraction must come outside the host institution
- At least half must be recruited from institutions with limited research opportunities
- Project costs must be predominantly for student support, for BIO-REU sites this is at least 90% of the Total Direct Costs.
- Most awards provide 3 years of funding.
- To view recent awards, go to https://nsf.gov/awardsearch/

Other information from the solicitation



- **Participants:** Undergraduates currently enrolled in 2 or 4-year college; U.S. citizens, U.S. nationals, or U.S. permanent residents.
- **Training location:** Both international and domestic programs
- **Proposal deadline:** August 21, 2024 or third Wednesday in August, Annually thereafter.

Proposal preparation

PIs can also use grants.gov, however research.gov may be more 'user friendly'

- In Research.gov, select "Prepare New Full Proposal" or "Prepare New Renewal Proposal"*

Note: If you were not the PI or Co-PI on the previous award, Research.gov* **will not *allow preparation of the proposal as a "Renewal Proposal".*

Indicate "renewal" in the "Project Elements" (see Project Summary)

Project Summary
(limited to one page)

- The "Overview" is different than in a typical NSF proposal and must begin with a list of "Project Elements", as specified in the solicitation that summarizes the proposed site in terms of the site, the research focus, the number of trainees etc.
- Intellectual Merit
- Broader Impacts

Project Description
(must not exceed 15 pages)

(a) Overview

(b) Nature of Student Activities.

(c) The Research Environment.

(d) Student Recruitment and Selection.

(e) Student and Mentor Professional Development and Expectations of Behavior.

(f) Project Evaluation and Reporting.

(g) Results from Prior NSF Support (if applicable).

Budget

- Project costs must be predominantly for student support.
- Student support includes stipends, housing, meals, travel, and laboratory use fees.
- Personnel support includes up to one month of salary for the PI or distributed among the PI and team members.
- An REU Site may not charge students for access to common campus facilities such as libraries or athletic facilities.
- All student costs should be entered as Participant Support Costs. Indirect costs (F&A) are not allowed on Participant Support Costs.

Merit Review principles and criteria

- Intellectual Merit (potential to advance knowledge)
- Broader Impacts (potential to benefit society and contribute to the achievement of specific, desired societal outcomes)
- Solicitation Specific Review Criteria (see solicitation for details)
  - Value of the research and professional development experience
  - Quality of the research environment
  - Appropriateness of the student recruitment and selection plans
  - Plan to promote continuation of student interest and involvement in STEM
  - Appropriateness and cost-effectiveness of the budget
  - For renewals, effectiveness of the previous Site

Proposal deadline

August 21, 2024, or third Wednesday in August, Annually thereafter.

Potential Question 1

Q: Can the cost of working meals be included in the budget?

A: The costs of "working meals" at seminars and other events at which student participation is required and for which there is a formal agenda are generally allowable.

Potential Question 2

Q: Does the BIO REU Sites program require the submission of Safe and Inclusive Fieldwork (SAIF) Plans under the BIO/GEO Pilot?

A: For REU Sites that will involve research off-campus or off-site, proposers are reminded that when submitting the proposal, the AOR must complete a certification that the organization has a plan in place to ensure a safe and inclusive working environment for the REU project, as described in PAPPG Chapter II.E.9.

Potential Question 3

Q: What should be included in the results from prior NSF support?

A: Outcomes should be described in sufficient detail to permit reviewers to reach an informed conclusion regarding the effectiveness of the site. This usually includes information about:

- Recruiting (number of applicants and participants and their demographics and home institutions)
- Student reporting of STEM gains from the experience
- Past participants career outcomes
- Scholarly outputs such as papers and presentations

Potential Question 4

Q: Can a proposal include other supplementary documents?

A: The proposal may include up to ten signed letters of collaboration (see PAPPG Chapter II.D.2.i(iii)).

"If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description or the Facilities, Equipment and Other Resources section of the proposal."

Potential Question 5

Q: What is new in solicitation 23-601?

A: The student stipend has been increased to $700. The average cost per student per week should not exceed $1,550 (there are exceptions—for example, an international component or remote field studies).

The non-PI faculty/professionals who will serve as research mentors for students are no longer required to be listed as Senior Personnel in REU Site proposals. However, Collaborators & Other Affiliations (COA) documents for anticipated non-PI research mentors must be uploaded into the Additional Single Copy Documents section of the proposal.

Potential Question 6

Q: What is new in solicitation 23-601? (continuation)

A: Students' names (as coauthors) are no longer required to be indicated with asterisks (*) in bibliographic citations in the Biographical Sketches of the PI and other Senior Personnel. However, some reviewers still find this useful information. Information about student authors should be mentioned in the proposal when describing the track record of the mentors.

NSF's Education & Training Application (ETAP) is described and encouraged as a means of managing student applications and collecting student demographic information. Some NSF units may require their REU Sites to use ETAP.

NSF BIO REU Contact Information

Andrea Holgado Ph.D.

Amanda Simcox Ph.D.

Contact us at: reu.bio@nsf.gov

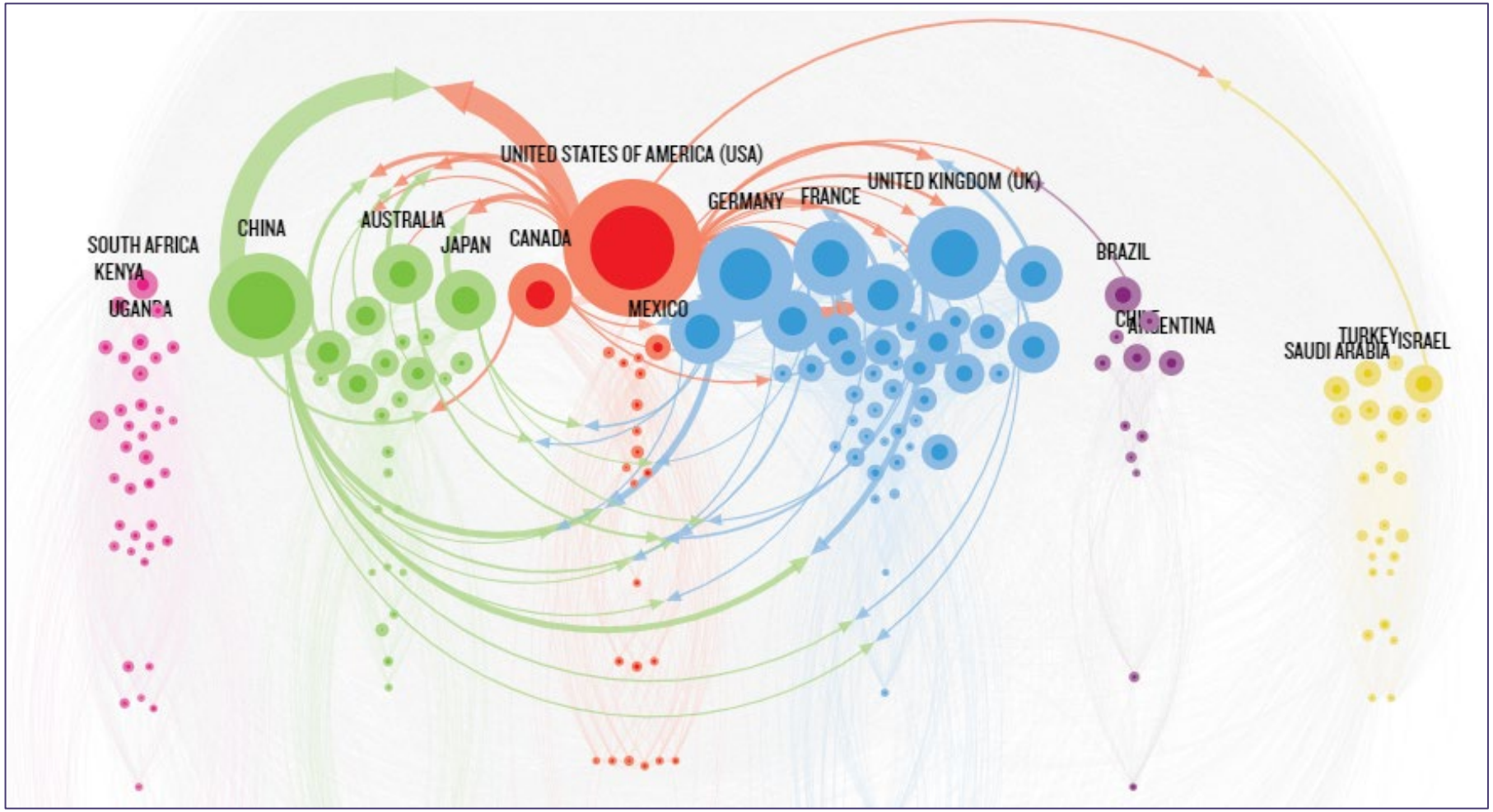
International Research Experiences for Students (IRES)

NSF OISE IRES Program Directors:

- Maija Kukla
- Kristin Küyük
- Fahmida Chowdhury

Email: ires@nsf.gov

Patterns of International Collaboration (Nature Index, 2023)



https://www.nature.com/nature-index/country-outputs/collaboration-graph/

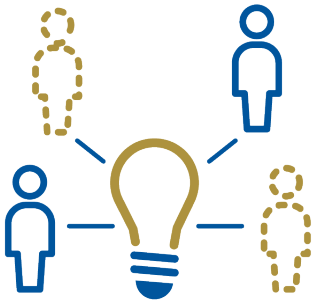
Program Goals

IRES supports international research and research-related activities for U.S. science and engineering students and contributes to development of a diverse, globally engaged workforce with world-class skills.

Major long-term goals are to:

- enhance U.S. leadership in research and education and
- strengthen economic competitiveness through training the next generation of research leaders.

Projects



- Engage undergraduate and/or graduate students in active high-quality collaborative, mentored international research
- Include a coherent overarching intellectual theme that may involve a single discipline or multiple disciplines funded by NSF
- Develop a globally competitive and diverse scientific workforce and enable formation of international networks

Student Support

- IRES budgets are expected to mostly support students and their research and training-related expenses.

- Participating students must be given a stipend in the range of **$600 - $700 per week** for the duration of the IRES project, including students involved in hybrid models or part-time research.

- Graduate students can be part of the IRES cohort and receive a stipend; full-time graduate research assistant support or tuition fees are not allowed.

- Up to one month of PI salary per project year is allowed; if there are co-PIs, the one month should be distributed between them.

Budget Guidelines

- IRES funds cannot be used to pay foreign mentors and students at the host location. For projects involving workshops or advanced studies institutes, reasonable honoraria and travel expenses may be requested.

- The budget can include funds for research and related logistical/other expenses for the U.S. team while in an international location.

- Subawards to foreign institutions or international branch campuses of U. S. institutions of higher education are not allowed.

IRES Solicitation Specific Review Criteria

1. Student Recruitment: Quality of plans for student recruitment and selection, involving students from the full spectrum of diverse talent in STEM and from institutions with limited research opportunities.

2. Collaborators and Mentors: Appropriateness of selection of researchers/mentors and host institution or location arrangements that provide opportunity for US students to benefit from the expertise, facilities, etc., of the foreign location.

IRES Solicitation Specific Review Criteria (continued)

3. Student Preparation: Quality of plans for student preparation, including both academic/research and cultural/practical preparation specific to the topic of the research and the site of the international placement.
4. Professional Development: Quality of plans to enhance the project's effectiveness and impact on student professional development, as well as plans for post-trip follow up after the overseas experience is completed.
5. Evaluation and Dissemination: Quality of the proposed evaluation and dissemination plans.

Required Supplementary Documents

- **Biosketches** for principal foreign collaborators are required and must be clearly identified as "non-NSF funded collaborators"
- **Letters of collaboration** from foreign researchers/ collaborators who will serve as mentor(s), lecturers/instructors or otherwise participate in the IRES program are required.
  Letters must include the following details:
  - 1) What infrastructure, resources, expertise etc. will be available to IRES participants at the international site
  - 2) What particular roles the foreign mentors or collaborators will play in the IRES project
  - 3) How foreign collaborators and/or their organizations will benefit from participation in the IRES project

PI & Student Eligibility

- All PIs, Co-PIs and Senior Personnel on IRES proposals must be from U.S. based organizations; Foreign collaborators may be listed as “non-NSF funded collaborators.”
- Student participants supported by IRES funds must be citizens, nationals, or permanent residents of the United States.
- IRES students may be undergraduates, graduates or postdocs.

Student Recruitment

Students do not apply directly to NSF to participate in IRES activities. Students apply to NSF-funded investigators who receive IRES awards. To identify appropriate IRES projects, students should consult the directory of active IRES awards.

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.

NSF IRES Contact Information

IRES team email: ires@nsf.gov
Fahmida's email: fchowdhu@nsf.gov

Program Page: https://new.nsf.gov/funding/opportunities/international-research-experiences-students-ires

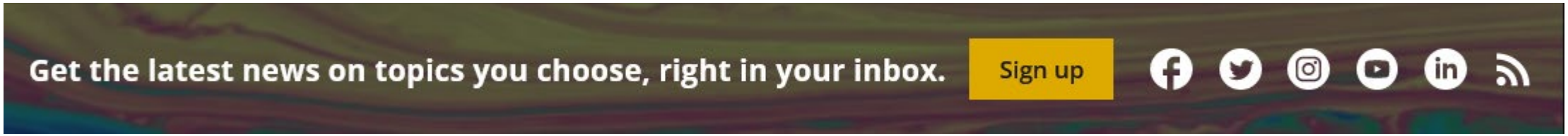
IRES Solicitation: NSF 24-506: International Research Experiences for Students (IRES)

IRES FAQs: IRES FAQs: Frequently Asked Questions (FAQs) for International Research Experiences for Students (IRES) (NSF 24-506)

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.



BIO Blogs

News, features, highlights, 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/
- MCB Blog (MCB): https://mcbblog.nsfbio.com/

BIO Virtual Office Hours (VOH)

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

- Days & Times by Division (occasionally rescheduled due to holidays)
  - 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.

NSF Needs You!

NSF Contact Information

- Sally O'Connor, DBI, soconnor@nsf.gov
- Karen McNeal, Division of Graduate Education, kmcneal@nsf.gov
- Jennifer Weller, DBI, jweller@nsf.gov
- Matthew Herron, Division of Environmental Biology, mherron@nsf.gov
- Reed Beaman, DBI, rsbeaman@nsf.gov
- Dan Marenda, DBI, dmarenda@nsf.gov
- Joel K. Abraham, DBI, jkabraha@nsf.gov

Questions?