Bioinformatics Research and Cyberinfrastructure Supported at NSF

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Directorate of BIO Structure

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**

How the BIO Divisions Support Research Across Scales

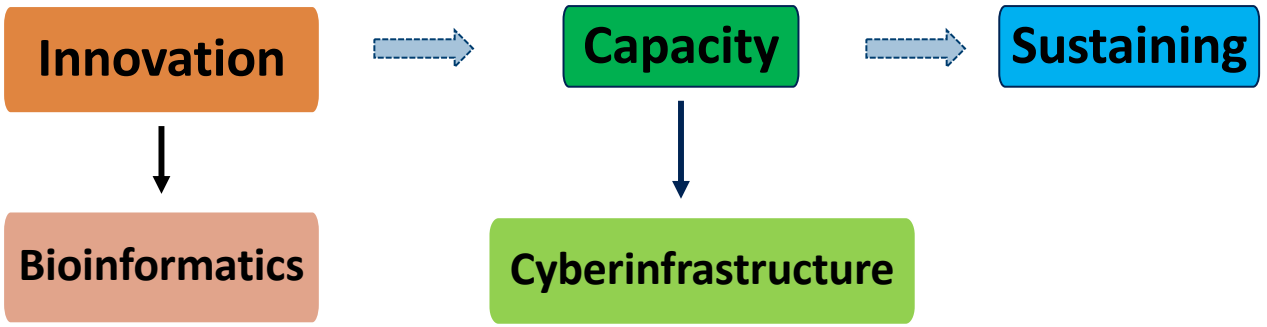
Molecular & Cellular Biosciences (MCB)

Integrative Organismal Systems (IOS)

Environmental Biology (DEB)

Biological Infrastructure (DBI)

DBI/Research Resources Cluster



Infrastructure Innovation for Biological Research (Innovation) ***NSF 21-502***

Infrastructure Capacity for Biology (Capacity) ***NSF 21-501***

Sustaining Infrastructure for Biological Research (Sustaining) ***NSF 21-503***

NO DEADLINES!

Infrastructure Innovation for Biological Research (Innovation, NSF 21-502)

- **Synopsis**
  - Support research to design novel or greatly improved research tools and methods that advance contemporary biology

- **Programmatic Areas**
  - Innovation: **Bioinformatics**
  - Innovation: Instrumentation
  - Innovation: Research Methods

- **Program Information**
  - Duration of projects: usually 3 years
  - Number of Awards: 20 to 40
    Anticipated Budget: $16M to $18M

Innovation: Bioinformatics

- **Goal**

  Seeks to pioneer new approaches to the application of informatics to biological problems

- **Priorities**
  - Creating computational/informatics tools and database architectures that are applicable to a ***broad range*** of biological research questions
  - High degree of novelty and potential impact
  - Publication of new methodologies, proof of concept, or production of a prototype for further development
  - Solve challenging, high-risk problems

- **Contact:** DBIBioinformatics@nsf.gov

Infrastructure Capacity for Biology (Capacity) (NSF 21-501)

- **Synopsis**

  Support the implementation of, scaling of, or major improvements to research tools, products, and services that advance contemporary biological research.

- **Programmatic Areas**
  - Capacity: **Cyberinfrastructure**
  - Capacity: Biological Collections
  - Capacity: Field Stations & Marine Labs (FSML)

- **Anticipated Budget:** $18M to $20M

  Number of Awards: 50 to 75

Capacity: Cyber Infrastructure (previously CIBR)

- **Goal**
  Provide robust cyberinfrastructure that will enable transformative biological research

- **Priorities**
  - Finished product that will have demonstrable impact
  - User engagement, design quality, engineering practices, management plan, and dissemination
  - Bringing a proof of concept into a robust, broadly-adopted cyberinfrastructure

- **Contact:** DBICyberinfrastructure@nsf.gov

Sustaining: Sustaining Infrastructure for Biological Research (NSF 21-503)

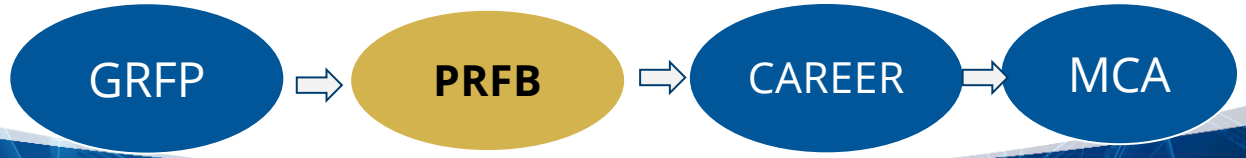
- **Goal**

  Supports the continued operation of existing research infrastructure that advances contemporary biology in any research area

- **Priorities**
  - Focuses primarily on sustaining critical research infrastructure that is broadly applicable to a wide range of researchers.
  - Ensure continued availability of existing, mature resources that will enable important science outcomes
  - Does not provide funds for research or development leading to new capabilities or features, methods, or tools.
- **Anticipated Budget:** $5M, 1-3 awards
- **Contact:** SustainingDBI@nsf.gov

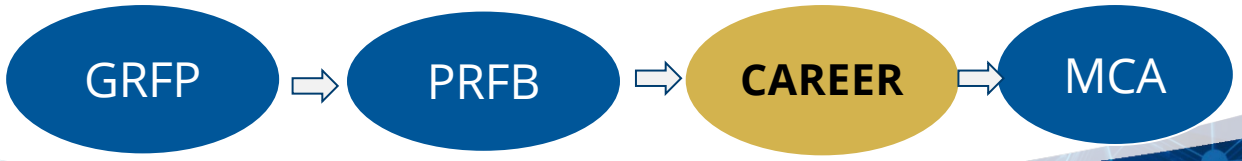
Postdoctoral Research Fellowship in Biology (PRFB) (NSF 22-623)

- **Who:** Recent recipients of doctoral degrees; U.S. citizens/Permanent Residents
- **What:** 3 Years, yearly: $60K stipend +$20K research expenditure
  - **Current themes: Rules of Life, Plant Genomics, Broadening Participation**
- **Where:** At any Institution of Higher Education or non-profit organization
- **When:** Application deadline is in the Fall
- **Contact:** bio-dbi-prfb@nsf.gov or dbipgr@nsf.gov (Plant Genomics)



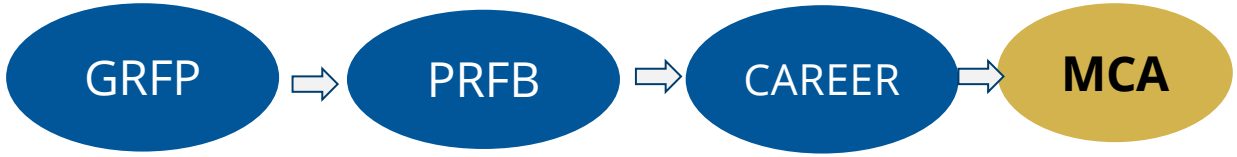
Faculty Early-Career Development Program (CAREER) (NSF 22-586)

- **Who:** Tenure track faculty members at assistant professor level, or equivalent
- **What:** Designed to help junior faculty members develop activities that can **effectively integrate research and education** within the context of his/her organization.
- **Where:** At any U.S. Institution of Higher Education or non-profit organization
- **Amount:** 5 year duration, $500K (minimum, may be more)
- **When:** 4th Wednesday of July



Mid-Career Advancement (MCA) (NSF 22-603)

- Targeted Date: February 1 to March 1, Annually
- NSF-wide
- The MCA is targeted at mid-career scientists and engineers (Associate Professors or equivalent, with at least 3 years at that rank).
- The Associate rank is a critical career transition period, where researchers typically have fewer institutional resources, higher service and teaching responsibilities, and a need for retooling.
- Main Budget: 6.5 months salary plus $100K in direct costs
- During: 3 years



BIO Virtual Office Hours

- BIO Directorate and each Division offers VOH
  - **DBI**: third Tuesday, 3-4 p.m. EST
  - DEB: second Monday, 1-2 p.m. EST
  - IOS: third Thursday, 1-2 p.m. EST
  - MCB: second Wednesday, 2-3 p.m. EST
- Monthly (or periodic) informational webinar focused on:
  - New and ongoing funding opportunities
  - Topics of general interest
  - Open questions from audience to be answered live
- Log-on information and upcoming topics for Virtual Office Hours can be found in BIO and Division blogs

NSF Needs You!

Questions?


NSF

Academic STEM Enterprise: ***NSF & BIO Programs along the Pathways***

Career Stage:	**K-12**	**Undergraduate**		**Post-Bacc**	**Graduate**		**Postdoc**	**Faculty**		
Milestone:	HS Diploma	AA/AS	BA/BS	*Research experience & Prof. Dev & Science identity*	MA/MS	PhD	Postdoc	New	Early-Career	Mid-Career
NSF & BIO Programs:	**[Supp: RET, RAHSS]** **BIO-RET**	**RCN-UBE, REU-Sites, [Supp:REU]**		[Supp: REPS] **RaMP**	*GRFP, NRT, IGE, INTERN*		**PRFB**	**BRC-BIO**	*CAREER,* **ROA**	*MCA NSF21-516,* **Transitions**
								HBCU-EIR, TCUP, ADVANCE, INCLUDES, AGEP, EPSCoR, **[Supp:RUI/ROA]**		
Research Environment Component:	*Culture:* **BIO-LEAPS**									