

NSF GLOBAL CENTERS

Use-Inspired Research Addressing Global Challenges through the Bioeconomy



NSF 24-556



NATIONAL
ENDOWMENT
FOR THE
HUMANITIES



SSHRC
CRSH



Biotechnology and
Biological Sciences
Research Council



BUSINESS
FINLAND



NSF Global Centers FY24 Funding Opportunity

NSF-led in partnership with NEH & International Funders

USA



Canada



Finland



Japan



Korea



UK



- National Science Foundation (NSF) & National Endowment for the Humanities (NEH)
- Natural Sciences and Engineering Research Council of Canada (NSERC) & Social Sciences and Humanities Research Council of Canada (SSHRC)
- Innovation Funding Agency Business Finland (BF) & Research Council of Finland (RCF)
- Japan Science and Technology Agency (JST)
- Republic of Korea Ministry of Science and ICT (MSIT) & National Research Foundation of Korea (NRF)
- United Kingdom Research and Innovation (UKRI)



Key Elements of NSF Global Centers

**International
Partnerships to
Address
Global Challenges**

- Multidisciplinary
- Use-Inspired research
- Foreseeable benefit to society
- Stakeholders beyond academia
- Workforce development
- Focus on engaging diverse talents



Proposal must focus on one or both of 2 scientific subtopics:

Informed by the White House Bioeconomy Executive Order and Bold Goals for U.S. Biotechnology and Biomanufacturing

1. Leveraging Biodiversity Across the Tree of Life to Power the Bioeconomy

- Put biodiversity to use in new applications for the bioeconomy
- Enhance discovery of novel function from diverse organisms
- Data science and the bioeconomy
- Socio-Economic Impact Assessment, Indigenous Knowledge, Historical and Cultural Ecology

2. Biofoundries using the Design-Build-Test-Learn process in biology

- Building novel forms and functions
- Measuring, sensing, actuating, and controlling biological systems
- Ethical Considerations, Governance, and Social Impact



Some examples related to 2 subtopics:

Proposals are welcome across a wide range of research projects within the general theme of bioeconomy. Examples of research themes include, but are not limited to:

- Microbial biodiversity and interactions
- Plant genomic biodiversity
- Metabolomic biodiversity
- Developing a green economy
- Intersection of AI and biotech
- Quantum sensing in biotech
- Bio-inspired design of materials and structures
- Use-inspired study of life adapted to extreme environments
- Predictive modeling and decision making under uncertainties
- Novel metabolic pathways
- Engineering design of biological systems
- Circular bioeconomy for food, feed, energy, and products
- Biomass refining, and integrated biorefineries
- Natural, modified, and synthetic materials from plant resources



Proposal must also include elements of BOTH crosscutting themes

A. Public engagement and co-generation of research activities to strengthen the global science and technology enterprise

- Develop social, behavioral, and economic drivers of a strong, sustainable and inclusive bioeconomy sector
- Enhance the evidentiary basis of ensuring the safety of products and processes

B. Workforce Development and Education

- Engage stakeholders in ways that benefit individuals, communities, society, by fostering participation of the full spectrum of diverse talent in STEM
- Enhance diversity and equity within biotechnology and biomanufacturing R&D
- Develop educational and training materials and curricula



Some examples related to 2 crosscutting themes:

Proposals are welcome across a wide range of research projects within the general theme of bioeconomy. Examples of crosscutting themes include, but are not limited to:

- Biocomputing
- Computational methods and data sciences for bioeconomy
- Cyberinfrastructure and data architectures for the bioeconomy
- Technology co-generation
- Enhancing precision agriculture
- Food and water security through the bioeconomy
- Nature based solutions through the bioeconomy
- Greenhouse gas mitigation through the bioeconomy
- Waste valorization for the bioeconomy
- Economic, Human, Social, and policy ramifications of bioeconomy
- Ethics and values of the bioeconomy, including biosecurity
- Economic analysis of bioeconomy systems



Program Timeline

- **Due date for all full proposal submission: June 11, 2024**
- **June – July:** NSF Merit Review Process for all proposals
- **July - August:** ranking completed, funding partners finalize portfolio
- **August – September:** First FY24 awards



Upcoming NSF Office Hours: all are welcome to drop in to ask any questions

23 April 2024	1:00 – 2:00 p.m. Eastern
1 May 2024	1:00 – 2:00 p.m. Eastern
10 May 2024	3:00 – 4:00 p.m. Eastern
22 May 2024	2:00 – 3:00 p.m. Eastern
27 May 2024	3:00 – 4:00 p.m. Eastern
6 June 2024	3:00 – 4:00 p.m. Eastern



Thank you!

Contact

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Scan to Global Centers website

