



Division of Environmental Biology Virtual Office Hour

Environmental Biology Research and the Bioeconomy

Please submit questions via the Q&A button available to you on Zoom.

Please set to "Send anonymously"

January 8, 2023

Welcome!

Division of Environmental Biology

NSF staff in attendance today:

- Karen Cone – Science Advisor for BIO OAD
- Brent Miller – Science Advisor for BIO OAD
- **Jeremy Wojdak** (host) – Population and Community Ecology
- **Chris Balakrishnan** – Systematics and Biodiversity Science

Facilitators – Christina Washington and Megan Lewis



DEB Virtual Office Hour

DEB Office Hours: second Monday of each month, 1-2pm Eastern

Upcoming Topics:

February 12: Opportunities for freshwater and marine environmental research

March 11: Translating foundational research and emerging technologies into communities through civic-engaged research

April 8: Opportunities for broadening the STEM community

May 13: CAREER Solicitation

June 10: Merit Review and How to Get Involved with NSF



DEB Blog posts upcoming topics, registration, and recap posts

<https://deblog.nsfbio.com/office-hours/>

DEBrief

Blog of the Division of Environmental Biology, NSF

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Office Hours

Join us the **second Monday of each month from 1pm-2pm Eastern Time** for the Division of Environmental Biology's (DEB) Virtual Office Hours. Representatives from each of the four clusters will be available to discuss specific programs and funding opportunities. There will then be an open question and answer period – questions can be on any NSF or DEB topic.

Join us remotely and bring your questions! Please use the registration link below to set up your



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AUGUST 21, 2023 BY DEB SCIENCE STAFF

8/14/23 Virtual Office Hours Recap: Things I wish I learned earlier about NSF

The Division of Environmental Biology (DEB) held its latest Virtual Office Hour on August 14, 2023. Program Officers discussed things they've learned during the transition from Principal Investigator to NSF Program Officer, helpful tips and tricks when applying for NSF funding, common misconceptions about the Merit Review Process, and more. We host these office hours 1-2pm EST on the 2nd Monday of every month. There is a designated theme each time, but attendees are welcome to ask about other NSF-related topics. Program Officers (POs) from different research areas are present at each Virtual Office Hour, so a wide range of scientific perspectives are represented.

The presentation slides, recording, and other documents are available here:

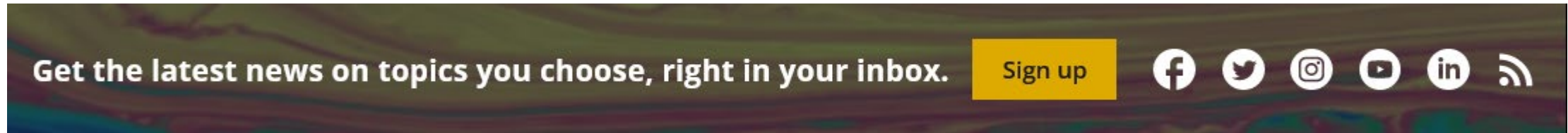


Search ...



BIO News and Updates

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.



Volunteer to review:

<https://www.surveymonkey.com/r/DEBexpertise>



Recent and Upcoming Funding Opportunities

Find links to all recent solicitations and DCL at the left side of the BIO webpage under Funding

Remember – Many BIO solicitations have no deadlines and no submission limits.

- NSF 23-549– DEB Core Programs - **No deadline**
- NSF 22-591 – Opportunities for Promoting Understanding through Synthesis (OPUS) – **No deadline**
- NSF 24-507 – Incorporating Human Behavior in Epidemiological Models – **Deadline Feb 14**
- NSF 22-603 – Mid-Career Advancement – **Deadline March 1**
- DCL 20-074 – Conferences for Building Computational Literacy in Biological Sciences
- DCL 23-109– Clean Energy Technology RAISE or EAGER Proposals
- [BIO 18-001](#) – Biological Sciences Temporary/Rotator Program Officer





CASA-Bio

Catalyzing Across Sectors to
Advance the Bioeconomy

Brent Miller, Karen Cone, and Martin Liu
Directorate for Biological Sciences
US National Science Foundation



Definitions



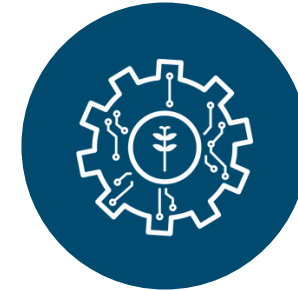
Bioeconomy

economic activity derived from biotechnology and biomanufacturing



Biotechnology

technology that applies to and/or is enabled by life science innovation or product development



Biomanufacturing

use of biological systems to produce goods and services at commercial scale

Source: National Institute of Standards and Technology (NIST) Bioeconomy Lexicon





CASA-Bio Background

- Inspired by the Executive Order (EO) on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy
- EO laid out a grand vision to advance US biotechnology and biomanufacturing through foundational and use-inspired R&D in five areas (**themes**)



Climate Change
Solutions



Food and Agriculture
Innovation



Supply Chain
Resilience



Human Health



Cross-Cutting
Advances



CASA-Bio: What is it?



- **A collaborative, facilitated activity** with these stakeholders:
 - Government agencies
 - Industries
 - Non-profits
 - Public-sector research community
- **Overall goal:** Give life to the vision of the Bioeconomy EO
- **Challenges:**
 - The vision is HUGE!
 - Agencies, industries, non-profits, and academic researchers have their own goals
- **Solution:** Seek synergy through collaboration in areas of mutual interest



CASA-Bio: Action Plan



STARTING POINT:

Multiple organizations with independent goals

1 Alignment

Identify **R&D Areas (Subtheme Challenges)** of shared interest and potential for synergy among agencies, industry and non-profits; use to frame a **Call to Action**

2 Engagement

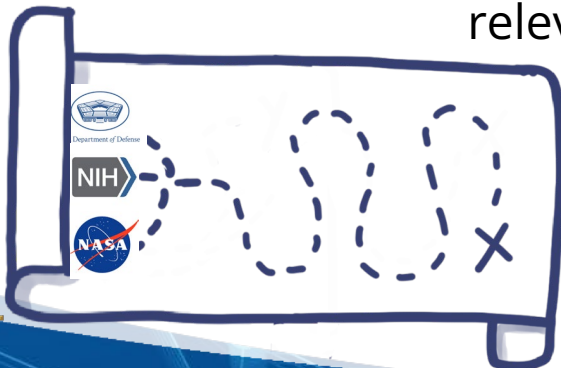
Ask the **research community** to respond to the **Call to Action** by identifying exciting and tractable **Cutting-Edge Research Ideas** addressing the **Subthemes**

3 Synthesis

Use the community's feedback to identify and select **Priority Research Ideas** with highest potential for cross-organizational collaboration

4 Advancement

Host community workshops to catalyze creation of roadmaps for research relevant to the **Priority Research Ideas**



ENDPOINT:

***Multiple roadmaps for
priority research to
advance the bioeconomy***



CASA-Bio Action Plan: Schematic

Alignment

Orientation Meeting

*Virtual
Dec 1*

Who:
Funding Agencies
NGOs
Industry

Goal: Explore broad areas with shared interest and opportunities for possible collaboration

Output: R&D areas with potential for synergy

Call to Action Meeting

*In-person
Dec 4-5*

Who:
Funding Agencies
NGOs
Industry

Goal: Flesh out R&D areas of shared interest as Bioeconomy relevant Subtheme challenges for Call to Action

Output: Call to Action for Town Halls Based on Bioeconomy Subthemes

Town Hall Meetings x 4

*Virtual
February*

Who:
Broad R&D
Communities

Goal: Present Subtheme challenges and ask community to identify Cutting-Edge Research ideas

Output: Community-sourced research ideas relevant to the Bioeconomy Subthemes

Synthesis

Synthesis Meetings x 4

*Virtual
March*

Who:
Funding Agencies
NGOs
Industry

Goal: Evaluate Cutting-Edge Research ideas and prioritize based on high potential for cross-agency synergy

Output: Priority Research Ideas ready for Roadmapping

Community Engagement



CASA-Bio Action Plan: Schematic

Advancement

Advancement Workshops x 5-10

*In-person and virtual,
Spring 2024 – Summer 2024*

Who:

R&D Communities

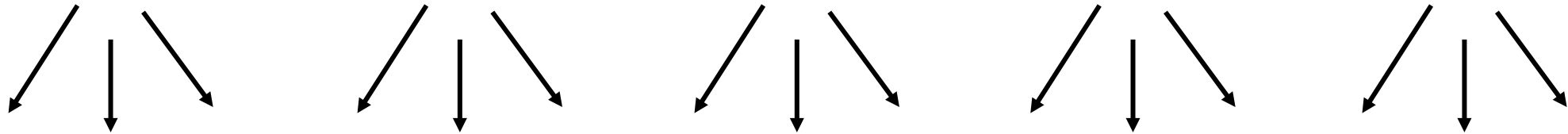
Goal: Engage research communities in producing roadmaps describing Priority Research opportunities for the bioeconomy

Output: Engaged, focused research communities; roadmaps for Priority Research to advance the US Bioeconomy



Where are we?

Themes Defined by the Bioeconomy EO



Subtheme Challenges Defined in Alignment Meetings





Representative Subtheme Challenges



Climate Change
Solutions

Creating Value from
Waste Carbon for a
Circular Bioeconomy

Reducing
Greenhouse
Gases

Accelerating
Plant and Animal
Breeding

Climate-Smart
Food and
Agriculture

Protecting Plants
and Animals to
Sustain the Planet



Food and Agriculture
Innovation

Resilient and
Sustainable Ag

Biomanufacturing
Alternative / Novel
Foods





Representative Subtheme Challenges



Supply Chain
Resilience

Creating Domestic Supply
Chains for Essential Bio-Products

Advancing Sustainable
Economic Models for Supply
Chain Management



Cross-Cutting
Advances

Designing Biologics for
Supply Chain Resilience
and Broad Uses

Scaling up Biomanufacturing
from Lab to Market



Human Health

Enhancing Human
Nutrition through
Biotechnology

Leveraging Advanced
Computing for
Biological Data Integration

Advanced Computing for
Human Health

Developing the
Bioeconomy Workforce

Building Data
Infrastructure
for the Bioeconomy



Now it's **your** turn!

So...

*Check out the
subthemes and
tell us what's
missing.*

You are a stakeholder
in this activity – help
us identify the gaps in
our discussions!



Your turn!

*What keeps you
up at night?*

Tell us how **you**
would solve such
big bioeconomy
challenges!



Call to Action

Share your **creative ideas** with funding agencies, industry partners, and non-profits at one of four **Virtual Town Halls!**

These Town Halls will be **highly interactive** with lots of time for breakout discussions among community members. Each Town Hall will have the same agenda but will be offered at different days and times to accommodate diverse schedules.

Three simple steps:

1. Visit www.casa-bio.net.
2. Register for the Town Hall session that works best for you.
3. Share your insights on bioeconomy **subthemes** and **research!**

Tentative Dates

February 12
7 - 8:30 PM ET

February 15
9 - 10:30 AM ET

February 21
Noon - 1:30 PM ET

February 22
5 - 6:30 PM ET





CASA-Bio is facilitated by KnowInnovation under contract No. 49100423P0058 from the National Science Foundation.



Questions?

- **Submit your questions via the Q&A box on your screen and set to “Send anonymously”**
- Upvote questions by clicking the thumbs up icon next to the question you most want answered

