CASA-Bio

Catalyzing Across Sectors to Advance the Bioeconomy

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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)

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 in 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

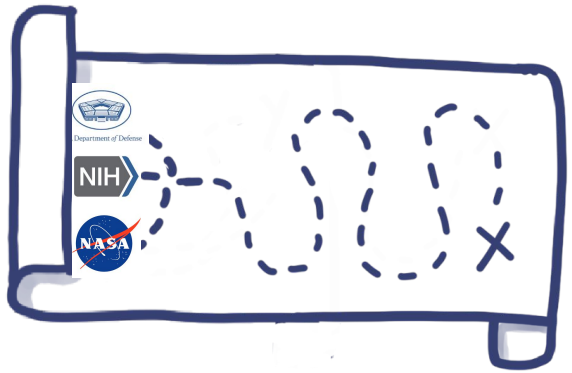
STARTING POINT:
Multiple organizations with independent goals

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

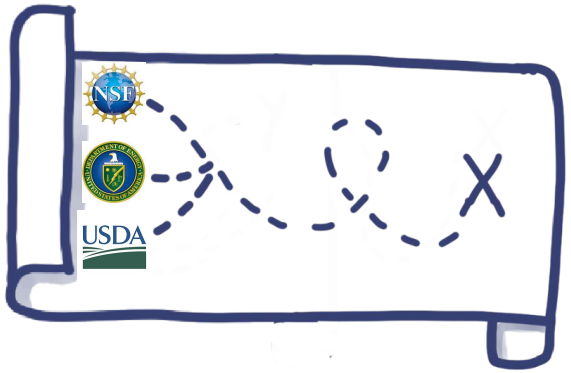
2 **Engagement** Ask the **research community** to respond to the Call to Action by identifying exciting and tractable Cutting-Edge Research Ideas addressing the Subthemes

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 areas** ready for Roadmapping

Community Engagement

CASA-Bio Action Plan: Schematic

Advancement

Advancement Workshops x 5-10

In-person and virtual,
Spring 2024 – Summer 2024

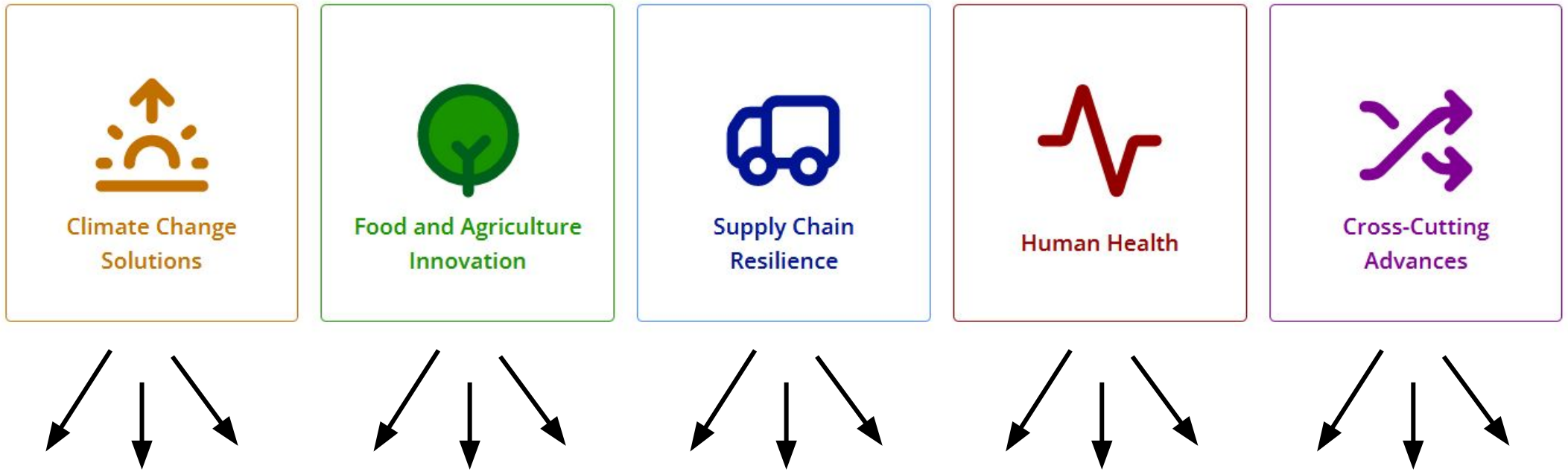
Who:
R&D Communities

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

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

Resilient and Sustainable Ag

Biomanufacturing Alternative / Novel Foods

Representative Subtheme Challenges

Creating Domestic Supply Chains for Essential Bio-Products

Advancing Sustainable Economic Models for Supply Chain Management

Designing Vaccines and Biologics for Supply Chain Resilience and Broad Uses

Enhancing Human Nutrition through Biotechnology

Advancing Cell Therapies

Advanced Computing for Human Health

Benefitting Public Health Outcomes

Intelligent Medical Assistance / Smart Health Care

Representative Subtheme Challenges

Foundational Discoveries to Drive the Bioeconomy

Building Data Infrastructure for the Bioeconomy

Leveraging Advanced Computing for Biological Data Integration

Developing the Bioeconomy Workforce

Scaling Up Biomanufacturing to Speed Lab-to-Market Pipeline

Effective Risk Communication

Responsible Innovation for Biotech Research

Guarding Against Biosecurity Risks

Advancing Regulatory Science for Biotech Products and Manufacturing

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!

What keeps you up at night?

Your turn!

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