

NSF ENGINES
INAUGURAL AWARDS

NSF's Regional Innovation Engines

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NSF TIP/ITE

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Presentation Roadmap

**1. Overview of the NSF
Engines program**

**2. Introducing the NSF
Engines**



Expanding the Geography of Innovation

NSF Goals:

Catalyze and accelerate regional-scale, R&D-based innovation ecosystems throughout the U.S.

Investment in NSF Engines will:

- Advance critical technologies
- Address societal challenges
- Promote economic growth
- Enable job creation
- Cultivate regional talent

Award regions up to \$160 M (per awardee), 10 years.

Create a diverse portfolio of regions and technology areas spanning the nation.

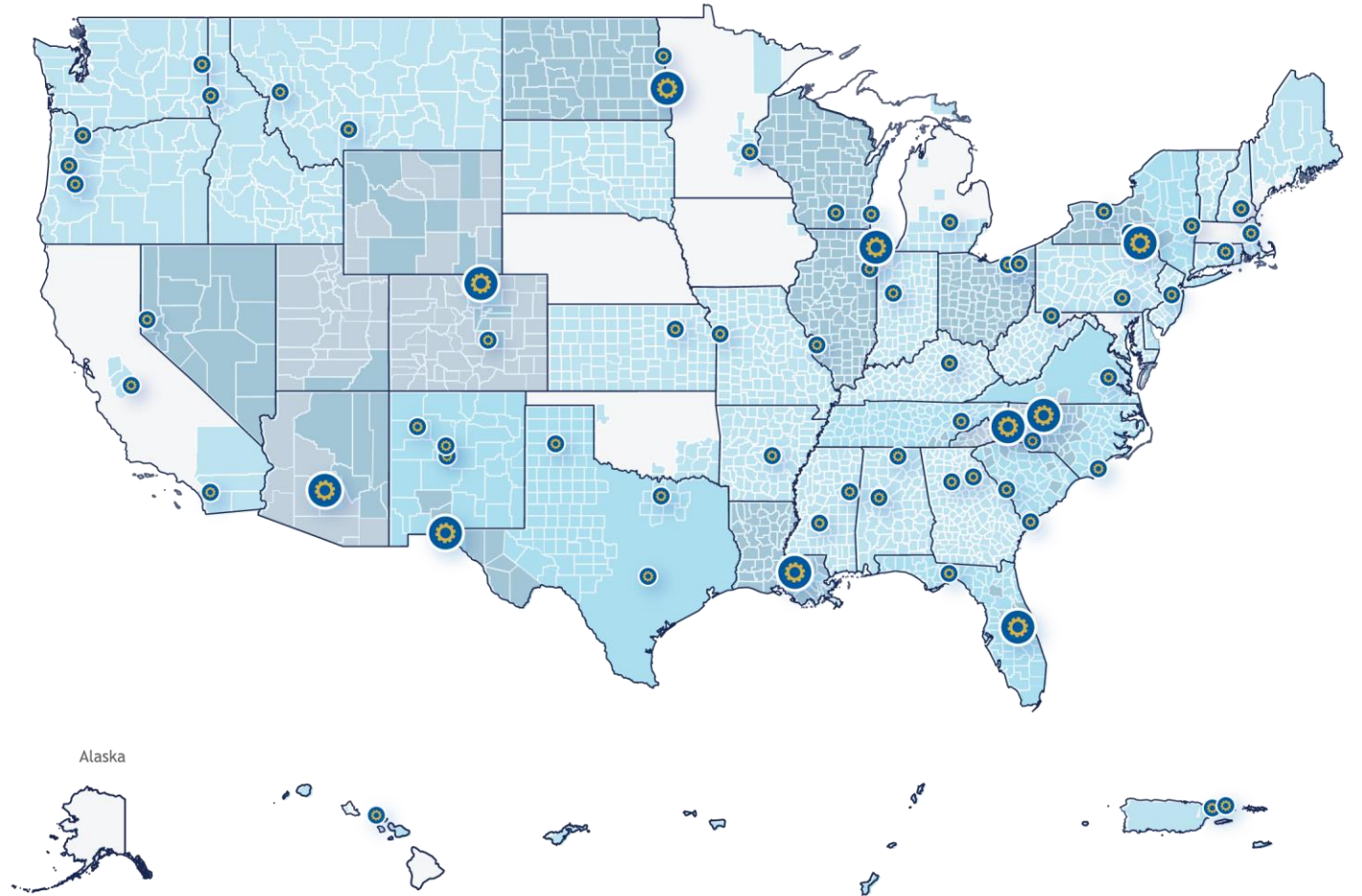
Launch one of the largest regional innovation ecosystem building efforts in the history of federal government (up to ~\$1.6 B over 10 years).



NSF is Making History

NSF Engines awards represent:

- **Up to \$1.6 billion over a decade**
- **450+ partners across sectors**
- **18 states across 10 regions**
- **2:1 matched investment from public and private sectors.**
- **Catalyzing America's innovation economy in all corners of the country**



By The Numbers



679

Concept outlines submitted



44

NSF Engines Development Awards



10

NSF Engines Inaugural Awards



18

States receiving NSF Engines funding



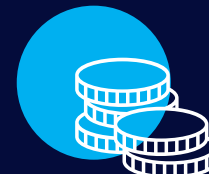
10

Key technology areas from the CHIPS & Science Act represented in the portfolio



450+

Organizations partnering with NSF Engines Awardees



2:1+

Match of NSF funds from corporate, philanthropic, and government sources.



40%

First time NSF Engine awardees

Theory of Change

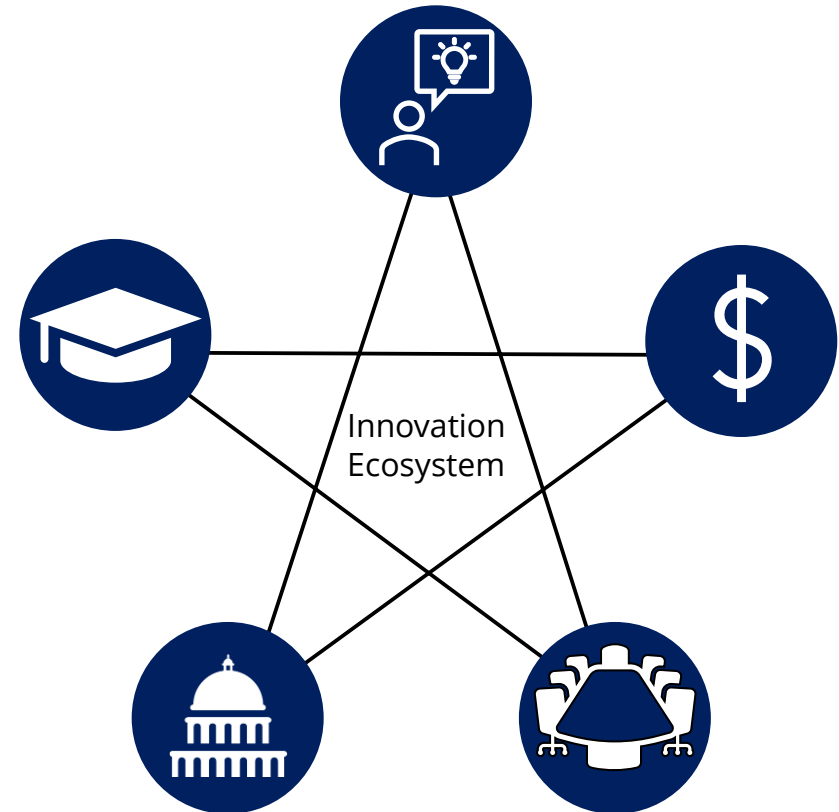
How do we build vibrant regional innovation ecosystems?

Interconnected set of cross-sector stakeholders in a **specific region of service** working cohesively to:

- **connect assets**
- **expand economic opportunity**
- **cultivate regional talent**
- **drive national competitiveness in topic area**



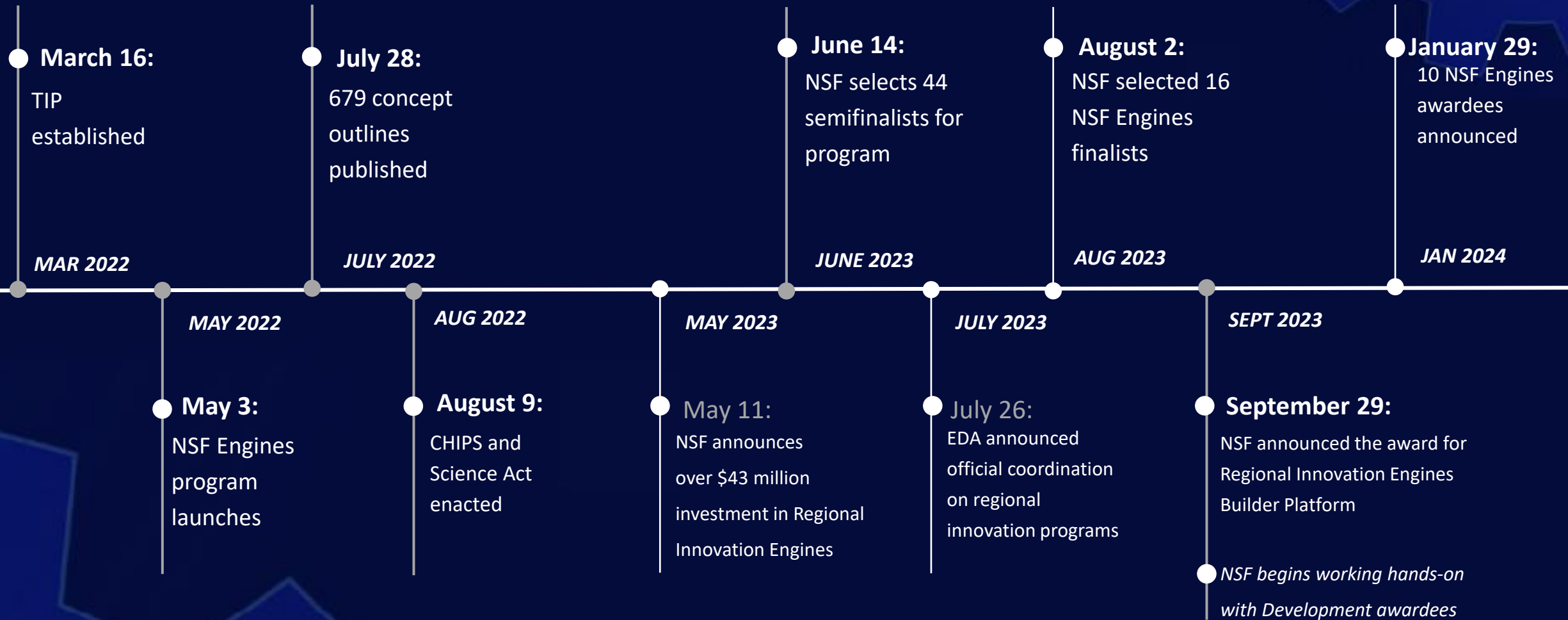
Flywheel effect; allowing ecosystems to become self-sustaining.



NSF aims to catalyze vibrant innovation ecosystems with a focus on regions that have been left behind by the tech boom.



NSF Engines Competition (2022 – 2024)



10 Inaugural NSF Engines

North Dakota Advanced Agriculture Technology Engine

Colorado - Wyoming Climate Resilience Engine

Southwest Sustainability Innovation Engine

Paso Del Norte Defense & Aerospace Innovation Engine

Louisiana Energy Transition Engine

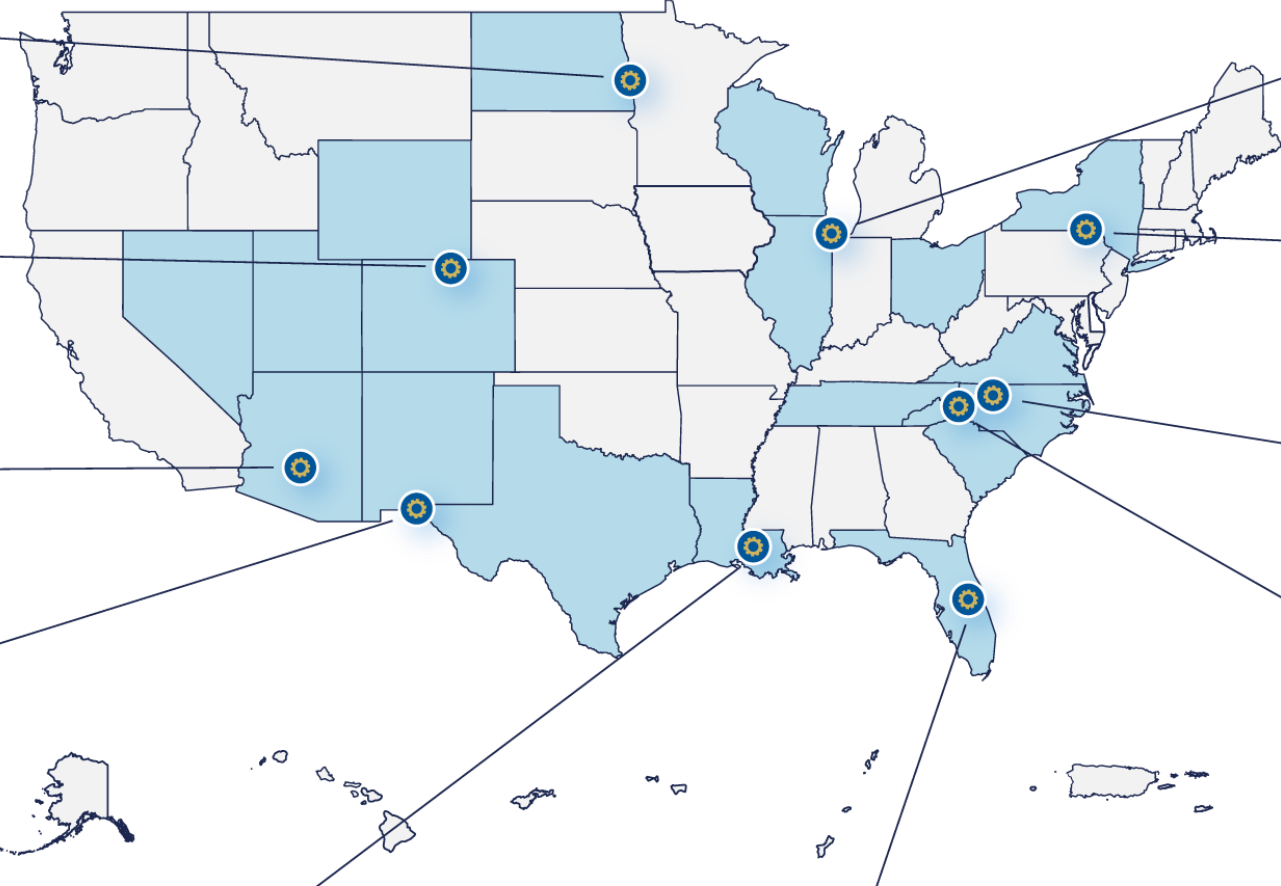
Central Florida Semiconductor Innovation Engine

Great Lakes Water Innovation Engine

Upstate New York Energy Storage Engine

Piedmont Triad Regenerative Medicine Engine

North Carolina Textile Innovation & Sustainability Engine



Paso del Norte Defense and Aerospace Innovation Engine

Lead Organization:

University of Texas-El Paso (UTEP)

Primary Societal Challenge:

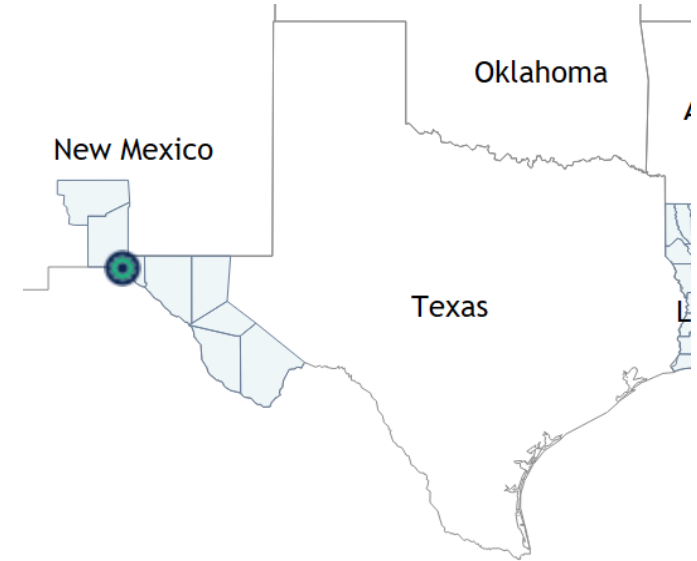
Aerospace and Defense small and medium (SMM) Manufacturer network

Innovations:

Transformation of SMM manufacturers via digital engineering, additive manufacturing, and various aerospace and defense technologies

Capital Commitments:

\$50M EDA Build Back Better Regional Challenge



Sampling of Partners (18)

ACADEMICS (2)

GOVERNEMENT ENTITIES (9)

INDUSTRY (3)

NON-PROFIT(4)

UTEP KECK AND AEROSPACE CENTERS)

CITY OF EL PASO, NM SPACEPORT AUTHORITY

LOCKHEED MARTIN, BELL TEXTRON

EL PASO COMMUNITY COLLEGE



Upstate New York Energy Storage Engine

Lead Organization:

Binghamton University

Primary Societal Challenge:

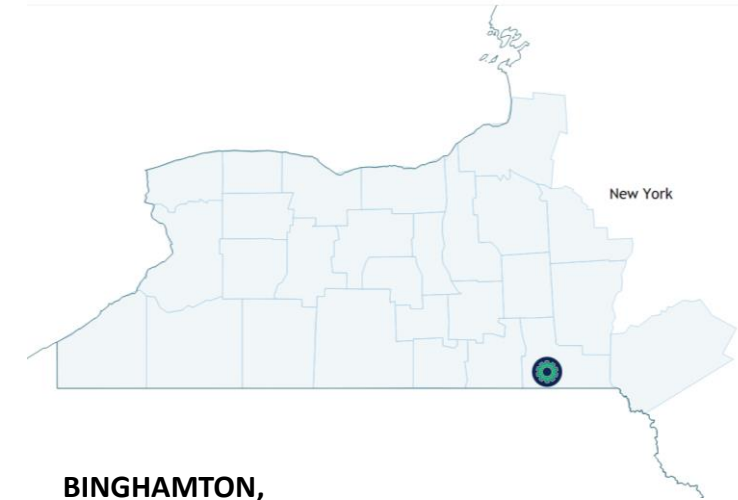
Building energy storage technologies to support USA based supply chain.

Innovations:

Battery technology and innovation for full battery lifecycle, novel battery chemistry, cell design/prototyping/production, module production, battery recycling

Capital Commitments:

\$63 M EDA Build Back Better Awardee + Tech Hubs Finalist, \$16 M from state of NY



**BINGHAMTON,
NEW YORK**

Sampling of Partners (40)

ACADEMICS (10)

GOVERNMENT ENTITIES (6)

INDUSTRY (18)

NON-PROFIT (6)

CORNELL UNIVERSITY

EMPIRE STATE DEVELOPMENT

BAE SYSTEMS, KODAK

LAUNCH NY, ACTIVATE GLOBAL INC.



Partnering with & Leveraging Resources from other Regional Innovation Programs

- NSF and the U.S. Economic Development Administration (EDA) are officially coordinating on NSF Engines and Tech Hubs, two regional innovation programs named in the “CHIPS and Science Act of 2022.”
- **4 NSF Engines** are leveraging funding from Build Back Better Regional Challenge communities, **unlocking more than \$230 M.**
- **12+ NSF Engines + Development Awardee** communities are finalists for EDA Tech Hubs, with the **potential to unlock hundreds of millions more.**

The coordination may include research and education activities, facilities, centers, data infrastructure and outreach.

NSF & EDA: CATALYZING INNOVATION

👉 ZOOMABLE MAP ⌂ ABOUT

NAVIGATION

- Hover over data points on map to view details.
- Press Ctrl + Click to filter multiple initiatives

OVERVIEW

Use this map to find U.S. government resources for innovators, researchers, and entrepreneurs, and communities to see the reach of U.S. investment in science and technology support. Click on the icons to learn more about various initiatives across the U.S. National Science Foundation and the Economic Development Administration. This map will be updated periodically to include more information about flagship investments in each key technology area.

SELECT INITIATIVES

EDA BBBRC Phase-1 **60** ♦

EDA BBBRC Phase-2 **21** ♦

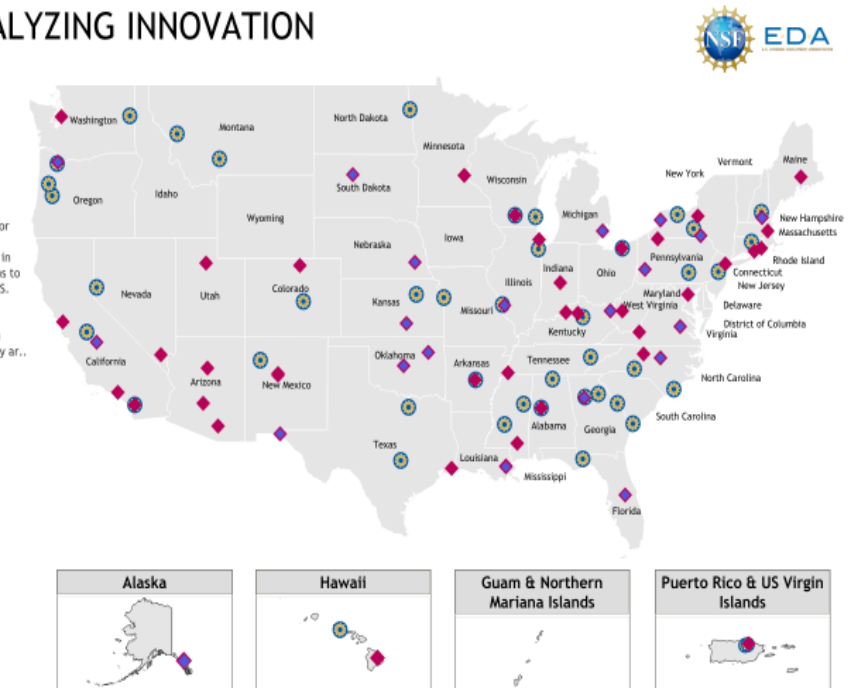
NSF Engines Type-1 **44** ⚙️

ABBREVIATIONS

- BBBRC: Build Back Better Regional Challenge
- EDA: Economic Development Administration

For more information please visit the About page.

Data As of Date: July 6, 2023



How to Get Involved

- **Reach out to the teams in your city/region.**
- **Help them build the partnerships.** Work through the NSF Engines Builder Platform.
- **Amplify the stories** of our NSF Engine awardees and their communities.
- **Co-Fund our awardees and the Engines portfolio,** help them unlock new sources of funding.
 - Philanthropy
 - Corporate commitments
 - State and local government commitments
 - Complementary federal investments

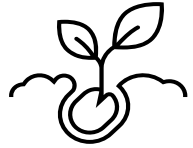


NSF Engines Builder Platform

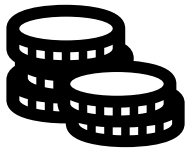
- **Run by The Engine Accelerator, a public benefit corporation with origins at MIT.**
- **A unique post-award support model that will provide tailored resources and a high level of personalized engagement.**
- **The NSF Engines Builder Platform is a human-centered portfolio of support structures that empowers awardees with the tools, networks and capital needed to thrive.**
- **The Platform is inspired and informed by the support systems pioneered by venture incubators and accelerators, national philanthropy and lessons learned from prior place-based investment efforts.**



This is Only the First Chapter



We're seeding these regions but there is much work to be done. It will require a village.



Awards are up to 10 years (up to \$160 M). 10 NSF Engines will be eligible for their next tranche of funding in 2025, dependent on progress made towards goals.



Running a second round of the NSF Engine (pending the availability of funds).



We expect that NSF Engines and Development Awardees, and even other proposers will team up to build stronger coalitions. Some will be successful in the NSF Engines program while others will be funded by complementary programs at NSF and across the federal government.



Thank You

Contact for questions :

engines@nsf.gov

