NSF ENGINES FACT SHEET

U.S. National Science Foundation's Regional Innovation Engines

Biden administration announces first 10 NSF Regional Innovation Engines to catalyze and foster new technologies and spur new jobs and economic growth across the U.S.

The latest investment by the Biden administration will accelerate key technologies, create new jobs and advance U.S. competitiveness.

Today, President Biden and U.S. National Science Foundation Director Sethuraman Panchanathan announce 10 inaugural NSF Regional Innovation Engines (NSF Engines) awards spanning 18 states. These NSF Engines will harness the nation's science and technology research and development enterprise and regional-level resources to spur innovation leading to breakthrough technologies and new jobs. The NSF Engines program was authorized by the "CHIPS and Science Act of 2022" — signed by President Biden in August 2022 — and is part of the president's agenda to grow the economy across the nation.

With an initial investment of $150 million over two years and a potential investment of nearly $1.6 billion over the next decade, NSF Engines represent one of the single largest broad investments in place-based research and development in the nation's history — uniquely placing science and technology leadership as the central driver for regional economic competitiveness throughout the U.S. Each NSF Engine will initially receive up to $15 million for two years. NSF's initial $150 million investment in these 10 regions leverages nearly twice as much funding in the projects and regions from state and local governments and private industry. Teams that demonstrate progress toward well-defined milestones could potentially receive up to $160 million each from NSF over 10 years, as they seek to catalyze the NSF funding to draw additional investments into their regions.

What makes the NSF Engines program truly groundbreaking?

This investment represents the broadest and most significant investment in place-based innovation since Congress created the modern university system over 160 years ago with the "Morrill Land-Grant Acts." While most innovation ecosystem programs fund individual startups and/or economic development projects for short windows, often one to four years, the NSF Engines program is making long-term investments in ecosystems at an unprecedented scale and time frame — up to 10 years and $160 million per awardee. If NSF and the awardees are successful, there will be more world-class innovation ecosystems in regions of the country that have historically been left behind by the tech boom. It's already working as NSF's investment has already been matched 2-to-1 by private, philanthropic, and other government sources. This is a new frontier for the federal government and our agency couldn't be more excited about launching this new audacious model.

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NSF ENGINES FAQ:

Who is receiving these awards? Do these teams look different from traditional NSF awardees?
Simple answer is yes! Very different.

New to NSF funding
Four out of 10 lead organizations are new to NSF funding.

Non-academic leads
Four out of 10 lead organizations are non-academic institutions.

Minority-serving institutions (MSIs) and Community Colleges
Two out of 10 NSF Engines are led by MSIs. All 10 include community college partners.

Non-academic partners
- Over 150 industry partners.
- Over 120 nonprofits and 10 federal agencies.
- Over 50 state, local or tribal governments.
- Nearly 30 incubators and investors.

How will the NSF Engines work with the EDA Tech Hubs?
The National Science Foundation and Department of Commerce's Economic Development Administration, which runs the Tech Hub program, worked closely together during the review process and that collaboration will continue going forward. We have at least 12 NSF Engines and development awardees competing for Tech Hub designations and four Build Back Better Regional Challenge awardees are in our first cohort of ten NSF Engines, which unlocked $230 M in complementary investments.

The EDA Tech Hubs and NSF Engines efforts are complementary, not duplicative. NSF Engines awards are up to 10 years with a focus on creating the research and translational spine of an emerging innovation ecosystem. EDA Tech Hubs are four-year awards with a much greater focus on scaling current tech-based innovations and creating the accompanying infrastructure to power these ecosystems. Both the technology topic areas and ecosystems within the EDA Tech Hubs communities are likely more mature, given their shorter timelines for impact.

Is NSF planning to run the NSF Engines competition again?
There is no new funding opportunity available at this time. But, NSF anticipates making an announcement about future around in the first half of calendar year 2024, pending the availability of funds.

How can I get involved?
If you are interested in working with NSF Engines, complete the NSF Engines Engagement Interest Form. This form provides interested parties with the opportunity to express interest in partnering with NSF Engines and NSF Engines Development Awardees in a variety of ways, including hiring, mentoring and co-funding.

If you are interested in learning more about more opportunities to connect with the Builder Platform to support initiatives and teams spanning the entire portfolio, please email BuilderPlatform@engine.xyz

NSF ENGINES AWARDS:

Ten NSF Engines covering 18 states will transform their regions:

- *Central Florida Semiconductor Innovation Engine (Florida)*, led by International Consortium for Advanced Manufacturing Research (ICAMR, Inc.) (doing business as BRIDG), aims to play a critical role in supporting the nation's capability for semiconductor advanced packaging design and manufacturing, rooting a vital industry on American shores and securing national defense.

- *Colorado-Wyoming Climate Resilience Engine (Colorado and Wyoming)*, led by Rocky Mountain Innovation Initiative Inc. (doing business as Innosphere Ventures), aims to advance the region's research and commercialization efforts focused on sensing, monitoring and predictive analytic technologies for climate resiliency spanning methane emissions, soil carbon capture, earth sensing, water scarcity, wildfires and extreme weather.

- *Great Lakes Water Innovation Engine (Illinois, Ohio and Wisconsin)*, led by Current Innovation NFP, aims to discover, develop and deploy innovative key technologies that attract water-intensive manufacturers to the region, recover valuable energy and mineral resources from wastewater streams, and foster workforce opportunities, all while maintaining environmental health.

- *Louisiana Energy Transition Engine (Louisiana)*, led by Louisiana State University, aims to enable a clean energy transition for the state by advancing research and commercialization efforts in the areas of carbon capture, the use of hydrogen as an alternative fuel, carbon dioxide as a feedstock, and sustainable water and sustainable manufacturing for clean energy to promote pathways to decarbonization across the state of Louisiana.

- *Paso del Norte Defense and Aerospace Innovation Engine (New Mexico and Texas)*, led by The University of Texas at El Paso, aims to fuel the growth of dynamic aerospace and defense manufacturing in Paso del Norte, an eight-county region on the U.S.-Mexican border, by creating a platform that combines an emerging digital engineering paradigm and skilled workforce development.

- *Piedmont Triad Regenerative Medicine Engine (North Carolina and South Carolina)*, led by the Wake Forest University School of Medicine, aims to cultivate breakthroughs in health care by providing the resources necessary to accelerate the transition of use-inspired regenerative medicine technologies into commercial products. Growth in this industry will help address long-term challenges related to retraining and upskilling the local workforce by developing a technical infrastructure for historically Black colleges and universities in the region to reduce disparities for underrepresented groups in science, technology, engineering and math fields.

- *North Carolina Textile Innovation and Sustainability Engine (North Carolina, South Carolina, Tennessee and Virgina)*, led by The Industrial Commons, aims to advance the nation's capacity for environmentally sustainable textiles by advancing smart textiles and wearable technology, reducing carbon outputs and the number of textiles in landfills, and nurturing the development of new product lines that use circular methods.

- *North Dakota Advanced Agriculture Technology Engine (North Dakota)*, led by North Dakota State University, aims to create resilient and secure food systems in North Dakota by combining advanced genomics, climate modeling, nanoscale sensors and computer networks to monitor and improve the growth of crops via strong networks of stakeholders across the state — including bringing tribal, rural and farming communities intentionally and meaningfully into the process of co-creating a blueprint for the future of agriculture and workforce development.

• *Southwest Sustainability Innovation Engine (Arizona, Nevada and Utah)*, led by Arizona State University, aims to equitably transform water security, renewable energy and net carbon emissions in the region by incentivizing new technology and governance, expanding infrastructure and capacity for knowledge translation, and preparing a diverse and highly skilled workforce.

• *Upstate New York Energy Storage Engine (New York)*, led by Binghamton University, aims to establish a tech-based, industry-driven hub for new battery componentry, safety testing and certification, pilot manufacturing, applications integration, workforce development and energy storage, including through material sourcing and recovery.
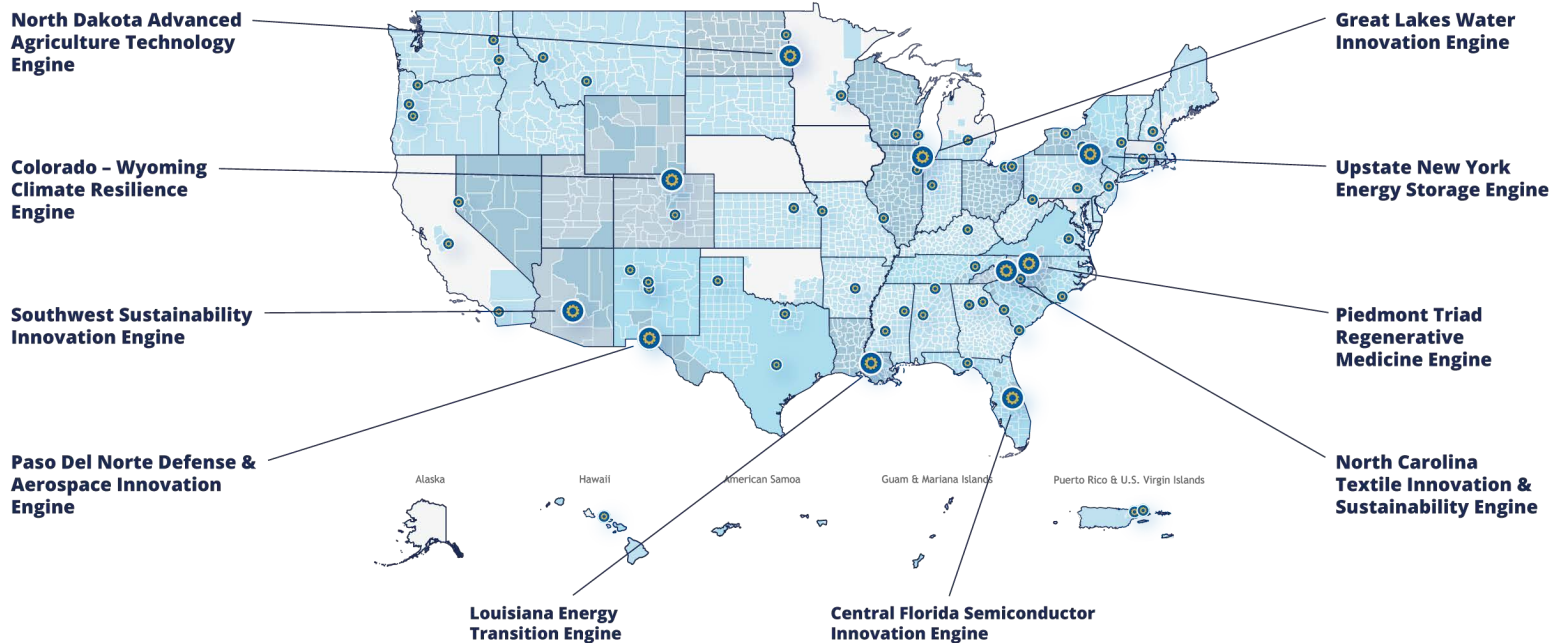
Learn more about the NSF Engines:

Launched in May 2022 by NSF's Directorate for Technology, Innovation and Partnerships —authorized as part of the "CHIPS and Science Act of 2022" — the NSF Engines program uniquely harnesses the nation's science and technology potential. To learn more about the NSF Engines program and future funding opportunities and follow along as the portfolio of awardees begin their entrepreneurial journey, sign up for NSF's newsletter.

For more information on NSF Engines and to see an interactive map of their coverage, visit:

nsf.gov/engines.

For press inquiries, please email

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