NSF ENGINES
INAUGURAL AWARDS

NSF's Regional Innovation Engines Awards

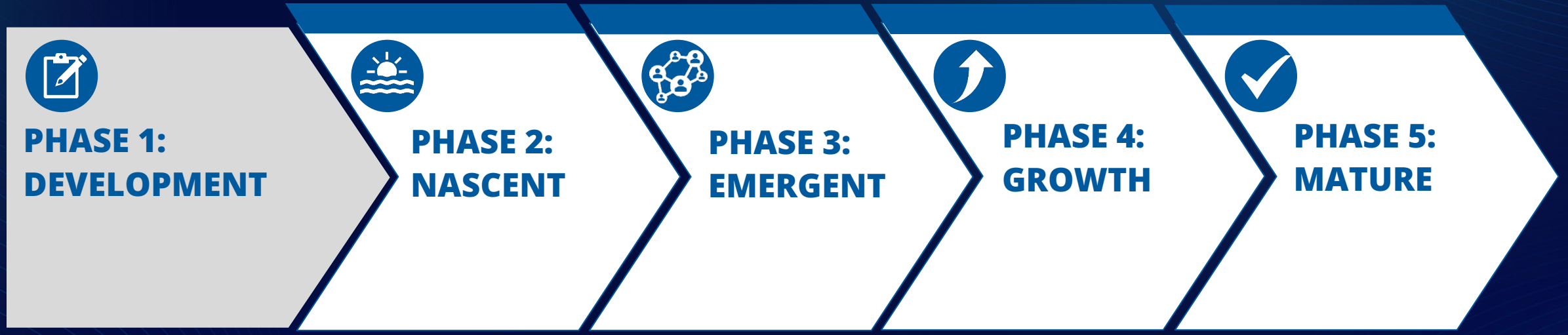
NSF establishes 10 inaugural Regional Innovation Engines across the country

- The first-ever NSF Engines awards span 18 states.
- Initial investment of $150 million over two years, with a potential investment of nearly $1.6 billion over the next decade.
- This groundbreaking investment represents the single largest broad investment in place-based science and technology R&D in our nation’s history.

“The inaugural NSF Engines awards demonstrate our enduring commitment to create opportunity everywhere and enable innovation anywhere. Through these NSF Engines, NSF aims to expand the frontiers of technology and innovation and spur economic growth across the nation through unprecedented investments in people and partnerships. NSF Engines hold significant promise to elevate and transform entire geographic regions into world-leading hubs of innovation.”

- NSF Director Sethuraman Panchanathan

Funding Levels and Model



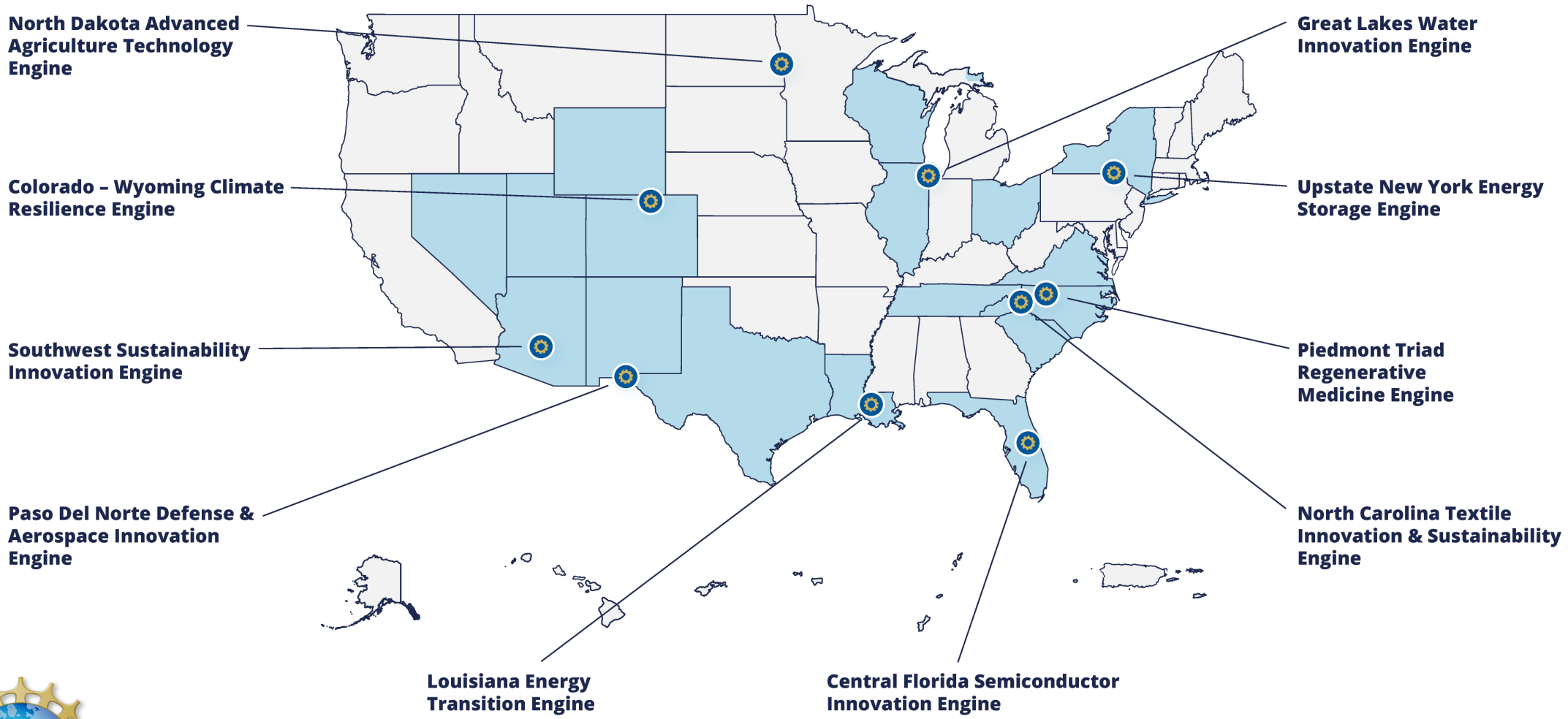
Development Awards - $1M (2 years)

44 Awardees + 15 invited

NSF Engines – Up to $160M (Up to 10 years)

10 Awardees

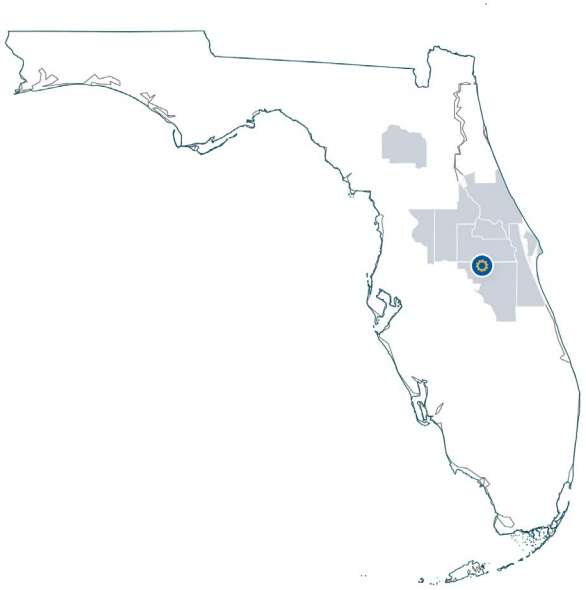
10 Inaugural NSF Engines



Central Florida Semiconductor Innovation Engine

Lead organization:
International Consortium for Advanced Manufacturing Research (ICAMR, Inc.)
(dba BRIDG — economic development organization)

Region of service:
Osceola County, Florida, and surrounding counties (Central Florida)



Aims:
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.

10 partners

Key Technology Areas:
Advanced computing and semiconductors; robotics and advanced manufacturing.

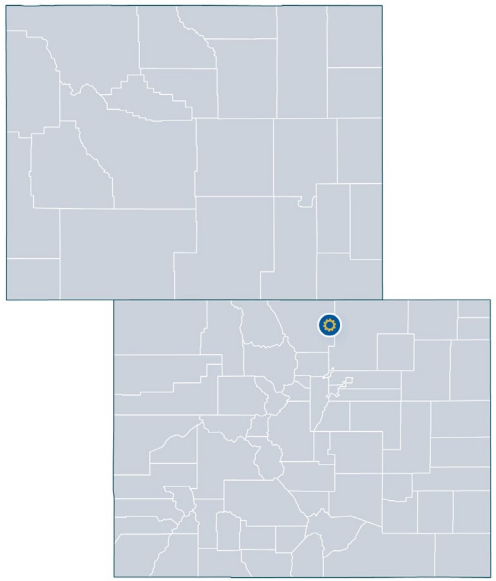
Learn more: https://gobridg.com/cfl-semi-innovation-engine

Colorado-Wyoming Climate Resilience Engine

Lead organization:
Rocky Mountain Innovation Initiative, Inc. (dba Innosphere Ventures)

Region of service:
Colorado and Wyoming (entire states)

Aims:
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.



145 partners

Key Technology Areas:
Disaster prevention and mitigation; advanced communications; artificial intelligence.

Learn More: www.co-wyengine.org

Great Lakes Water Innovation Engine

Lead organization:
Current Innovation NFP

Region of service:
Illinois, Wisconsin and Ohio (anchor nodes in urban and rural areas

Aims:
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.

58 partners

Key Technology Areas:
Biotechnology; advanced energy and industrial efficiency technologies.

Learn More: https://greatlakesrenew.org

Louisiana Energy Transition Engine

Lead organization:
Louisiana State University

Region of service:
Louisiana (entire state)

Aims:
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.

49 partners

Key Technology Areas:
Advanced energy and industrial efficiency technologies.

Learn More: https://www.fuelouisiana.org/

North Carolina Textile Innovation & Sustainability Engine

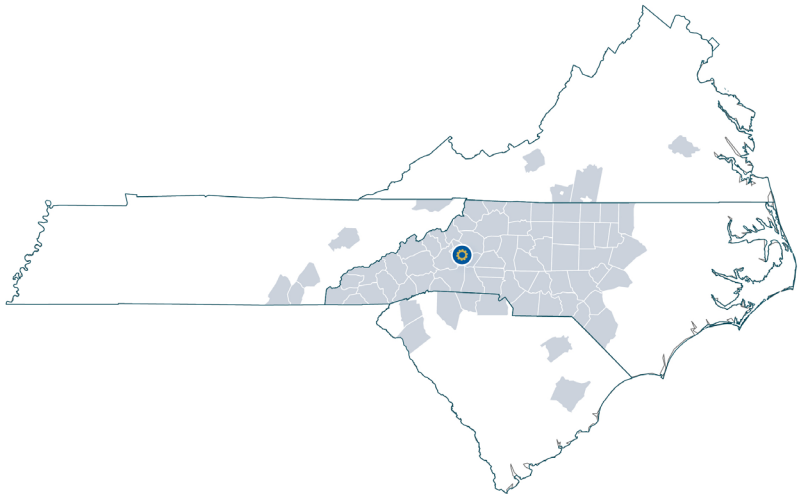
Lead organization:
The Industrial Commons

Region of service:
Western North Carolina with parts of South Carolina and Tennessee

Aims: 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.

44 partners

Key Technology Areas:
Advanced manufacturing; material science.

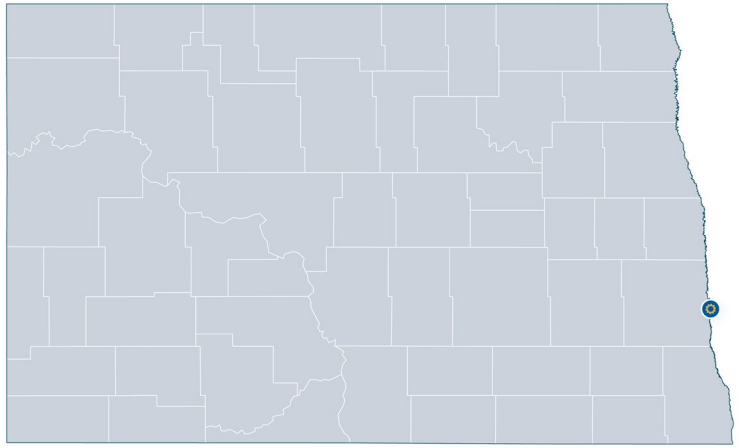


Learn More: https://nctise.org/

North Dakota Advanced Agriculture Technology Engine

Lead organization:
North Dakota State University

Region of service:
North Dakota (entire state)



Aims:
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.

65 partners

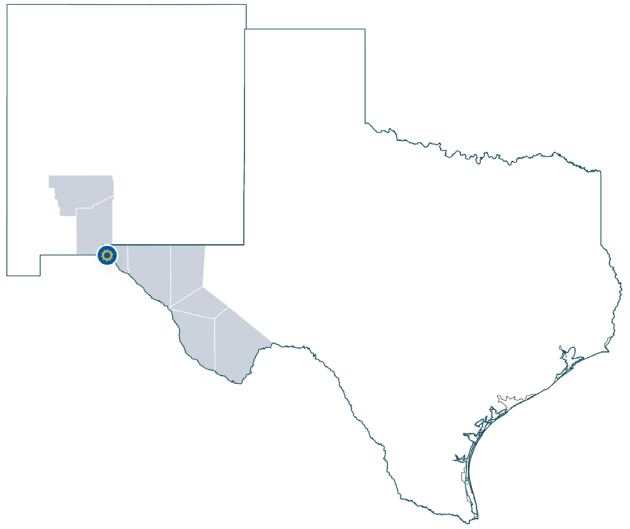
Key Technology Areas:
Advanced communications; robotics and advanced manufacturing; biotechnology.

Learn More: www.FARMSfeedstheworld.com

Paso del Norte Defense and Aerospace Innovation Engine

Lead organization:
University of Texas at El Paso

Region of service:
El Paso, Texas, and immediately surrounding counties in Texas and New Mexico



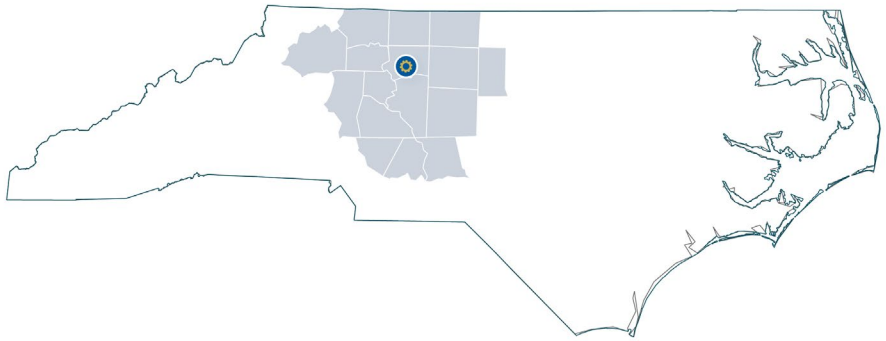
Aims:
Fuel the growth of dynamic aerospace and defense manufacturing in Paso del Norte, a eight-county region on the U.S.-Mexican border, by creating a platform that combines emerging digital engineering paradigm and skilled workforce development.

18 partners

KTA:
Advanced materials; robotics and advanced manufacturing; artificial intelligence.

Learn More: utep.edu/nsf-engine-defense-aerospace/

Piedmont Triad Regenerative Medicine Engine



Lead organization:
Wake Forest University School of Medicine

Region of service:
Greensboro, Winston-Salem, and High Point, North Carolina (Piedmont Tr

Aims:
Cultivate breakthroughs in health care by providing resources 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.

81 partners

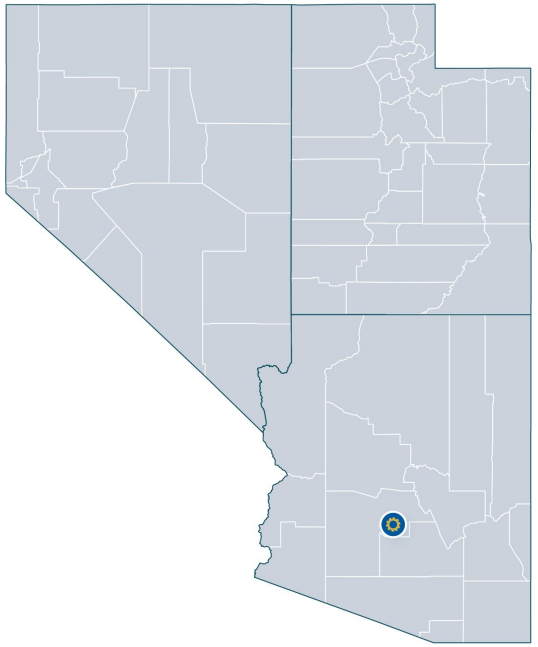
Key Technology Area:
Biotechnology.

Learn More: http://regenmedengine.com

Southwest Sustainability Innovation Engine

Lead organization:
Arizona State University

Region of service:
Arizona, Utah, Nevada (tied together by water scarcity challenges)



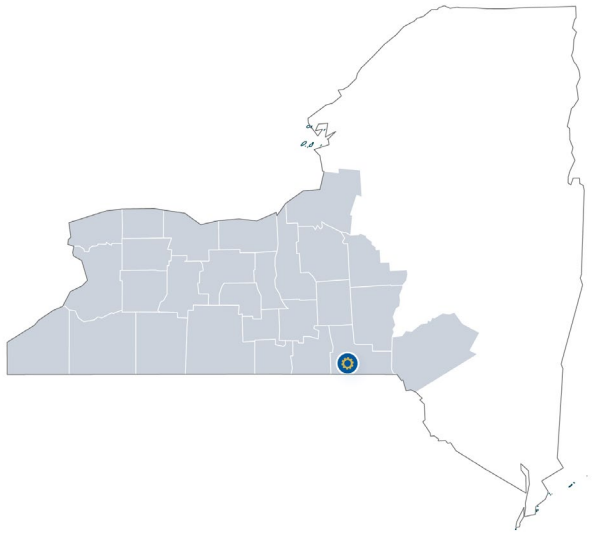
Aims:
Equitably transform water security, renewable energy and net carbon emissions in the region by incentivizing new technology and governance, expanding infrastructure and capacity for knowledge translation, and preparing a diverse and highly skilled workforce.

56 partners

Key Technology Areas:
Disaster prevention and mitigation; advanced energy and industrial efficiency technologies.

Learn More: SWSIE.asu.edu

Upstate New York Energy Storage En



Lead organization:
Binghamton University

Region of service:
Southern tier of New York

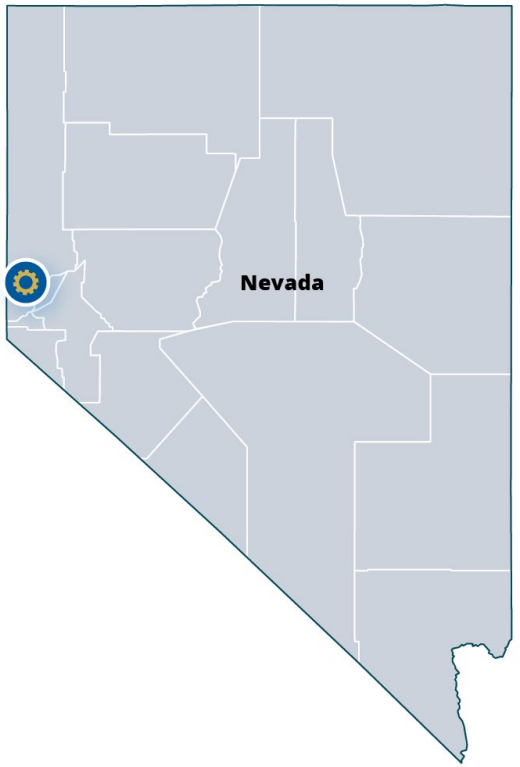
Aims:
Establish a tech-based, industry-driven hub for new battery componentry, safety test certification, pilot manufacturing, applications integration, workforce development ai energy storage, including through material sourcing and recovery.

40 partners

Key Technology Areas:
Advanced energy and industrial efficiency technologies, advanced computing and semiconductors, advanced materials, data and cybersecurity, disaster prevention and mitigation, robotics and advanced manufacturing

Learn More: https://newenergynewyork.com/nsf-upstate-ny-energy-storage-engine/

Nevada Development Award: Advancing Circular Economy for Li Batteries



Lead organization:
University of Nevada Reno

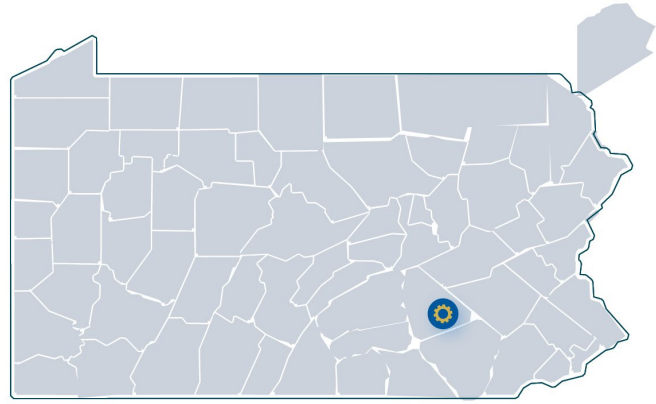
Region of service:
Nevada

Aims:
Building a clean energy economy with a focus on critical minerals and new battery technologies. Focus on lithium extraction, utilization and development of batteries, repurposing of used batteries, and rejuvenating and recycling lithium batteries.

24 partners

Key Technology Areas:
Advanced Manufacturing, Advanced Materials, Energy & Industrial Efficiency Tech.

Pennsylvania Development Award: Advancing Industrial Hemp Technologies



Lead organization:
Vytal Plant Science Research

Region of service:
Pennsylvania and part of New York

Aims:
Develop a new industrial hemp-based supply chain inclusive of improved seed genetics, labs, greenhouses, commercial farms, industrial decortication facilities and biomanufacturers. Create bio-based products for use in green building construction, packaging, foods, nutraceuticals, textiles, renewable energy, and land remediation.

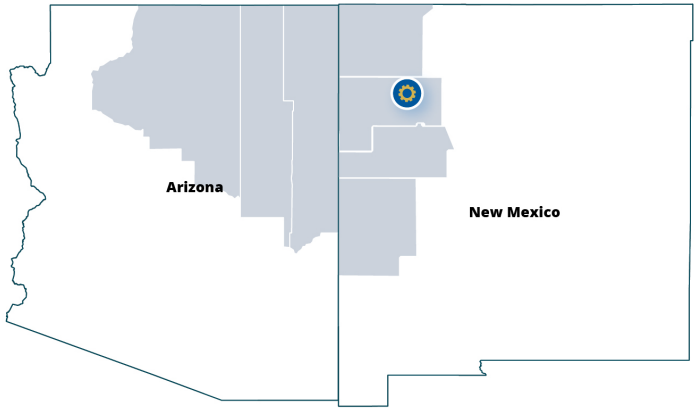
18 partners

Key Technology Areas:
Advanced Manufacturing and Biotechnology, Advanced Materials, Energy & Industrial Efficiency Tech.

Arizona/New Mexico Development Award: Advanced Manufacturing for Tribal Communities

Lead organization:
Navajo Technical University

Region of service:
Tribal nations and rural communities in Arizona and New Mexico

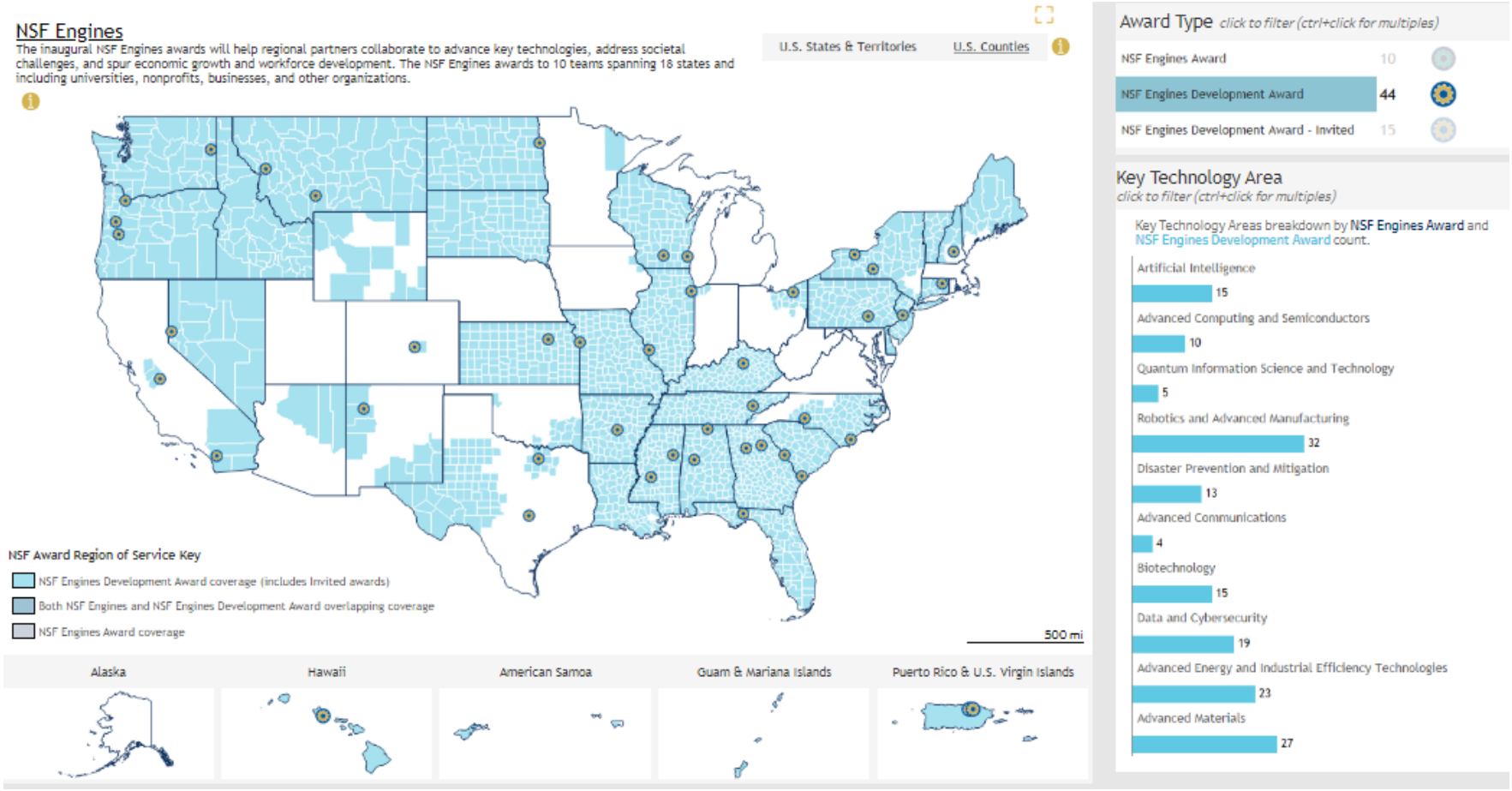


Aims:
Address a failure to involve tribal communities in technology transfer and advanced manufacturing, a key void in technology-based economic development. Develop distributed manufacturing micro-factories and technology centers in the Navajo Nation enabling remote rural tribal communities to participate in emerging supply chain operations in the space industry.

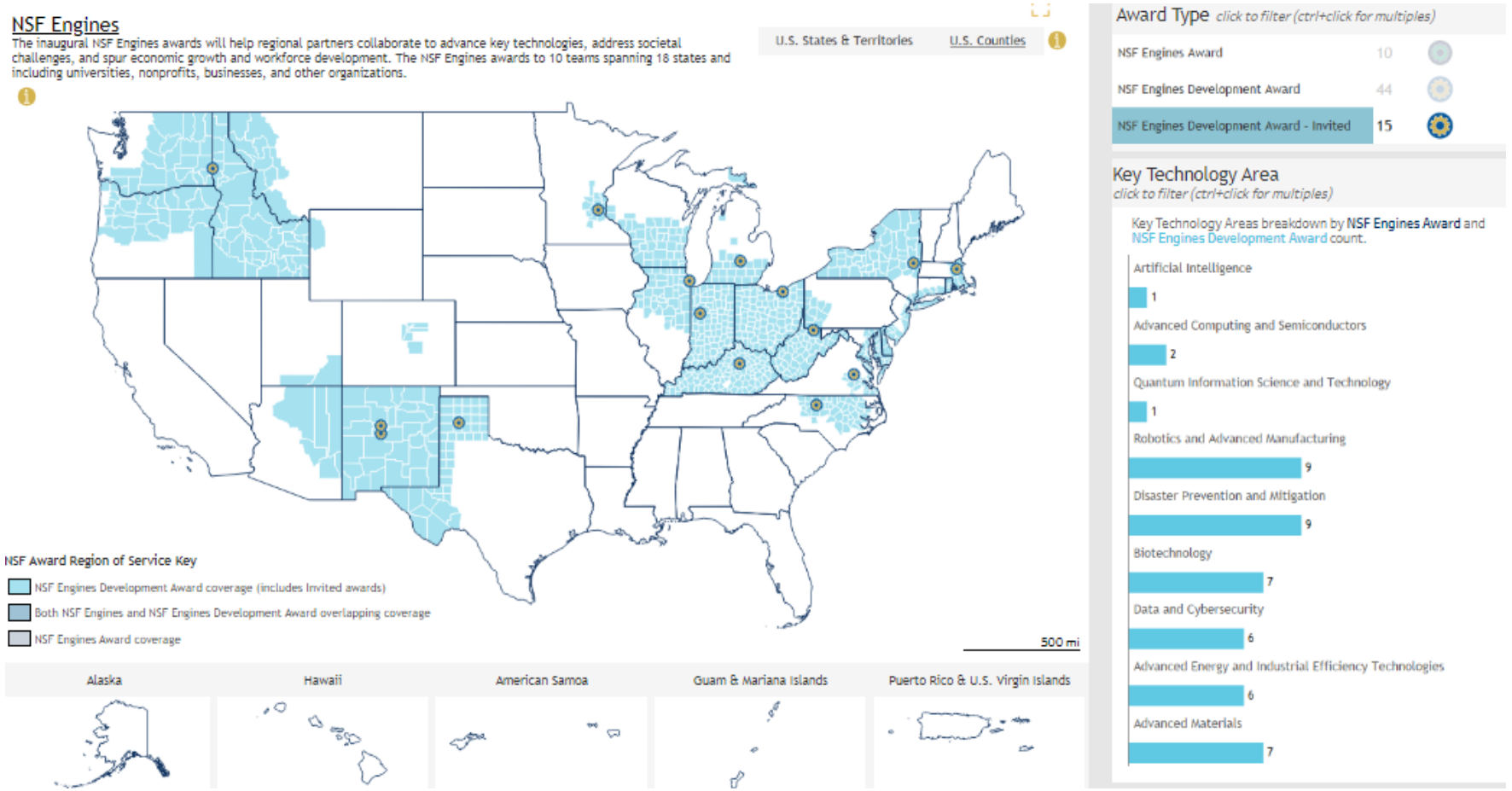
6 partners

Key Technology Areas:
Advanced Manufacturing, Advanced Materials, Energy & Industrial Efficiency Tech.

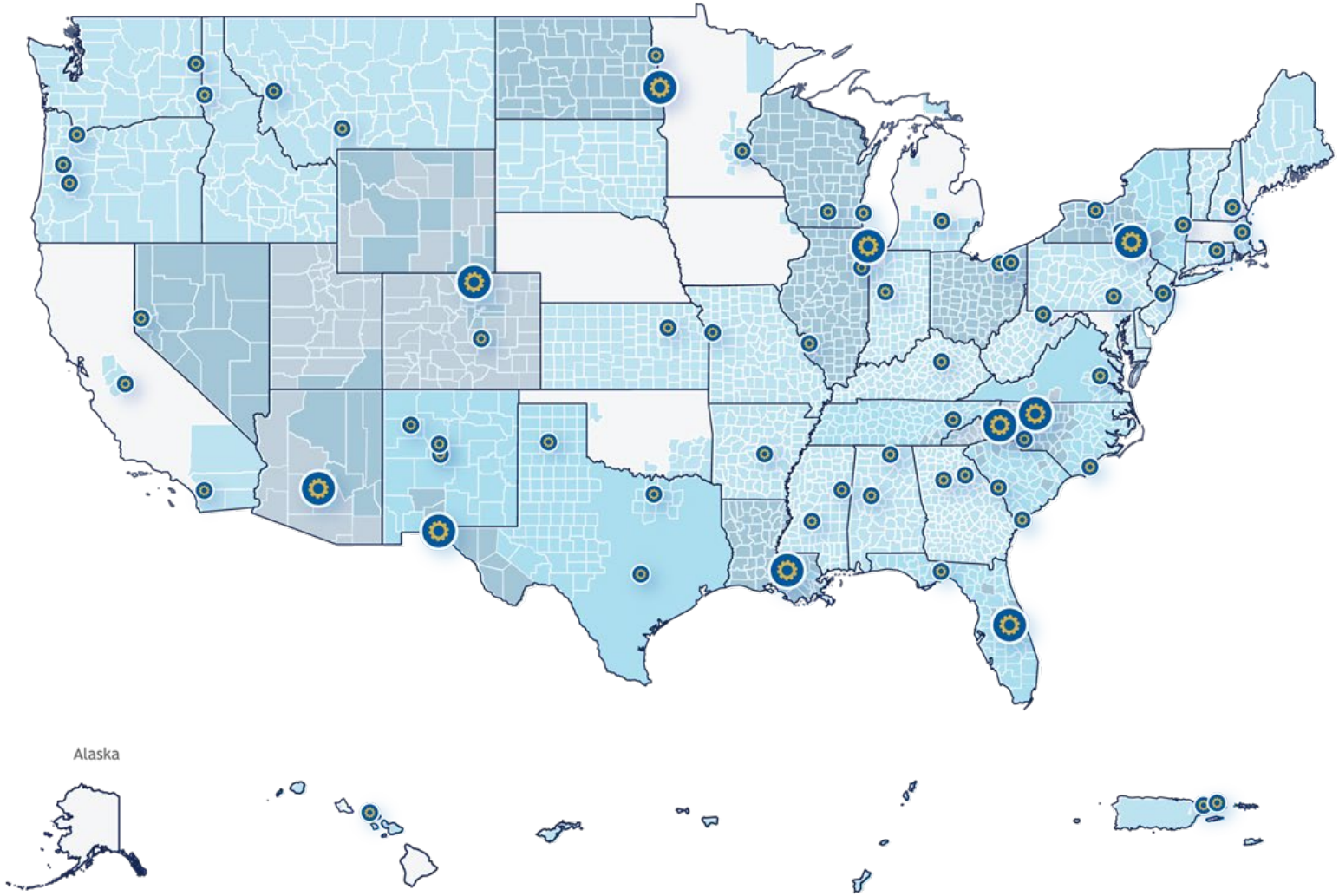
NSF Engines Development Awards



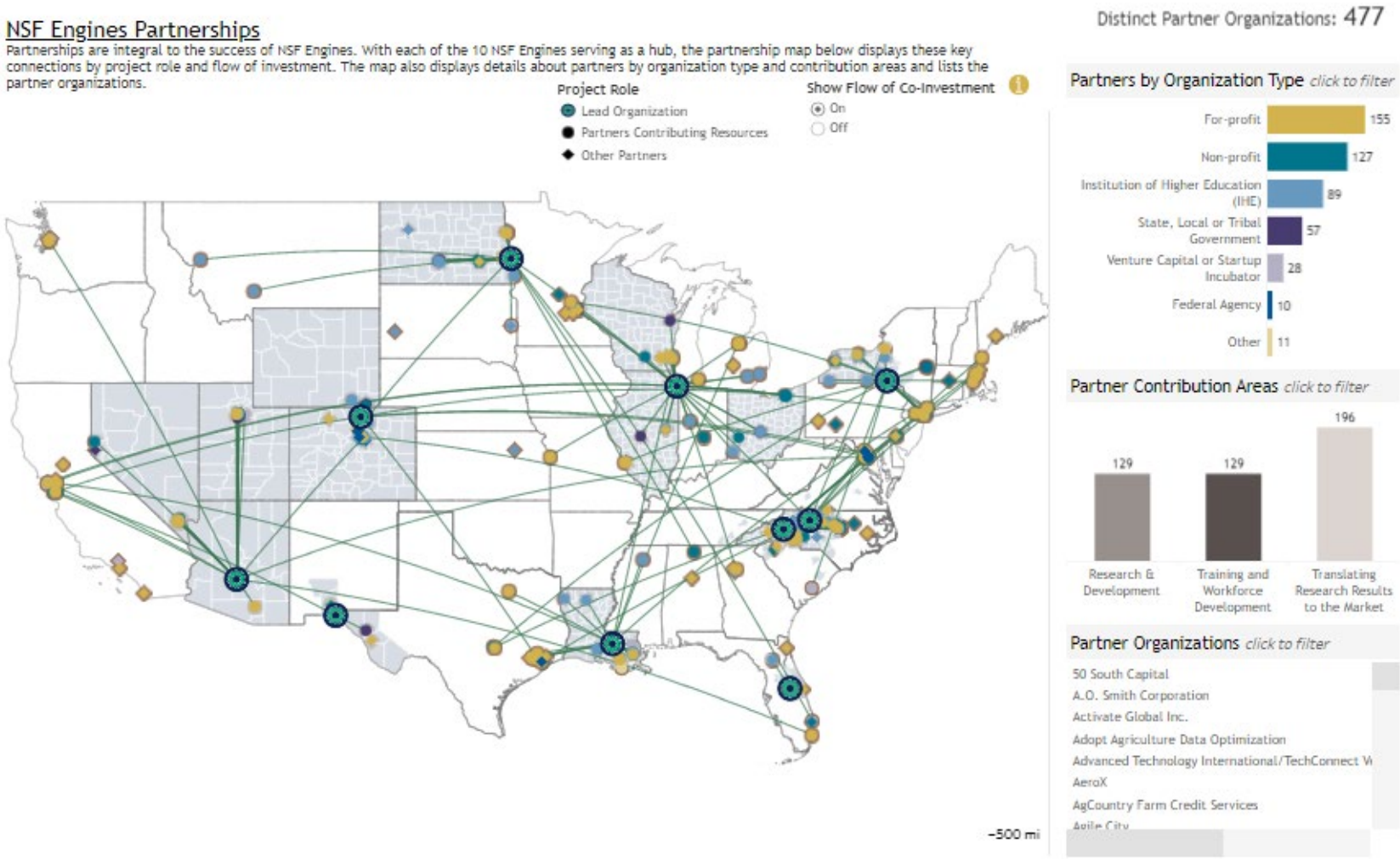
Invited NSF Engines Development Awards



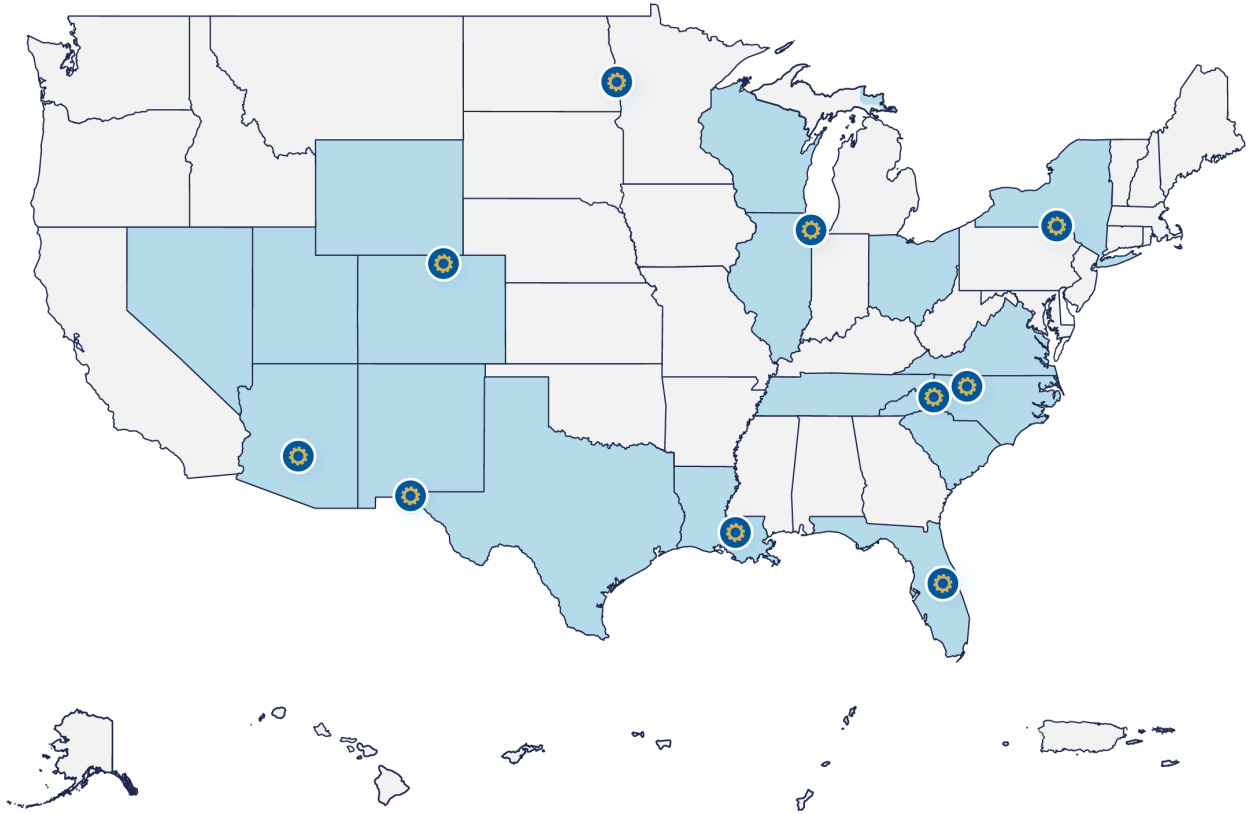
Full NSF Engines Portfolio



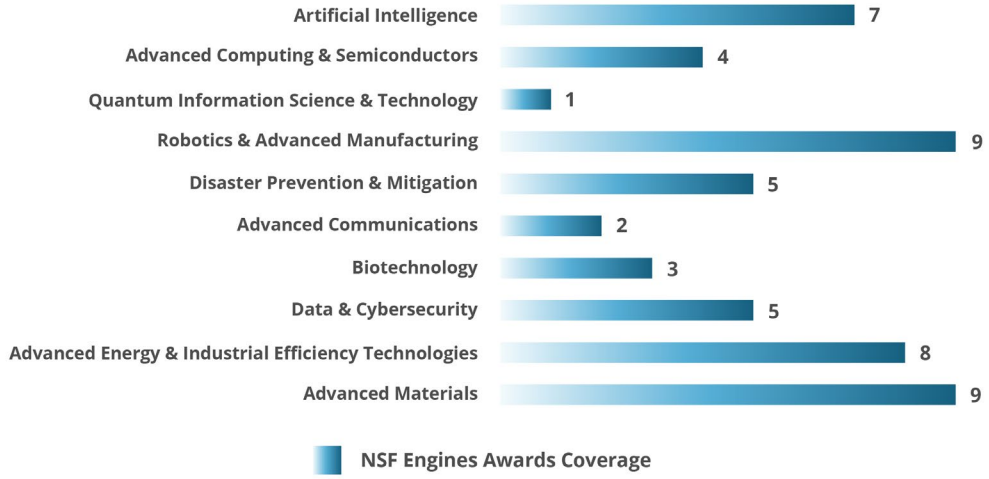
Partnership Network



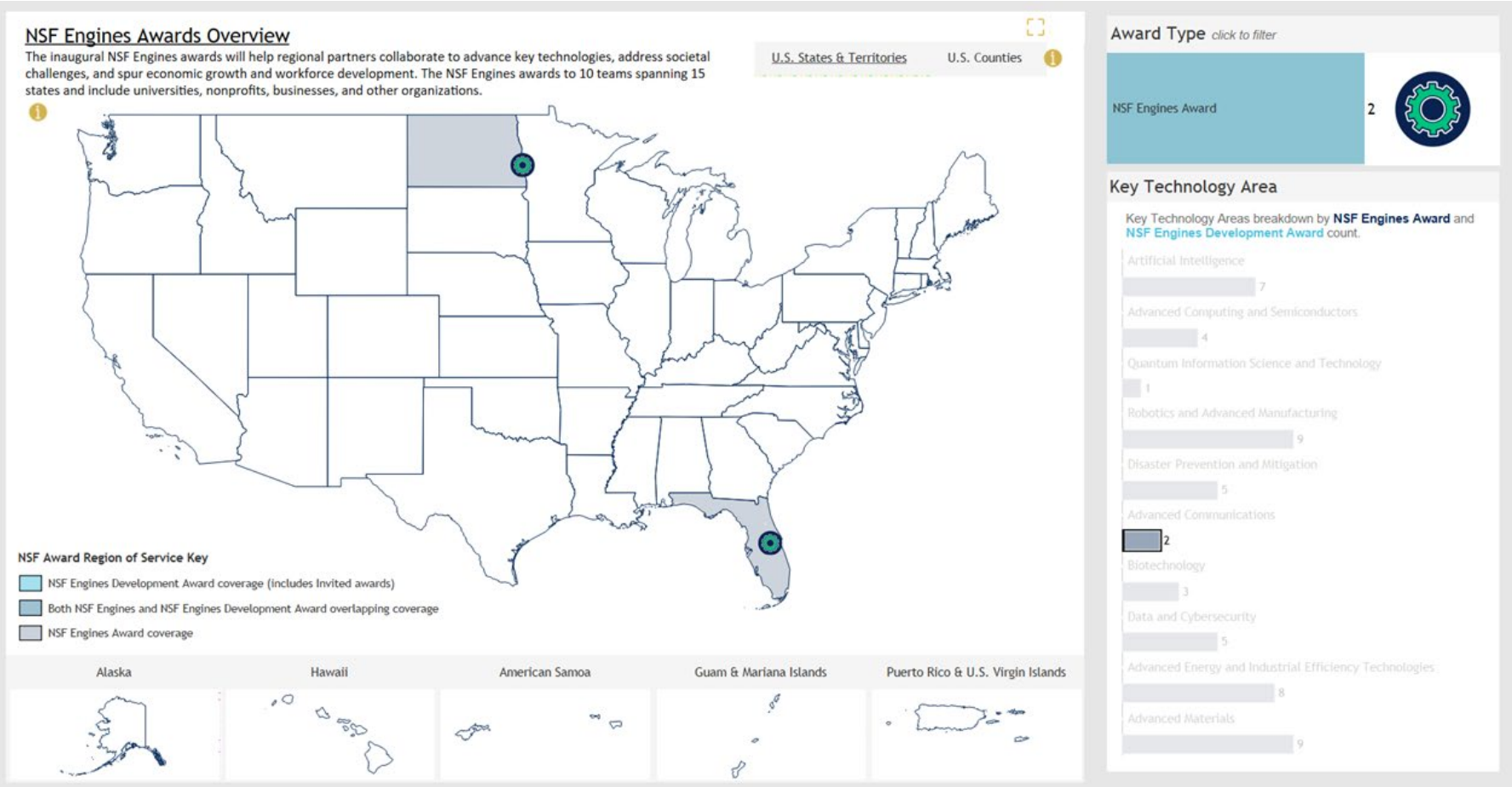
Key Technology Areas



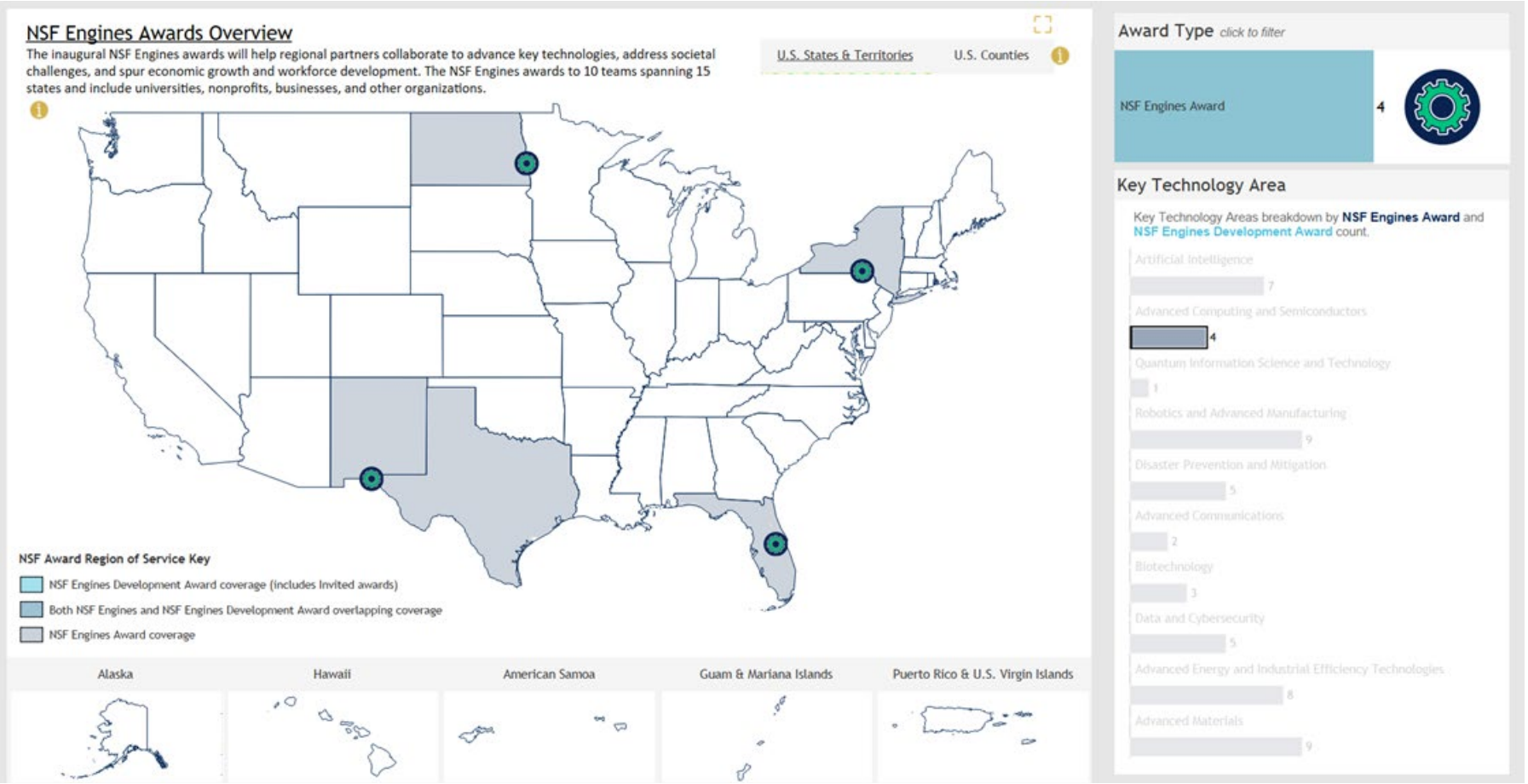
NSF ENGINES KEY TECHNOLOGY AWARDS AREA BREAKDOWN



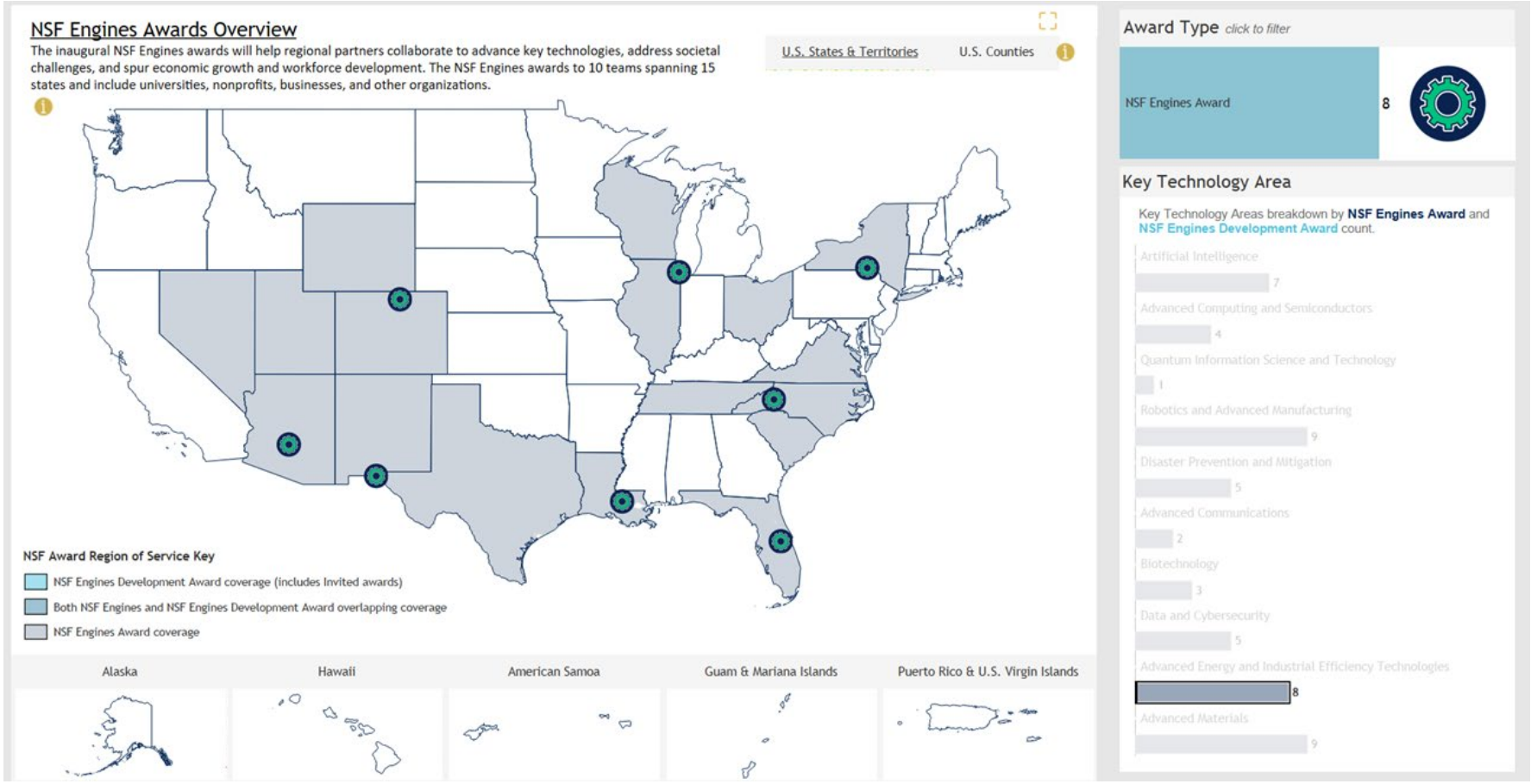
KTA: Advanced Communications



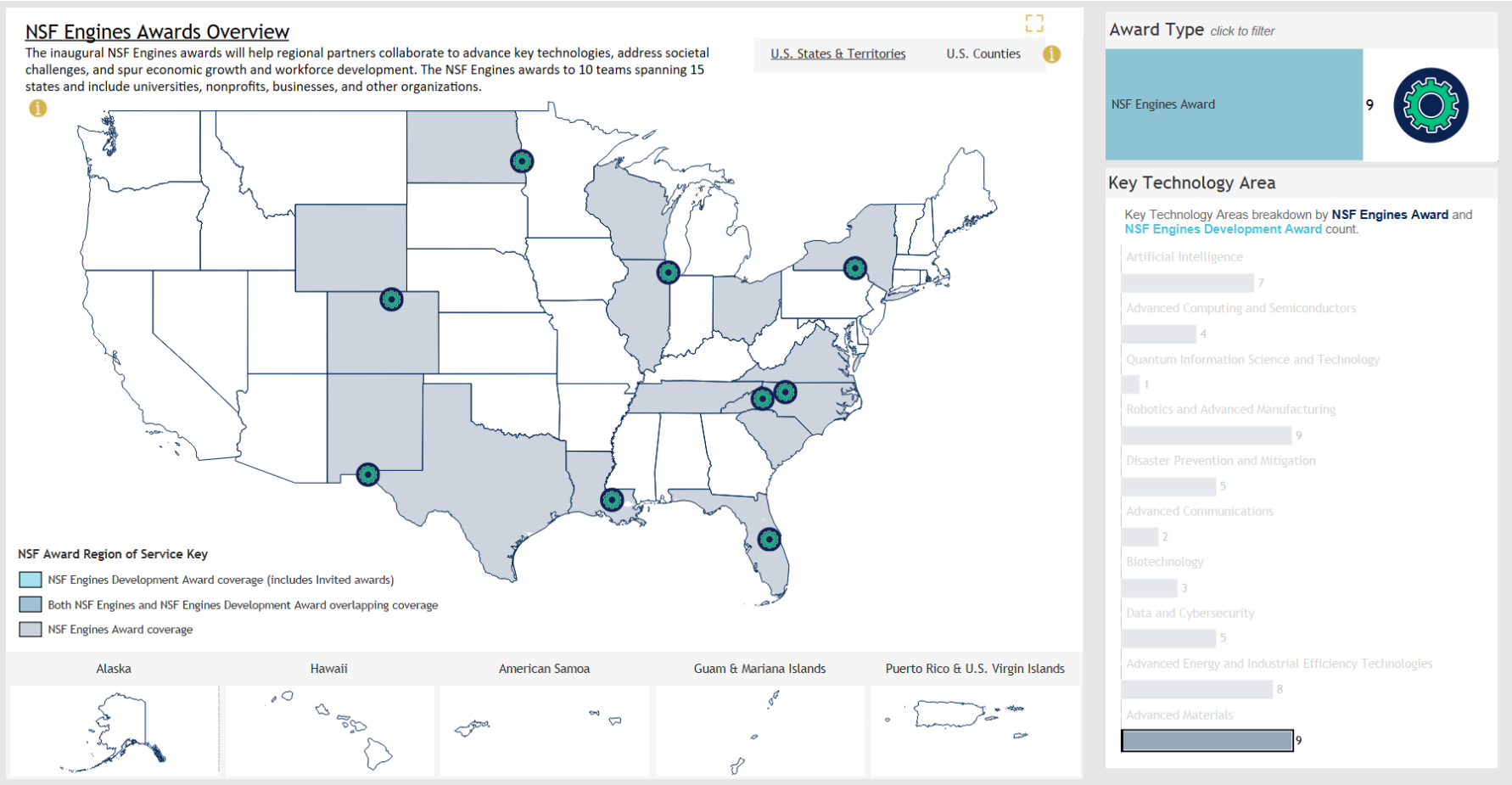
KTA: Advanced Computing and Semiconductors



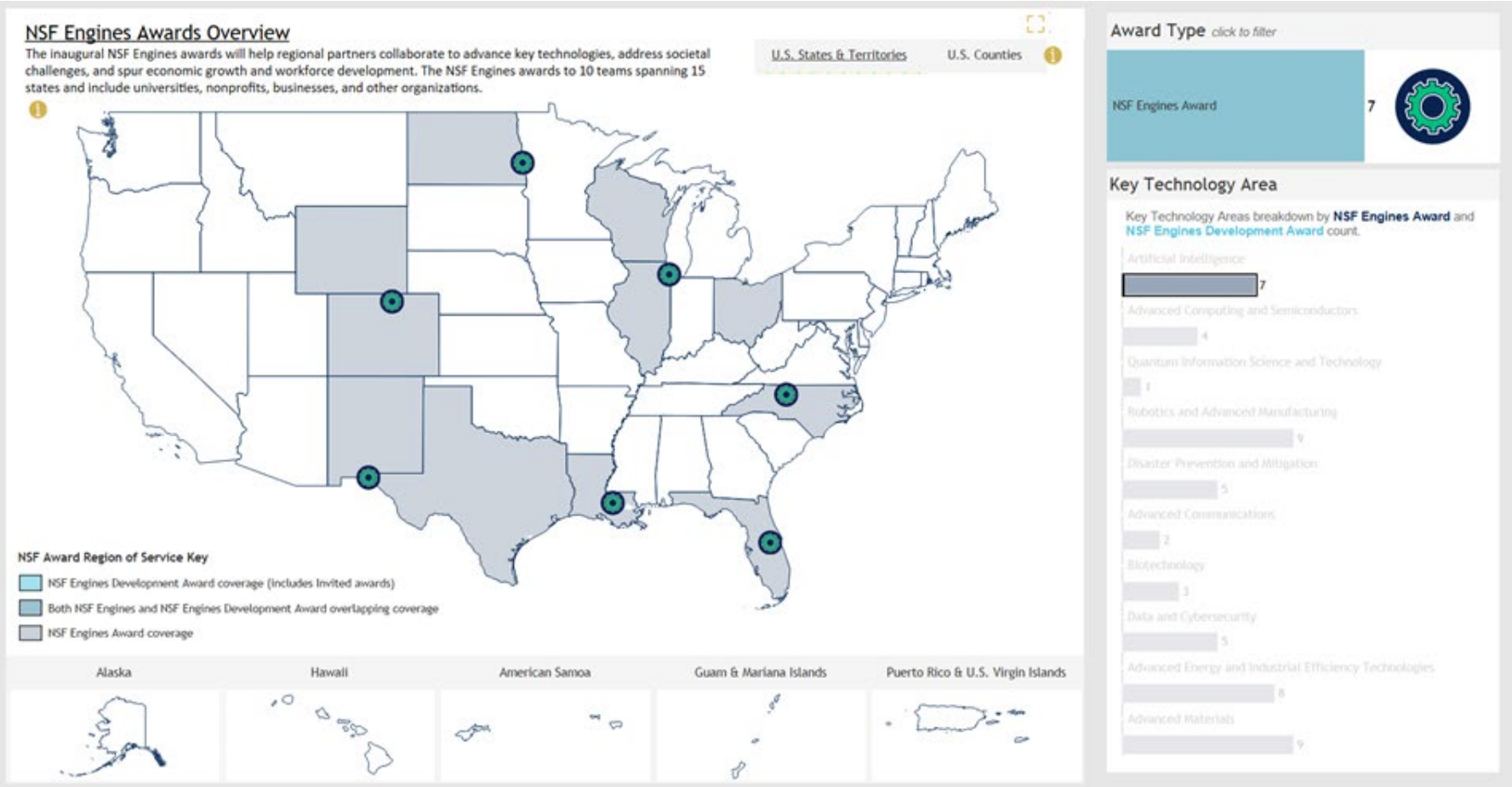
KTA: Advanced Energy and Industrial Efficiency Technologies



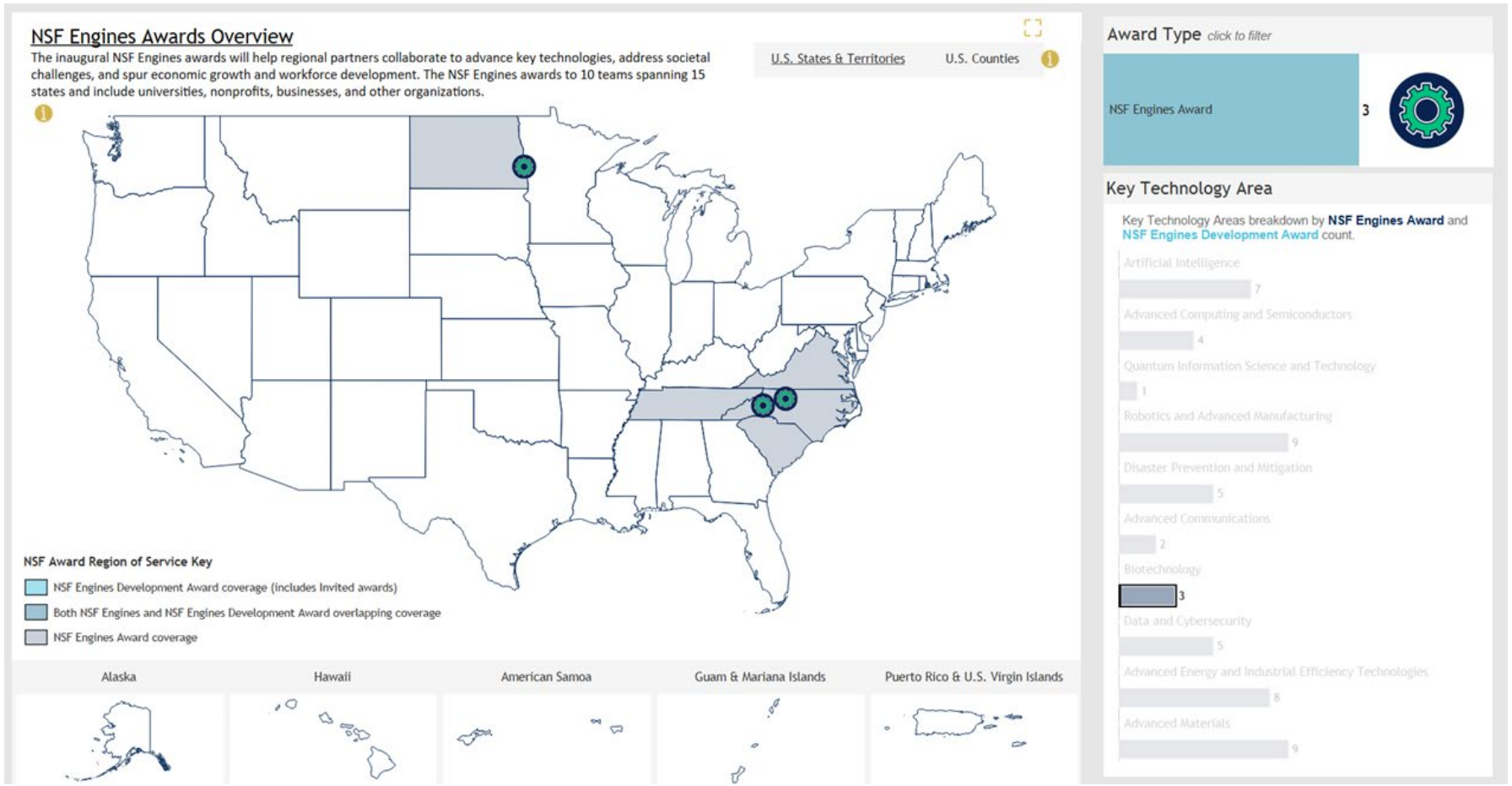
KTA: Advanced Materials



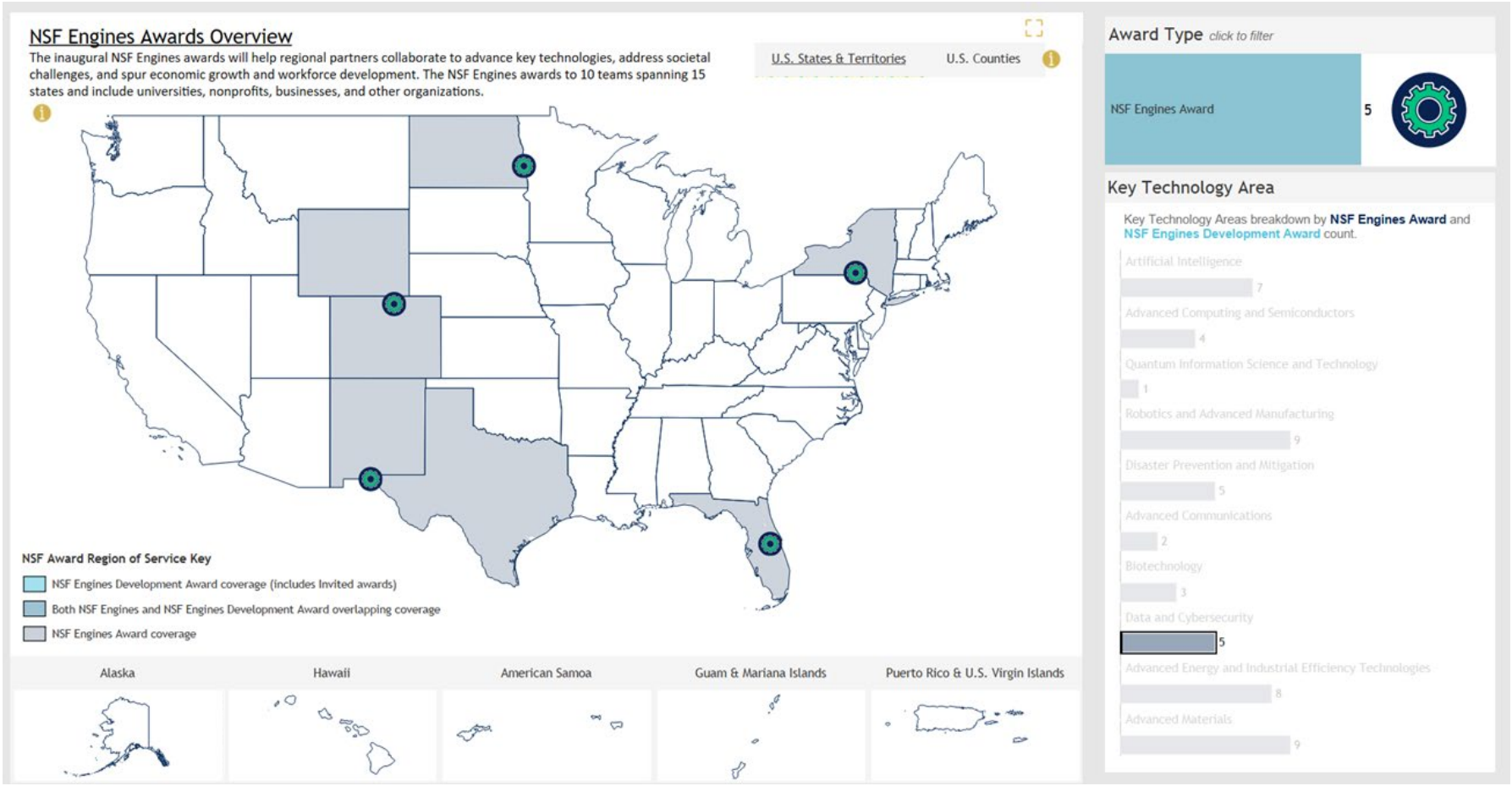
KTA: Artificial Intelligence



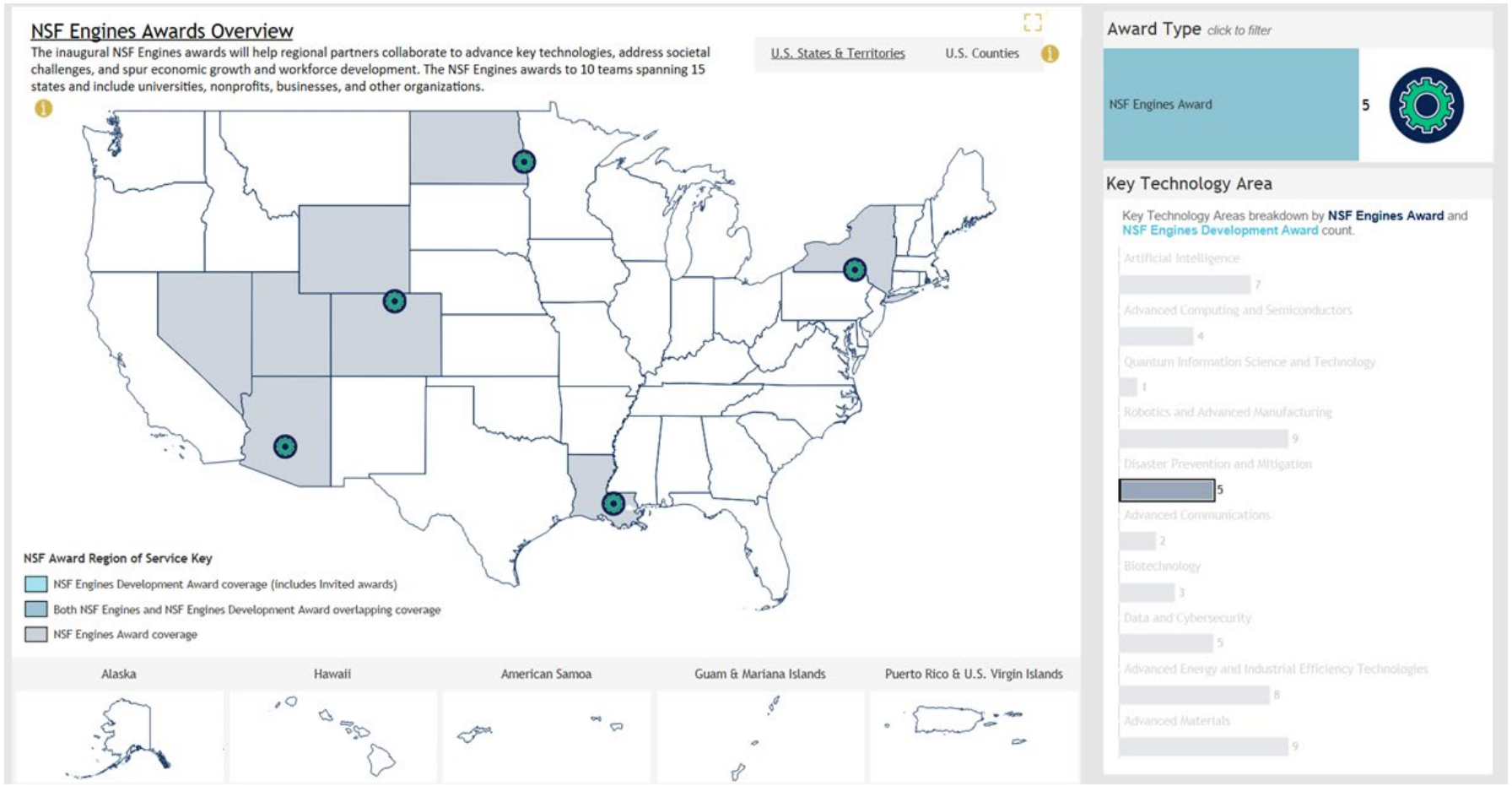
KTA: Biotechnology



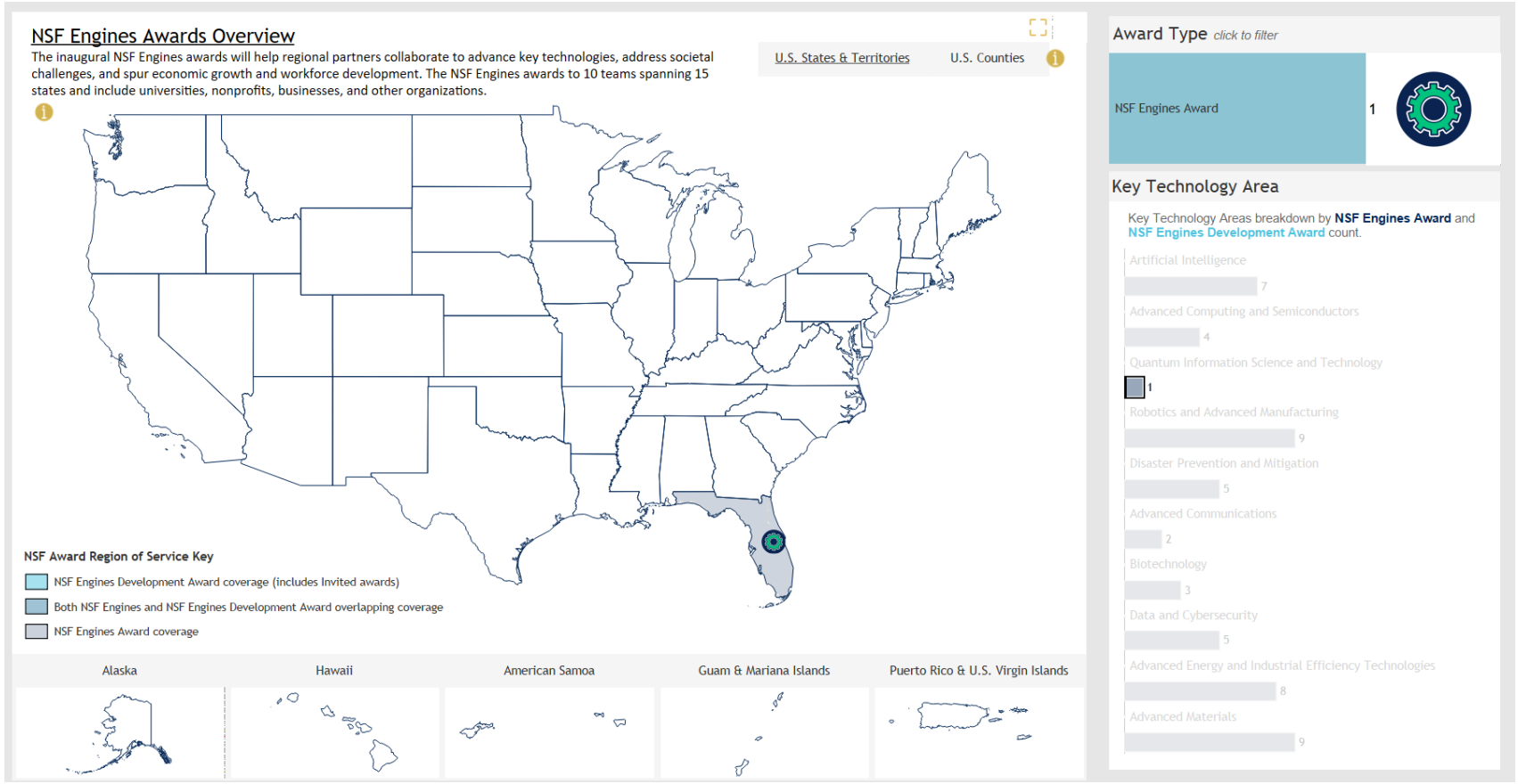
KTA: Data and Cybersecurity



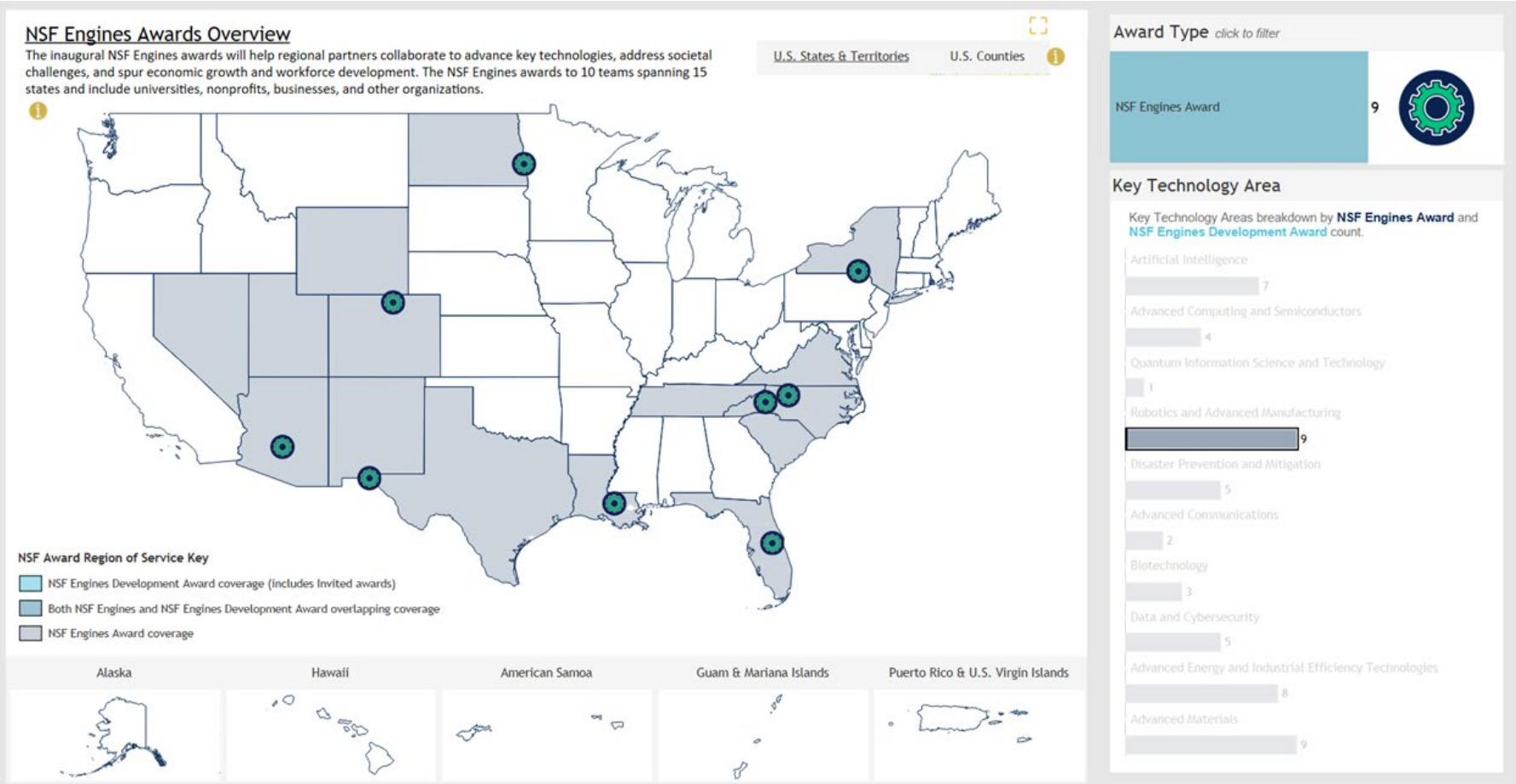
KTA: Disaster Prevention and Mitigation



Key Technology Area: Quantum Information Science and Technology



KTA: Robotics and Advanced Manufacturing



By The Numbers

679

Concept outlines submitted

44

NSF Engines Development Awards

10

NSF Engines Inaugural Awards

18

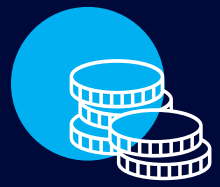
States receiving NSF Engines funding

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

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 and support that will significantly contribute to the success of the NSF Engines program.
- 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.

Share your interest in working with an NSF Engine

The NSF Engines team has created an interest form to help members of the innovation community connect with and support the NSF Engines Development Awardees and NSF Engines Awardees. NSF recognizes that building robust innovation ecosystems across the country requires identifying and working with new sources of talent and building diverse collaborations. The goal of this interest form is to create an entry point for individuals, organizations, and funders who are interested in supporting our portfolio of NSF Engine awardees and/or working within an NSF Engine to share their information.