Accelerating Technology, Innovation and Partnerships

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TIP Update Webinar
February 13, 2024
TIP Directorate Mission

TIP harnesses the nation's vast and diverse talent pool to advance critical and emerging technologies, address pressing societal and economic challenges, and accelerate the translation of research results from lab to market and society. TIP improves U.S. competitiveness, growing the U.S. economy and training a diverse workforce for future, high-wage jobs.
A New “Horizontal”: Strengthen, Scale Use-Inspired and Translational Research
Apr. 3: NSF announces 100 teams advancing to VITAL Prize Challenge

Apr. 25: NSF launches new $9.5M opportunity to support NSF Engines

May 5: NSF partners with Sweden for research and innovation

May 11: NSF announces the first-ever NSF Engines program awards to 44 unique

June 14: NSF selects 34 semifinalists for the inaugural NSF Engines competition

June 22: NSF releases its I-Corps™ Biennial report

July 14: NSF announces 54 teams picked for the VITAL Prize Challenge Semi-Final Round

Aug. 2: NSF Regional Innovation Engines program selects 16 teams for the final round of competition

Sept. 15: NSF launches pilot program to identify barriers and tools for historically underrepresented communities in the innovation ecosystem

Sept. 22: NSF launches new $9.5M opportunity to support NSF Engines

Sept. 26: NSF invests $26.7M in building the first-ever prototype open knowledge network

Sept. 27: NSF invests $18.8M in inaugural cohort of projects enabling experiential learning in key technologies

Sept. 28: NSF selects 5 teams to advance to Convergence Accelerator Phase 1
Sept. 28: NSF partners with the Institute for Progress to test new mechanisms for funding research and innovation

Sept. 29: NSF announces award for the NSF Engines Builder Platform

Sept. 29: NSF launches pilot program to enhance the potential for success of startups

Oct. 24: New report identifies pathways to strengthen U.S. competitiveness in key technology areas

Oct. 25: NSF invests over $26M in open-source projects

Oct. 26: NSF launches pilot to assess the impact of strategic investments on regional jobs

Nov. 28: NSF announces 18 teams for final round of the VITAL Prize Challenge

Dec. 7: NSF advances technologies to improve quality of life for persons with disabilities

Dec. 14: NSF announces first-ever Accelerating Research Translation awards to empower academic institutions to speed and scale translational research

Jan. 9: NSF launches Responsible Design, Development, and Deployment of Technologies program

Jan. 29: NSF awards 10 inaugural NSF Engines

Sept. 28: NSF invests $19.6M in emerging research institutions to grow their capacity to participate in regional innovation ecosystems and announces next funding opportunity

Oct. 26: NSF invests over $26M in open-source projects
TIP’s Core Message

TIP advances U.S. competitiveness and societal impact by nurturing partnerships that drive and accelerate:

- Diverse Innovation Ecosystems
- Technology Translation and Development
- Workforce Development
TIP’s Core Message

TIP advances U.S. competitiveness and societal impact by nurturing partnerships that drive and accelerate:

Diverse Innovation Ecosystems

Technology Translation and Development

Workforce Development
**NSF Convergence Accelerator** funds transdisciplinary teams through convergence research and innovation processes to stimulate innovative idea sharing and development of sustainable solutions to solve societal challenges.

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**Two Phases:**

**PHASE I (PLANNING)**
- 9 months
- Up to $750,000

**PHASE II (IMPLEMENTATION)**
- 24 months
- Up to $5 Million

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Opportunity available to:
- Academia
- Business & Industry
- Governments
- Nonprofits
NSF Convergence Accelerator Portfolio

**Track A**
Open Knowledge Networks

**Track B**
AI and the Future of Work

**Track C**
Quantum Technology

**Track D**
AI-Innovation Data Sharing & Modeling

**Track E**
Networked Blue Economy

**Track F**
Trust & Authenticity in Communication Systems

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**2019 COHORT**
Complete

**2020 COHORT**
Phase 2

**2021 COHORT**
Phase 2

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**Track G**
Securely Operating Through 5G Infrastructure

**Track H**
Enhancing Opportunities for Persons with Disabilities

**Track I**
Sustainable Materials for Global Challenges

**Track J**
Food & Nutrition Security

**Track K**
Equitable Water Solutions

**Track L**
Real-World Chemical Sensing Applications

**Track M**
Bio-Inspired Design Innovations

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**2022 COHORT**
Phase 1

**2023 COHORT**
Phase 1
NSF Regional Innovation Engines (NSF Engines) program supports the development of diverse, regional coalitions to engage in use-inspired research, drive research results to the market and society, promote workforce development, and ultimately stimulate the economy and create new jobs.

NSF Engines are funded at up to **$160 million** for up to **10** years.

NSF Engine Development Awards are funded at up to **$1 million** for up to **2** years to plan for an Engine.

Opportunity available to:
- Academia
- Business & Industry
- Governments
- Nonprofits
The 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

Great Lakes Water Innovation Engine

Upstate New York Energy Storage Engine

Piedmont Triad Regenerative Medicine Engine

North Carolina Textile Innovation & Sustainability Engine

Louisiana Energy Transition Engine

Central Florida Semiconductor Innovation Engine
NSF is Making History

NSF Engines awards represent:

• $1.6 billion over a decade

• 450+ partners across sectors

• 18 states across 10 regions; 69 regions total across the U.S.

• 2:1 matched investment from public and private sectors

• Catalyzing America’s innovation economy in all corners of the country
Central Florida Semiconductor Innovation Engine

Lead Organization:
ICAMR, Inc. (dba BRIDG)

Primary Societal Challenge:
Making the U.S. a leader in semiconductor advanced packaging design and manufacturing

Innovations:
Advanced semiconductor packaging, digital twin advanced packaging design and manufacturing, county-owned fabrication facility

Capital Commitments:
$50 million from Florida Commerce and the Florida Department of Education; $50 million from EDA Build Back Better Regional Challenge; $49 million recently from U.S. Department of Defense

Key Fact:
The 50,000 square foot campus is a unique model where the county owns the land and there is a high school on the campus

Sampling of Partners (10)

<table>
<thead>
<tr>
<th>ACADEMICS (3)</th>
<th>GOVERNMENT ENTITIES (1)</th>
<th>INDUSTRY (1)</th>
<th>NON-PROFIT (5)</th>
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<tr>
<td>UNIVERSITY OF CENTRAL FLORIDA</td>
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<td>OSCEOLA COUNTY</td>
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<td>SKYWATER TECHNOLOGY</td>
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<td>ORLANDO ECONOMIC PARTNERSHIP</td>
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ND Advanced Agriculture Technology Engine

**Lead Organization:**
North Dakota State University

**Primary Societal Challenge:**
Driving the agtech revolution by partnering with rural and tribal communities to spur inclusive economic development

**Innovations:**
Crop genomics, climate modeling, advanced crop data, sensors

**Capital Commitments:**
EDA Good Jobs Challenge Awardee, UAS FAA drone site

**Key Fact:**
#1 U.S. producer of peas, beans, barley, canola, flax, oats, and wheat

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**Sampling of Partners (65)**

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<tr>
<th>Category</th>
<th>Organizations</th>
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<tr>
<td>ACADEMICS (14)</td>
<td>UNIVERSITY OF MONTANA</td>
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<td>GOVERNMENT ENTITIES (8)</td>
<td>NORTH DAKOTA GOVERNOR'S OFFICE</td>
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<td>INDUSTRY (32)</td>
<td>BANKNORTH, MICROSOFT (FARGO)</td>
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<td>NON-PROFIT (11)</td>
<td>NORTH DAKOTA FARMERS UNION</td>
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<td>Tribal Entities (5)</td>
<td>NUETA HIDATSA SAHNISH COLLEGE</td>
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Louisiana Energy Transition Engine

Lead Organization:
Louisiana State University

Primary Societal Challenge:
Advancing US's capacity for innovation in low-carbon energy with a focus on carbon capture and hydrogen

Innovations:
Carbon capture, hydrogen fuel, CO2 as feedstock, sustainable manufacturing for clean energy

Capital Commitments:
$67.5 million from state, EDA BBRC winner +Tech Hubs finalist

Key Fact:
There are over 5,000 miles of oil, gas, chemical, H2 and CO2 pipelines in Louisiana

Sampling of Partners (49)

ACADEMICS (13)
GOVERNMENT ENTITIES (5)
INDUSTRY (21)
NON-PROFIT (10)

DILLARD UNIVERSITY
LOUISIANA ECONOMIC DEVELOPMENT
EXXONMOBIL, SHELL
SOUTH LOUISIANA ECONOMIC COUNCIL
NSF Engines Partnerships Network
CHIPS and Science Act: Key Technology Focus Areas

NSF ENGINES KEY TECHNOLOGY AWARDS AREA BREAKDOWN

- Artificial Intelligence: 16
- Advanced Computing & Semiconductors: 12
- Quantum Information Science & Technology: 9
- Robotics & Advanced Manufacturing: 7
- Disaster Prevention & Mitigation: 5
- Advanced Communications: 5
- Biotechnology: 4
- Data & Cybersecurity: 4
- Advanced Energy & Industrial Efficiency Technologies: 8
- Advanced Materials: 9

Legend:
- NSF Engines Awards Coverage
- NSF Engines Development Awards Coverage
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.
- BuilderPlatform@engine.xyz.
Enhancing Partnerships to Increase Innovation Capacity (EPIIC) program provides training and networking support to help build more inclusive innovation ecosystems and pathways into NSF Regional Innovation Engines.

Awarded a total $19.6 million to nearly 50 teams.

New funding opportunity is available. Deadline to apply is May 16, 2024.

Opportunity available to:

Academia
Enabling Partnerships to Increase Innovation Capacity (EPIIC)

- Total EPIIC Awards: 49
- Awards in EPSCoR States: 12
- Awards to MSIs: 14

Legend:
- State with EPIIC Award
- Lead Institution
- Collaborative Institution

Organization Type:
- Community College: 4 - 14
- Master’s College: 3 - 14
- Baccalaureate College: 4 - 7
- Doctoral/Professional Universities: 1 - 1

Alaska
Hawaii
Mariana Islands & Guam
Puerto Rico & U.S. Virgin Islands
American Samoa
TIP’s Core Message

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1. Diverse Innovation Ecosystems
2. Technology Translation and Development
3. Workforce Development
Innovation Corps (I-Corps™) provides experiential entrepreneurial education to further the nation's innovation ecosystem. Hubs implement the I-Corps program by creating a network of universities that help researchers learn how to test the market through customer discovery.

**I-Corps Hubs** Funding for up to **$3 million** per year for **5 years**

**10 I-Corps Hubs** involving nearly 100 universities

**I-Corps Teams** Funding for **$50,000** for **7 weeks**

Opportunity available to:  
- Academia
America's Seed Fund powered by NSF (the Small Business Innovation Research and Small Business Technology Transfer program) provides up to $2 million in research and development funding for deep-tech startups, transforming scientific and engineering discoveries into products and services with commercial and societal impact.

Submit a Project Pitch to get started!

**PHASE I**
6-12 months
Up to $275,000

**PHASE II**
2 years
Up to $1 million

**PHASE IIB**
Up to $500,000

Opportunity available to:
- Academia
- Business & Industry
Pathways to Enable Open-Source Ecosystems (POSE) supports sustainable high-impact open-source ecosystems to ensure more secure open-source products, increase coordination of developer contributions and a more focused route to impactful technologies.

Two Phases:

**PHASE I**
1 year
Up to
$300,000

**PHASE II**
2 years
Up to
$1.5 million

Opportunity available to:
- Academia
- Business & Industry
- Nonprofits
Accelerating Research Translation (ART) program supports institutions of higher education to build capacity and infrastructure to strengthen and scale the translation of basic research outcomes into impactful solutions.

Awarded more than $100 million to **18 teams** at academic institutions across the nation.
Opportunity available to:

Academia
NSF ART Awards:
The NSF Accelerating Research Translation (ART) awards support institutions of higher education (IHES) that seek to build capacity and infrastructure for translation of fundamental academic research into tangible solutions that benefit the public.

For more information, please visit the NSF ART program website.
The Responsible Design, Development and Deployment of Technologies (ReDDDDoT) program is a collaboration with five philanthropic partners and crosses all disciplines of science and engineering. The program seeks to ensure ethical, legal, community and societal considerations are embedded in the lifecycle of technology’s creation and use.

$16 million program

For more information visit: https://new.nsf.gov/funding/opportunities/responsible-design-development-deployment
TIP’s Core Message

TIP advances U.S. competitiveness and societal impact by nurturing partnerships that drive and accelerate:

- Diverse Innovation Ecosystems
- Technology Translation and Development
- Workforce Development
Experiential Learning for Emerging and Novel Technologies (ExLENT) program promotes partnerships between organizations in emerging technology fields and those with expertise in workforce development to expand practical learning opportunities for individuals interested in entering or gaining more experience in emerging and novel technology.

NSF awarded $18.8 million to 27 projects over 3 years.
Experiential Learning for Emerging and Novel Technologies (ExLENT)
Through a $20 million cooperative agreement, the Entrepreneurial Fellowships run by the non-profit, Activate.org, support researchers from a variety of backgrounds and geographies to move technologies from lab to market.

2 years of training

At least $350,000 in direct support, plus specialized research facilities and equipment
NSF funded the **Council of Graduate Schools** to expand data collection activities and help recruit graduate students in key technology areas. By collecting more data, universities will use data-driven decision making to address challenges in recruiting and retaining domestic graduate students underrepresented in STEM.

A combined nearly $5.8 million over 4 years.

TIP: Accelerating Research To Impact
Find Your Opportunities

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Technology, Innovation and Partnerships
A new directorate at the U.S. National Science Foundation

One year ago, under the leadership of Director Sethuraman Panchanathan, the U.S. National Science Foundation announced the establishment of the Directorate for Technology, Innovation and Partnerships, or TIP, the agency’s first new directorate in more than 30 years.

Just a few months later, Congress passed the “CHIPS and Science Act,” authorizing the establishment of the directorate and charging it with the critical mission of advancing U.S. competitiveness through investments that accelerate the development of key technologies and address pressing societal and economic challenges.

Updates

NSF Invests more than $43 million in NSF Regional Innovation Engines Development Awards
May 11, 2023

NSF seeks input on novel approaches to emerging technology career pathways

Learn More About TIP

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Funding Opportunities
Broad Agency Announcements
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TIP Leadership
TIP Staff
Careers

TIP Programs

Accelerating Research Translation

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