Accelerating Research to Impact

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UIDP-HBCU Connect
April 18-19, 2023, Nashville, TN

Promote the progress of science
NSF
Advance the national health, prosperity and welfare
Secure the national defense

Today’s agenda

- Inspiration, vision
- Mission, functions, program
- Status

Changing landscape

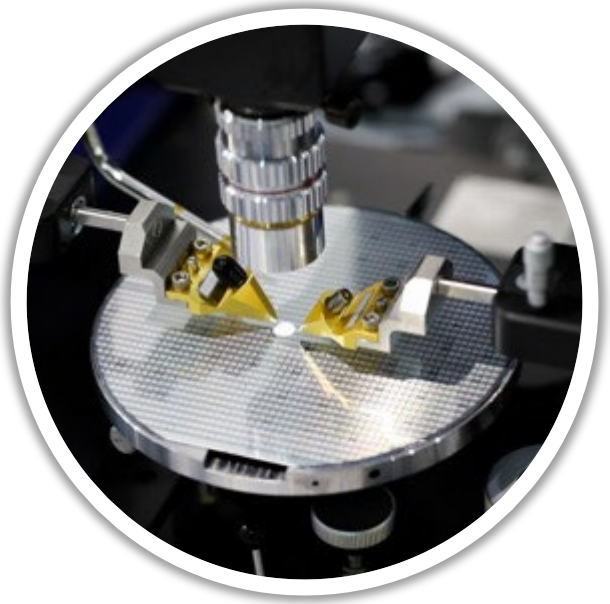
Pressing socioeconomic challenges

Changing climate

Equitable access to education, health care

Critical and resilient infrastructure

Evolving research and innovation ecosystem



Pace of discovery accelerated by data, emerging technologies

Demand for societal impact

Opportunity to leverage partnerships

A new “horizontal” to enhance use-inspired and translational research

TIP's 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.

TIP: Accelerating research to impact

Fostering Innovation and Technology Ecosystems

Nurtures regional and national innovation and technology ecosystems to support researchers and innovators.

Establishing Translation Pathways

Supports startups through a lab-to-market platform and establishes new pathways for translating research results.

Partnering to Engage the Nation's Diverse Talent

Advances and deepens public and private partnerships across all areas of science, engineering and education.

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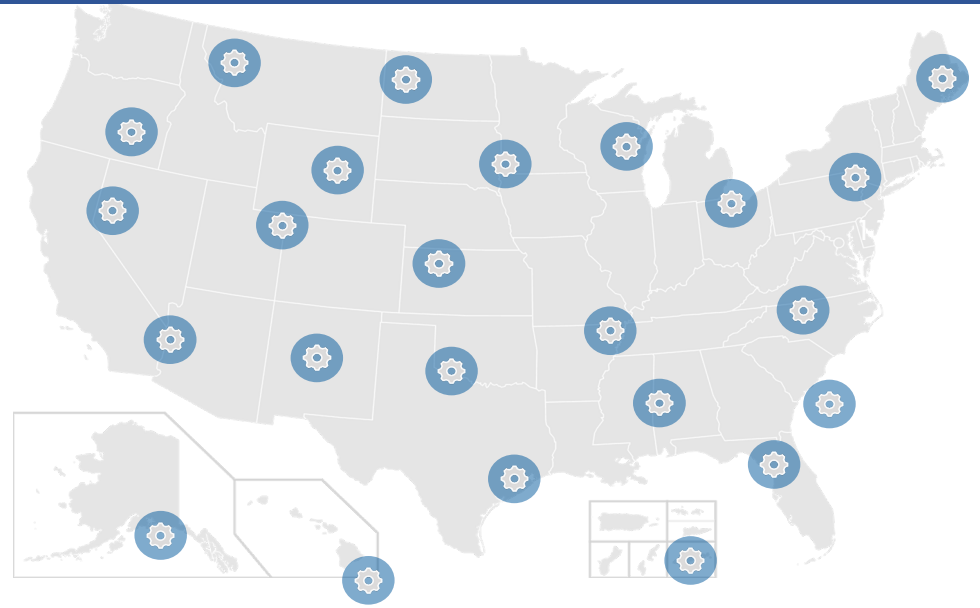
NSF Regional Innovation Engines



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 up to $160 million for up to 10 years

NSF Engine Development Awards - up to $1 million for up to 2 years to plan for an Engine. (Awards coming soon!)

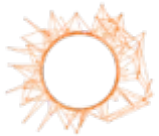
Convergence Accelerator

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

2019 COHORT
Phase 2

2020 COHORT
Phase 2

2021 COHORT
Phase 1

Track G

Securely Operating Through 5G Infrastructure (joint with DOD)

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

2022 COHORT

FUTURE COHORT

Convergence Accelerator

Convergence Accelerator multidisciplinary teams use convergence research fundamentals and innovation processes to stimulate innovative idea sharing and development of sustainable solutions.

PHASE I (PLANNING):

Up to $750,000 over 9 months

PHASE II (IMPLEMENTATION):

Up to $5 Million over 24 months

NSF broadens participation in innovation ecosystems by supporting capacity building at institutions of higher education

NEW

More information @ beta.nsf.gov/tip/latest

$Up to $400,000 for three years

- The Enhancing Partnerships to Increase Innovation Capacity (EPIIC) program will provide training and networking support to help build more inclusive innovation ecosystems and pathway into NSF Engines.

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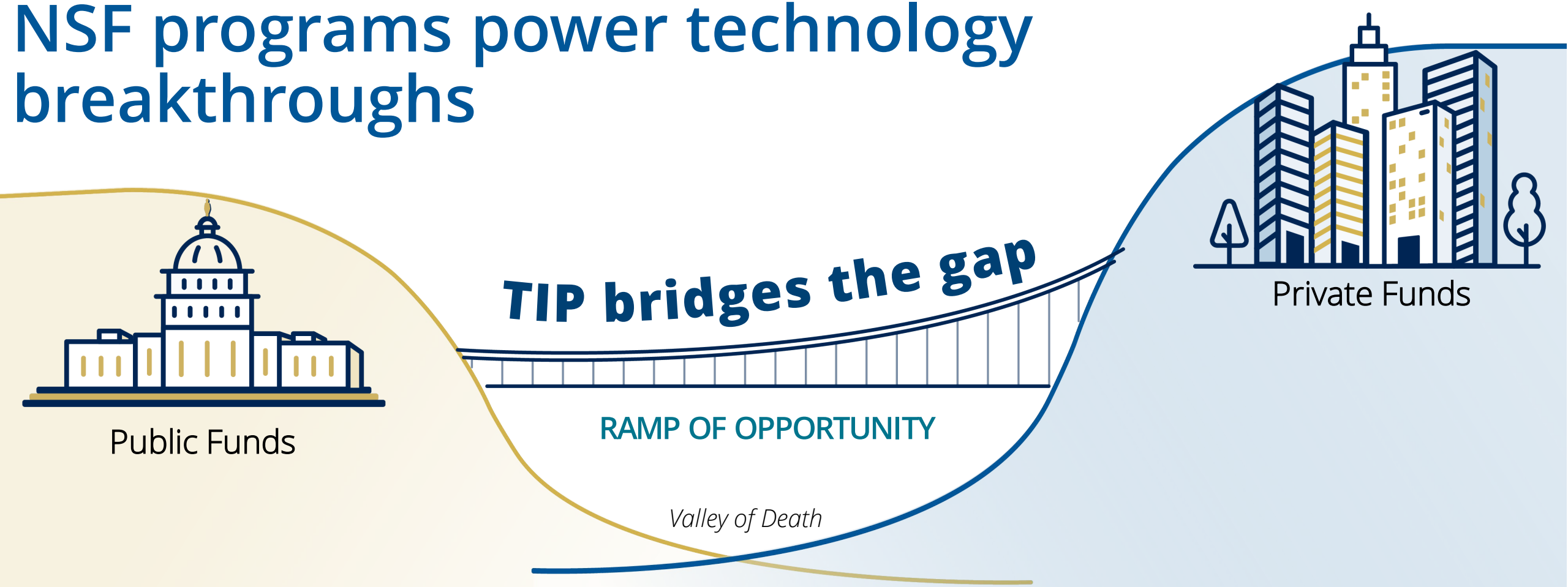
NSF programs power technology breakthroughs



LAB ⟵ **SOCIETY**

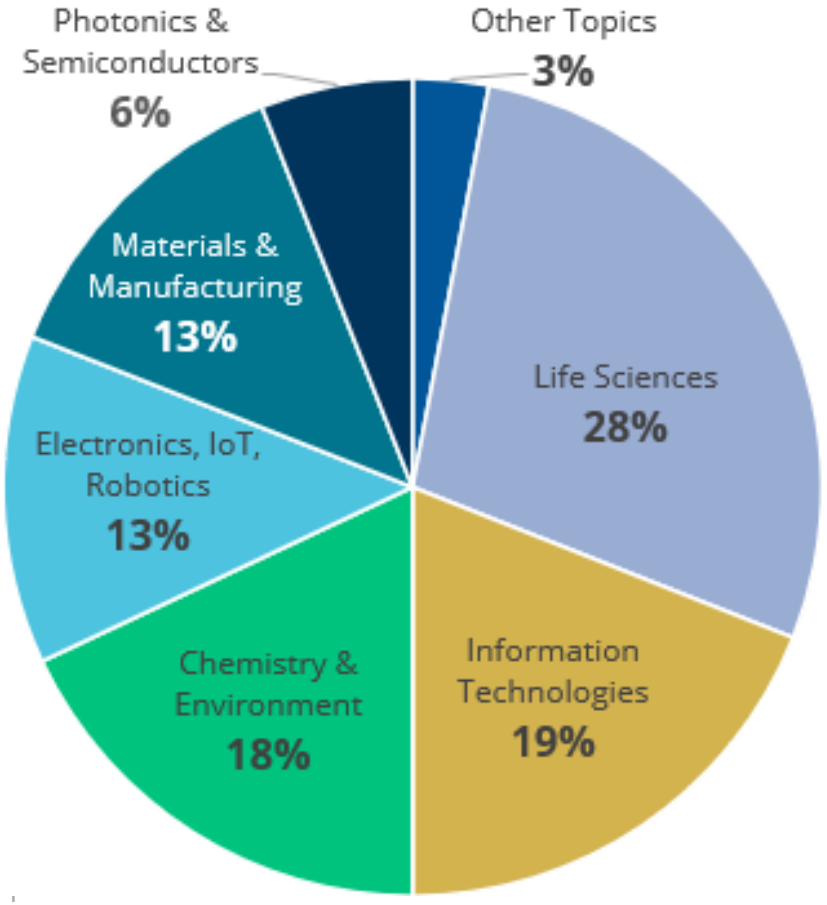
Foundational Research	Use-Inspired Research	Proofs-of-Concept	Prototype Development	Product/Solution Development	National and Societal Impact, Commercialization

America's Seed Fund (SBIR/STTR)

Up to **$2 Million** in R&D funding for startups to develop transformative, deep tech, high-impact technologies

Phase I	Phase II	Phase IIB
6-12 months	2 years	Up to
Up to **$275,000**	Up to **$1M**	**$500,000**

- Get started any time at seedfund.nsf.gov/apply



* Funding amount reflects total dollars obligated on SBIR/STTR awards and s
2020. This amount excludes 1) the SBIR/STTR admin fund, 2) any award that were made for purposes other than funding small businesses, and 3) awards and supplements that have been cancelled

Partnerships for Innovation (PFI)

- Translational research toward proof-of-concept of a future product, process or service.
- For researchers with NSF funding
- Two Tracks:
  - Technology Translation

2 years
up to $550,000

  - Research Partnerships (industry partner required)

3 years
up to $1 million

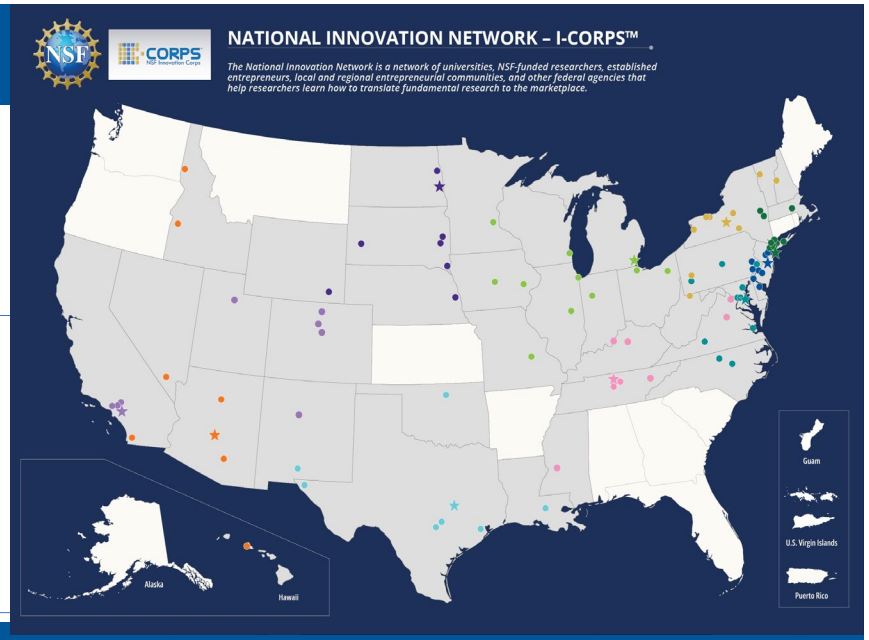
https://beta.nsf.gov/funding/initiatives/pfi

Innovation Corps (I-Corps™)

- Spur translation of fundamental research to the marketplace.
- Train NSF-funded faculty, students, and other researchers in innovation and entrepreneurship skills.

Reach

10	I-Corps Hubs involving nearly 100 universities
40+	University Sites & Nodes



Outputs

5,800	Individuals trained since 2012
1,000+	Startups created

Pathways to Enable Open-Source Ecosystems (POSE)

Harnesses the power of open-source development for the creation of new technology solutions to:

- ensure more secure open-source products;
- increase coordination of developer contributions and
- a more focused route to impactful technologies.

Phase I – 1 year
Up to $**300,000**

Phase II – 2 years
Up to **$1.5M**

NSF ART: New $60 million NSF program aims to grow speed, scale of research solutions

NEW

More information @ beta.nsf.gov/tip/latest

Up to $6 million over four years

- The **Accelerating Research Translation**, or ART program, will support institutions of higher education to build capacity and infrastructure to strengthen and scale the translation of basic research outcomes into impactful solutions.

NSF ExLENT: a workforce development program that opens new doors in emerging technology fields

NEW

More information @ beta.nsf.gov/tip/latest

Up to $1 million over three years

- 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 launches entrepreneurial fellowship program for engineers and scientists

NEW

At least $350,000 in direct support

Activate

- Supports researchers from a variety of backgrounds and geographies to move technologies from lab to society.
- Run by a non-profit, Activate.org, provides Activate Fellows supported by NSF with two-years of training and at least $350,000 in direct support, plus access to specialized research facilities and equipment.

More information @ beta.nsf.gov/tip/latest

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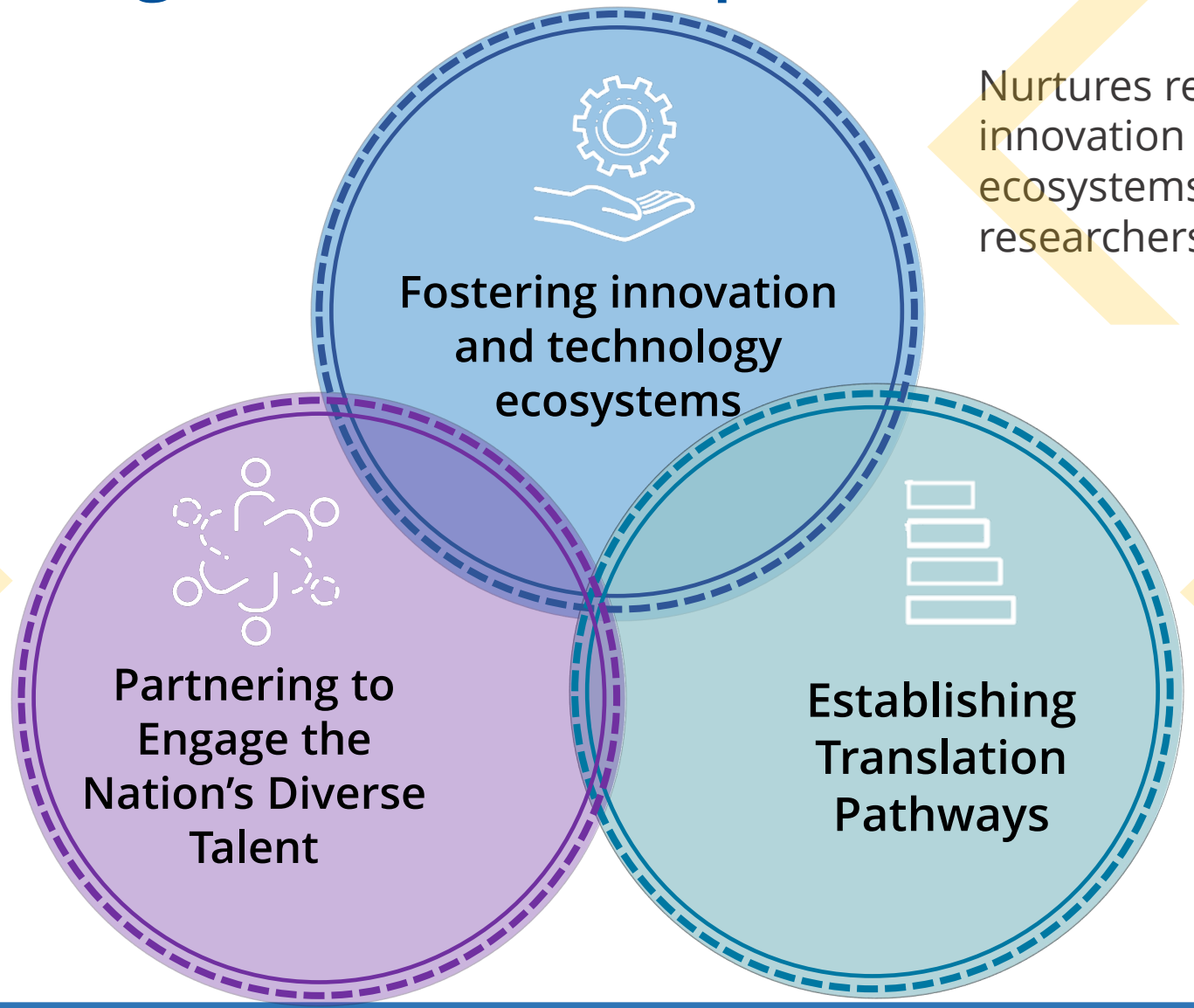

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Ramping up TIP

Jan. 21: NSF + Intel announce $100M semi. workforce partnership

JAN 2022

Feb. 15: Pathways to enable Open-Source Ecosystems launches

FEB 2022

March 16: TIP is established

MAR 2022

May 3: NSF Engines program launches

MAY 2022

July 20: NSF, NIST, OSTP, UK announce privacy prize challenges

July 28: NSF Engines Concept Outlines published

JUL 2022

Sept. 7: NSF, DOD partner to advance 5G security

Sept. 8: NSF awards five new I-Corps™ Hubs

Sept. 19: New Fellows program launches

SEP 2022

Oct. 19: NSF launches ExLENT program

Oct. 27: NSF + Micron announces $10M semi. workforce partnership

OCT 2022

Nov. 10: NSF announces winners in first phase of NSF, NIST, OSTP, UK privacy prize challenges

NOV 2022

Dec 8: NSF launches EPIIC

Dec 12: NSF announces Builder Platform for NSF Engines

Dec 19: NSF invests $12M to advance circular economy

DEC 2022

Dec 9: NSF invests $12M on solutions for persons with disabilities

Dec 13: NSF invests $11M to address food/nutrition security

Jan. 10: NSF, NobleReach Emerge announce biotechnology investment

Jan. 26: NSF announces cross-sector partnership with Ericsson, Intel, IBM, and Samsung as part of its FuSe initiative

JAN 2023

Feb 8: NSF launches ART

FEB 2023