2024 CRA CONFERENCE

Growth with Impact: Mission-focused Research, Evolving Sponsor Models, and Innovative Funding Approaches in Academia

Speakers

Chaitanya Baru
National Science Foundation

Nadya Bliss
Arizona State University

Alastair Thomson
Advanced Research Projects Agency for Health (ARPA-H)

Matt Turek
Defense Advanced Research Projects Agency (DARPA)

Nadya Bliss

Chair, Computing Community Consortium
Executive Director, ASU Global Security Initiative

Two decades in national security research and development

- At MIT Lincoln Laboratory and Arizona State University
- At both organizations, have always worked on mission-driven, interdisciplinary projects

Executive director of interdisciplinary hub for defense/security research at ASU

- 4 research centers and over 100 employees
- Currently executing awards from DARPA, NSF, ARPA-H, DHS, ONR, AFOSR, IARPA, ARL, and others
- 150+ affiliated faculty span 12 ASU colleges
- FY24 research expenditures: ~$30M

Matt Turek

Deputy Director, Information Innovation Office (I2O), DARPA

Former DARPA Program Manager

- AI-related programs, including Explainable AI, Machine Common Sense, Media Forensics, and Semantic Forensics

Deputy Director, I2O, Defense Advanced Research Projects Agency (DARPA)

- Provide technical leadership and work with program managers to envision, create, and transition capabilities

Alastair Thomson

Acting Director, Data Innovation, (ARPA-H)

Former Chief Information Officer at the National Heart, Lung, and Blood Institute (NHLBI) at NIH

- Led the development of the NHLBI's BioData Catalyst cloud-based data and analytics platform
- Directed the data strategy for the RECOVER Long COVID research program

Director (Acting) for Data Innovation at the Advanced Research Projects Agency for Health (ARPA-H)

- Co-lead the ARPA-H Biomedical Data Fabric Toolbox program to enhance interoperability and discoverability of biomedical data using AI
- Advisor in biomedical data and AI to ARPA-H's Program Managers

Chaitanya Baru

Senior Advisor, Technology, Innovation, and Partnerships (TIP) Directorate, National Science Foundation

25-year career at the San Diego Supercomputer Center, UC San Diego

8+ years as Senior Advisor for NSF

- Data Science in the Computer and Information Science and Engineering Directorate
- Convergence Accelerator, Office of Integrative Activities

Senior Advisor, Technology, Innovation, and Partnerships (TIP) Directorate, NSF

Program interests:

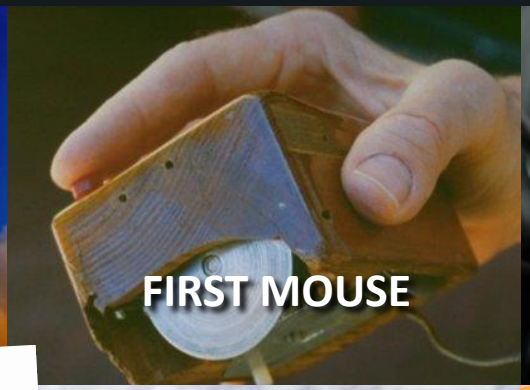
- Building the Prototype Open Knowledge Network (Proto-OKN)
- Responsible Design, Development, and Deployment of Technologies (ReDDDoT)
- Measuring the effects of research investments on regional firms and jobs
- Innovation, Culture, and Creativity
- Self-Driving/Programmable Cloud Labs

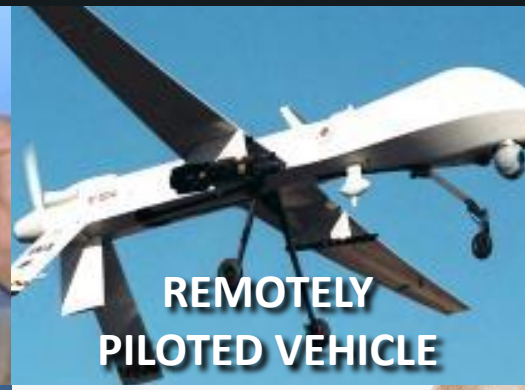
Defense Advanced Research Projects Agency

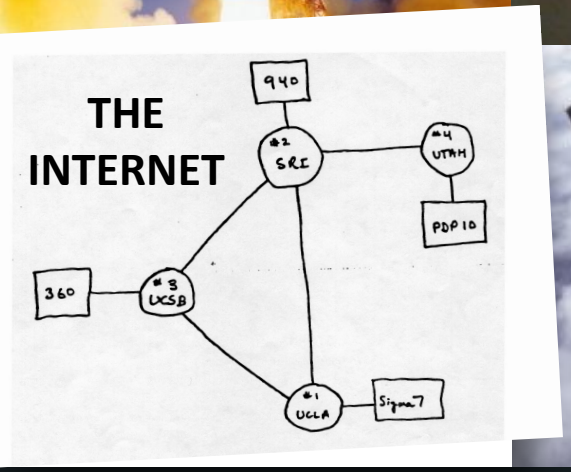
Matt Turek
Deputy Director, Information Innovation Office

July 2024

DARPA History



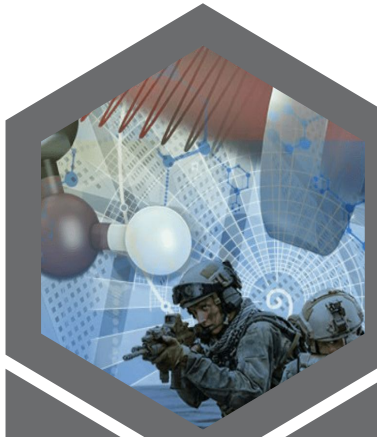




DARPA technical offices

Biological Technologies Office

- Maintain force readiness
- Tactical warfighter care and functional restoration
- Operational resilience and logistical security
- Biosensors and novel methods and materials



Defense Sciences Office

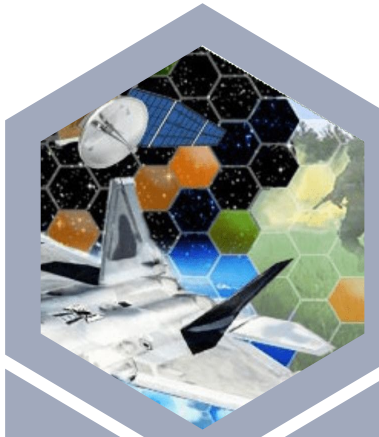
- Novel materials and structures
- Sensing and measurement
- Computation and processing
- Enabling operations
- Collective intelligence
- Emerging threats

Information Innovation Office

- Proficient AI
- Advantage in cyber operations
- Confidence in the information domain
- Resilient, adaptable, and secure systems

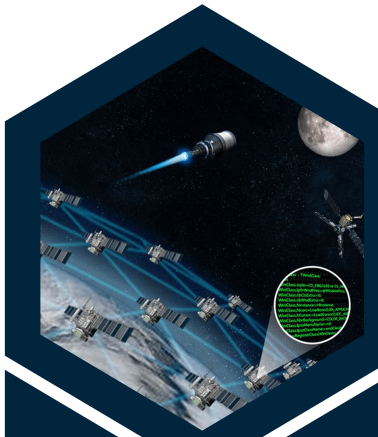
Microsystems Technology Office

- Disruptive microsystems
- Edge processing
- Microsystems manufacture



Strategic Technology Office

- Advanced sensors and processing
- Battlefield effects
- Command, control, and communications
- System of autonomous systems
- Empowered human decision making



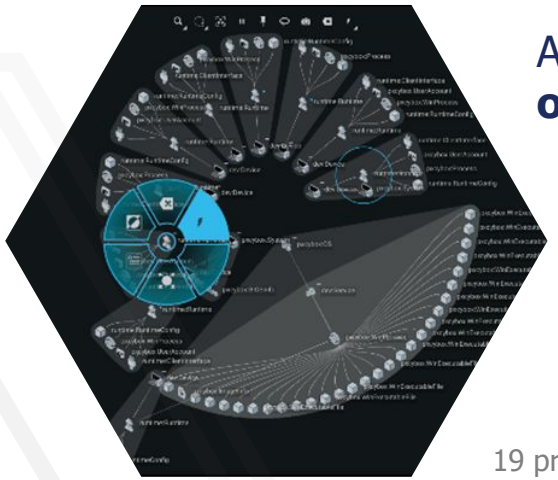
Tactical Technology Office

- Tactical systems
- Platforms, systems, and technologies that enable new warfighting constructs
- Reimagination of missions across maritime, ground, air, and space domains

Information Innovation Office (I2O)

Proficient **artificial intelligence**

11 programs



Advantage in **cyber operations**

19 programs

Confidence in the **information domain**

5 programs

Resilient, adaptable, and **secure systems**

21 programs

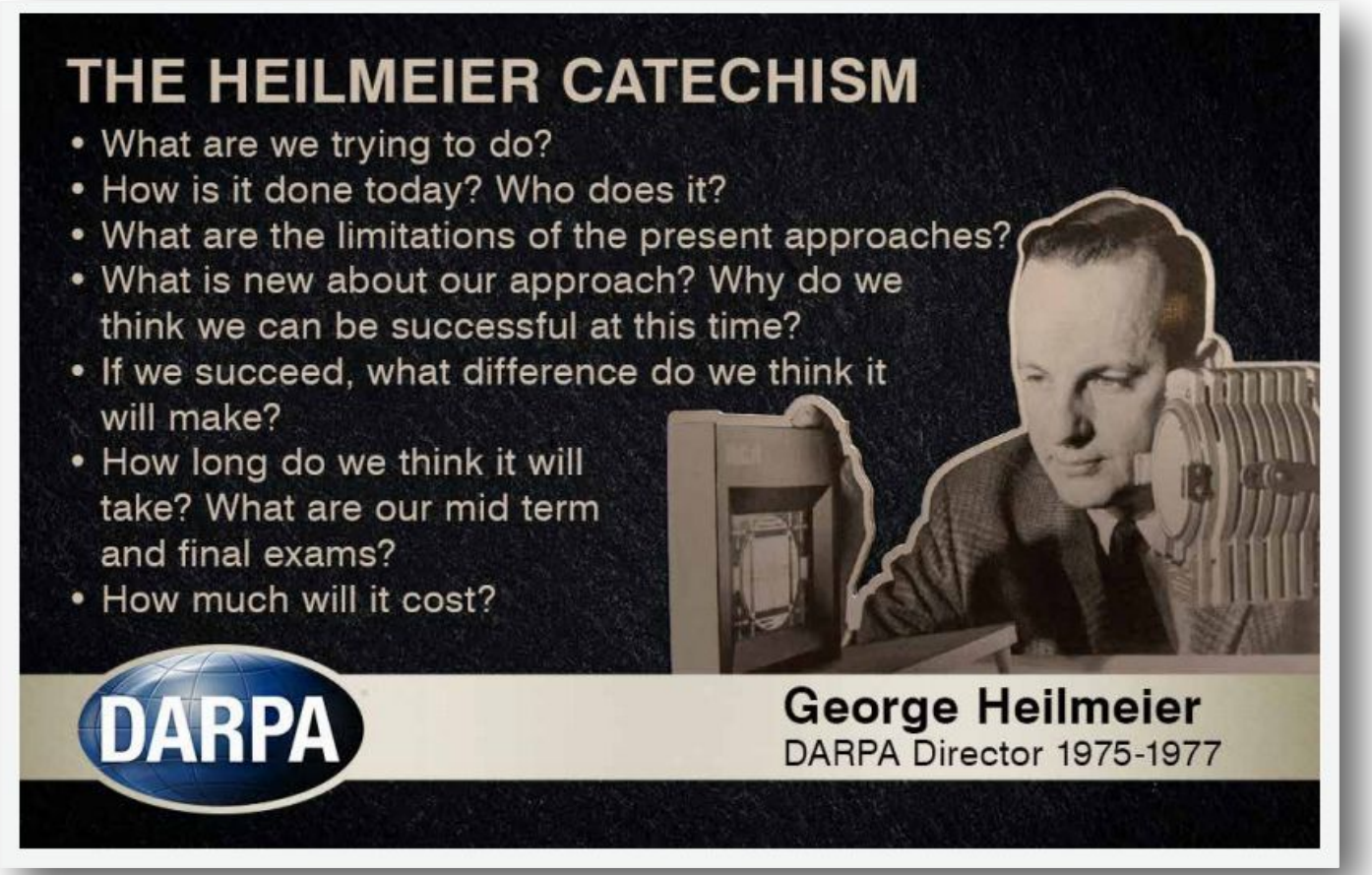
DARPA is

Culture

People

Performers

Culture



Mission: prevent strategic technological surprise

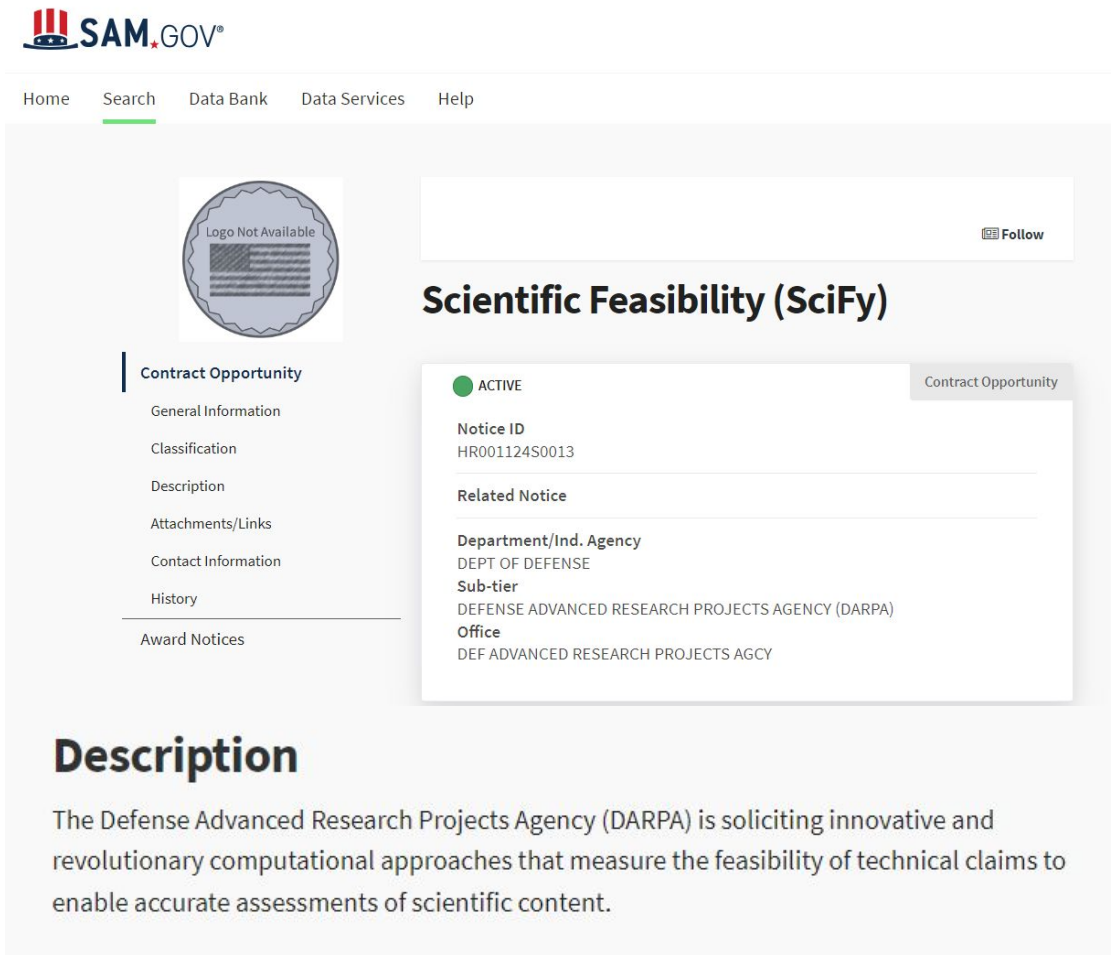
- Willingness to take risks and tolerate failure
- Entrepreneurial
- "Projects" focus on proving something is possible, then move on
    - Keep ideas fresh through planned turnover in personnel
- Programs executed by competitively selected performers external to DARPA
- DARPA offices organized around broad technical thrusts
    - Flat organization with the program manager as the nucleus

People

Program managers and their teams are the core of the organization

- Delegated authority to execute programs
- Trusted to manage significant funds to impact problems facing national security
- Are passionate about their field
- Came here to start a program that solves a problem they could not solve anywhere else
- Incredible opportunity to
  - Serve the country
  - Solve a problem with an impact to national security
  - Develop a network among the brightest people on the planet

Performers



Performers do the work

- DARPA maintains no laboratories or infrastructure
- Competitive, public solicitation of proposals
- Seek out the best talent on the planet
- Performer ecosystem:
  - Big and small companies, universities, government and quasi-government organizations
- Performers sometimes encouraged to join teams to cover multiple fields
- Average program duration of 3-5 years
- Success means changing the world

Doing business with DARPA

Program Managers

- Key is becoming familiar with DARPA's challenges and opportunities
- Contact a PM to gain insight about your idea prior to submitting an abstract, white paper, or proposal

Typical Solicitation Types:

- Program-specific BAAs released throughout the year (typically allow any type of award)
- Office-wide BAAs for one or two years with general tech-office scope
- Research announcements for grants or cooperative agreements
- Funding durations and amounts vary based on objectives
- Concept studies can be 6 to 12 months
- Program and study funding amounts are based on proposed research level of effort

DARPA Connect

- Stimulate growth and collaboration with small businesses and education institutions new to the national security space

I2O proposers' day November 7, 2024

- I2O mailing list: sign up at darpa.mil/i2o

darpaconnect.us

www.darpa.mil

ARPA-H: The Mission

Advanced Research Projects Agency for Health (ARPA-H)

Alastair Thomson, Director of Data Innovation

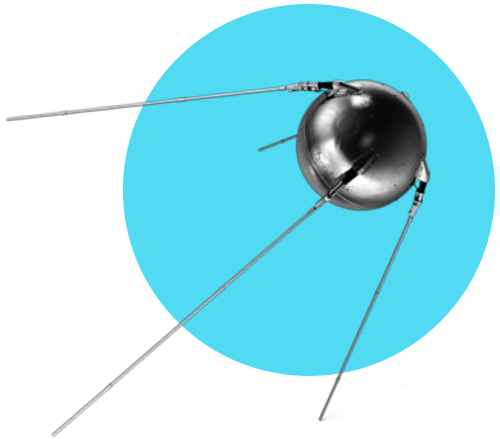
ARPA-H

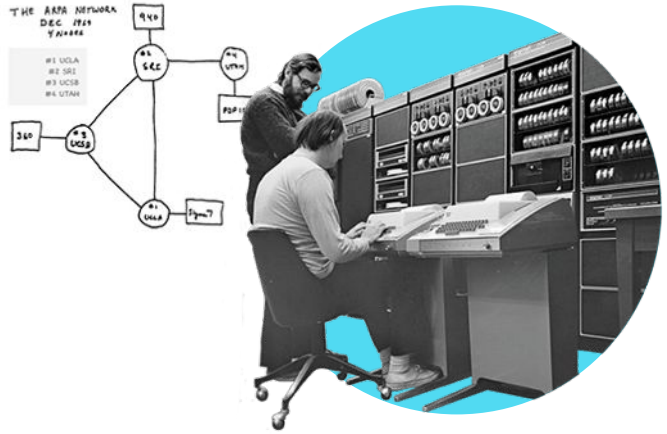
Mission

Accelerate better health outcomes for everyone.

ARPA-H

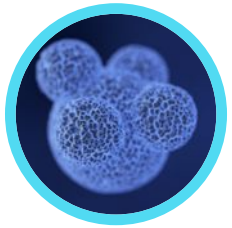
The Promise of the ARPA-H Model





ARPA-H

ARPA-H: the ARPA Model at Work for Health



HOW?

We are a unique funding agency *by design*

WHO?

Problem-focused Program Managers drive innovation

WHAT?

We are seeking radical change

Attributes that Support the Mission

Radical Change

ARPA-H investments should seek to address seemingly impossible barriers in demonstrating "proof of concept" for solutions to major challenges—not incremental advances.

Autonomy

PMs practice "full contact" management to maintain vision and deliver results, with metrics/ milestones for program, empowered to stop underperforming projects.

Term limits

Terms limited to 3 years (renewable once for 6 total years) for PMs, Office Directors, and Deputy Directors, allowing inflow of new ideas.

Success for ARPA-H is defined by real-world impact

ARPA-H

The Program and Program Manager Flywheel

The ARPA-H portfolio is:

(1) a reflection of the PMs

(2) dynamic, and

(3) will — and should! — change frequently

ARPA-H

Program Managers

What are the phenotypes?

Uncommon people with common traits

- Recognized Expertise
- Serious Drive
- Insatiable Curiosity
- No Fear of Failure
- Interdisciplinary Track Record
- Technical Honesty
- Decisive
- Customer-Centric

Different Approaches and Career Stage

The Problem Solver

Motivated by personal experience; can't let it go.

The Rookie

Early career. Unbiased, looks at the world with fresh eyes.

The Dreamer

Intensely curious about how the world works, motivated by search for objective facts/truth.

The Status Quo Challenger

Mid-career. Frustrated by the limits of the existing system.

The Sprinter-Tinkerer

Intrinsic desire to build and experiment and quickly iterate to achieve path to market. Cares about application, not theory.

The Sage

Late career. Experience yields deep understanding.

ARPA-(H)eilmeier Questions

Towards a well-defined problem

1. What are you trying to do? What health problem are you trying to solve?
2. How does this get done at present? Who does it? What are the limitations of present approaches?
3. What is new about our approach? Why do we think we can be successful at this time?
4. Who cares? If we succeed, what difference will it make? What Health Outcomes are we accelerating?
5. What are the risks? That may prevent you from reaching your objectives? Any risks the program itself may present?
6. How long will the program take?
7. How much will the program cost?
8. What are our mid-term and final exams to check for success?
9. To ensure equitable access for all people, how will cost, accessibility, and user experience be addressed?
10. How might this program be misperceived or misused (and how can we build trust and prevent that from happening)?

ARPA-H

ARPA-H Model: Program Lifecycle

Launch

Program Manager

Program Manager identifies a difficult health-related challenge that is ripe for solving.

Program Launch

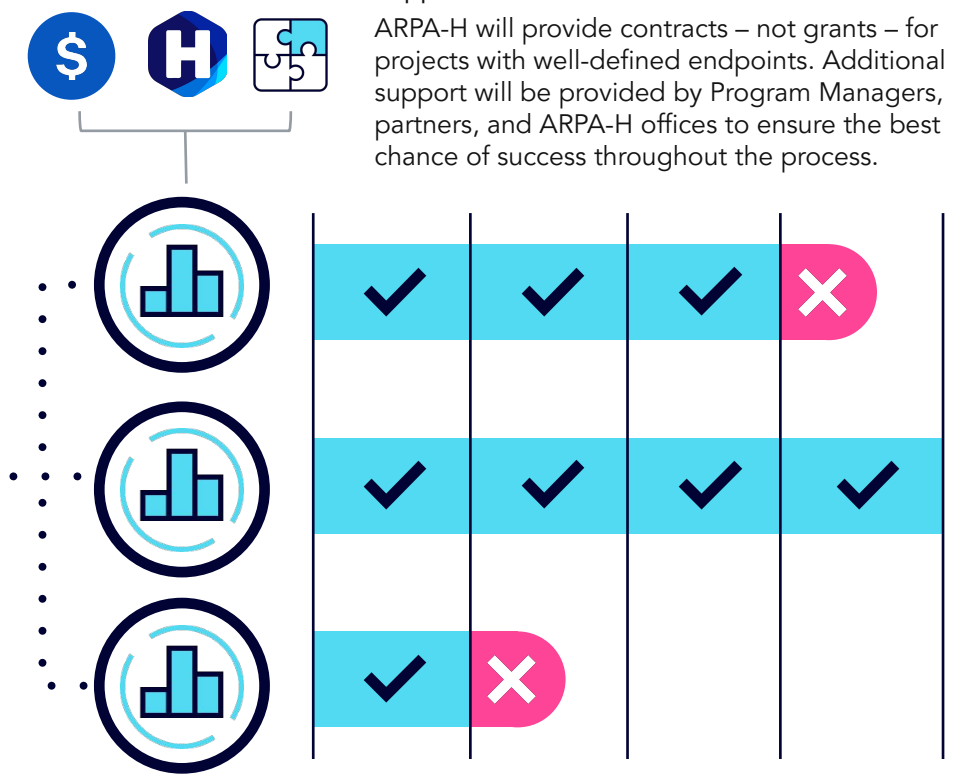
A Program Manager seeks — and oversees — several groups of performers aiming to solve the same problem in unique ways.

Challenge

The challenge should NOT be easily solvable through traditional activities.

Support

ARPA-H will provide contracts – not grants – for projects with well-defined endpoints. Additional support will be provided by Program Managers, partners, and ARPA-H offices to ensure the best chance of success throughout the process.



Perform

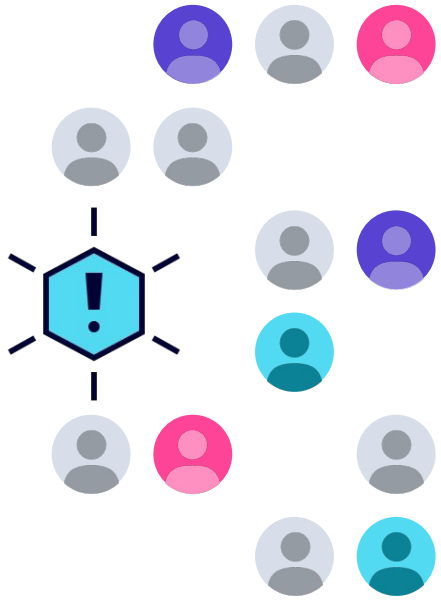
Performers

Performers compete to carry out their potential innovative solutions to the challenge.

Performance

Contract performance will be regularly evaluated to allow ARPA-H to concentrate resources on the most effective approaches to reaching the desired goals.

Transition



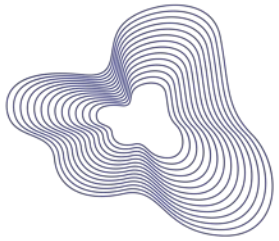
Graduation

Graduation occurs when the challenge is solved. The project then transfers to partners, who have been involved from the start and can scale the solution for large, diverse communities everywhere.

ARPA-H

Initial Mission Focus Areas

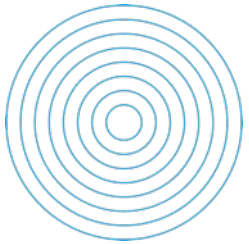
Further ARPA-H investment in these areas will generate asymmetrical benefits to the health ecosystem



Health Science Futures

Expanding what's technically possible

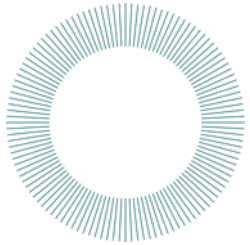
Accelerate advances across research areas and remove limitations that stymie progress towards solutions. These innovative tools, technologies and platforms apply to a broad range of diseases.



Scalable Solutions

Reaching everyone quickly

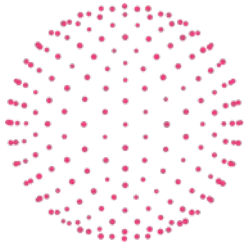
Address health challenges that include geography, distribution, manufacturing, data and information, and economies of scale to create programs that result in impactful, timely, and equitable solutions.



Proactive Health

Keeping people from being patients

Preventative programs will create new capabilities to detect and characterize disease risk and promote treatments and behaviors to anticipate threats to Americans' health, whether those are viral, bacterial, chemical, physical, or psychological.



Resilient Systems

Building integrated healthcare systems

Develop capabilities, business models, and integrations to endure crises such as pandemics, social disruption, and economic instability. Resilient systems need to sustain themselves between crises – from the molecular to the societal - to better achieve outcomes that advance American health and wellbeing.

Project Accelerator Transition Innovation

Ensuring programs survive in the wild

Translating scientific and technical breakthroughs into real world products and services, ensuring they result in better health outcomes for all Americans

ARPA-H

DIGIHEALS (Digital Healthcare Security)

Vision: Advance digital health security, software assurance, and software usability technologies to address weaknesses (e.g., prevent ransomware attacks) in current U.S. healthcare infrastructure to increase system resiliency and improve the quality of care rendered to patients. DIGIHEALS will utilize AI/ Machine Learning in order to drive automated vulnerability discovery and identification of ways to patch these vulnerabilities.

Technology focus areas

- Automated vulnerability discovery
- Large-scale testing of device and system interactions
- Secure-by-design implementations of common data formats and protocols

Key Dates

- BAA released: August 4, 2023
- Awardees announced: Sept. 29, 2023

Press links or link to landing page
WIRED magazine article highlighting DIGIHEALS project

Approach

- Adapt novel research from non-traditional cybersecurity performers to healthcare
- Apply AI/ML to drive automated vulnerability discovery and patching
- Iterate rapidly to identify promising areas for further investment
- Develop transition strategies to ensure equitable impact

What if we had resilient healthcare infrastructure with advanced digital security for data, software, and devices?

ARPA-H

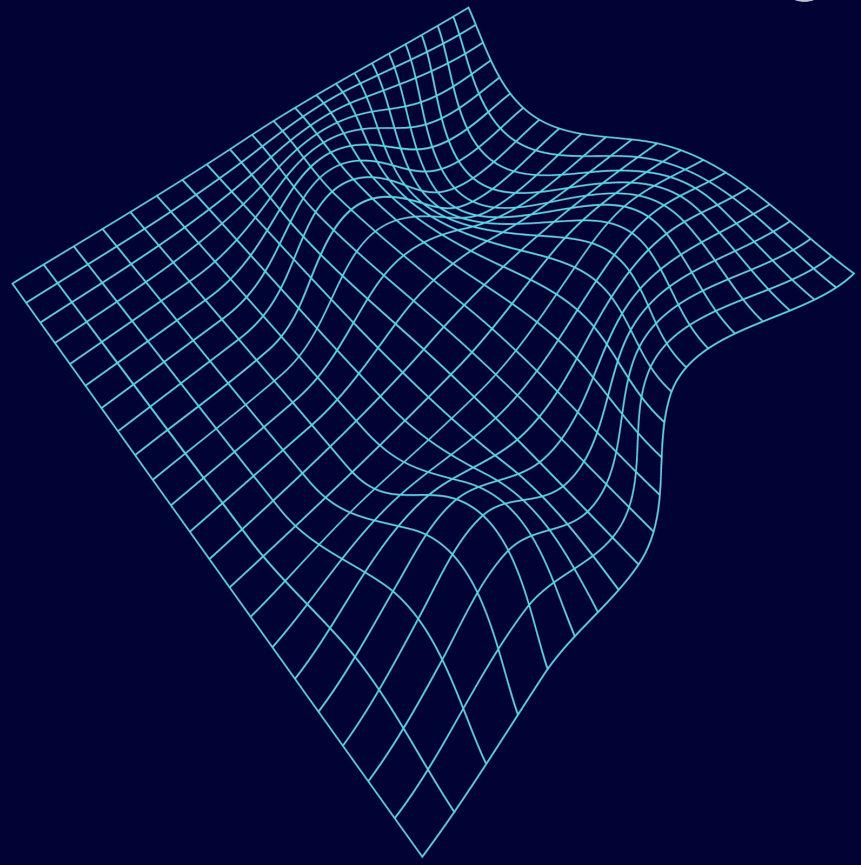
Biomedical Data Fabric (BDF) Toolbox

Vision: Develop a reuseable, easily deployable data fabric to maximize the usability of research data for researchers, patients, and clinicians, while reducing the human effort needed to generalize data fabric capabilities across multiple disease.

Technology focus areas

- Automated data collection;
- Machine-assisted data curation;
- Intuitive data exploration;
- User testing;
- Cross-domain generalization of best-in-class capabilities.

Approach	Key Dates/Links
• Develop automated workflows to reduce time and effort to collect data from labs and electronic health records. • Apply next-generation AI/ML approaches to automate multi-modal data integration and analysis • Advance capabilities for quality assurance/quality control, de-identification, and equity checks. • Enhance data discovery and exploration using AI/ML • Iterative user testing with broad range of stakeholders for continuous feedback and development of tools	Program announcement (September 2023)



What if new data integration tools made it possible to get more value out of the health research data produced by thousands of labs and hospital centers?

ARPA-H

Antigens Predicted for Broad Viral Efficacy through Computational Experimentation (APECx)

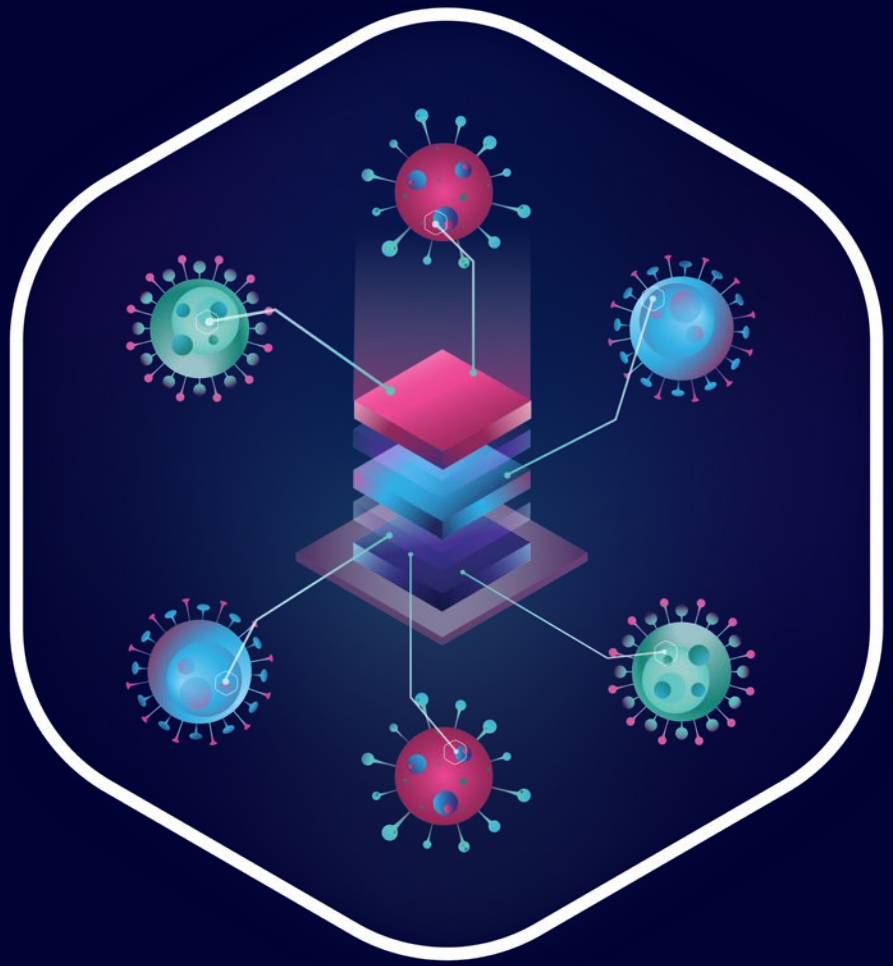
Vision: To transform vaccine antigen discovery, first by developing toolkits that successfully design broadly effective antigens, targeting entire viral families, and then demonstrating the toolkits' accuracy by evaluating candidate vaccine antigens in clinical trials.

Technology focus areas

- High-throughput biochemical analysis and protein engineering
- Protein modeling toolkit development for antigen design
- Translational candidate development and clinical evaluation

Key Dates

- Program Approval: October 1, 2023
- Program BAA Released: November 16, 2023
- Proposers' Day: November 17, 2023



What if we could eliminate viruses as current and future health threats?

ARPA H

Platform Accelerating Rural Access to Distributed & InteGrated Medical care (PARADIGM)

Vision: PARADIGM will create a multifunctional, scalable care delivery platform (CDP) that enables health systems to extend their services beyond the walls of a hospital:

- Distributed platform that delivers hospital-grade services to rural patients.
- Medical IoT platform for connecting remote medical devices.
- Advanced imaging in rural radiology deserts.
- Upskilling rural healthcare workers.

Technology focus areas

TA1: Decentralized Approach to Hospital-Level Care.
TA2: Care Delivery Platform Integration.
TA3: Medical Internet of Things (IoT) Platform.
TA4: Rugged & Miniaturized CT Scanner.
TA5: Intelligent Task Guidance.

Key Dates

- Proposers' Day: February 15, 2024
- Full Proposals Due: April 26, 2024

What if we could deliver advanced hospital-level care to every rural county in America?

ARPA-H

ARPA-H Timeline

ARPA-H appropriations passed in omnibus

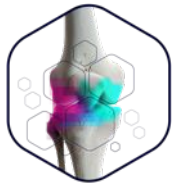
2023

DEC | MAR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR

2024

"Open for Business" – ARPA-H launches its first Agency-wide Open BAA

NITRO



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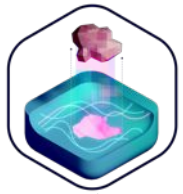
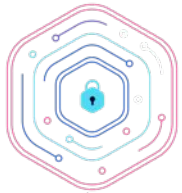
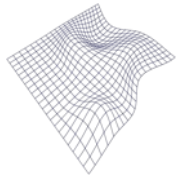


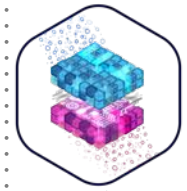
DIGIHEALS



BDF

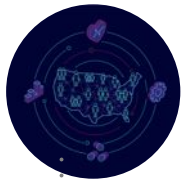


REACT



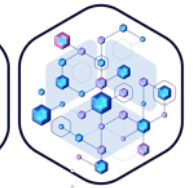
APECx

ACTR



HEROES

PARADIGM



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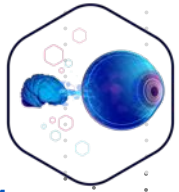
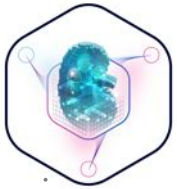


EMBODY | BREATHE | LIGHT

ADAPT



CUREIT

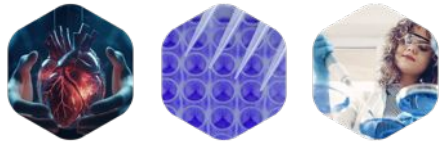
9 SBIRs

ARPANET-H

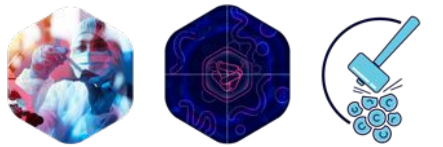
Women's Health

CT-NEURO

HEART | CODA | SPIKEs



CDTR | DARTS | THOR



REO | PIC-OCT | MATRIX

ARPA-H

@ARPA_H

Alicia Eggert
This Present Moment
2019 – 2020
Currently @ The Renwick Gallery
Washington, DC

U.S. National Science Foundation
Directorate for Technology, Innovation and Partnerships

Accelerating Technology, Innovation and Partnerships

Chaitan Baru
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Seven Decades of NSF-Powered Innovations

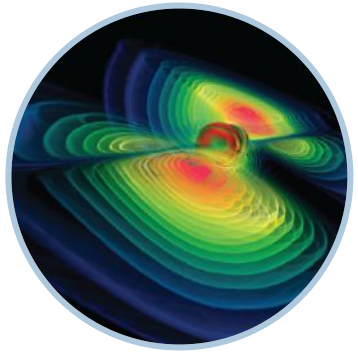
FOUNDATION FOR THE INTERNET

3-D PRINTING BREAKTHROUGH

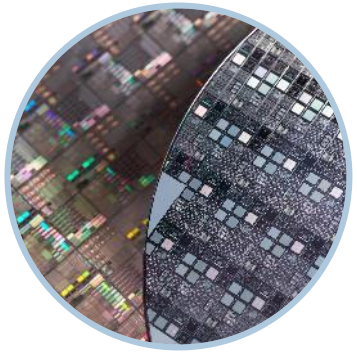
FIRST IMAGE OF A BLACK HOLE

RAPID COVID-19 TESTING

CLIMATE FORECASTING



LIGO GRAVITATIONAL WAVES



COMPUTER CHIP FABRICATION

ARTIFICIAL INTELLIGENCE (AI)

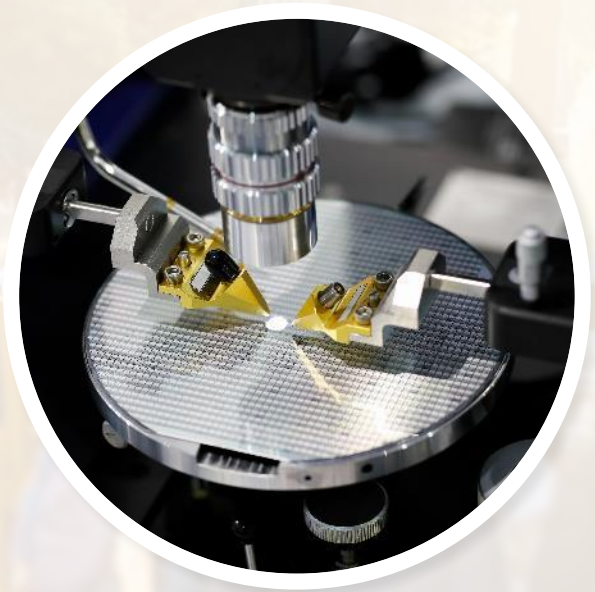
EARLY WEB SEARCH

MAGIC SCHOOL BUS

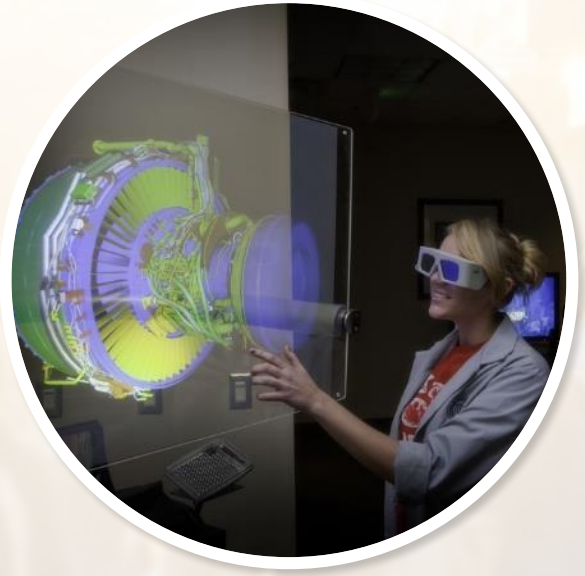
NSF's Mission

A Changing Landscape

A Changing Science and Engineering Enterprise Can Meet This Moment



Pace of discovery accelerated by data, emerging technologies



Demand for societal and economic impact

Opportunity to leverage partnerships

U.S. National Science Foundation
Directorate for Technology, Innovation and Partnerships

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

Integrative Activities

International Science & Engineering

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

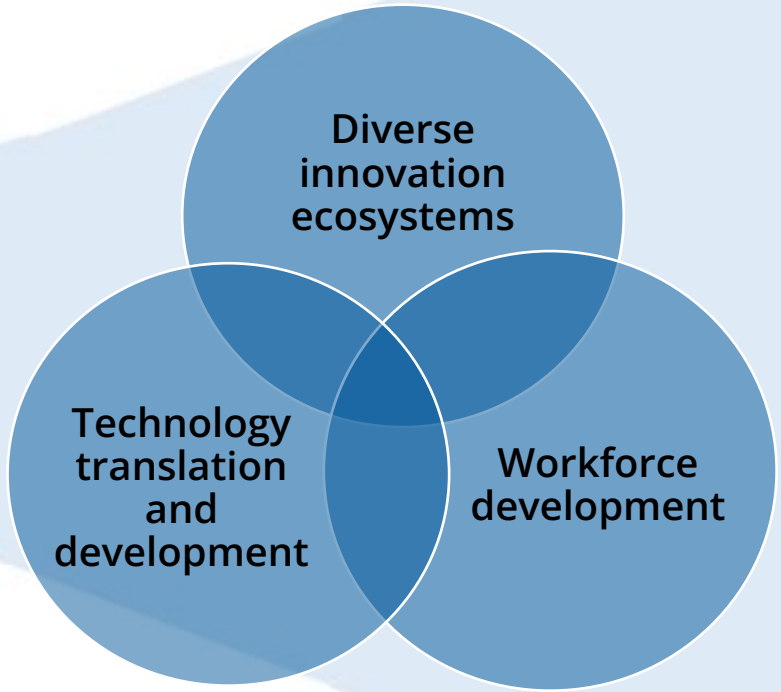
Workforce Development

TIP Strategic Value Creation Framework

Nurture partnerships that drive and accelerate ….

Ideas/Tech

Talent



… to advance US competitiveness and deliver societal impact

1.	Support use-inspired translational research & accelerate development and use of federal funded research. Strengthen U.S. competitiveness by development of key technologies
2.	Grow domestic workforce in key tech and challenge focus areas
3.	Expand participation of U.S. students and researchers in areas of societal, national and geostrategic importance across all levels of education

DIVERSE INNOVATION ECOSYSTEMS

- A pilot to develop approaches to assess the impact of NSF investments on regional firms and jobs in key technology areas. The **Industries of Ideas** pilot is led by teams at the University of Michigan, The Ohio State University and the Social Science Research Council.
- Building a prototype measurement system for AI and Electric Vehicles (EV) in Ohio
- Developing prototype dashboards with academic, state and federal stakeholders
- Plans for expansion in:
  - Scale – more universities, states, fields
  - Scope – additional domains and types of data
  - Usability – data/findings access, research use, training needs etc.
- Exploring the creation of an NSF Translational Research Coordination Network (TRCN)

For more information visit:
https://new.nsf.gov/tip/updates/nsf-pilot-assess-impact-strategic-investments-regional-jobs

$4.5 million

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.

Two Phases:

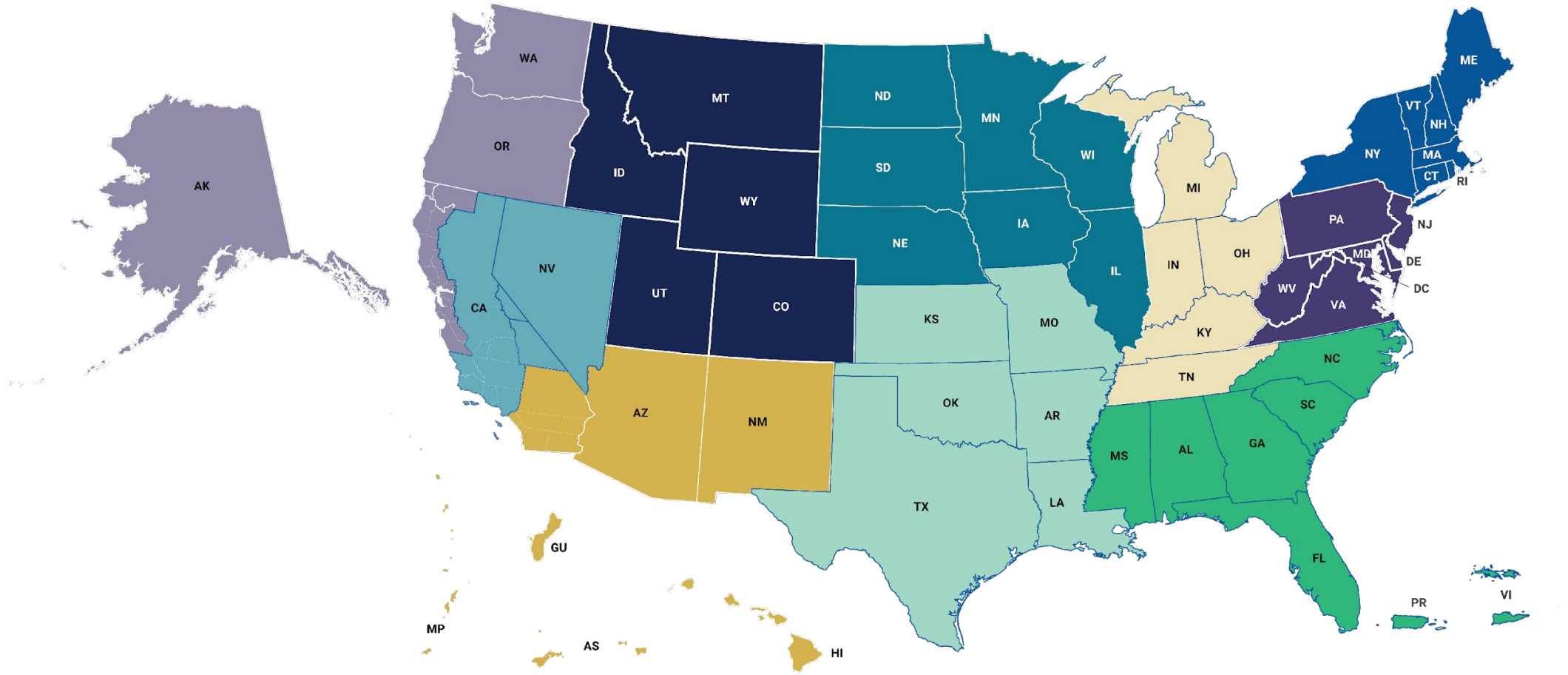
PHASE I (PLANNING)
9 months
Up to **$750,000**

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

Opportunity available to:

- Academia
- Business & Industry
- Governments
- Nonprofits

Convergence Accelerator Expansion



Regions

Northwest · West · Mountain · Southwest · Midwest · South Central · Central · Southeast · Mid Atlantic · Northeast

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.

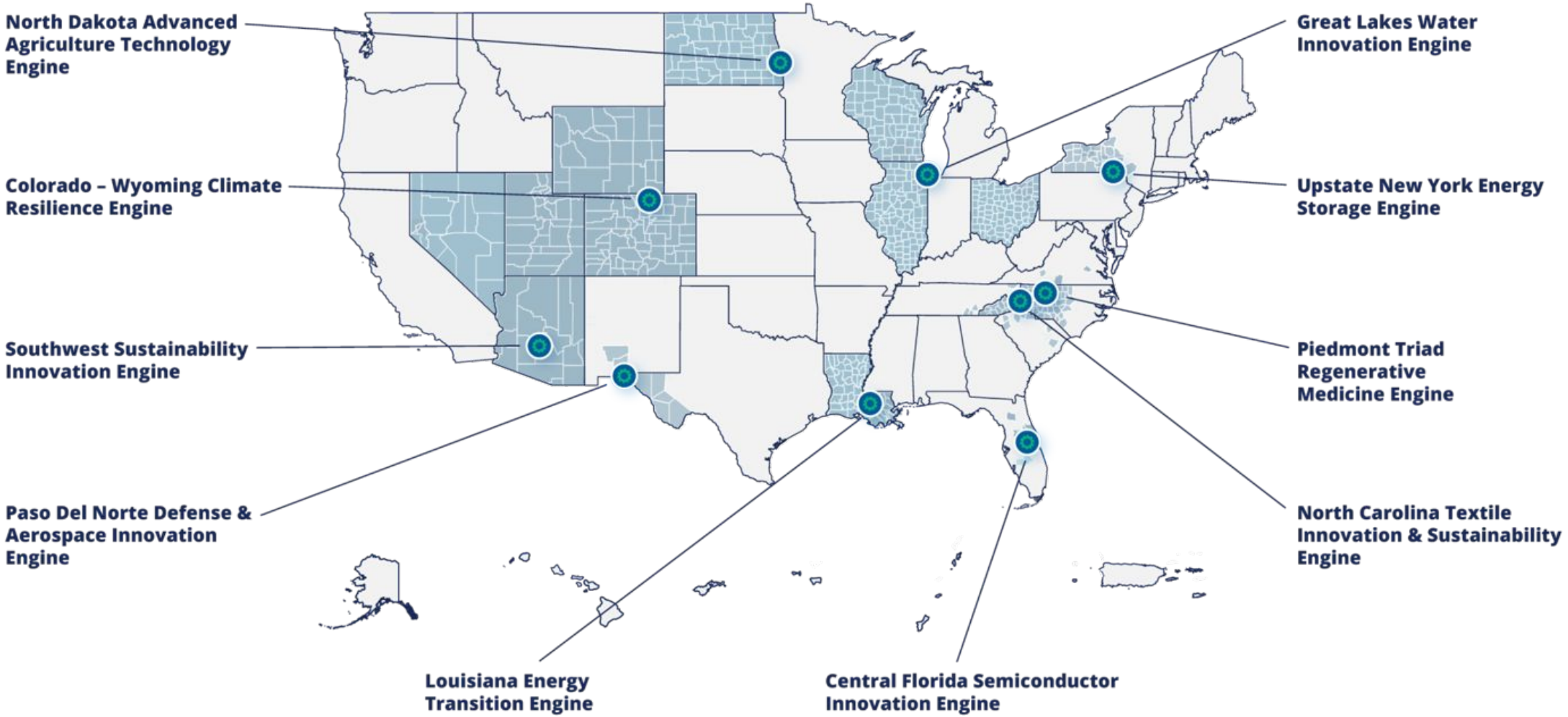
NSF Engines are funded up to **$160 million** for up to **10** years

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

Opportunity available to:

- Academia
- Business & Industry
- Governments
- Nonprofits

NSF establishes 10 inaugural Regional Innovation Engines across the country



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.

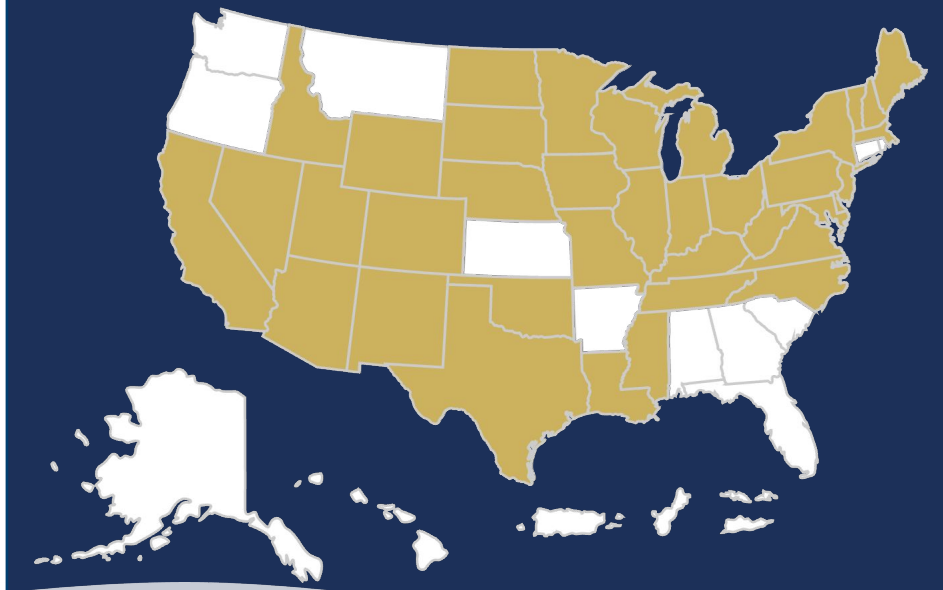
I-Corps Hubs Funding for up to **$3 million** per year for **5 years**

10 I-Corps Hubs involving nearly 100 universities

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

NSF CORPS NSF Innovation Corps

All Hubs



Opportunity available to:

Academia

America's Seed Fund powered by NSF (the Small Business Innovation Research and Small Business Technology Transfer program) provides more than **$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	PHASE II	PHASE IIB
6-12 months	2 years	
Up to	Up to	Up to
$305,000	**$1.25 million**	**$500,000**

CHIPS and Science Act 2022

America's SEED FUND SBIR.STTR

Opportunity available to:

- Academia
- Business & Industry

TECHNOLOGY TRANSLATION AND DEVELOPMENT

A pilot to help maximize the chances of success for startups by making available novel curriculum and support methodologies, including techno-economics training and methods to evaluate financials. The pilot is led by NextCorps, a startup accelerator based in Rochester, New York.

$4.5 million

For more information visit:
https://nextcorps.org/

TECHNOLOGY TRANSLATION AND DEVELOPMENT

A $5 million pilot entrepreneurial training and mentoring program for academic researchers to enhance the impact on STEM translation and commercialization success.

Builds upon and expands the NSF Innovation Corps (I-Corps™) program by adding:

Jumpstart Academy - expands entrepreneurial training by providing instruction both before and after I-Corps training; and

Next-Steps Accelerator - provides additional mentoring, support services and funding for a startup launch.

For more information visit:
https://new.nsf.gov/tip/updates/new-nsf-effort-expands-i-corpstm-teams-training

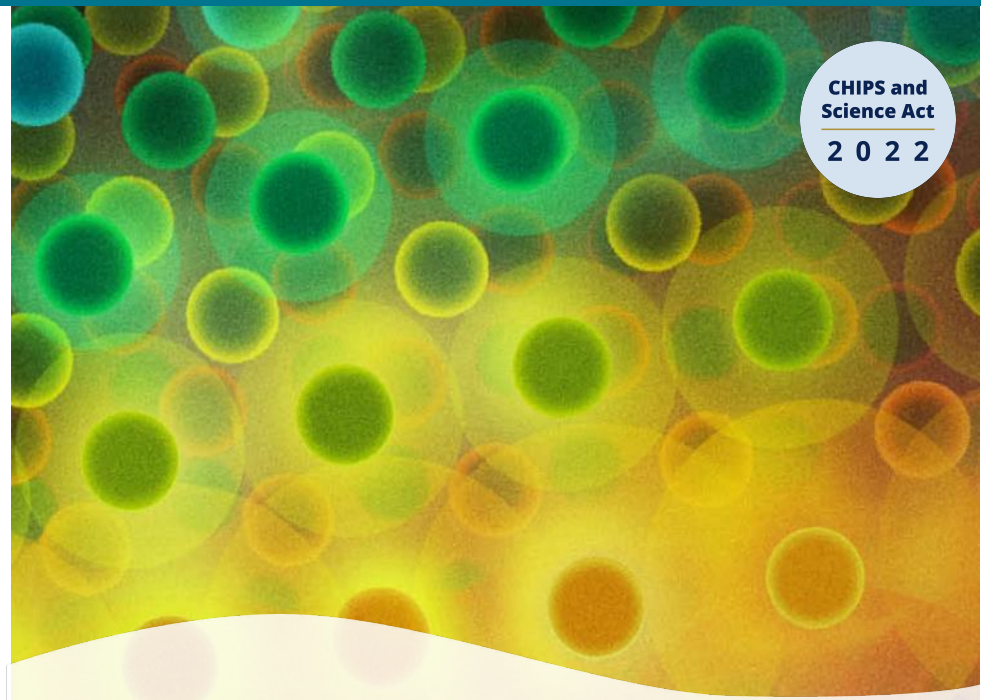
Prototype Open Knowledge Network (Proto-OKN)

program funds projects to prototype scalable, cloud-based technical infrastructure to address challenges across healthcare, space, criminal justice, climate change and many other fields. This program was born from NSF Convergence Accelerator's Track A and an innovation sprint.

Awarded **$26.7 million** to 18 teams across three themes

Three revolutions in AI: Deep Learning, Knowledge Graphs, Reasoning

A *National Knowledge Axiomatization Resource* would complement the NAIRR resource for deep learning



Opportunity available to:

- Academia
- Business & Industry
- Nonprofits

The Responsible Design, Development and Deployment of Technologies (ReDDDoT) 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

Exploring Public Interest AI

Siegel Family Endowment · Patrick J. McGovern Foundation · Ford Foundation · pivotal ventures

For more information visit:
https://new.nsf.gov/funding/opportunities/responsible-design-development-deployment

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.

Opportunity available to:

- Academia
- Business & Industry
- Governments
- Nonprofits

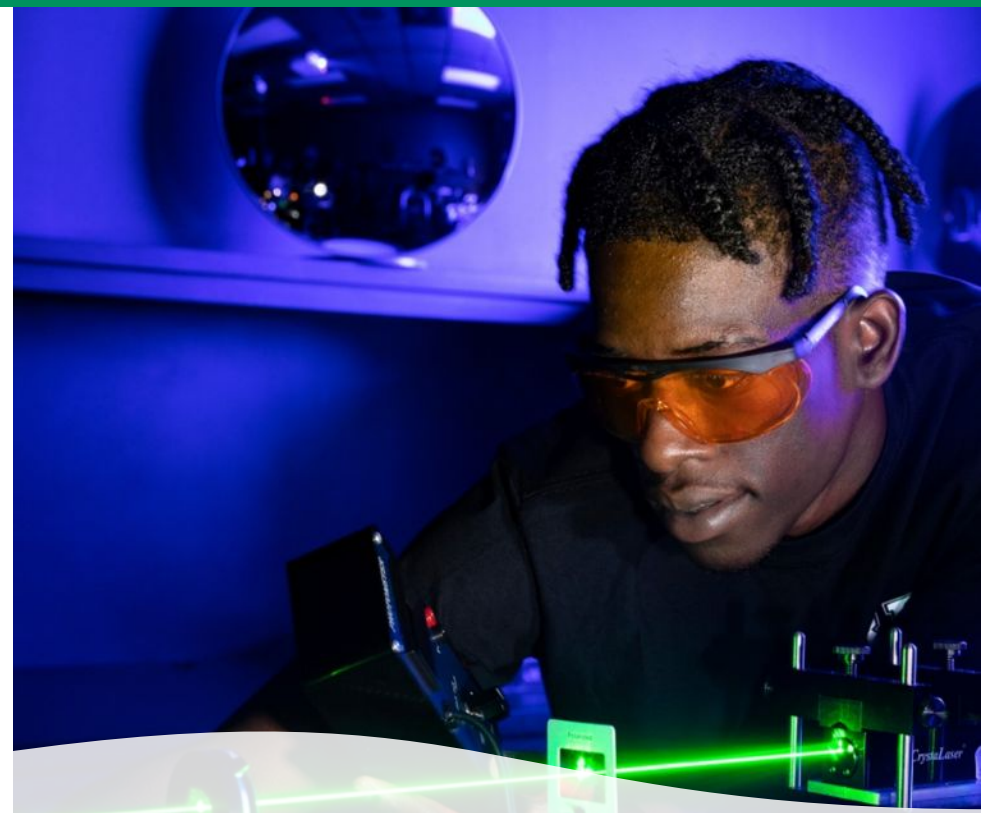
NSF funded the **Council of Graduate Schools** to expand data collection activities and help recruit graduate students in key technology areas. By collecting more data, universities will use data-driven decision making to address challenges in recruiting and retaining domestic graduate students underrepresented in STEM.

A combined nearly **$5.8 million** over **4** years.

For more information:
https://new.nsf.gov/tip/updates/nsf-supports-council-graduate-schools-efforts

WORKFORCE DEVELOPMENT

NSF invited input on challenges and opportunities related to investing in robust and engaging pathways for talent interested in working in emerging technology areas. Information gathered will help identify and shape new funding opportunities to increase the rate and overall composition of domestic students enrolled in traditional academic and nontraditional STEM pathways that will lead to emerging technology careers.



To view the responses visit, https://new.nsf.gov/tip/stem-workforce-development-rfi-responses

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

The **NSF Research Traineeship Institutional Partnership Pilot (NRT-IPP)** program offers graduate students in research-based master's and doctoral degree programs at non-R1 institutions the opportunity to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers by stimulating collaborations with other NRT awardee institutions and industry partners.

The program aims to develop sustainable programmatic capacity for STEM workforce training at the lead institutions in specific tech focus areas.

$4.5 million , up to 5 years

For more information visit:
https://new.nsf.gov/funding/opportunities/national-science-foundation-research-traineeship-0

DIVERSE INNOVATION ECOSYSTEMS

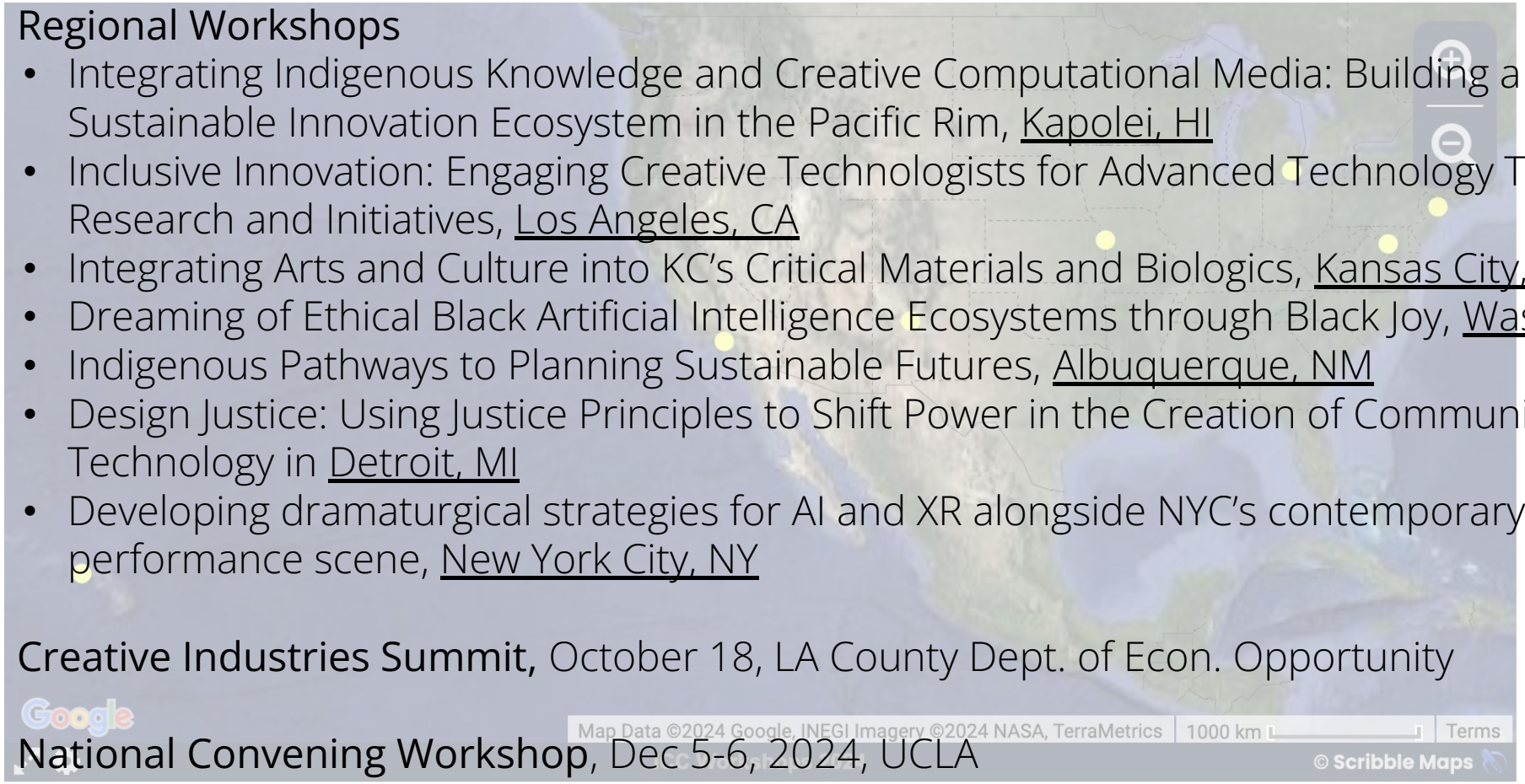
Exploring how to support research and innovation at the intersection of **culture, creativity and technology**. Project led by UCLA and UCSB. See https://icc.ucla.edu/ for more information.

Regional Workshops

- Integrating Indigenous Knowledge and Creative Computational Media: Building a Sustainable Innovation Ecosystem in the Pacific Rim, Kapolei, HI
- Inclusive Innovation: Engaging Creative Technologists for Advanced Technology Tools Research and Initiatives, Los Angeles, CA
- Integrating Arts and Culture into KC's Critical Materials and Biologics, Kansas City, MO
- Dreaming of Ethical Black Artificial Intelligence Ecosystems through Black Joy, Wash DC
- Indigenous Pathways to Planning Sustainable Futures, Albuquerque, NM
- Design Justice: Using Justice Principles to Shift Power in the Creation of Community Technology in Detroit, MI
- Developing dramaturgical strategies for AI and XR alongside NYC's contemporary performance scene, New York City, NY

Creative Industries Summit, October 18, LA County Dept. of Econ. Opportunity

National Convening Workshop, Dec 5-6, 2024, UCLA



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- Funding opportunities
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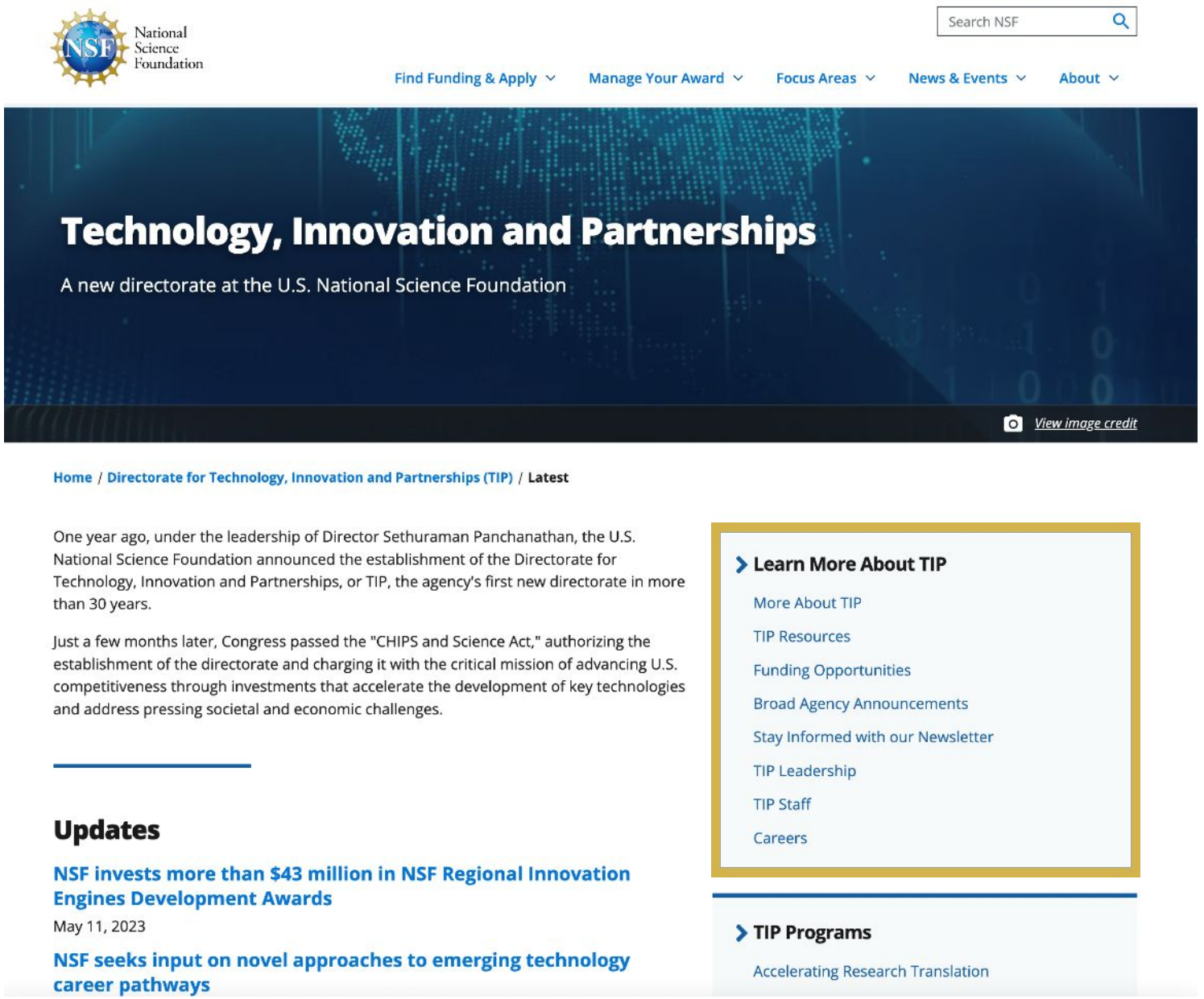
- Resources and upcoming events

new.nsf.gov/tip/latest



U.S. National Science Foundation
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Thank you!

- Email tip@nsf.gov
- Visit https://new.nsf.gov/tip/

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Innovative Models in Academia

Nadya Bliss

Executive Director, Global Security Initiative, ASU

Recent growth in ASU mission-focused research

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DHS Selects Arizona State University to Lead Center of Excellence for Accelerating Operational Efficiency

7-Aug-2017 11:05 AM EDT, by Homeland Security's Science And Technology Directorate

Published September 29, 2023

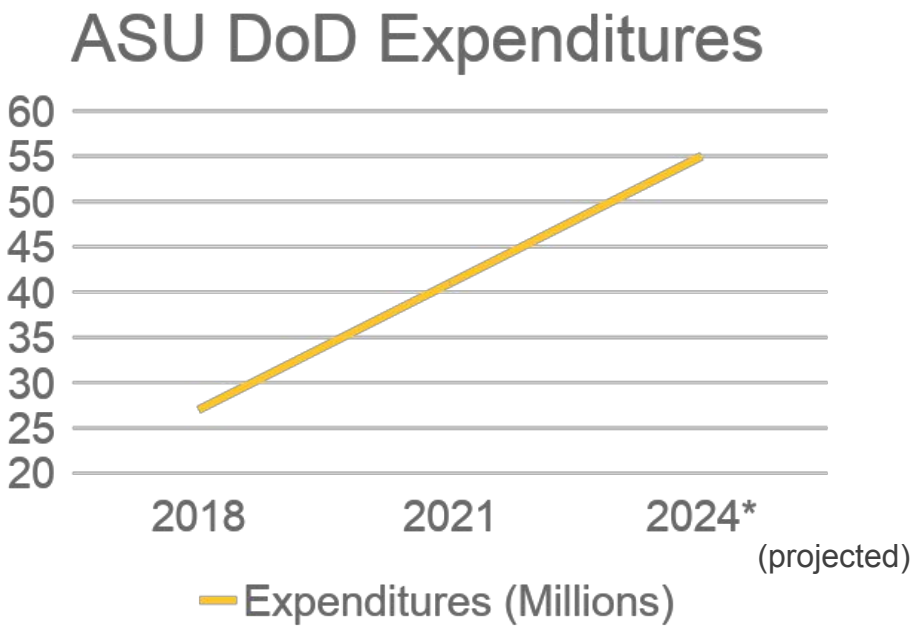
Biden-Harris Administration announces up to $50 million to advance health data security in America

Six new projects funded by ARPA-H will address existing vulnerabilities in securing health care data and strengthen the nation's digital health infrastructure

DOD Names 8 Locations to Serve as New 'Microelectronics Commons' Hubs

Sept. 20, 2023 | By C. Todd Lopez, DOD News |

Under the CHIPS and Science Act, the Defense Department today announced the award of nearly $240 million dollars to eight regional "innovation hubs" around the United States which will be a part of the Microelectronics Commons, and which will benefit both the department and the United States by spurring development of a domestic microelectronics manufacturing industry.



Most DARPA Young Faculty Awards in nation since 2014 (15)

Young Faculty Award

The objective of the DARPA Young Faculty Award (YFA) program is to identify and engage researchers in junior faculty positions at U.S. academic and non-profit research institutions and expose them to Department of Defense (DoD) needs and DARPA's program development process.

Fostering mission-driven research in academia

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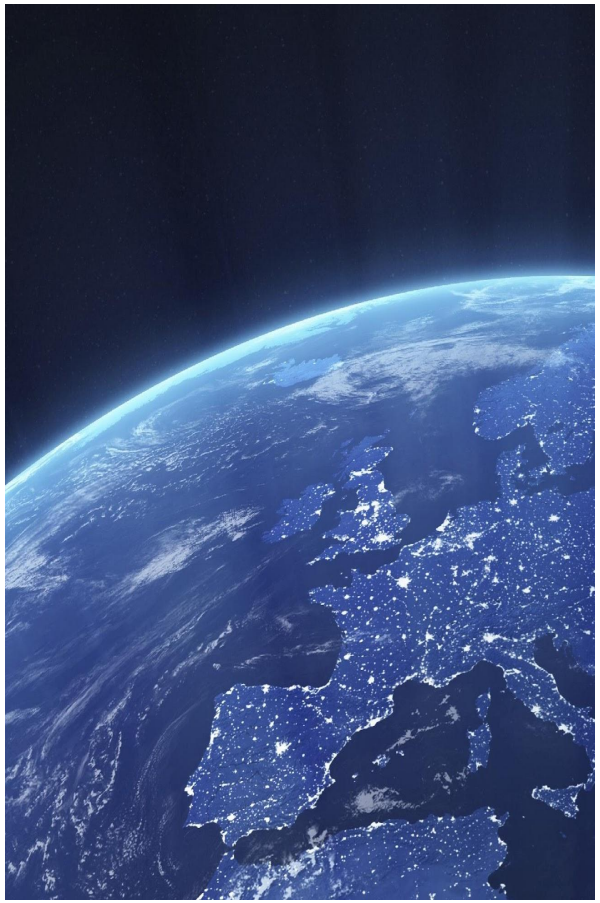
What your <u>university</u> can do:

- Create and fund positions to serve as the bridge between technical expertise and mission-needs
- Design those positions so they are seen as a partner with academic units vs. a competitor for resources
- Develop a culture of problem-solving: pursue research of public value
- Build mutually beneficial, long-term relationships with private and public sectors actors to scale impact
- Invest in administrative, contracting, and project support expertise to supplement the technical expertise



Fostering mission-driven research in academia

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What <u>you</u> can do:

- Understand the academic incentive structure and work within it…
- … while creating new incentives for interdisciplinary research
- Help faculty research the application, not just the topic. Understand the problem they are trying to solve…
- … by working through the Heilmeier Catechism for everything (not just DARPA)
- Provide resources for engagement on research challenges. Faculty travel to DC to discuss concepts with program managers, for example
- Prioritize execution. Success begets success, and the research ecosystem has a long memory

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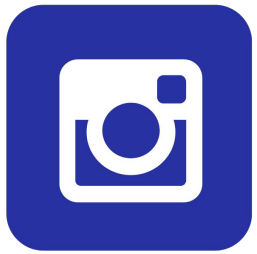

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