“Discovery Acceleration Workshop:
Meet TIP – Technology, Innovation, and Partnerships –
A New Directorate at the National Science Foundation”

*Director of Special Initiatives, Office of Research and Innovation;
Professor of Political Science;
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Discovery Acceleration Workshop:  
Meet TIP – Technology, Innovation, and Partnerships –  
A New Directorate at the National Science Foundation (NSF)

TIP is the new Directorate at NSF. TIP brings together teams of researchers, practitioners and users to shape research directions, catalyze iterative co-design and co-creation, develop game-changing technologies and solutions to address the nation's societal and economic challenges, and grow the future workforce. This Workshop provides an introduction to TIP, including the Directorate’s mission and various programs.
Technology, Innovation and Partnerships (TIP) Directorate, NSF’s Newest Directorate

• TIP spans the whole of the agency and will collaborate with each of NSF’s existing directorates and other stakeholders in the U.S. research, innovation and education enterprise.

• TIP works closely with the entire agency to leverage ongoing research investments to drive research and innovation across all science and engineering fields, leading more rapidly to societal and economic benefits.

• TIP includes programs that were housed in other directorates at NSF, as well as new programs specific to TIP
NSF Leadership:

**Directorates:**

- Biological Sciences (BIO)
- Computer and Information Science and Engineering (CISE)
- Education and Human Resources (EHR)
- Engineering (ENG)
- Geosciences (GEO)
- Mathematical and Physical Sciences (MPS)
- Social, Behavioral, and Economic Sciences (SBE)
- Office of Integrative Activities (OIA)
- Office of International Science & Engineering (OISE)
- Technology, Innovation and Partnerships (TIP)

NSF is Divided into Directorates; Directorates are divided into Divisions/Offices, which are further divided into Programs:
CHIPS and Science Act of 2022

• Appropriates $54 billion for semiconductors incentives, R&D, workforce development, as well as NSF, DOE, NIST, and NASA

• Authorizes $81B for NSF:
  • +$36B for the agency
  • Of that, +$20B for TIP
  • Authorizes a new NSF Directorate for Technology, Innovation and Partnerships
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’s mission fits within NSF’s Mission: promote the progress of science; advance the national health, prosperity and welfare; and secure the national defense.
TIP Maximizes NSF’s Impact

- TIP doubles down on NSF’s commitment to support use-inspired research and the translation of research results to the market and society. In doing so, TIP strengthens the intense interplay between foundational and use-inspired work, enhancing the full cycle of discovery and innovation.
TIP Mobilizes the Collective Power of the Nation

- TIP is a crosscutting platform that collaboratively integrates with NSF's existing directorates and fosters partnerships — with government, industry, nonprofits, civil society and communities of practice — to leverage, energize and rapidly bring to society use-inspired research and innovation.

- TIP spurs NSF and the STEM community forward to new innovations and impacts. TIP meets the nation’s priorities by providing researchers and innovators with education, tools and funding to accelerate the development of breakthrough technologies and speed solutions forward.
TIP’s Focus Areas

• TIP comprises three primary focus areas: 1) fostering innovation and technology ecosystems; 2) establishing translation pathways; and 3) partnering across sectors to engage the nation’s diverse talent.
TIP Focus Area:
Fostering Innovation and Technology Ecosystems

• Accelerates breakthroughs in key technology areas to grow long-term U.S. competitiveness, leading to game-changing technologies and solutions that address societal and economic challenges and pave the way for new, high-wage jobs.
TIP Focus Area: Establishing Translation Pathways

- Accelerates the translation of research results to practice. Programs aligned to this focus provide pathways for researchers, startups and aspiring entrepreneurs to move their ideas from the laboratory to the market and society.
TIP Focus Area:
Partnering to Engage the Nation’s Diverse Talent

• Ignites partnerships among academia, industry, government, nonprofits, civil society and communities of practice to blend expertise and resources, advancing research, innovation and education.
TIP Programs

• TIP’s impact is embodied in its dynamic innovation programs to advance use-inspired and translational research in all fields of science and engineering, giving rise to new industries and engaging all Americans — regardless of background or location — in the pursuit of new, high-wage jobs in STEM:

  • America’s Seed Fund
  • Convergence Accelerator
  • Innovation Corps (I-Corps™)
  • Partnerships for Innovation
  • Pathways to Enable Open-Source Ecosystems
  • Regional Innovation Engines (“NSF Engines”)
  • ExLENT (“Experiential Learning for Emerging and Novel Technologies”)
TIP Program: Convergence Accelerator

- Goals: Disrupt the usual way of NSF business through a new innovation model; expand and diversify multidisciplinary teams and partnerships to include academia, industry, nonprofits, government, and other sectors; deliver solutions that have a national societal impact

- Structure:
  - **Ideation** includes RFI, Workshops, and Funding
  - **Phase 1** (planning phase, $750K/9 months)
  - **Phase 2** (development phase, $5M/2 years)
TIP Program: Regional Innovation Engine ("NSF Engines")

- Goals: NSF Engines bolsters innovation ecosystems across the U.S. by supporting the development of diverse, regional coalitions to engage in use-inspired research, driving research results to the market and society, promoting workforce development, and ultimately stimulating the economy and creating new jobs.

- Structure:
  - **Type 1: Development** ($1M/2 years)
  - **Type 2: Nascent** ($160M/10 years)
  - Type 3 (Emergent), Type 4 (Growth), and Type 5 (Mature) not yet in place.
TIP Program: ExLENT
(“Experiential Learning for Emerging and Novel Technologies”)

- NSF’s newest Workforce Development program in TIP will expand practical learning opportunities for individuals interested in entering or gaining more experience in emerging and novel technology areas such as advanced manufacturing, artificial intelligence, biotechnology, quantum information science, and semiconductors and microelectronics.

- ExLENT promotes partnerships between organizations in emerging technology fields and those with expertise in workforce development.

- 3 Tracks: 1) Pivots; Beginnings; and Explorations ($1M/3 years)

- Introduction to ExLENT Webinar on November 1, 2022, 3pm ET
NSF and TIP Websites of Interest:

NSF: https://www.nsf.gov/
NSF Beta: https://beta.nsf.gov/
About NSF: https://www.nsf.gov/about/
TIP Directorate: https://beta.nsf.gov/tip/latest
About TIP: https://beta.nsf.gov/tip/about-tip
TIP Resources and Contacts: https://beta.nsf.gov/tip/resources
Thank you!
Questions?

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