NSF's Convergence Accelerator

NSF'S CONVERGENCE ACCELERATOR

ACCELERATING CONVERGENT SOLUTIONS FOR SOCIETAL IMPACT

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NSF Convergence Accelerator

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ACCELERATING CONVERGENT SOLUTIONS FOR SOCIETAL IMPACT

A Pivotal Moment for the Nation and Society

Climate change

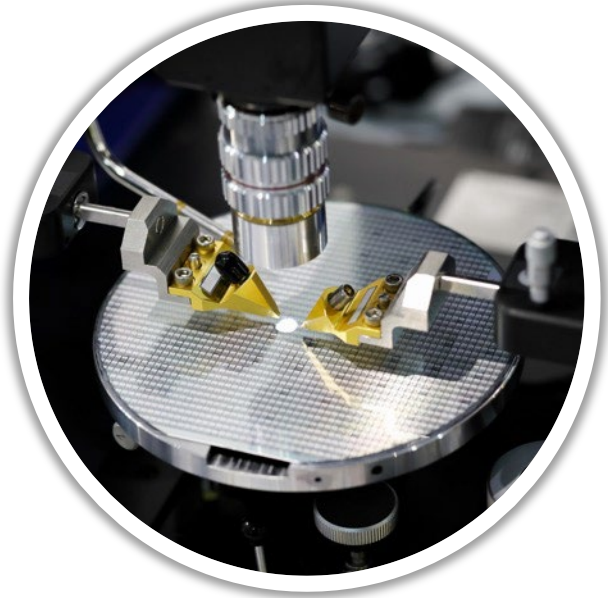Equitable access to education, health care

Critical and resilient infrastructure

TIP Technology, Innovation and Partnerships

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

TIP Technology, Innovation and Partnerships

Technology, Innovation and Partnerships Directorate

Accelerating research toward impact

TIP 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.
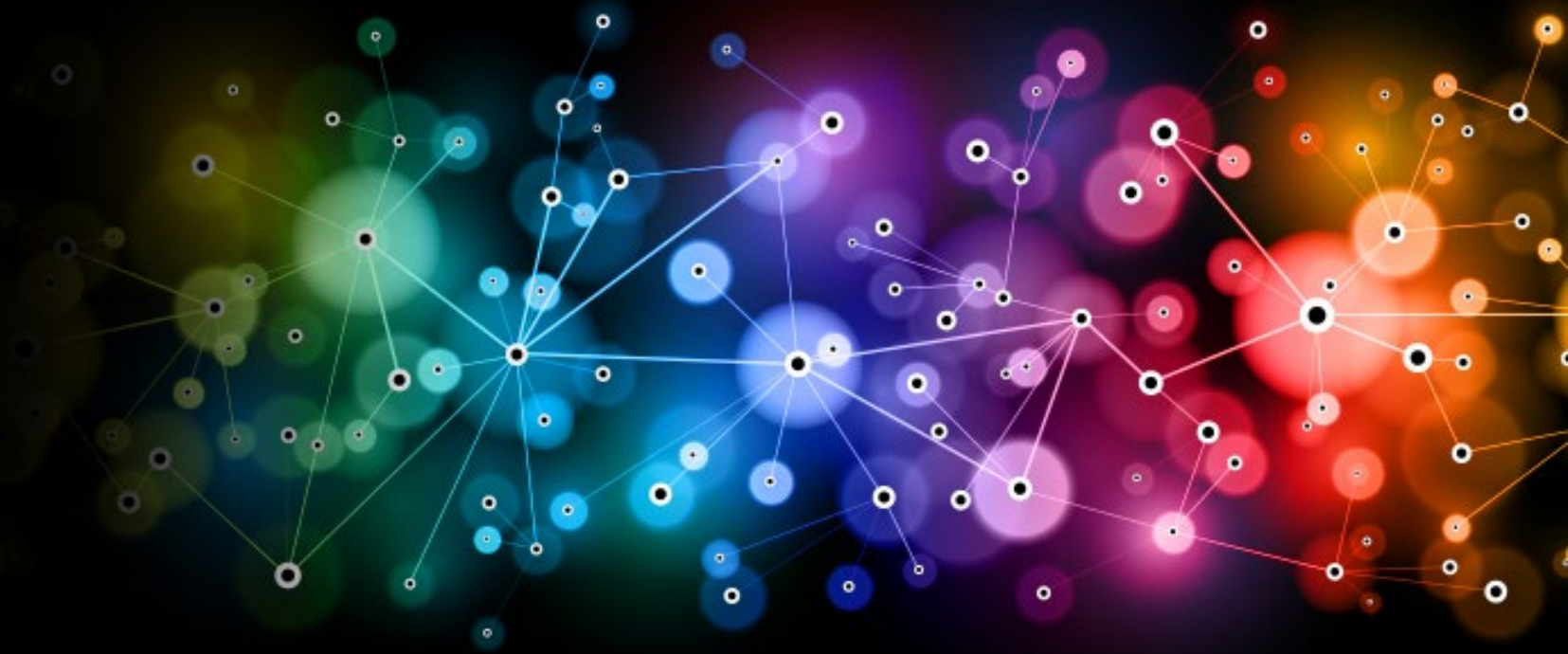
Fostering Innovation and Technology Ecosystems	Establishing Translation Pathways	Partnering to Engage the Nation's Diverse Talent
Accelerates breakthroughs in key technology areas to grow long-term U.S. competitiveness, leading to game-changing technologies and solutions that address societal and economic challenges and pave the way for new, high-wage jobs.	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.	Ignites partnerships among academia, industry, government, nonprofits, civil society and communities of practice to blend expertise and resources, advancing research, innovation and education.

TIP Technology, Innovation and Partnerships

CONVERGENCE RESEARCH

Today's grand challenges will **NOT** be solved by one discipline working alone.

Grand Challenges require **CONVERGENCE**:
the merging of ideas, approaches, and technologies from widely diverse fields of knowledge to stimulate innovation and discovery.

NSF CONVERGENCE ACCELERATOR

Accelerating Solutions Toward Societal Impact

GOALS:

- Disrupt the usual way of NSF business through a new innovation model
- Expand and diversifies multidisciplinary teams and partnerships to include academia, industry, non-profits, government, and other sectors
- Deliver solutions that have a national societal impact

Characteristics	Proactively & Intentionally Managed
- Use-inspired research - Clear goals, milestones, high-impact deliverables - Leverages multidisciplinary teams **Larger, national societal scale** - Requires **diverse partnerships** – industry, non-profits, academia **Acceleration at speed and scale**	- Teams and Cohorts—"Tracks" **Cooperation and Competition** **Intensive education and mentorship—human-centered design thinking, team science, and customer discovery** - Mission-driven evaluation

PROGRAM STRUCTURE

IDEATION (DCL/RFI, WORKSHOPS):

Selected by gathering input from the community. Identified topics must meet a societal need at scale, be built upon foundational research, and be suitable for a multidisciplinary, convergence research approach.

PHASE 1 (PLANNING):

Up to $750K over 9 months is provided to further develop the initial concept (building upon basic research), identify new team members/partners, participate in a hands-on innovation curriculum, and develop an initial/low-fidelity prototype.
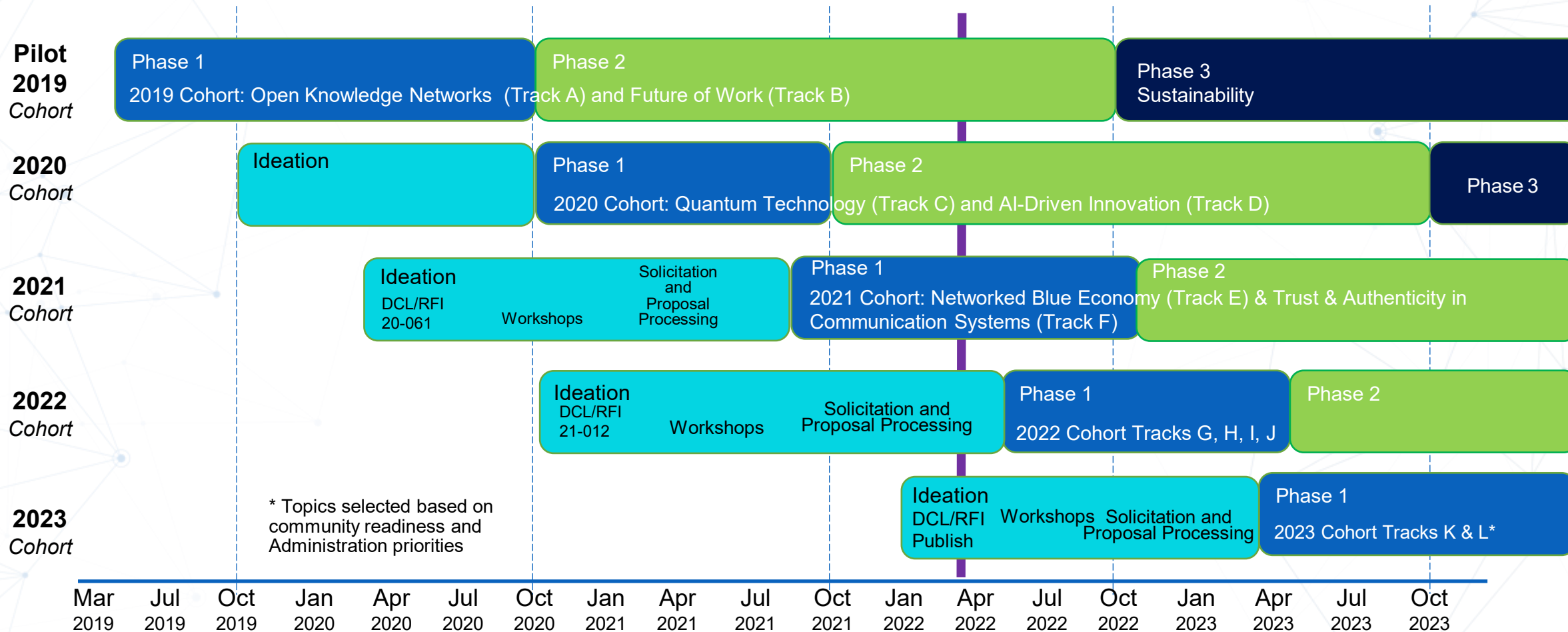
PHASE 2 (IMPLEMENTATION):

Up to $5M over 24 months to develop solution prototypes and to build a sustainability model to continue impact beyond NSF support.

| IDEATION | PHASE 1 | PHASE 2 | SOCIETAL IMPACT |

Convergence Research Focus

NSF

CONVERGENCE ACCELERATOR PROGRAM

Overall Timeline – 2019-2023

Pilot 2019 *Cohort*
- Phase 1 — 2019 Cohort: Open Knowledge Networks (Track A) and Future of Work (Track B)
- Phase 2
- Phase 3 Sustainability

2020 *Cohort*
- Ideation
- Phase 1 — 2020 Cohort: Quantum Technology (Track C) and AI-Driven Innovation (Track D)
- Phase 2
- Phase 3

2021 *Cohort*
- Ideation — DCL/RFI 20-061, Workshops, Solicitation and Proposal Processing
- Phase 1 — 2021 Cohort: Networked Blue Economy (Track E) & Trust & Authenticity in Communication Systems (Track F)
- Phase 2

2022 *Cohort*
- Ideation — DCL/RFI 21-012, Workshops, Solicitation and Proposal Processing
- Phase 1 — 2022 Cohort Tracks G, H, I, J
- Phase 2

2023 *Cohort*
- * Topics selected based on community readiness and Administration priorities
- Ideation — DCL/RFI Publish, Workshops, Solicitation and Proposal Processing
- Phase 1 — 2023 Cohort Tracks K & L*

Timeline axis: Mar 2019, Jul 2019, Oct 2019, Jan 2020, Apr 2020, Jul 2020, Oct 2020, Jan 2021, Apr 2021, Jul 2021, Oct 2021, Jan 2022, Apr 2022, Jul 2022, Oct 2022, Jan 2023, Apr 2023, Jul 2023, Oct 2023

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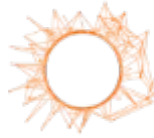
Convergence Accelerator Portfolio

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

2019 COHORT
Phase 2

2020 COHORT
Phase 2

2021 COHORT
Phase 1

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

Track Topic: TBD

Track L

Track Topic: TBD

2022 COHORT

FUTURE COHORT

CONVERGENCE ACCELERATOR FUNDING MECHANISMS

Each year the program releases a solicitation funding opportunity featuring several convergent research topics selected from the program's ideation process. Also, this process will provide increased opportunities for non-academic entities to submit and **lead** proposals. Researchers and innovators are encouraged to apply.

Traditional NSF Solicitation – Academic submitters

- Example: NSF-21-572 (recommended); refer to http://bit.ly/CA_GrantSolicitation_NSF-21-572)

Broad Agency Announcement (BAA) – For-profit or Non-profit (or similar)

- Example: BAA Solicitation 2021- https://bit.ly/CA_BAA_Solicitation2021
- Additional Information: Fee/profit is an allowable cost

Solicitation Evaluation/Review Criteria

Convergence Accelerator: Submitting the "same old proposals" won't work!

INTELLECTUAL MERIT & BROADER IMPACTS:

Intellectual Merit:
Encompasses the potential to advance knowledge

Broader Impacts:
Encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes

PROGRAM SPECIFIC CRITERIA:

- **Convergence:** Multiple disciplines with a focus on social science aspects; think big—Experts from multiple institutions

- **Cross-cutting Partnerships:** Multiple organizations and sectors; not just academia; must include industry, non-profits, government, and other communities of practice American people in 3 years, (e.g., Prototypes); What impact the solution have a national and/or global scale?

- **Broadening Participation:** Describe activities that will be undertaken to increase the participation of underrepresented groups (e.g., expertise, partnerships, user groups, resource needs); Refer to the Broadening Participation Plan requirements

- **Deliverables:** What can teams deliver to the American people in 3 years, (e.g., Prototypes); What impact the solution have a national and/or global scale?

- **Track Alignment:** How can multiple teams work together to solve a national-scale complex challenge?
  - Each track funds a set of diverse teams focusing on different aspects of a national-scale societal challenge
  - Teams are uniquely positioned to ensure the highest societal impact

Current Convergence Accelerator Cross-Cutting Partners Roles & Sectors

Cross-cutting partnerships strengthen each funded effort by providing end-user insights, resources, services, infrastructure and transition-to-practice pathways.

Partner Roles in the Convergence Accelerator Teams

- Advisory, Consulting
- Data provider
- End-user
- Education support
- Resources
- Talent pipeline
- Testing

Partners are from the following sectors

- Communications
- Consumer
- Education
- Energy
- Financial
- Government
- Healthcare
- Industrial
- Information Technology
- Utilities

UPCOMING FUNDING OPPORTUNITY
Upcoming Topics for the 2022 NSF Convergence Accelerator Solicitation, DCL NSF 22-036

The NSF Convergence Accelerator has published a Dear Colleague Letter, DCL (NSF 22-036) to make the research and innovation community aware of the convergent research topics selected for the program's 2022 solicitation. The solicitation is expected to be published in the coming months. Once published the NSF Convergence Accelerator will hold informational webinars.

Track H: Enhancing Opportunities for Persons with Disabilities
This track will converge a wide range of disciplines to include social sciences, behavioral sciences, engineering,. computer science, ethics, and economics to develop use-inspired solutions to enhance the quality of life, employment access, and opportunities for PWDs.

Track I: Sustainable Materials for Global Challenges
This track will converge advances in fundamental materials science with materials design and manufacturing methods with the goal to couple their end-use and full life-cycle considerations for environmentally and economically sustainable materials and products that address global challenges.

Track J: Food & Nutrition Security
This track will converge across food and nutrition sectors to address intertwined challenges in supporting population health, combating climate change, and addressing the nutritional needs of the most vulnerable by empowering youth, women, and disadvantaged communities.

DCL Details: bit.ly/CA_DCL_upcoming-topics-for-2022-solicitation-NSF-22-036

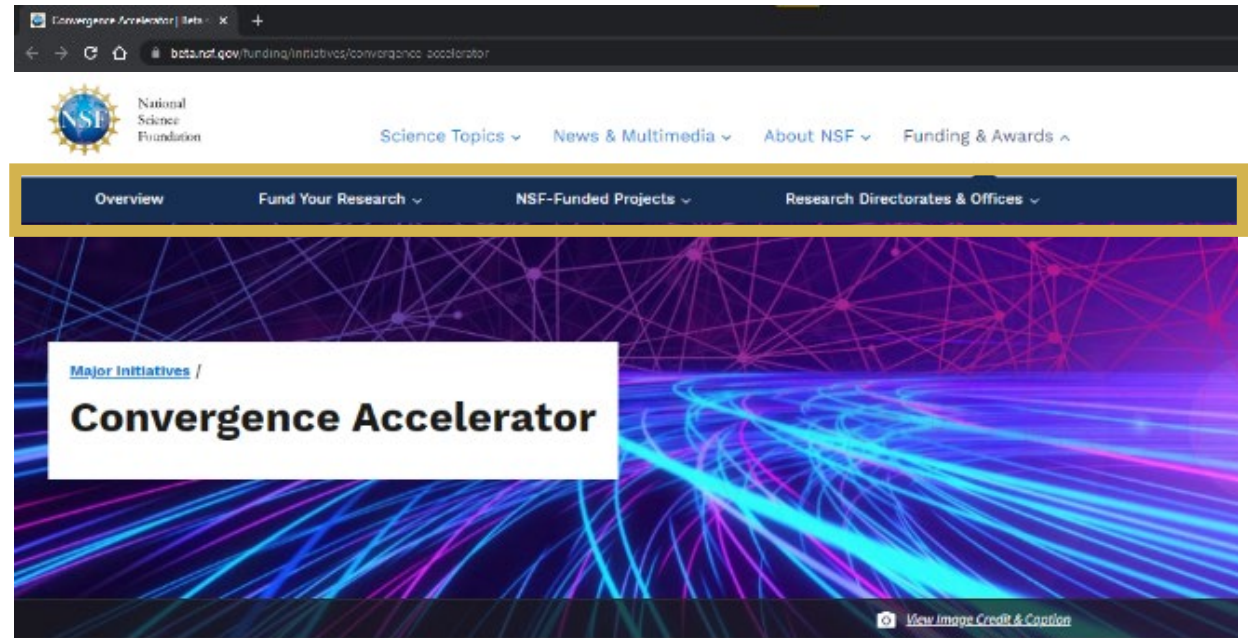NSF's Convergence Accelerator

SAVE THE DATE
July 27 – 28, 2022

beta.nsf.gov/funding/initiatives/convergence-accelerator

NSF's Convergence Accelerator is an NSF Directorate for Technology, Innovation and Partnerships program.

LEARN ABOUT US.

- Unique Program Model

- Exciting Program Offerings

- Current Portfolio

- Ways to Connect into the

  Program and with the Team

CONNECT WITH US.

beta.nsf.gov/funding/initiatives/convergence-accelerator

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