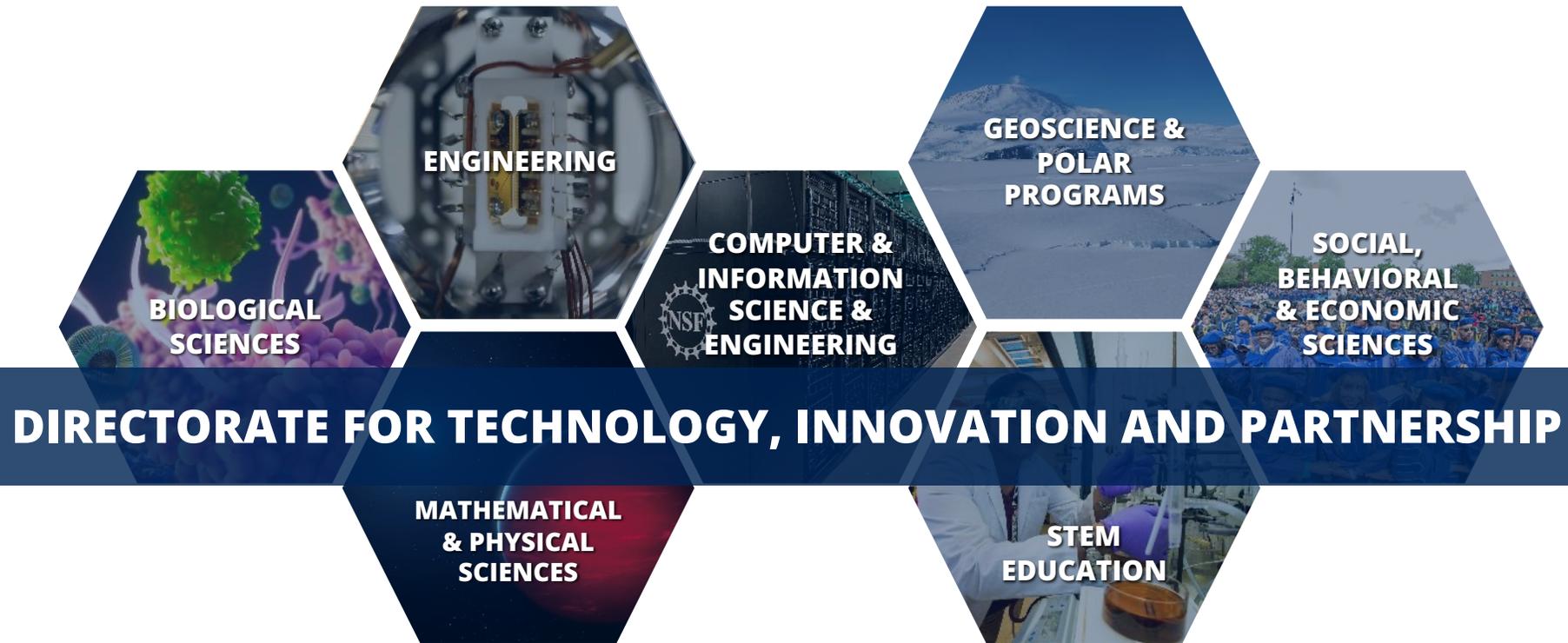# Webinar Outline

- About NSF, the Directorates, and TIP

- Background on the ReDDDoT Program

- The ReDDDoT Program, Proposal Types, and Other Related Information

- Preparing to Create a Proposal and the Review Process

- Suggested Resources

Live Polls on Slides 18 and 25

A New "Horizontal": Strengthen, Scale Use-Inspired and Translational Research

About the U.S. National Science Foundation (NSF)

- An independent federal agency

- Established in 1950 by Congress to:
  - Promote the progress of science.
  - Advance the national health, prosperity and welfare.
  - Secure the national defense.

- FY 2023 enacted budget is $9.8 billion

- Receives more than 43,000 proposals per year for research, education, and training projects, and more than 13,000 applications for graduate and postdoctoral fellowships

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.

TIP Programs Power Technology Breakthroughs

Public Funds

Private Funds

TIP bridges the gap

RAMP OF OPPORTUNITY

Valley of Death

LAB ⟷ SOCIETY

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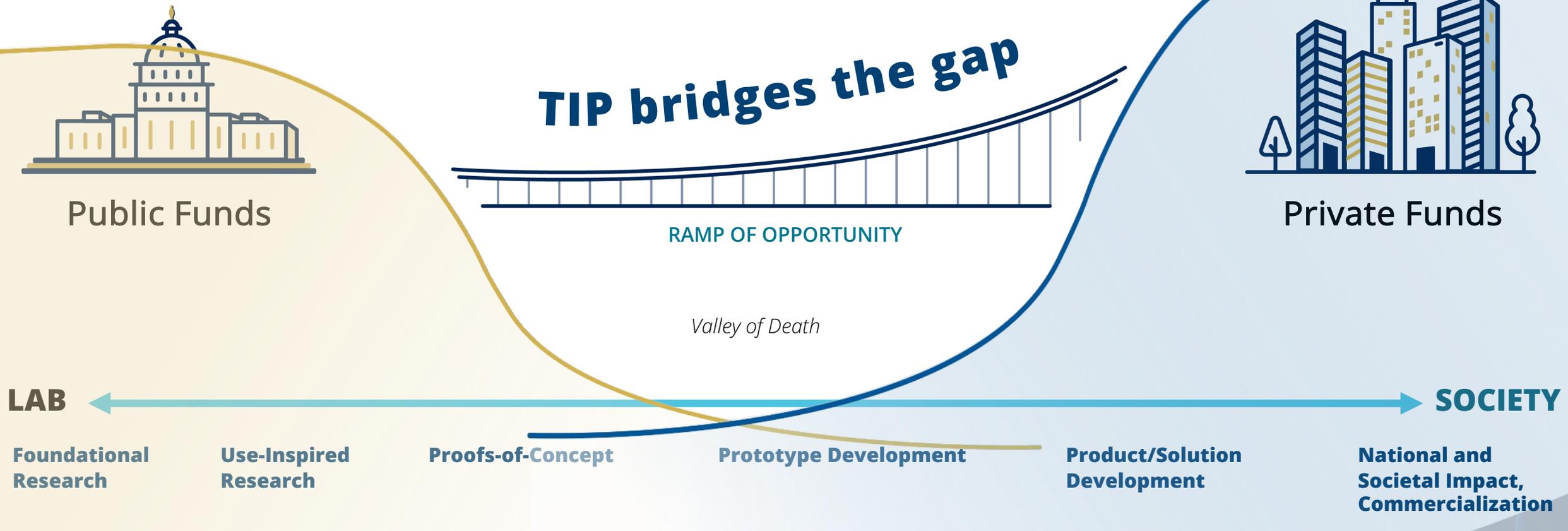
ReDDDoT Program Website

The home link is: https://new.nsf.gov/funding/opportunities/responsible-design-development-deployment

Collaboration between NSF and other Foundations

National Science Foundation

Directorate for Technology, Innovation and Partnerships
Directorate for Social, Behavioral and Economic Sciences
Directorate for Biological Sciences
Directorate for Computer and Information Science and Engineering
Directorate for Geosciences
Directorate for STEM Education

SIEGEL FAMILY ENDOWMENT

Patrick J McGovern FOUNDATION

Ford Foundation

pivotal VENTURES

The Eric and Wendy Schmidt Fund for Strategic Innovation

ReDDDoT Program Scope

Proposals from **multidisciplinary, multi-sector teams** that **examine and demonstrate the translational principles, methodologies, implementations, and impacts** associated with responsible design, development, and deployment of technologies

A key goal of the program is to support and strengthen collaborations across disciplines and sectors, for example, **academia, industry, government, and non-profits**.

The program also aims to ensure that **ethical, legal, and societal considerations and community values** are embedded across technology lifecycles to generate products that promote the public's wellbeing and mitigate harm.

Background: CHIPS and Science Act of 2022

SEC 10398: ETHICAL, LEGAL, AND SOCIETAL CONSIDERATIONS.

The Director shall engage, as appropriate, experts in the social dimensions Of science and technology and set up formal avenues for public input, as appropriate, to ensure that **ethical, legal, and societal considerations are taken into account in the priorities and activities of the Directorate,** including in the selection of the **challenges and key technology focus areas** under section 10387 and the award-making process, and throughout all stages of supported projects.

SEC 10383: ACTIVITIES.

"**develop mutually-beneficial research and technology development partnerships** and collaborations among institutions of higher education…, and non-profit organizations, labor organizations, businesses and other for-profit entities…"

ReDDDoT Program Objectives

- Stimulating activity and filling gaps in research, innovation, and capacity building

- Creating broad and inclusive communities of interest that bring together key stakeholders to better inform practices

- Educating and training the STEM workforce

- Accelerating pathways to societal and economic benefits while developing strategies to avoid or mitigate societal and economic harms

- Empowering communities, including economically disadvantaged and marginalized populations, to participate in all stages of technology development, including the earliest stages of ideation and design

ReDDDoT Program Values (Examples)

A technology's lifecycle provides opportunities for meaningful stakeholder engagement to inform responsible design, development, and deployment. An array of values could shape and be considered, including but not limited to:

- *Accountability*
- *Equity*
- *Inclusion*
- *Sustainability*
- *Transparency*
- *Accessibility*

- *Safety*
- *Fairness*
- *Sensitivity to culture and context*
- *Privacy*
- *Security....*

Illustrative Types of Activities

- **_Research_**
  - Study the impacts of current or new ReDDDoT paradigms

- **_Implementation_**
  - Interdisciplinary, multi-sector collaborations that demonstrate and strengthen ReDDDoT approaches for a specific technology or technology application

- **_Methodologies and Tools_**
  - Development and/or assessment of methodologies/tools that enable ReDDDoT approaches

- **_Infrastructure_**
  - Support of collaborations and educational programs necessary to sustain ReDDDoT approaches

The program will consider projects that are exploratory in nature as well as projects that build on and expand efforts already underway.

Key Challenge Areas from CHIPS and Science Act

National, Societal and Geostrategic Challenges:

1) United States **national security**;

2) United States **manufacturing and industrial productivity**;

3) United States **workforce development and skills gaps**;

4) **Climate change and environmental sustainability**;

5) **Inequitable access** to education, opportunity, or other services.

Key Technology Areas from CHIPS and Science Act

ReDDDoT Priority Areas

- In FY 2024, the **Planning Grant**, **Translational Research Coordination Network**, and **Phase 2 Project proposals** should all focus on one or more of the following three technology areas:

  - artificial intelligence

  - biotechnology, and/or

  - natural and anthropogenic disaster prevention or mitigation

  - climate change and environmental sustainability, as it relates to AI, biotech, or disasters

- Projects that cover multiple of these priority areas, and/or include other areas in addition to one or more of the priority areas are also welcome.

- **Workshop proposals** may focus on any of the key technology areas and/or national, societal and geostrategic challenges in the CHIPS and Science Act

Live Poll (1 of 2)

- **What tech area(s) are you planning to submit to?**

  - Artificial Intelligence

  - Biotechnology

  - Disaster Prevention or Mitigation

  - Climate Change and Environmental Sustainability, as it relates to AI, biotech, or disasters

  - Mix of one or more Emerging Tech areas (AI, biotech, disasters)

  - Another Emerging Tech or Challenge Area (Workshop Proposal)

Proposal Types

Phase 1 - Deadline: April 08, 2024

- Planning Grants
- Translational Research Coordination Networks

- Workshops

Phase 2 - Deadline: April 22, 2024

- Project Proposals

Phase 1 - **Workshops**

- Up to $75,000 each and duration of no more than 1 year

- May focus on any of the key technology areas and/or national,

  societal and geostrategic challenges

- Should raise awareness and identify approaches and needs relevant to ReDDDoT in one or more technology/challenge area(s); explore and refine opportunities for future projects; and facilitate building of relationships/trust to enable substantive transdisciplinary and multi-sector collaborations

Due April 8th, 2024

Phase 1 - **Planning Grants**

- Up to $300,000 and duration of no more than 2 years

- Should facilitate collaborative transdisciplinary and multi-sector activities in anticipation of submission of larger proposals to the program in the future

- May engage in activities to help identify stakeholders and build necessary relationships; identify research gaps, questions, and hypotheses; and/or describe potential approaches to solutions. Activities may include, but are not limited to, travel, workshop organization, stakeholder meetings, data collection, preliminary experiments, and pilot studies

- ***Select the 'Research' proposal type in Research.gov when submitting (up to 15 pages of project description)***

<div align="center">

Due April 8th, 2024

</div>

Phase 1 - **Translational Research Coordination Networks**

- Up to $500,000 for 3-4 years; *a single organization must serve as the submitting organization, with other organizations involved as subawards*

- Should promote use-inspired translational research activities to help initiate a community of practice relevant to one or more of the FY 2024 priority areas

- Should jump start new community activity across multiple disciplines and sectors, and not propose funding for on-going operation of existing networks or established collaborations

Due April 8th, 2024

Phase 2 – **Project Proposals**

- Should be between $750,000 and $1,500,000 with a performance period of 3 years

- Intended for projects with an established track record in the priority areas

  with teams that have experience in use-inspired and translational

  activities in responsible design, development, and deployment

- Projects covering multiple priority areas and/or including other areas in addition to the priority areas are welcome

Due April 22nd, 2024

Phase 2 – **Project Proposals (continued)**

- A Project Proposal must include a **Collaboration Plan** (1 to 3 pages) that is submitted as a supplementary document. This plan must describe the structure of the collaborative activities in the project, and how these activities will be nurtured, monitored, and sustained for the overall benefit of the project.

Live Poll (2 of 2)

- Which type of proposal do you plan to submit?

  - Phase 1: Workshops

  - Phase 1: Planning Grants

  - Phase 1: Translational Research Coordination Networks
  - Phase 2: Project Proposals

Types of Organizations That Can Apply

- **Institutions of Higher Education (IHEs)** - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members.

- **For-profit organizations** - U.S.-based commercial organizations, including small businesses, with strong capabilities in scientific or engineering research or education and a passion for innovation.

- **Non-profit, non-academic organizations** - Independent museums, observatories, research labs, professional societies, community organizations, and similar organizations located in the U.S. that are directly associated with educational or research activities or that bring relevant expertise/perspectives.

- **State, local, and Tribal governments**, limited to agencies, offices, divisions, or other units specifically dedicated to innovation, economic and/or workforce development.

- **Tribal Nations** - An American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. §§ 5130-5131.

Project Team Leadership & Professional Relationships

- PIs and co-PIs may be from academic institutions, community organizations and other non-profit organizations, or companies

- Clearly identified roles, responsibilities, and contributions of each collaborator or partner. Projects are encouraged to promote inclusion in their leadership, collaborations, and other project activities

- How relevant stakeholders from across disciplines and sectors such as (but not limited to) academia, industry, government, and non-profit and community organizations will be fully integrated in project activities, as appropriate for the project type and topic. Example: <u>authentic engagement</u> with individuals and communities most impacted by relevant technologies

- Teams should include individuals with experience and expertise in topics and areas broadly associated with responsible design, development, and/or deployment of technologies.

- **No limits** on how many proposals a PI can be on.

NSF Review Criteria

All NSF proposals are evaluated using the following two criteria:

- **Intellectual Merit**: The Intellectual Merit criterion encompasses the potential to advance knowledge; and

- **Broader Impacts**: The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

A program can have Additional Review Criteria, which ReDDDoT has for **all Types of Proposals**.

Additional Review Criteria

In addition to NSF's standard merit review criteria, the following solicitation-specific criteria will be applied to all ReDDDoT proposals:

- Is it evident that the project is addressing potential areas of need with respect to advancing strategies for responsible design, development and deployment of technology?

- Does the proposal include mechanisms to share project results broadly across relevant disciplines and sectors?

- Are the composition and expertise of the project team and the plans to integrate relevant stakeholders appropriate to meet the project goals in enabling or demonstrating responsible design, development and deployment of technology?

Required Components for a Proposal

These include but are not necessarily limited to:

- Project Summary (one page)

- Project Description (a maximum of 15 pages)
- References Cited
- Data Management Plan (depending on the type of project)

- Postdoctoral Mentoring Plan (if applicable)

- Collaboration Plan (if applicable – required for Phase 2 Proposals)

- Current and Pending Support Form
- Collaborators & Other Affiliations Information
- Biographical Sketch
- Budget and Budget Justification

Be sure to review the PAPPG...

https://new.nsf.gov/policies/pappg/23-1
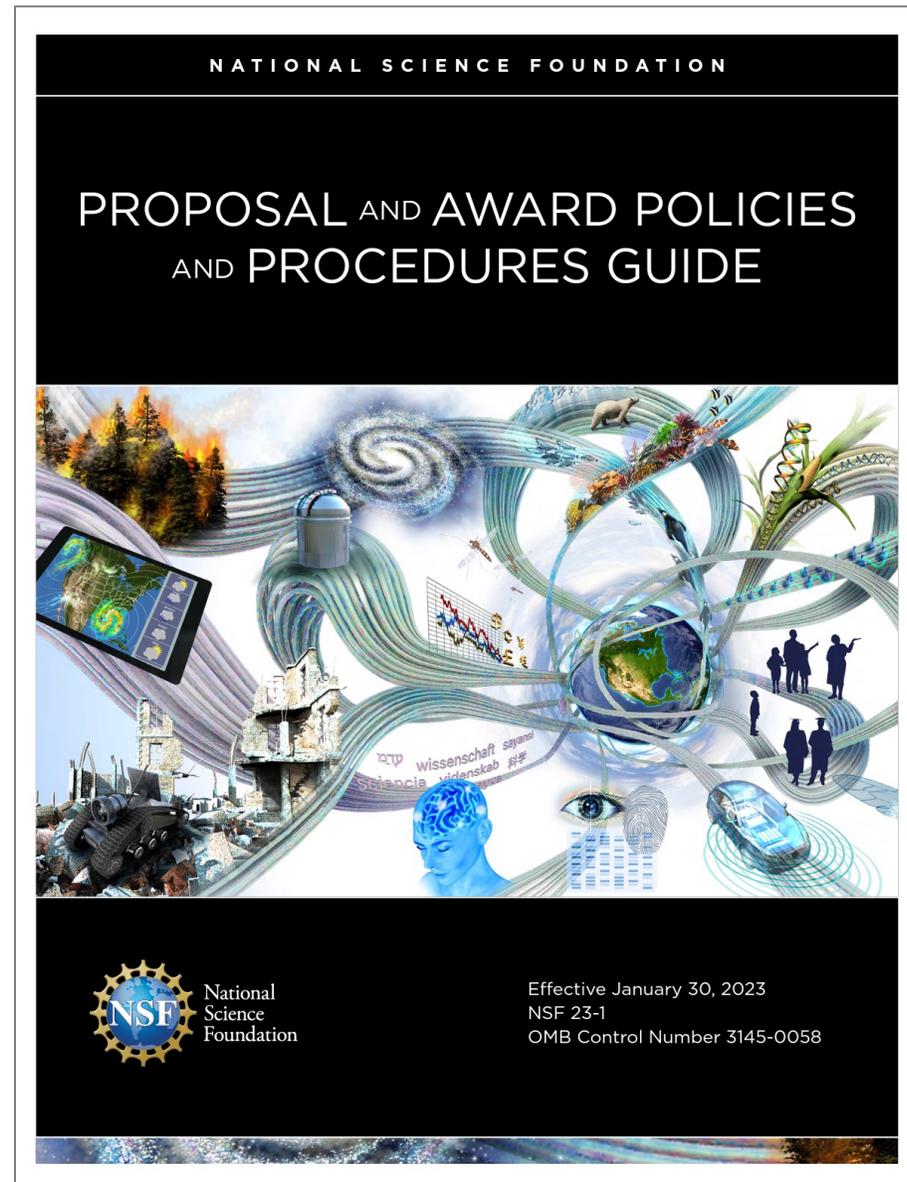
ReDDDoT Office Hours

- Friday, February 16, at 2 PM Eastern

- Friday, February 23, at 2 PM Eastern
  - Limited to 60 people – one per current research group
  - Make connections and talk with Program Directors
  - Breakouts:
    - Vishal Sharma (CISE) – AI
    - Clifford Weil (BIO) – biotechnology
    - Danielle Sumy (TIP) – natural and anthropogenic disaster prevention or mitigation

Register here: **https://new.nsf.gov/funding/opportunities/responsible-design-development-deployment**

Interested in being a reviewer or panelist for ReDDDoT?

Fill out the survey: https://new.nsf.gov/funding/opportunities/responsible-design-development-deployment/announcements/100977

Become a ReDDDoT reviewer

February 2, 2024

Sign up to be a reviewer for the ReDDDoT program ↗.

Cognizant Program Officers

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- Nasser Alaraje (EDU)   nalaraje@nsf.gov   (703) 292-8063

- Nicholas Anderson (GEO)   nanderso@nsf.gov   (703) 292-4715

- Jason Borenstein (SBE)   jborenst@nsf.gov   (703) 292-4207

- Vishal Sharma (CISE)   vsharma@nsf.gov   (703) 292-8950

- Frederick M. Kronz (SBE)   fkronz@nsf.gov   (703) 292-7283

- Clifford Weil (BIO)   cweil@nsf.gov   (703) 292-4668

For more information...

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

redddot@nsf.gov

https://new.nsf.gov/funding/opportunities/responsible-design-development-deployment