

# Partnerships for Innovation (PFI)

Solicitation  
NSF 19-506



Q&A Office Hours

We will start at 2:00 pm EST



# New Submission Deadline

- The new submission deadline for full PFI proposals is **February 10, 2021**.
- To provide additional flexibility during the COVID-19 crisis, the proposal submission deadline for PFI solicitation (NSF 19-506).
- Summer deadline: July 14, 2021.
- [https://www.nsf.gov/news/special\\_reports/coronavirus/](https://www.nsf.gov/news/special_reports/coronavirus/)



# Resources for Applicants

- Read the solicitation NSF 19-506  
<https://www.nsf.gov/pubs/2019/nsf19506/nsf19506.htm>
- Visit our website PFI: <https://www.nsf.gov/PFI>.
- Read the PFI FAQs (NSF 19-046) at:  
<https://www.nsf.gov/eng/iip/pfi/resources.jsp>.
- Contact Program Directors Katie Bratlie, Carole Read or Jesus Soriano—  
[pfi@nsf.gov](mailto:pfi@nsf.gov)



# NSF encourages the research community to submitting PFI proposals in Research.gov (instead of FastLane)

Research.gov ONLINE GRANTS MANAGEMENT FOR THE NSF COMMUNITY

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Search

Research.gov will be unavailable from 12:01AM ET to 8:00AM ET on Saturday, November 17 for scheduled maintenance. We apologize for any inconvenience.

ATTENTION: SBIR and STTR applicants, please click here for important proposal guidance.

ATTENTION: Beginning September 24, 2018, there will be more options for PDF Uploads in Research.gov's Proposal Preparation and Submission site. Click here for more details.

[Hide all notifications](#) (Viewing 3 of 3 notifications)

**MODERNIZATION**  
Research.gov

**IT'S HERE!**  
New Account Management System: One NSF ID,  
one password, and one profile for each NSF account

Note: Effective March 26, 2018, new organizations registering with NSF must first register in the System for Award Management (SAM). The SAM registration process could take up to two weeks to complete.

[Training Resources](#)

NSF ID  
123654789  
Password  
.....

**Prepare & Submit Proposals**  
Prepare, submit and check status of proposals

**Proposal/ Panel Review**  
Review proposals, participate in panels

**Awards & Reporting**  
Submit project reports, notifications & requests

**Fellowships & Honorary Awards**  
Nominate colleagues, apply for awards



# Video “How to Initiate a Proposal” is available upon PI login

**Attention:**

Research.gov's new proposal preparation system is now available for preparing and submitting full research non-collaborative proposals (Other system capabilities). NSF welcomes all to give feedback! Proposals prepared in FastLane will continue to be available from FastLane.

**Attention:**

As of September 22, 2018, the system supports additional font types and sizes. Please refer to Research.gov Proposal Preparation Site Document Upload FAQ for full details. You are encouraged to review the information in the FAQ prior to uploading files for your proposals in this application.

## Proposal Preparation

What would you like to work on?

### Prepare New Proposals

By answering a few questions, NSF will guide you through the process and compliance rules.

Prepare Proposal

What information will need to be provided?

Video: How to Initiate a Proposal

### Video: How to Initiate a Proposal

**How to Initiate a Proposal in Research.gov**  
The video demonstrates how a PI can Initiate a Proposal i...

**MODERNIZATION**  
**IT'S HERE!**  
New Account Management System: One NSF ID, one password, and one profile for each NSF account

NSF ID: 123654789  
Password: \*\*\*\*\*

**Prepare & Submit Proposals**  
Prepare, submit and check status of proposals

- Propose new or existing proposals
- Check Proposal Status

**FASTLANE PROPOSAL FUNCTIONS**

- Additional proposal functions

**Proposal/Panel Review**  
Review proposals, participate in panels

**FASTLANE PROPOSAL REVIEW**

- Proposal Review

**FASTLANE PANEL REVIEW**

- Panelist Functions

**Awards & Reporting**  
Submit project reports, notifications & requests

- Project Reports
- Deposit Public Access Publication
- Example Project Reports (Demo only)
- Notifications & Requests

**FASTLANE AWARD FUNCTIONS**

- Additional award functions

**Fellowships & Honorary Awards**  
Nominate colleagues, apply for awards

- Graduate Research Fellowship Program (GRFP)
- Postdoctoral Fellowships and Other Programs
- Honorary Awards

Close

### Submitted Proposals

download, or perform a Proposal File /Budget Revision on proposals that have previously been submitted to NSF.

View/Update Submitted Proposals



# Notice on Collaborative Proposals

- No collaborative proposals will be accepted.
  - Defined as simultaneous proposal submissions for a joint project from different organizations, with each organization requesting a separate award.
- Multiorganizational teams must submit **only 1 proposal** that contains subaward budgets for each partner.



# Questions & Answers

**Please type your question  
in the Q&A panel**

[jsoriano@nsf.gov](mailto:jsoriano@nsf.gov)

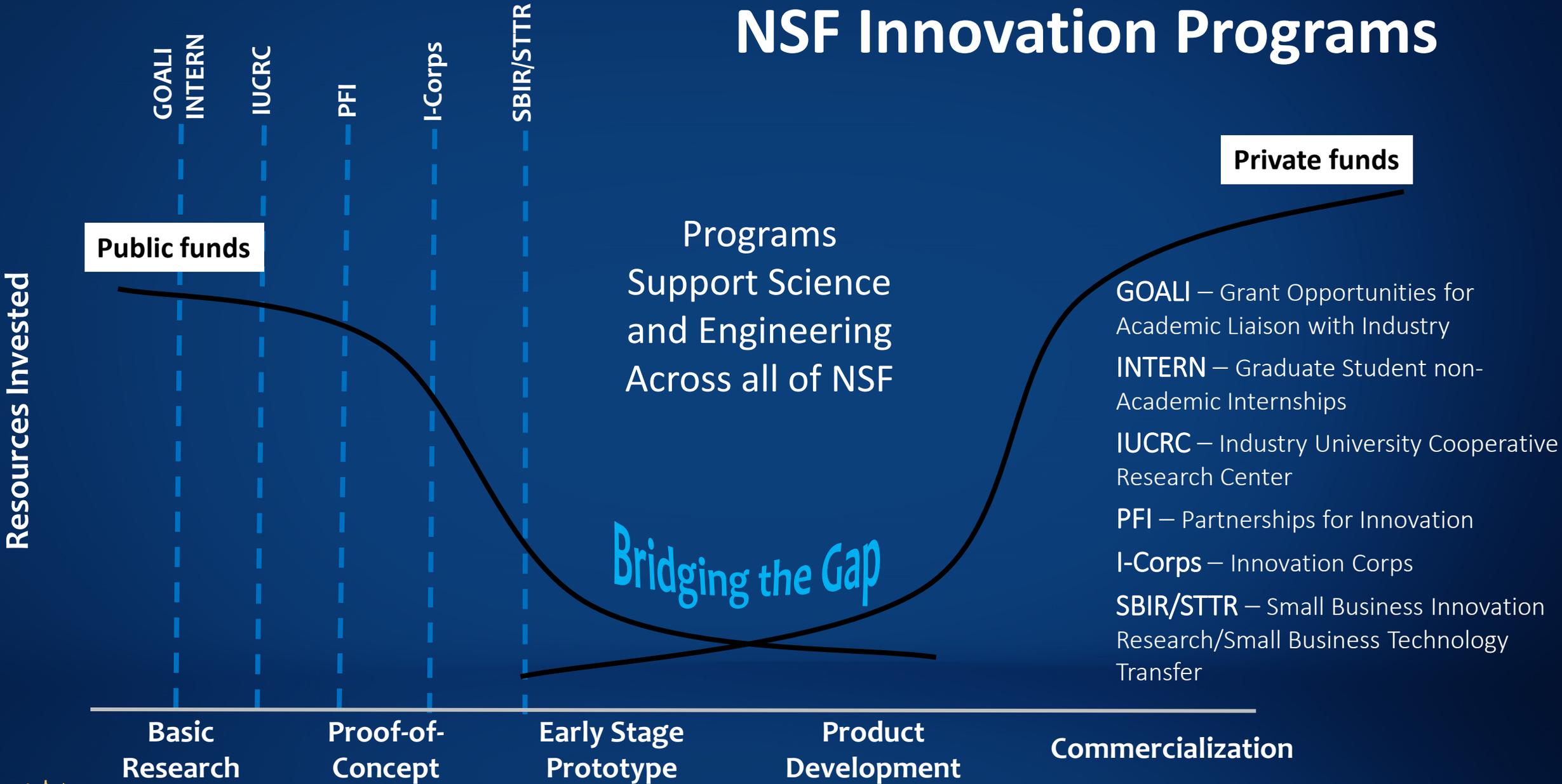
[kbratlie@nsf.gov](mailto:kbratlie@nsf.gov)

[cread@nsf.gov](mailto:cread@nsf.gov)

<https://www.nsf.gov/PFI>

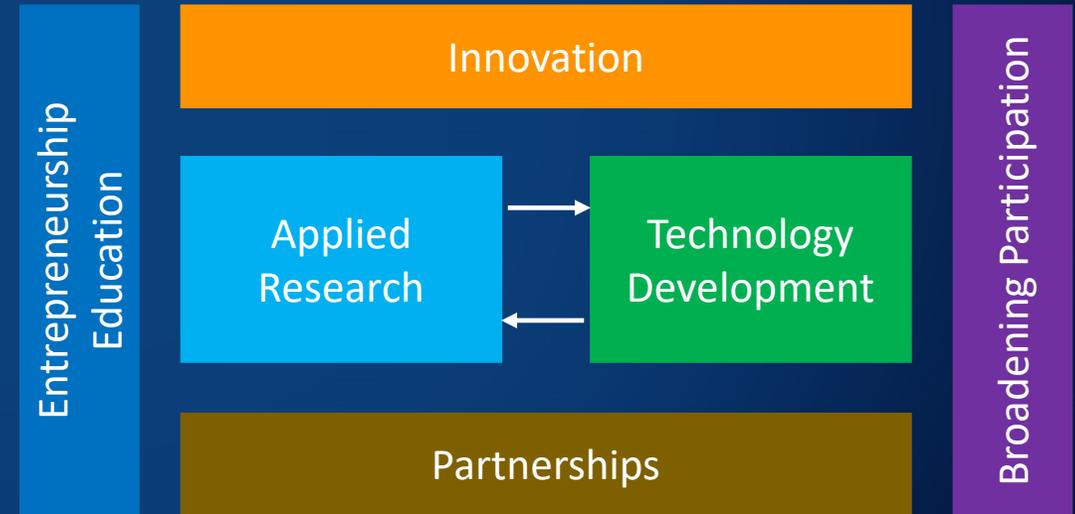


# NSF Innovation Programs



# Partnerships for Innovation (PFI)

- Congressionally mandated goals:
  - Accelerate translation of research results to societal impact.
  - Promote a sustainable university-based innovation ecosystem.
  - Train faculty and students in technological innovation.
  - Engage women and other underrepresented groups in innovation.
- PFI-TT grants are up to \$250,000 over 18-24 months.
  - Applied research.
  - Proof-of-concept demonstrations or prototypes.
- PFI-RP grants are up to \$550,000 over 36 months.
  - Same goals than PFI-TT.
  - Focused on multidisciplinary, multi-organizational teams.
  - Requires an industry partner.



# Intended Program Outcomes

- Commercialization of IP derived from NSF-funded research.
- Licensing of NSF-funded research outputs to third-party corporations or start-up companies funded by PFI teams.
- Foster collaborations with industry.
- Training future innovation and entrepreneurship leaders.
- Increased participation of women, minorities, and persons with disabilities in innovation & entrepreneurship.



# Program Updates (I)

- Technology translation and development in all science and engineering disciplines supported by NSF.
- New submission deadlines: **January and July**.
- Number of proposals per organization:
  - PFI-TT track: **No limit**.
  - PFI-RP track: **1 proposal** per submission deadline.
- NSF Lineage now required for **both TT and RP** tracks.
  - Exception: Resubmission of PFI-RPs not awarded under solicitation NSF 18-511



<https://www.nsf.gov/PFI>

# Program Updates (II)

- Educational Component of PFI:
  - Focus on leadership development & entrepreneurship training of student /postdoc team members.
  - Upon award, teams without NSF I-Corps Lineage will take **mandatory I-Corps training**.
- Mandatory **letter of support** from potential commercialization partner(s) not associated with the proposal.
- Reporting Requirements updated to include progress of lab-to-market effort.



# Eligibility Requirements

Organization

NSF Lineage

Number of  
Proposals

Principal  
Investigator

Technology  
Commercialization  
Expert

Non-responsive  
Objectives

Read solicitation NSF 19-506 for a detailed description of eligibility requirements:

<https://www.nsf.gov/pubs/2019/nsf19506/nsf19506.htm>



# Eligible Organizations

- **Academic / Research US institutions**; includes universities and two- and four-year colleges (**including community colleges**) accredited in, and having a campus located in the US, acting on behalf of their faculty members.



- Public or Non-profit, **Non-academic US organizations** located in the US that are directly associated with technology transfer activities.



- **Non-profit US organizations** located in the US that partner with an institution of higher education.



- A US consortium of **2 or more** of the organizations described above



# NSF Lineage Requirement in PFI

Both PFI-TT & PFI-RP must meet at least one of these criteria:

➤ **NSF-funded research award**

- Technology development from PI or co-PI's prior NSF funded research completed within **last 7 years**

➤ **NSF I-Corps™ Teams award** (supported customer discovery).

- The product to be developed informed by an NSF I-Corps Teams award completed within **last 4 years**
- I-Corps Info: [https://www.nsf.gov/news/special\\_reports/i-corps/teams.jsp](https://www.nsf.gov/news/special_reports/i-corps/teams.jsp)

Exception: Resubmission of PFI-RPs submitted but not awarded under previous solicitation NSF 18-511



# Limit on Number of Proposals

## Proposals

### Per Organization:

- No limit on TTs
- 1 RP per deadline

### Per PI or Co-PI

- 2 Proposals  
(2 TT / 1TT + 1RP)

**Any proposal above  
limit will be Returned  
Without Review**

## Awards

- **2 awards per Organization**
- **1 award per PI or Co-PI**



# What PFI Does Not Fund

- Basic research with **no technology development**.
- Pre-clinical / clinical efficacy or safety studies, drug development, regulatory work.
- **Non-R&D work**: Market research, corporate or business development, sales, fundraising, intellectual property.
- Commercial development of **existing products** or proven concepts.
- **Low-risk**, straightforward engineering design, **incremental improvements** of existing product or process.



# PFI-TT: Technology Translation Track

- Up to \$250,000 for 1.5-2 years.
- Commercial potential demonstration projects for NSF-funded research outputs in any science and engineering discipline.
- Proof-of-concept, prototyping or scale-up work.
- An active Co-PI or Sr. Personnel is a **Technology Commercialization Expert** *in the targeted field of application or industry sector.*
- At least 1 **letter of support** to validate market potential/broader impact.



# PFI-RP: Research Partnerships Track

- Up to \$550,000 for 3 years.
- Same goals as the PFI-TT track.
- Complex projects
  - Require a multi-organizational, interdisciplinary collaboration.
- Requires **at least 1 Industrial Partner**.
  - Project must be industry-relevant.
  - An employee of Industrial Partner serves as co-PI (Tech. Commercialization Expert).
  - May support the educational objectives.
- Research Partners encouraged



# PFI Track Comparison: TT vs RP

A detailed comparison of PFI-TT and PFI-RP proposals is available in solicitation NSF 19-506.

Visit: <https://www.nsf.gov/pubs/2019/nsf19506/nsf19506.htm>



# The Industrial Partner (I)

- **Mandatory in PFI-RP track, encouraged in PFI-TT.**
- U.S.-based.
  - Foreign Public Entities (2 CFR § 200.46) or Foreign Organizations (2 CFR § 200.47) do not qualify.
- Established record of commercial revenue.
  - From sales or licensing.
  - Majority of revenues cannot be from grants and government contracts.
- For-profit or not-for-profit.
  - Non-profit, technology transfer organizations must meet revenues requirement.
- Proven experience in bringing products or services to the proposed target market sector.



# The Industrial Partner (II)

- Demonstrates a strategic commercial interest in the PFI technology.
- Vendors/ service providers (included in the budget) are not Industrial Partners.
- SBIR/STTR companies may act as Industrial Partner.
- Subawards only to SBIR/STTR –funded businesses
  - Small businesses must be eligible\* for SBIR/STTR.
  - Must not be owned and/or controlled by the proposing team/institution.
  - Subawards are not intended to complement or circumvent SBIR/STTR awards to small businesses, or as a standing source of revenue for the small business.

\*SBIR eligibility requirements: <https://www.sbir.gov/faqs/eligibility-requirements>



# The Research Partner(s)

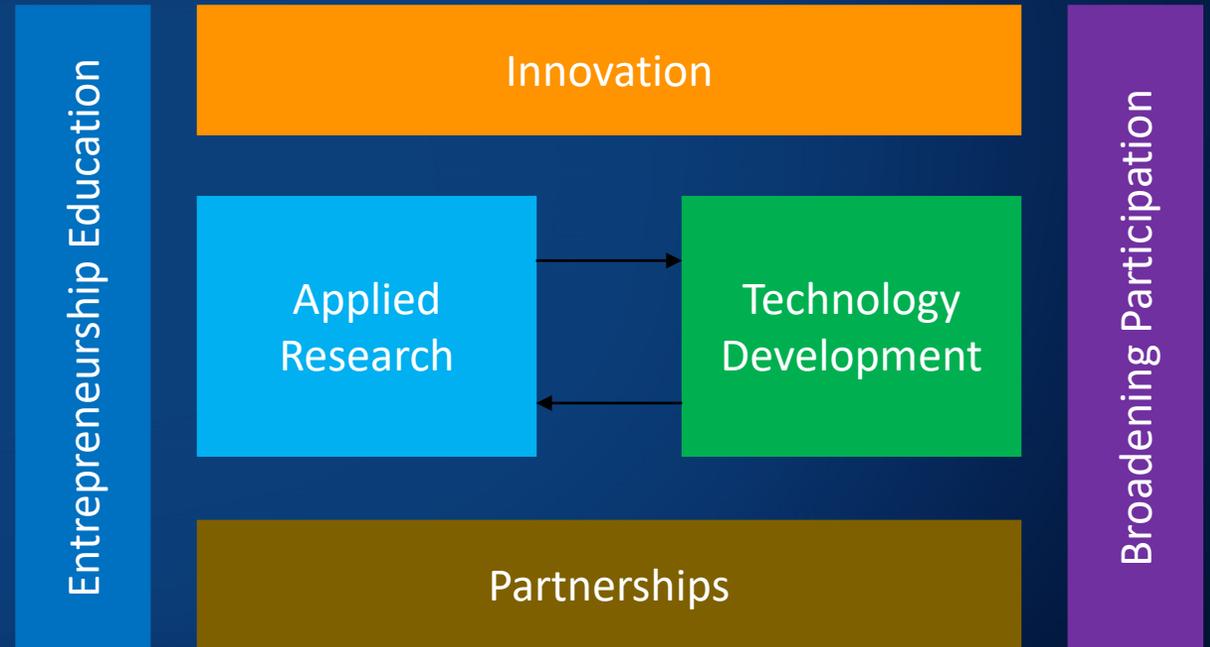
Read PFI solicitation NSF 19-506 for additional information on Research Partners.

Visit: <https://www.nsf.gov/pubs/2019/nsf19506/nsf19506.htm>



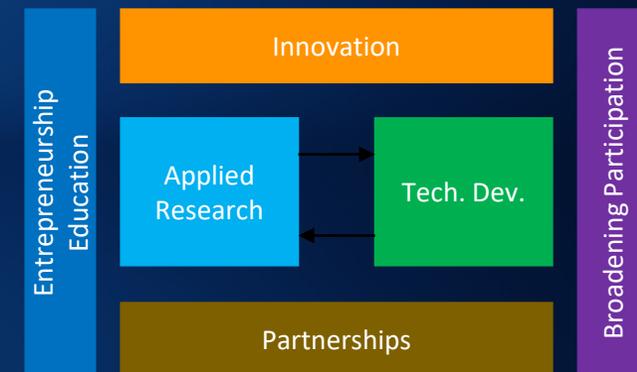
# Elements of a PFI Proposal

- Technology Development
- Demonstration of Commercialization Potential
- Partnerships
- Education and Leadership Development in Innovation & Entrepreneurship
- Broadening Participation



# Key Sections in Project Description

1. Executive Summary
2. From NSF Basic Research to Addressing a Market Opportunity
3. Technical Challenges and Applied Research Plan
4. Achieving Societal Impact through the Realization of Commercial Potential
5. Project Team
6. Partnerships
7. Training Future Leaders in Innovation and Entrepreneurship
8. Broadening Participation

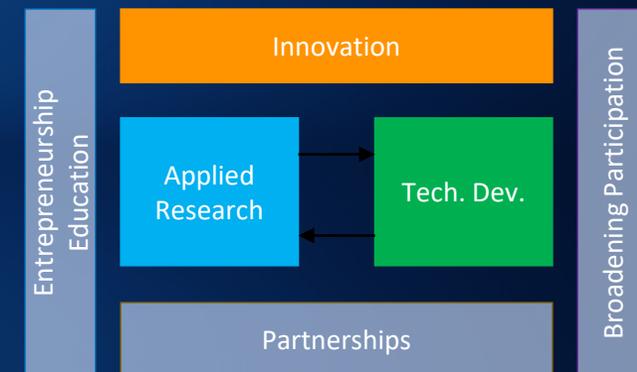


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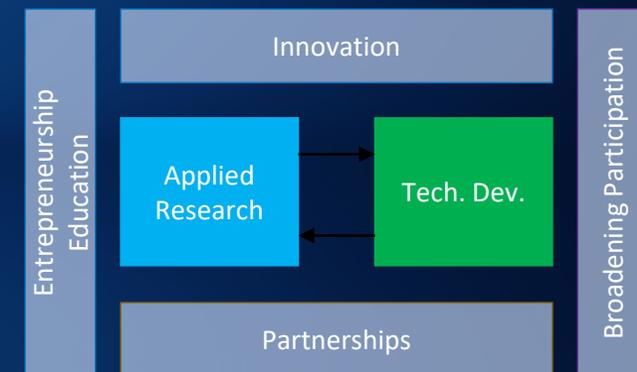
## 2. From NSF Basic Research to Addressing a Market Opportunity

- Document and describe the NSF Lineage.
- Why is the technology ready to move beyond the basic research?
- Intellectual Merit of the proposed product, process or service.
- Broader Impacts: societal, economic and commercial.
- What is the target market segment addressed by the proposed innovation? How is it informed by any preliminary market research or customer discovery?
- Competitive analysis & intellectual property.



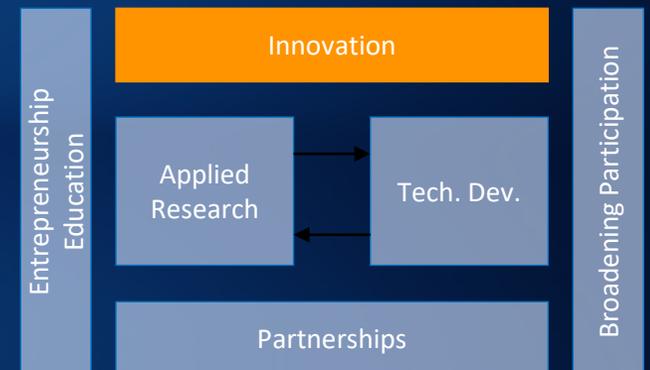
# 3. Technical Challenges & Applied Research Plan

- Knowledge gaps and technical barriers that you must overcome to translate the technology into a product, process or service.
- Describe the applied research plan to address those knowledge gaps and technical barriers.
- Who will do what in the project?
- Success metrics.
- Risk assessment and mitigation plan to address potential failures.
- Milestone chart.



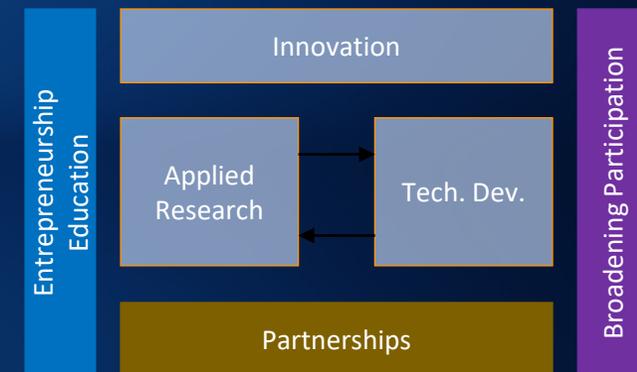
# 4. Achieving Societal Impact through Commercial Potential

- How will you achieve a societal benefit through commercialization?
- Your future commercialization **strategy and plans** beyond PFI.
- The strategic planning:
  - Ensures the **sustainability** of the commercialization efforts during and after your PFI project.
  - Aimed at identifying and securing strategic commercialization partners, investors, licensees, the creation and funding of spin-out companies, etc.
- Assessment plan of your partnership(s) and collaboration(s) performance in accelerating the transfer from lab-to-market.



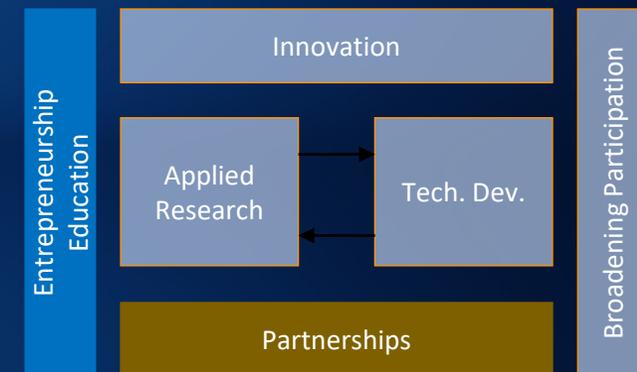
# 5. The Team

- Team members and their qualifications.
- Partners and/or collaborators: What are their **roles and value-added?**
- Masters, PhD student(s) or post-docs:
  - Their **qualifications and motivation.**
  - If you have not identified the student / post-doc, describe the selection process to recruit her/him.
- In PFI-TT: **Technology Commercialization Expert**
- In PFI-RP: the **Industrial Partner co-PI** (is an employee or member of the Partner)



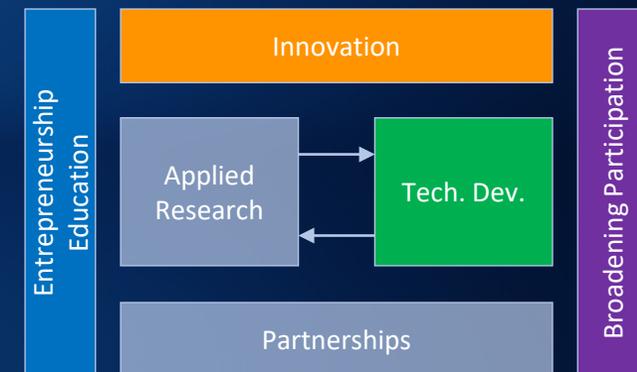
# 6. Partnerships

- Mandatory in PFI-RP; may be applicable in PFI-TT.
- Describe the overall partnership being assembled, roles and capabilities of each partner.
- How will the partnership achieve the goals of PFI?
  - **Catalyze & accelerate** technology development towards commercialization
  - Support the educational goals?
- Assessment plan.
- If the Industrial Partner is a SBIR/STTR company, discuss the need and rationale.



# 7. Training Future Leaders in Innovation and Entrepreneurship

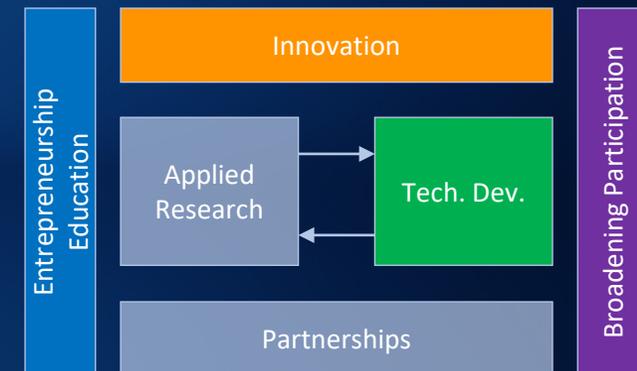
- PFI as a **platform for education and leadership development** of promising young innovators –masters, PhD students and postdocs.
- Provide learning **objectives**, expected learning **outcomes** and **assessment plan**.
- Discuss intellectual merit and broader impacts of the educational plan:
  - How will the proposed project activities enhance the knowledge and readiness of the student/postdoc for innovation beyond the usual research experience?



See instructions in solicitation: <https://www.nsf.gov/pubs/2019/nsf19506/nsf19506.htm>

# 7. Training Future Leaders in Innovation and Entrepreneurship

- We seek commitment:
  - Masters and PhD students: 100% of research effort must be dedicated to PFI.
  - Postdocs: must dedicate at least 50% of non-teaching time to PFI.
  - Allocate personnel expenses for students /postdocs accordingly\*.
- Teams without NSF I-Corps Teams Lineage must integrate the mandatory I-Corps training\*.
- Leverage your Industrial Partnership
- Mentorship:
  - Industrial Partner's co-PI (in PFI-RP)
  - Tech. commercialization expert (in PFI-TT)

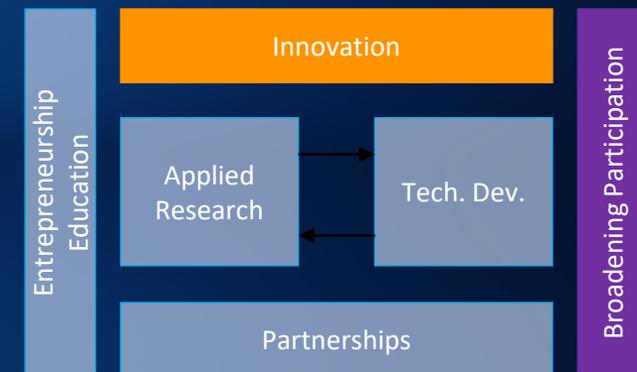


See budget instructions in solicitation: <https://www.nsf.gov/pubs/2019/nsf19506/nsf19506.htm>



# 8. Broadening Participation

- Congressionally mandated: American Innovation and Competitiveness Act (Public Law No: 114-329).
  - *“expanding the participation of women and individuals from underrepresented groups in innovation, technology translation, and entrepreneurship”*
- Your PFI project must contain a plan to broaden the participation of women, minorities, and persons with disabilities.



# Questions? Send your executive summary

After you visit <https://www.nsf.gov/PFI> and read the solicitation, email Jesus Soriano, Carole Read or Katie Bratlie ([pfi@nsf.gov](mailto:pfi@nsf.gov)) a short summary with:

- The NSF Lineage
- The societal need/market opportunity to be addressed.
- The proposed innovation.
- Key technological hurdles you must overcome to translate the technology into a product or service.
- The envisioned pathway to commercialization.
- The team and partners you would bring to the PFI project.



# Contact the PFI Program Directors

- Jesus Soriano, MD, PhD, MBA  
[jsoriano@nsf.gov](mailto:jsoriano@nsf.gov); [pfi@nsf.gov](mailto:pfi@nsf.gov)
- Kaitlin Bratlie, PhD  
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- Carole Read, PhD  
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