

# Innovation Corps - National Innovation Network Teams Program (I-Corps™ Teams)

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## PROGRAM SOLICITATION

NSF 17-559

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### REPLACES DOCUMENT(S):

NSF 12-602

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#### National Science Foundation

Directorate for Engineering

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Education & Human Resources

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

**Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

Proposals Accepted Anytime

Proposal accepted anytime with an I-Corps Cognizant Program Officer's invitation. See II. PROGRAM DESCRIPTION - Requirements

## IMPORTANT INFORMATION AND REVISION NOTES

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Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 17-1)*, which is effective for proposals submitted, or due, on or after January 30, 2017.

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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#### Program Title:

Innovation Corps - National Innovation Network Teams Program (I-Corps™ Teams)

Note: Trademark hereafter asserted and referred to as I-Corps

#### Synopsis of Program:

The National Science Foundation (NSF) seeks to develop and nurture a national innovation ecosystem that builds upon fundamental research to guide the output to facilitate the application of scientific discoveries closer to the development of technologies, products and processes that benefit society.

In order to maintain, strengthen and grow a national innovation ecosystem, NSF has established the Innovation Corps - National Innovation Network Teams Program (I-Corps Teams). The NSF I-Corps Teams Program purpose is to identify NSF-funded researchers who will receive additional support in the form of entrepreneurial education, mentoring and funding to accelerate innovation that can attract subsequent third-party funding.

The purpose of the NSF I-Corps Teams grant is to give the project team access to resources to help determine the readiness to transition technology developed by previously-funded or currently funded NSF projects. The outcomes of I-Corps Teams projects will be threefold: 1) a clear go /or no go decision regarding viability of products and services, 2) should the decision be to move the effort forward, a transition plan for those projects to move forward, and 3) a

definition of a compelling technology demonstration for potential partners.

#### **WEBINAR**

A webinar will be held monthly to answer questions about this program. Details will be posted on the I-Corps website (see [https://www.nsf.gov/news/special\\_reports/i-corps/program.jsp](https://www.nsf.gov/news/special_reports/i-corps/program.jsp)) as they become available.

#### **Cognizant Program Officer(s):**

*Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.*

- Steven Konsek, telephone: (703) 292-7021, email: [skonsek@nsf.gov](mailto:skonsek@nsf.gov)

#### **Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):**

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources
- 47.079 --- Office of International Science and Engineering
- 47.083 --- Office of Integrative Activities (OIA)

## **Award Information**

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**Anticipated Type of Award:** Standard Grant

**Estimated Number of Awards:** 255

Estimated program budget, and number of awards are subject to the availability of funds.

**Anticipated Funding Amount:** \$12,750,000

The anticipated funding amount is \$12.75 million per year, pending availability of funds.

## **Eligibility Information - See Section IV for additional information**

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#### **Who May Submit Proposals:**

Proposals may only be submitted by the following:

- Universities and Colleges - 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. Such organizations also are referred to as academic institutions.

#### **Principal Investigator (PI) Limit:**

Multiple awards based on the same core technology will not generally be supported.

#### **Limit on Number of Proposals per Organization:**

There are no restrictions or limits.

#### **Limit on Number of Proposals per PI or Co-PI:**

Multiple I-Corps awards to a PI participating on a currently active I-Corps team will generally not be supported. Collaborative proposals are not eligible for the I-Corps Teams Program.

## **Proposal Preparation and Submission Instructions**

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### **A. Proposal Preparation Instructions**

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
  - Full Proposals submitted via FastLane: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: [https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=pappg](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg).
  - Full Proposals submitted via Grants.gov: *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov* guidelines apply (Note: The *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: [https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=grantsgovguide](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)).

## B. Budgetary Information

- **Cost Sharing Requirements:**

Inclusion of voluntary committed cost sharing is prohibited.

- **Indirect Cost (F&A) Limitations:** Recovery of indirect costs (F&A) shall be limited to \$5,000. As such, this program does require mandatory cost sharing, and, therefore, is an exception to NSF's cost sharing policy.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

## C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

Proposals Accepted Anytime

Proposal accepted anytime with an I-Corps Cognizant Program Officer's invitation. See II. PROGRAM DESCRIPTION - Requirements

## Proposal Review Information Criteria

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**Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

## Award Administration Information

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**Award Conditions:** Additional award conditions apply. Please see the full text of this solicitation for further information.

**Reporting Requirements:** Additional reporting requirements apply. Please see the full text of this solicitation for further information.

## TABLE OF CONTENTS

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### Summary of Program Requirements

- I. **Introduction**
- II. **Program Description**
- III. **Award Information**
- IV. **Eligibility Information**
- V. **Proposal Preparation and Submission Instructions**
  - A. Proposal Preparation Instructions
  - B. Budgetary Information
  - C. Due Dates
  - D. FastLane/Grants.gov Requirements
- VI. **NSF Proposal Processing and Review Procedures**
  - A. Merit Review Criteria
  - B. Review and Selection Process
- VII. **Award Administration Information**
  - A. Notification of the Award
  - B. Award Conditions
  - C. Reporting Requirements
- VIII. **Agency Contacts**
- IX. **Other Information**

## I. INTRODUCTION

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America's prosperity has originated in part from the ability to capitalize economically on ground-breaking discoveries from science and engineering research. Simultaneously, a knowledgeable, creative workforce has maintained the country's global leadership in critical areas of technology. These important discoveries and capable workforce resulted from substantial, sustained investment in science and

engineering. A strong capacity for leveraging fundamental scientific discoveries into powerful engines of innovation is essential to maintain our competitive edge in the future.

The National Science Foundation (NSF) supports fundamental research and education in science and engineering. NSF's dual role, unique among government agencies, results in new knowledge and tools as well as a capable, innovative workforce. These complementary building blocks of innovation have led to revolutionary technological advances and wholly new industries.

Through this initiative, NSF seeks to accelerate the development of new technologies, products and processes that arise from fundamental research. NSF investments will strategically strengthen the innovation ecosystem by addressing the challenges inherent in the early stages of the innovation process. This solicitation will support collaborations that are designed to overcome many of the obstacles in the path of innovation.

## II. PROGRAM DESCRIPTION

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The goals of this program are to spur translation of fundamental research to the market place, to encourage collaboration between academia and industry, and to train NSF-funded faculty, students and other researchers in innovation and entrepreneurship skills.

The purpose of the I-Corps Teams program is to identify NSF-funded researchers who will receive additional support in the form of entrepreneurial education, mentoring and funding to accelerate the translation of knowledge derived from fundamental research into emerging products and services that can attract subsequent third-party funding.

The I-Corps Teams grant is six-months in duration. The major focus of the program is for the selected I-Corps teams (an I-Corps team includes, at minimum, the Technical Lead, the Entrepreneurial Lead, and the I-Corps Mentor) to participate in the I-Corps Teams Curriculum. This curriculum typically includes an in-person Entrepreneurial Curriculum Immersion Kickoff, a weekly online curriculum, and an in-person Lessons Learned report-out. More details on the exact I-Corps Teams Curriculum can be found in the I-Corps Teams FAQ. The teams selected for each curriculum offering make up an individual I-Corps Teams cohort. During the cohort the team will be expected to spend significant time doing active customer discovery work, interviewing potential customers and potential partners.

The outcomes of I-Corps Teams projects will be threefold: 1) a clear go/no go decision based on an assessment of the viability of the overall business model, 2) substantial first-hand evidence for or against product-market fit, with a pithy definition of the customer segments and corresponding value propositions, and 3) a narrative of a compelling technology demonstration for potential partners.

The go/no go decision of the proposed effort will be made by each I-Corps team member in consultation with the I-Corps Cognizant Program Officers, communicated in consultation with instructors of the I-Corps Teams Curriculum.

### Requirements

To be eligible to pursue funding under an I-Corps Teams award, applicants must have received a prior award from NSF (in a scientific or engineering field relevant to the proposed innovation) that is currently active or that has been active within five years from the date of the I-Corps Teams proposal submission. The lineage of the prior award extends to the PI, Co-PIs, Senior Personnel, Post Docs, Professional Staff or others who were supported under the award. The prior award could range from a modest single-investigator award to a large, distributed center and also could include awards involving students such as REU Sites, provided the technology developed under the grant has a clear link to the innovation being explored in the I-Corps project. If the proposed I-Corps Team is applying based on participation in a local or regional NSF-supported I-Corps training run by a current I-Corps Site or Node, a senior member of that I-Corps Site or Node staff must provide a recommendation for the team's consideration in the I-Corps Teams program. The technology underlying the effort will need to be consistent with NSF requirements on intellectual merit and represent a significant technical innovation.

Before an I-Corps Teams proposal can be submitted, PIs must complete a series of steps that may lead to an invitation to submit a proposal. The steps are as follows:

#### 1. Team Formation:

Identify a set of at least three I-Corps Team members. The I-Corps team will consist of three roles:

- o Entrepreneurial Lead (EL)
- o I-Corps Teams Mentor (IM)
- o Technical Lead (TL)

The **Entrepreneurial Lead (EL)** could be a postdoctoral scholar, graduate or other student, staff member, researcher, or other personnel with relevant knowledge of the technology and a deep commitment to investigate the commercial landscape surrounding the innovation. In rare circumstances, with approval of a cognizant NSF I-Corps Program Officer, the EL could also be the proposal PI or TL. The Entrepreneurial Lead should also be capable and have the will to support the transition of the technology, should the I-Corps Teams project demonstrate the potential for commercial viability.

The **I-Corps Teams Mentor (IM)** will typically be an experienced entrepreneur with proximity to the institution and experience in transitioning technology out of Academic labs. The I-Corps Teams Mentor should be a third-party resource and may be recommended by the proposing institution. The I-Corps Teams Mentor will be responsible for advising the team on its progress through I-Corps and will usually have contacts in the industry area(s) being explored. For more details on the role of the IM, please see the accompanying FAQ. Other than their direct expenses for program participation, Mentors are not compensated through I-Corps Teams awards – Mentors are part of a volunteer cadre of entrepreneurs.

The **Technical Lead (TL)** will typically be a faculty member, senior research scientist or postdoctoral scholar with deep and direct technical expertise in the actual core technology about which the I-Corps team is exploring commercial potential. Typically the Technical Lead will also serve as the proposal Principal Investigator (PI).

Teams may have an additional member in the role of co-EL, co-TL, or co-IM. Teams with more than four members will not typically be supported.

## 2. Executive Summary Preparation:

Prepare a two-page (maximum) Executive Summary that describes the following:

- o Team Members. Composition and roles (EL, TL, IM, plus any additional co-EL, co-TL or co-IM) of the team members proposing to undertake the commercialization feasibility research and a brief description of each member's qualifications.
- o Proposal Principal Investigator. Proposal Principal Investigator (PI) and a brief description of their connection to the team. In most cases the PI will also be the TL.
- o Lineage. Relevant current/previous NSF awards establishing team eligibility.
- o Technology. Brief description of the core technology.
- o Application/Market. Brief description of the potential commercial application.
- o Current Plan. Brief description of the current commercialization plan.

If the proposed I-Corps Team is applying based on participation in a local or regional NSF-supported I-Corps training run by a current I-Corps Site or Node, a senior member of that I-Corps Site or Node staff must provide a recommendation for the team's consideration in the I-Corps Teams program. The technology underlying the effort will need to be consistent with NSF requirements on intellectual merit and represent a significant technical innovation.

## 3. NSF Contact:

Forward the Executive Summary to [icorps-apply@nsf.gov](mailto:icorps-apply@nsf.gov) for review.

## 4. Telephone Interviews:

Teams that describe projects with viable commercialization potential will be scheduled to engage in a telephone interview call with NSF's I-Corps Management Team. The purpose of this conference call is to assess the proposing team's capabilities and commitment to the program. At the conclusion of this initial call, teams may be invited for a second telephone interview that includes both the NSF I-Corps Management team and instructors of the I-Corps Teams Curriculum. At the successful conclusion of both conference calls, teams may be invited to submit full proposals.

## 5. Proposal Submission:

The I-Corps Teams Program will not accept proposals that have not been authorized for submission. Uninvited proposals will be returned without review.

Each team member will be asked to agree to all program requirements by meeting the target number of interviews during the program, dedicating the weekly time commitment, and fully participating in the scheduled I-Corps Teams Curriculum before receiving approval to submit a full proposal.

See Section V on Proposal Preparation for instructions about preparing an I-Corps Teams proposal.

## 6. I-Corps Teams Curriculum Participation

I-Corps team members are required to participate in the I-Corps Teams Curriculum. This curriculum typically includes an in-person Entrepreneurial Curriculum Immersion Kickoff, a weekly online curriculum, and an in-person Lessons Learned report-out. More details on the exact I-Corps Teams Curriculum can be found in the I-Corps Teams FAQ. Dates for upcoming cohorts will be posted on the NSF I-Corps program website.

The I-Corps Teams Curriculum provides real-world, hands-on, immersive learning about what it takes to evaluate commercial opportunity around the innovation. The main activity is customer discovery where the team leaves the lab to evaluate potential product-market fit and the wider business model. The team's progress in customer discovery will be shared with the entire cohort to facilitate group learning. At the end of the curriculum, Teams are expected to have performed at least one hundred (100) face-to-face interviews with potential customers and potential partners from their proposed target market(s).

NSF I-Corps teams are encouraged to travel extensively to reach their customer discovery goals for the curriculum. Travel to customer discovery interviews typically does not need approval by NSF, however, teams must obtain written prior approval from the NSF I-Corps program officer for either international travel or travel to an academic conference. Additionally, teams must receive prior approval for any technical R&D work done under the award.

### Expectations from the I-Corps Teams Grant:

Successful completion of the I-Corps Teams grant is expected to contribute to one or more of the following:

- New for-profit, start-up business
- Licensing
- SBIR/STTR proposal
- A business model suitable for review by third-party investors
- Students prepared to be entrepreneurially competitive
- Enhancing the entrepreneurial mindset among NSF-funded researchers

NSF will seek to collect outcomes from the awardees along the lines listed above during post-award period.

### III. AWARD INFORMATION

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**Anticipated Type of Award:** Standard Grant

**Estimated Number of Awards:** 255

Estimated program budget and number of awards are subject to the availability of funds.

**Anticipated Funding Amount:** The anticipated funding amount is \$12.75 million per year, pending availability of funds.

### IV. ELIGIBILITY INFORMATION

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#### Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - 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. Such organizations also are referred to as academic institutions.

#### Principal Investigator (PI) Limit:

Multiple awards based on the same core technology will not generally be supported.

#### Limit on Number of Proposals per Organization:

There are no restrictions or limits.

#### Limit on Number of Proposals per PI or Co-PI:

Multiple I-Corps awards to a PI participating on a currently active I-Corps team will generally not be supported. Collaborative proposals are not eligible for the I-Corps Teams Program.

#### Additional Eligibility Info:

Proposers must have an active NSF award or one that has been active within the previous five years from the date of submission of the I-Corps Teams proposal in a science or engineering field relevant to the proposed innovation.

### V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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#### A. Proposal Preparation Instructions

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**Full Proposal Preparation Instructions:** Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: [https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=pappg](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg). Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov). Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov*. The complete text of the *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: ([https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=grantsgovguide](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov).

See PAPPG Chapter II.C.2 for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

**Mandatory Communication with cognizant I-Corps Program Officer:** PI(s) *must* contact one of the cognizant I-Corps program officers and receive prior written authorization to submit a proposal. To start the application process the I-Corps Team should email an

Executive Summary (as outlined in Section II-PROGRAM DESCRIPTION) to [icorps-apply@nsf.gov](mailto:icorps-apply@nsf.gov) for review.

**Cognizant I-Corps Program Officer(s):**

- Steven Konsek, telephone: (703) 292-7021, email: [skonsek@nsf.gov](mailto:skonsek@nsf.gov)

Teams may wish to discuss the commercial readiness of their effort with a [Topic Specific I-Corps Program Officer](#). This discussion is meant to help determine whether the proposed work is appropriate for I-Corps funding. To start the application process the I-Corps Team should email an Executive Summary (as outlined in Section II-PROGRAM DESCRIPTION) to [icorps-apply@nsf.gov](mailto:icorps-apply@nsf.gov) for review.

**Guide to Submission of an Innovation-Corps Teams Proposal**

*Note: NSF utilizes the Rapid Response Research (RAPID) funding mechanism specified in Proposal and Award Policies and Procedures Guide (PAPPG) Chapter II.E.1 for the submission and review of I-Corps proposals. The I-Corps Teams RAPID proposal preparation and submission requirements specified below modify, or supplement the requirements specified in the NSF Proposal and Award Policies and Procedures Guide (PAPPG) or NSF Grants.gov Application Guide.*

An I-Corps Teams RAPID proposal consists of the following parts:

**Cover Sheet:**

The cover sheet is automatically generated by FastLane or Grants.gov based on information entered into the "Cover Sheet."

**Proposers must check the RAPID box on the Cover Sheet.**

**Project Summary:**

The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.

The summary MUST have the following components:

1. The overview section must include a listing of "key" words. The key words/phrases should identify the areas of technical expertise in science, engineering, or education which are to be invoked in reviewing the proposal; and the areas of application that are the initial target of the technology.
2. A summary limited to 200 words addressing the Intellectual Merits of the proposed activity. No proprietary information should be included in the summary.
3. A summary limited to 200 words addressing the Broader Impacts of the proposed activity. Include information on how the innovation will enhance scientific and technological understanding. Describe the potential societal and commercial impact of the project.

**Table of Contents:**

The table of contents is automatically generated by FastLane or Grants.gov.

**Project Description:**

The project description is **limited to 5 pages**. The following information should be provided in the project description:

1. **I-Corps Team (two page limit)**
  - a. Describe the composition of the team and roles (EL, TL, IM, plus any additional co-EL, co-TL or co-IM) and briefly describe each member's qualifications. Mention each member's entrepreneurial experience and the experience in collaborating with the other team members. Provide a one paragraph description of each team member.
2. **Lineage of the Proposed Innovation (one page limit)**
  - a. Provide a table of previous awards with managing program officer (if applicable) identified.
  - b. Briefly describe the core technology that is being considered for commercialization potential
  - c. Briefly describe how this research has led the team to believe that a commercial opportunity exists for the effort moving forward.
3. **Description of the Potential Commercial Impact (one page limit)**
  - a. Provide a brief profile of a typical customer of the proposed innovation.
  - b. Describe the customer need that you believe will be met by the proposed innovation.
  - c. Describe how the customer currently meets those needs.
  - d. Your approach - What is the proposed innovation? How does it relate to the fundamental research already conducted under previous award(s)?
  - e. How much do you think a customer would pay for your solution? How did you arrive at that estimate?
4. **Brief description of the project plan (one page limit)**
  - a. Current Status - In what stage is the development: proof-of-principle, proof-of-concept, prototype (alpha, beta), etc...
  - b. Provide a brief description of the proof-of-concept or technology demonstration you envision will be the next step following the I-Corps program.

*Please note that per guidance in the PAPPG, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. You can decide where to include this section within the Project Description but it must be a separate section labeled "Broader Impacts."*

**References Cited:**

Provide a comprehensive listing of relevant reference sources, including patent citations.

**Biographical Sketches:**

A biographical sketch for each team member (two pages maximum per team member) must be provided, highlighting technical expertise and track records in successful technology and business development and be prepared in accordance with the requirements specified in the PAPPG. Exhaustive academic resumes are not appropriate.

**Proposal Budget:**

Funding for the Innovation-Corps Teams Program is \$50,000 per award. Recovery of indirect costs (F&A) shall be limited to \$5,000.

To complete the I-Corps Teams budget in FastLane:

- Include \$45,000 on line G6 (Other Direct Costs)
- Include \$5,000 on line I.1 (Indirect Costs)

To complete the I-Corps Teams budget in Grants.gov:

- Include \$45,000 in Field F.8 (Other Direct Costs)
- Include \$5,000 in Field H (Indirect Costs)

The total amount of the request must not exceed \$50,000.

Within the award amount of \$50,000, funds must be set aside for up to three persons (the Entrepreneurial Lead, the I-Corps Teams Mentor, and the Technical Lead) for mandatory attendance at:

- grantee entrepreneurial immersion Kickoff workshop (location and date to be announced), followed by
- a Lessons Learned report out workshop (location and date to be announced).

Proposers should estimate travel expenses for these two events **plus \$1500 per person to cover workshop registration fees.**

Funds should be set aside for customer discovery activity, primarily including travel to meet potential customers and potential partners, in order to meet the program requirements. It is expected that customer discovery travel will be the largest portion of the I-Corps budget.

No technical R&D work, which includes facility fees or materials and supplies, should be budgeted. With written approval from NSF I-Corps program officer it may be possible to accommodate some limited, well-motivated R&D work after the end of the I-Corps Curriculum. However, this should not be budgeted in the proposal.

The following phrase must be included in the budget justification: "The team will require explicit written approval from an NSF I-Corps program director prior to undertaking any travel to an academic conference or any international travel under the I-Corps award."

**Current and Pending Support:**

The proposal should provide information regarding all research to which the Principal Investigator (PI), Technical Lead, I-Corps Teams Mentor, and Entrepreneurial Lead either have committed time or have planned to commit time. If none, state NONE.

**Current and Pending Support must be uploaded for each of the team members. Note that this proposal is considered "pending" and therefore MUST appear on each Current and Pending Support submission.**

**Facilities, Equipment, and Other Resources:**

Discuss requirements for and the availability of equipment, instrumentation, and facilities required for the proposed project. If none, state NONE.

**B. Budgetary Information**

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**Cost Sharing:**

Inclusion of voluntary committed cost sharing is prohibited.

**Indirect Cost (F&A) Limitations:**

Recovery of indirect costs (F&A) shall be limited to \$5,000. As such, this program does require mandatory cost sharing, and, therefore, is an exception to NSF's cost sharing policy.

**Other Budgetary Limitations:**

The funding for each I-Corps award will not exceed \$50,000.

**C. Due Dates**

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- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

Proposals Accepted Anytime

Proposal accepted anytime with an I-Corps Cognizant Program Officer's invitation. See II. PROGRAM DESCRIPTION - Requirements



## D. FastLane/Grants.gov Requirements

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### For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](mailto:fastlane@nsf.gov). The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

### For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: <http://www.grants.gov/web/grants/applicants.html>. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: [support@grants.gov](mailto:support@grants.gov). The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

**Submitting the Proposal:** Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

Proposers that submitted via FastLane are strongly encouraged to use FastLane to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

## VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

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### A. Merit Review Criteria

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All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (PAPPG Chapter II.C.2.d(i). contains additional information for use by proposers in development of the Project Description section of the proposal). Reviewers are strongly encouraged to review the criteria, including PAPPG Chapter II.C.2.d(i), prior to the review of a proposal.

All proposals are evaluated against 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.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
  - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
  - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic

competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

#### **Additional Solicitation Specific Review Criteria**

- Team composition
- Potential impact on market
- Time horizon to impact

## **B. Review and Selection Process**

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Proposals submitted in response to this program solicitation will be reviewed by Internal NSF Review.

Full proposals may only be submitted upon invitation of a cognizant I-Corps program officer. Proposals submitted in response to this program solicitation will be reviewed by internal NSF merit review. The proposal may be declined if there are deviations in the proposal from what has been disclosed or discussed during the initial and final screening interviews.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

## **VII. AWARD ADMINISTRATION INFORMATION**

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### **A. Notification of the Award**

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Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

### **B. Award Conditions**

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An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (GC-1); \* or Research Terms and Conditions \* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter.

\*These documents may be accessed electronically on NSF's Website at [https://www.nsf.gov/awards/managing/award\\_conditions.jsp?org=NSF](https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov).

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the *NSF Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at [https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=aag](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag).

#### **Special Award Conditions:**

Online content establishing the process and progress tracking throughout the I-Corps cohort will be available. Team progress will be tracked using an online technology platform that supports the I-Corps curriculum. This I-Corps platform is a shared resource provided by a logistics partner and is accessible by NSF, the entrepreneurial course instructors, and the peer teams that participate in the I-Corps Cohort.

### **C. Reporting Requirements**

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The Principal Investigator must submit a final project report and a Project Outcomes Report for the General Public to the cognizant Program Officer within 90 days following the expiration of the grant.

Failure to provide the final project report or the Project Outcomes Report will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

The PI is required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of the final project report. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The Project Outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at [https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=aag](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag).

The final report must include commercialization disposition along lines similar to the following:

- Patent applications
- Patents granted and derived or both
- Licensing agreements
- Company formation
- Royalties realized
- SBIR proposal submission (with agency name and date submitted)
- Third party financing
- Enhanced entrepreneurial mindset of NSF-funded researchers
- Enhancing career trajectories of team members

The final report needs to detail the work conducted under the I-Corps Award, the progress and learning made by the team in the reporting period, the outcomes of the work, and the project's vision post-award. It should articulate the customer segments explored, what pivots were made and how the team sees their value proposition and the rest of the business model.

## VIII. AGENCY CONTACTS

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*Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.*

General inquiries regarding this program should be made to:

- Steven Konsek, telephone: (703) 292-7021, email: [skonsek@nsf.gov](mailto:skonsek@nsf.gov)

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: [fastlane@nsf.gov](mailto:fastlane@nsf.gov).

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: [support@grants.gov](mailto:support@grants.gov).

## IX. OTHER INFORMATION

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The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF [Grants Conferences](#). Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on [NSF's website](#).

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this mechanism. Further information on Grants.gov may be obtained at <http://www.grants.gov>.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

*Facilitation Awards for Scientists and Engineers with Disabilities (FASSED)* provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <https://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
  - Send an e-mail to: [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov)
  - or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

## PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, *NSF-50*, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and *NSF-51*, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton  
Reports Clearance Officer  
Office of the General Counsel  
National Science Foundation  
Arlington, VA 22230



The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA  
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

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