

Solicitation: NSF Secure and Trustworthy CyberSpace (SaTC) [Solicitation 21-500]

Submitted by willirn1 on Thu, 10/15/2020 - 12:33pm

Secure and Trustworthy Cyberspace (SaTC)

**PROGRAM SOLICITATION
NSF 21-500**

**REPLACES DOCUMENT(S):
NSF 19-603**

National Science Foundation

Directorate for Computer and Information Science and Engineering
Division of Computer and Network Systems
Division of Computing and Communication Foundations
Division of Information and Intelligent Systems
Office of Advanced Cyberinfrastructure

Directorate for Social, Behavioral and Economic Sciences
Division of Social and Economic Sciences
Division of Behavioral and Cognitive Sciences

Directorate for Mathematical and Physical Sciences
Division of Mathematical Sciences

Directorate for Engineering
Division of Electrical, Communications and Cyber Systems

Directorate for Education and Human Resources
Division of Graduate Education

Submission Window Date(s) (due by 5 p.m. submitter's local time):

January 21, 2021 - January 29, 2021

LARGE proposals
Proposals Accepted Anytime

SMALL, MEDIUM, and EDU projects

IMPORTANT INFORMATION AND REVISION NOTES

- The description of the Education (EDU) designation is updated.
- Proposals that are Returned Without Review (RWR) will not be counted against the limit of proposals submitted by a PI.
- The requirements for the Broadening Participation in Computing (BPC) plan have been revised.
- Large proposals (with a Project Description of up to 20 pages), in addition to Small and Medium, are accepted for the CORE designation.
- Small, Medium, and EDU proposals continue to have no deadlines; Large proposals have a deadline.
- Potential opportunities for co-funding of awards from other agencies or industry under this solicitation are described.
- Descriptions of some topic areas within the CORE are refined, along with the corresponding keywords.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 20-1), which is effective for proposals submitted, or due, on or after June 1, 2020.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title: Secure and Trustworthy Cyberspace (SaTC)

Synopsis of Program:

In today's increasingly networked, distributed, and asynchronous world, cybersecurity involves hardware, software, networks, data, people, and integration with the physical world. Society's overwhelming reliance on this complex cyberspace, however, has exposed its fragility and vulnerabilities that defy existing cyber-defense measures; corporations, agencies, national infrastructure and individuals continue to suffer cyber-attacks. Achieving a truly secure cyberspace requires addressing both challenging scientific and engineering problems involving many components of a system, and vulnerabilities that stem from human behaviors and choices. Examining the fundamentals of security and privacy as a multidisciplinary subject can lead to fundamentally new ways to design, build and operate cyber systems, protect existing infrastructure, and motivate and educate individuals about cybersecurity.

The goals of the SaTC program are aligned with the National Science and Technology Council's (NSTC) Federal Cybersecurity Research and Development Strategic Plan (RDSP) and National Privacy Research Strategy (NPRS) to protect and preserve the growing social and economic benefits of cyber systems while

ensuring security and privacy. The RDSP identified six areas critical to successful cybersecurity research and development: (1) scientific foundations; (2) risk management; (3) human aspects; (4) transitioning successful research into practice; (5) workforce development; and (6) enhancing the research infrastructure. The NPRS, which complements the RDSP, identifies a framework for privacy research, anchored in characterizing privacy expectations, understanding privacy violations, engineering privacy-protecting systems, and recovering from privacy violations. In alignment with the objectives in both strategic plans, the SaTC program takes an interdisciplinary, comprehensive and holistic approach to cybersecurity research, development, and education, and encourages the transition of promising research ideas into practice.

The SaTC program welcomes proposals that address cybersecurity and privacy, and draw on expertise in one or more of these areas: computing, communication and information sciences; engineering; education; mathematics; statistics; and social, behavioral, and economic sciences. Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both welcome.

Proposals must be submitted pursuant to one of the following designations, each of which may have additional restrictions and administrative obligations as specified in this program solicitation.

- **CORE:** This designation is the main focus of the SaTC research program, spanning the interests of NSF's Directorates for Computer and Information Science and Engineering (CISE), Engineering (ENG), Mathematical and Physical Sciences (MPS), and Social, Behavioral and Economic Sciences (SBE).
- **EDU:** The Education (EDU) designation will be used to label proposals focusing entirely on cybersecurity education.
- **TTP:** The Transition to Practice (TTP) designation will be used to label proposals that are focused exclusively on transitioning existing research results to practice.

CORE and TTP proposals may be submitted in one of the following project size classes:

- **Small projects:** up to \$500,000 in total budget, with durations of up to three years;
- **Medium projects:** \$500,001 to \$1,200,000 in total budget, with durations of up to four years;

EDU proposals are limited to \$400,000 in total budget, with durations of up to three years. Proposals that demonstrate a collaboration, reflected in the PI, co-PI, and/or Senior Personnel composition, between a cybersecurity subject matter expert (researcher or practitioner) and an education researcher may request up to \$500,000 for three years.

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.

- Jeremy J. Epstein, Program Director, CISE/CNS, telephone: (703) 292-8338, email: jepstein@nsf.gov
- Mohammad Ali, Program Director, ENG/ECCS, telephone: (703) 292-4632, email: moali@nsf.gov
- Nina Amla, Program Director, CISE/CCF, telephone: (703) 292-7991, email: namla@nsf.gov
- Robert Beverly, Program Director, CISE/OAC, telephone: (703) 292-7068, email: rbeverly@nsf.gov
- Sol Greenspan, Program Director, CISE/CCF, telephone: (703) 292-8910, email: sgreensp@nsf.gov
- James Joshi, Program Director, CISE/CNS, telephone: (703) 292 8950, email: jjoshi@nsf.gov
- Sara Kiesler, Program Director, SBE/SES, telephone: (703) 292-8643, email: skiesler@nsf.gov
- Wei-Shinn Ku, Program Director, CISE/IIS, telephone: (703) 292-8318, email: weiku@nsf.gov
- Sandip Kundu, Program Director, CISE/CNS, telephone: (703) 292-8950, email: skundu@nsf.gov
- Victor P. Piotrowski, Program Director, EHR/DGE, telephone: (703) 292-5141, email: vpiotrow@nsf.gov
- Andrew D. Pollington, Program Director, MPS/DMS, telephone: (703) 292-4878, email: adpollin@nsf.gov
- Balakrishnan Prabhakaran, Program Director, CISE/IIS, telephone: (703) 292-4847, email: bprabhak@nsf.gov
- Indrajit Ray, Program Director, CISE/CNS, telephone: (703) 292-8950, email: iray@nsf.gov
- Phillip A. Regalia, Program Director, CISE/CCF, telephone: (703) 292-2981, email: pregalia@nsf.gov
- Alexander Sprintson, Program Director, CISE/CNS, telephone: (703) 292-8950, email: asprints@nsf.gov
- Nigamanth Sridhar, Program Director, EHR/DGE, telephone: (703) 292-7294, email: nsridhar@nsf.gov
- Kevin Thompson, Program Director, CISE/OAC, telephone: (703) 292-4220, email: kthompso@nsf.gov
- Li Yang, Program Director, EHR/DGE, telephone: (703) 292-2677, email: liyang@nsf.gov

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

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.070 --- Computer and Information Science and Engineering
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 78

NSF anticipates approximately 15 EDU awards, 35 Small awards, 25 Medium awards, and 3 Large awards.

Anticipated Funding Amount: \$69,000,000 per year, dependent on the availability of funds.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- 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. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

By the submission deadline, any PI, co-PI, or other senior project personnel must hold either:

- a tenured or tenure-track position, or
- a primary, full-time, paid appointment in a research or teaching position

at a US-based campus of an organization eligible to submit to this solicitation (see

above), with exceptions granted for family or medical leave, as determined by the submitting organization. Individuals with primary appointments at for-profit non-academic organizations or at overseas branch campuses of U.S. institutions of higher education are not eligible.

Proposals from Minority Serving Institutions (MSIs) are particularly encouraged.

Limit on Number of Proposals per Organization:

- There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI: 4

An individual can participate as a PI, co-PI or senior personnel on no more than four SaTC proposals. There is a limit of:

- two proposals designated as CORE (across Small, Medium, and Large);
- one proposal designated as TTP (across Small and Medium); and
- one proposal designated as EDU.

These limits apply for the period from October 1st to September 30th of the following year to all proposals in response to this solicitation and are unrelated to any limits imposed in other NSF solicitations. Note that Large proposals have a specific time window for submission; the other project size classes may be submitted any time.

To treat everyone fairly and consistently, these eligibility constraints will be strictly enforced. If an individual exceeds these limits, only proposals received within the limits will be accepted, based on earliest date and time of proposal submission. No exceptions will be made.

Proposals that are withdrawn or returned without review will not count against this proposal limit.

For more information, please see

<https://www.nsf.gov/pubs/2021/nsf21500/nsf21500.htm>

