Introduction to Secure and Trustworthy Cyberspace (SaTC) and Designing Accountable Software Systems (DASS)

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Secure and Trustworthy Cyberspace (SaTC): One of NSF’s Largest Research Programs

SaTC approaches security and privacy as a socio-technical problem involving deep scientific and engineering problems as well as vulnerabilities that arise from human behaviors.
About 1020 Active Awards in These Topic Areas

- access control
- authentication
- biometrics
- cloud
- cyber physical systems
- cryptography
- economics
- engineering
- data science
- forensics
- formal methods
- hardware security
- human aspects
- internet of things
- intrusion detection
- mathematical sciences
- network security
- privacy
- programming languages
- social and behavioral sciences
- social networks
- software security
- statistics
- system security
- usability

Additional details on topics can be found in the most recent SaTC solicitation.
Some numbers from 21-500
(Counts are proposals, not projects)

- 5 Conference/Travel
- 4 CRII
- 10 EAGER
- 15 EDU
- 25 EDU EAGER (AI/Security)
- 8 Large
- 45 Medium
- 3 RAPID
- 51 Small
- 3 TTP-Small
- 2 TTP-Medium

- Total spending ~$80M; expect similar numbers for FY23 (22-517)
- Details on all awards available at [www.nsf.gov/awardsearch](http://www.nsf.gov/awardsearch) click “Advanced”, then enter ”8060” for “element code”
- Historic total for SaTC & predecessor programs $1.14B, ~2800 awards
Designation Summary - NSF 22-517 (FY22/FY23)  
(replaces 21-500)

<table>
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<tr>
<th>CORE:</th>
<th>Transition to Practice (TTP):</th>
<th>Education (EDU):</th>
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<tbody>
<tr>
<td>Focus: Fundamental research in one/more of CISE/SBE/MPS/ENG</td>
<td>Focus: transitioning existing research results to practice</td>
<td>Focus: cybersecurity education</td>
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| Funding levels:  
  • **Small**: Up to 3 years, $600K  
  • **Medium**: Up to 4 years, $1.2M | Funding levels:  
  • **Small**: Up to 3 years, $600K  
  • **Medium**: Up to 4 years, $1.2M | Funding levels:  
  • Up to 3 years, $400K  
  • If include both computer scientist and education specialist, up to $500K |
| No submission deadlines | No submission deadlines | No submission deadlines |
| Mediums must include BPC plan | Mediums must include BPC plan |  |
| Open to universities & non-profits; PI may submit 2 proposals/FY | Open to universities & non-profits; PI may submit 1 proposal/FY | Open to universities & non-profits; PI may submit 1 proposal/FY |
| Int’l collaboration programs with Israel & Ireland |  |  |
A Few FAQs

• How do I become a panelist?
  • Fill out the survey:
    https://www.surveymonkey.com/r/SatcVolunteer2022

• What topics are most of interest to SaTC?
  • The ones you find most exciting – we’re driven by the best ideas
    (“curiosity driven research”), not by a target of particular ideas

• How can I get help writing a good SaTC proposal?
  • Attend CISE CAREER workshops and CRA Career Mentoring
    Workshop (both held each spring)
  • Show your drafts to colleagues who have written successful NSF
    awards and/or have served on NSF panels
Staying connected to SaTC

To join the SaTC mailing list: Send “subscribe SaTC-announce” to listserv@listserv.nsf.gov and then respond to the confirmation message.

Serving on a SaTC Panel

https://www.surveymonkey.com/r/SatcVolunteer2022
Designing Accountable Software Systems (DASS): NSF 22-512

• Submission deadline Jan 27 2023
• Up to $750K, 3 years
• Open to Institutes of Higher Education and non-profit non-academic organizations
Motivation for DASS

Society is becoming highly dependent on software for everything

• Serious physical, social, economic, and geo-political consequences

Recently there have been efforts to regulate software, and all indications seem to suggest that more are on the way!

Can current software development frameworks comprehensively address the challenges in this new (social) policy aware setting?
High-level goals of DASS

How to design “accountable” software: flexible to change and context, expressive enough to capture policy, provably/certifiably compliant, and transparent/auditable to policymakers and stakeholders

How software systems interact with the complex legal and social environment in which they operate, and how that understanding evolves in the presence of software that helps enact those

Convergent research and community building across SBE and CISE on these topics.
Program Scope

DASS seeks deep, forward-looking scientific research in

• Understanding the social, behavioral, economic and/or legal context of software design

• Improving the methodology for designing accountable software beyond specific use cases and systems

• Synergies and integration between these

(In the broad context of regulation as defined in the solicitation)
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