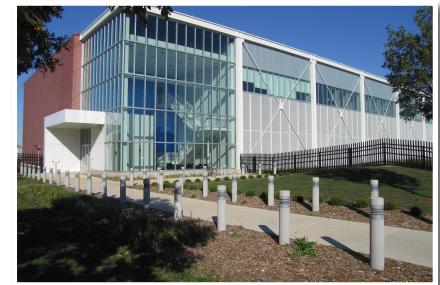


# Jim Basney

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# Jim's career arc

- 1995-2001 UW-Madison Ph.D. in Computer Sciences (HTCondor)
- 2001- NCSA Cybersecurity
  
- 2001-2011 TeraGrid: distributed terascale facility
- 2001-2018 MyProxy: credential management service
- 2009- CILogon: federated identity service
- 2011- XSEDE: Extreme Science and Engineering Discovery Environment
- 2012- Trusted CI: NSF Cybersecurity Center of Excellence
- 2017-2021 SciTokens: capability-based access to scientific data



# Trusted CI: The NSF Cybersecurity Center of Excellence

Our mission: to lead in the development of an NSF Cybersecurity Ecosystem with the workforce, knowledge, processes, and cyberinfrastructure that enables trustworthy science and NSF's vision of a nation that is a global leader in research and innovation.



<https://trustedci.org/>

# What is Cyberinfrastructure (CI)?

"The comprehensive infrastructure needed to capitalize on dramatic advances in information technology has been termed cyberinfrastructure (CI). Cyberinfrastructure integrates hardware for computing, data and networks, digitally-enabled sensors, observatories and experimental facilities, and an interoperable suite of software and middleware services and tools."

-NSF Cyberinfrastructure Vision for 21st Century Discovery

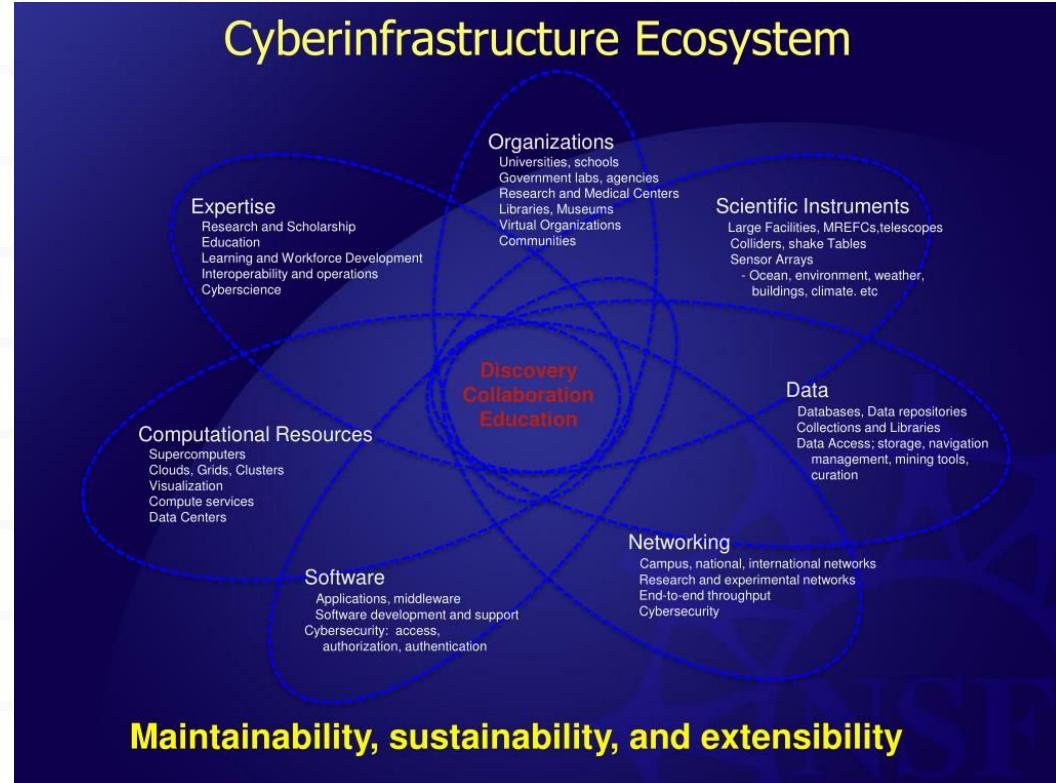


Image credit: NSF

NSF Funds Research and Education across all Fields of Science and Engineering



Awards > \$1m:  
644 in FY20  
4,283 active in 2021

## NSF by the Numbers

\$8.1 billion	FY 2019 Appropriations (does not include mandatory accounts)
1,800	Colleges, universities, and other institutions receiving NSF funding in FY 2019
41,000	Proposals evaluated in FY 2019 through a competitive merit review process
11,300	Competitive awards funded in FY 2019
192,000	Proposal reviews conducted in FY 2019
306,000	Estimated number of people NSF supported directly in FY 2019 (researchers, postdoctoral fellows, trainees, teachers, and students)
60,000	Students supported by NSF Graduate Research Fellowships since 1952

# NSF Community Benchmarking Survey

- Survey of 14 NSF Major Facilities & 9 other NSF projects (23 total)
- 10 of 23 employ 1 Cyber FTE or greater. Others <1 Cyber FTE.
- 9 of 23 respondents detected at least 1 incident, 4 of whom detected 3 or more incidents.

<http://hdl.handle.net/2022/24912>



2019 NSF Community Cybersecurity  
Benchmarking Survey Report

10 Jan 2020  
For Public Distribution

Scott Russell,<sup>1</sup> Kelli Shute

<sup>1</sup> Project Lead, [scottrus@vt.edu](mailto:scottrus@vt.edu)

# Cybersecurity Threats to NSF CI Projects

- Ransomware
- Intellectual Property theft
  - Access to expensive Journal subscriptions
  - Disclosure of proprietary/sensitive information
- Abuse of resources
  - Cryptocurrency mining
  - Launch of attacks on others

# Preparing for a CI Cybersecurity Career

- Broad coursework/experience/interest/skills:
  - Cybersecurity and
  - Programming or
  - System Administration or
  - Data Management or
  - Bio, Engineering, Humanities, Math, Science, etc.
- TrustedCI@PEARC21 workshop tomorrow morning
- NSF CyberCorps: Scholarship for Service program
- NSF Cybersecurity Summit student program

# SFSCon

- Launched in 2017 by Cal Poly Pomona and Trusted CI
- Annual cybersecurity training and professional development event for CyberCorps Scholarship for Service (SFS) students nationwide
- Includes Capture-the-Flag Competition, Job Fair, Resume Clinic, and Professional Career Panel from Federal and State agencies
- In 2019, 105 students from 42 universities participated



# Annual NSF Cybersecurity Summit

One day of training and workshops.

1.5 days of plenary sessions.

Lessons learned and success from community.

October 11-13, 2021 online.

No registration fee.

<https://trustedci.org/summit/>



# Summit Student Programs

Each NSF Cybersecurity Summit has a Student Program matching students from across the country with mentors and connecting them with NSF science projects and cybersecurity challenges.

<https://blog.trustedci.org/search/label/students>



# Acknowledgments

Trusted CI is supported by the National Science Foundation under Grants 1234408, 1547272, and 1920430. The views expressed do not necessarily reflect the views of the National Science Foundation or any other organization.



Trusted CI activities are made possible thanks to the contributions of a multi-institutional team:

<https://trustedci.org/who-we-are/>

