# State of Trusted CI and NSF Trustworthy Cyberinfrastucture

**Von Welch**
Director, Trusted CI

NSF Cybersecurity Summit
October 17, 2019

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THE NSF CYBERSECURITY
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# Trusted CI Renewed Through 2024

# 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.

# Trusted CI Partners

https://trustedci.org/partners

# Trusted CI and Inclusivity

Cybersecurity requires diverse perspectives and cybersecurity community suffers from a lack of diversity.

Trusted CI works to address it through its workforce development, outreach, and community building efforts by explicitly seeking out and encouraging underrepresented groups to apply and striving for inclusive demographics.
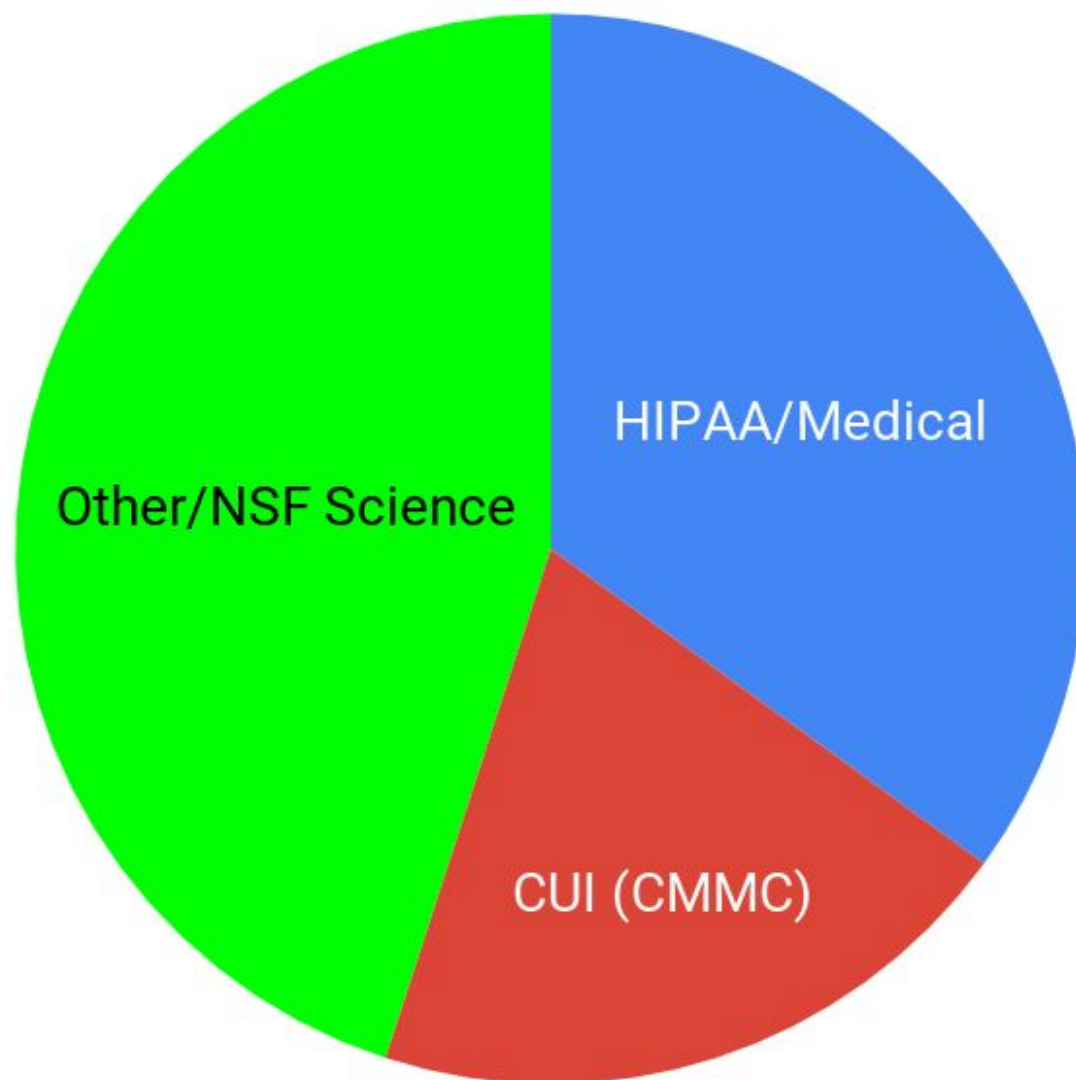


2018 NSF Cybersecurity Summit Student Program

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# The Higher Education and Research Cybersecurity Landscape*

Not at all scientific: ratio is a guess.



- HIPAA/Medical
- CUI (CMMC)
- Other/NSF Science

# The Trusted CI Framework

https://trustedci.org/framework

Framework Core:

- Concise, clear minimum requirements for cybersecurity programs organized under the 4 Pillars:  Mission Alignment, Governance, Resources, and Controls
- Based in general cybersecurity best practice and evidence of what works.
- Infrequent updates.

Framework Implementation Guide:

- Guidance vetted by and tailored to the open science community.
- Curated pointers to the very best resources and tools.
- Frequent (at least yearly) updates.

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# Call for Applications for Trusted CI's Open Science Cybersecurity Fellows Program

APPLY HERE

**Application Deadline: Friday, January 17th, 2020.**

https://trustedci.org/fellows/apply

# Bit Flip

► LISTEN    ⬇ Download    </> Embed

May 8, 2019                                          Share  f  🐦  ✉



May 18th, 2003, Brussels:

"And at that point, one of my colleagues did the math and said the difference between the number of votes she had in the first count and the number of votes she had in the second count, it's exactly **4,096** votes."

https://www.wnycstudios.org/podcasts/radiolab/articles/bit-flip

So [Zoe Genot, member of parliament] asked, "**Are you sure there was no other cosmic ray somewhere who changed some of the result of the election?**"

And the minister [responsible for the election] admits he was not sure [...] "**Yeah, perhaps there are other problems we don't know,**" there was a strange silence. And nobody can laugh anymore.

# Annual Challenge 2020: Data Integrity

- Survey key science projects
- Understand the spectrum of concerns
- Understand current practices
- Analyze the results
- Produce broadly-applicable guidance for projects, CI developers

~1,500 >$1m

## NSF by the Numbers

| | |
|---|---|
| $7.8 billion | FY 2018 Appropriations (does not include mandatory accounts) |
| 1,800 | Colleges, universities, and other institutions receiving NSF funding in FY 2018 |
| 48,300 | Proposals evaluated in FY 2018 through a competitive merit review process |
| 11,700 | Competitive awards funded in FY 2018 |
| 223,800 | Proposal reviews conducted in FY 2018 |
| 386,000 | Estimated number of people NSF supported directly in FY 2018 (researchers, postdoctoral fellows, trainees, teachers, and students) |
| 57,700 | Students supported by NSF Graduate Research Fellowships since 1952 |

https://www.nsf.gov/pubs/2019/nsf19003/nsf19003.pdf

# Quilt and Regional Network Collaboration

THE QUILT

- Consortium of Regional networks from across the US
- Members are higher ed institutions of all sizes.
- Train the Trainers session & materials to be presented at Regional network annual meetings.

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**Possible Topics**
- Compliance (800-171, HIPAA, etc.).
- Cybersecurity for Open science
- Information Security and Research Computing Collaboration interactive workshop.
- Why is cybersecurity for research important?
- Secure Science DMZs
- Cyber-hygiene
- Research facilitation for information security professionals.

# Cybersecurity Transition to Practice (TTP)

Enabling researcher and practitioner collaboration to accelerate cybersecurity research to practice in industry, academia, government, or open source via

- matchmaking
- business model coaching
- workshops

https://trustedci.org/ttp



Goals:
1. NSF cybersecurity research deployed in at least one NSF Large or Medium Facility
2. NSF cybersecurity research transitioned to at least one commercial entity, government facility (agency or lab), or academia
3. Increased participation of under-represented minorities in cybersecurity TTP

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ResearchSOC

Operational services and related training for NSF CI
Community of Practice and Threat Intelligence Network
Enabling Cybersecurity Research
Outreach to Higher Ed Infosec regarding research CI

researchsoc.iu.edu



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Creating comprehensive cybersecurity programs
Community building and leadership
Training and best practices
Tackling specific challenges of cybersecurity, software assurance, privacy, etc.

# Save the Date: September 22-24, 2020
# 2020 Annual NSF Cybersecurity Summit

Indiana University Bloomington, IN

Australian
National
University

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# Data breach

The Australian National University has been the victim of a data breach. All the available information and advice on protecting your data is available here. To speak confidentially with a trained member of staff, please e-mail helpline@anu.edu.au or phone (02) 6125 2981. The Call Centre will operate 8.30am-5pm Monday to Friday (AEST).

## Vice-Chancellor's Message

Provided to the community on 2 October 2019

» read more

## Incident report

Incident report into the ANU data breach

» read more

## FAQs - 2 October 2019

More information for our community

» read more

https://www.anu.edu.au/news/all-news/data-breach

https://www.pexels.com/photo/light-sign-typography-lighting-519/

- Leslee, Diana, Austin, Tori
- Program Committee
- Mark Krenz, PC Chair
- Trusted CI Team
- Emily and Todd

**Reinvigorating the NSF Cybersecurity Community:**
**A proposal to restart the NSF Cybersecurity Summits**

A supplemental proposal to the
Center for Trustworthy Scientific Cyberinfrastructure (1234408)
Von Welch (PI), James Marsteller (Co-PI), Craig Jackson (Senior Personnel)
Period of performance: June 1, 2013 - November 30, 2013

## Summary

Spanning six years from 2004-2009, the NSF-funded annual Cybersecurity Summits served as a valuable part of the process of securing the NSF-funded cyberinfrastructure (CI) by providing a forum for education, sharing experiences and building community. Since 2009 the NSF CI community has been without a forum to exchange best practices with regard to cybersecurity and collectively address evolving threats. In line with the Center for Trustworthy Scientific Cyberinfrastructure's mission to provide cybersecurity leadership and education to the NSF CI community, we propose supplemental funding to re-launch the NSF Cybersecurity Summits in the fall of 2013. The Summit will provide intensive education, information exchange and discussion on key cybersecurity issues for the NSF community. As with prior summits, it will be invite-only, but inclusive of the NSF CI community, free-to-attend, and targeted at those with security responsibilities in NSF CI and MREFC projects. Additionally, we will include key members of the research community (to better disseminate NSF CI cybersecurity needs and foster transition of their research to practice through CI projects), as well as select invitees from outside the NSF community to avoid being insular.

## Intellectual Merit

The NSF CI ecosystem presents an aggregate of complex, unique cybersecurity needs (e.g., scientific data, unique computational and storage resources, science instruments, complex collaborations) as compared to other organizations and sectors. The Summit will bring together leaders in NSF CI and cybersecurity to build a community and recommence the process of seriously addressing these issues.

## Broader Impact

The Cybersecurity Summit will bring together 100 attendees from tens of NSF MREFC and cyberinfrastructure projects, as well as key members from the broader community. This will result in information exchange and education that will improve cybersecurity across the NSF CI ecosystem.

# Staying Connected with Trusted CI

**Trusted CI Webinars**

4th Monday of month at 10am ET.

https://trustedci.org/webinars

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https://blog.trustedci.org

@TrustedCI

**Email Lists**

Announce and Discuss

https://trustedci.org/trustedci-email-lists

**Ask Us Anything**

No question too big or too small.

info@trustedci.org

**Cyberinfrastructure Vulnerabilities**

Latest news on security vulnerabilities tailored for cyberinfrastructure community.

https://trustedci.org/vulnerabilities/

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