

William & Mary  
Department of Computer Science  
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## EDUCATION

Ph.D., University of Maryland, Computer Science, 2021  
M.S. *with honors*, Johns Hopkins University, Computer Science, 2012  
B.S. *summa cum laude*, University of Maryland, Mathematics, 2006

## EMPLOYMENT

William & Mary	Assistant Professor	2022– <i>current</i>
Salisbury University	Adjunct Professor	2020
University of Maryland Medical Center	Application Developer	2015–2016
National Security Agency	Software Engineer	2010–2015
National Security Agency	Mathematics Researcher	2007–2010
US Census Bureau	Applied Mathematician	2006–2007
Joint Global Change Research Institute	Economic Intern	2005–2006

## AWARDS

NSA Dilke-Allen Award 2013

## GRANTS

*CRII: SaTC: Evolving I/O Protocols for Confidential Computing* 6/2024–5/2026  
National Science Foundation (NSF) \$165,000  
Computer and Information Science and Engineering Research Initiation Initiative (CRII)  
Award #2348130  
Principal Investigator  
– NSF Research Experiences for Undergraduates (REU) Supplement \$9,975

*Securing Communication on the Interplanetary Internet* 3/2023–2/2024  
Virginia Space Grant Consortium (VSGC) \$10,000  
New Investigator Program (NIP)  
Principal Investigator

## PUBLICATIONS

### Conference Publications

*PhD Dissertation: Execution Environments for Running Legacy Applications in Multi-Party Trust Settings*  
**Stephen Herwig** (Dr. Dave Levin, advisor)  
July, 2021

*Bento: Bringing Network Function Virtualization to Tor*  
Michael Reininger, Arushi Arora, **Stephen Herwig**, Nicholas Francino, Jayson Hurst,  
Christina Garman, Dave Levin  
ACM SIGCOMM, 2021

*Achieving Keyless CDNs with Conclaves*

**Stephen Herwig**, Christina Garman, Dave Levin  
USENIX Security Symposium, 2020

*Measurement and Analysis of Hajime: A Peer-to-peer IoT Botnet*

**Stephen Herwig**, Katura Harvey, George Hughey, Richard Roberts, Dave Levin  
Network and Distributed System Security Symposium (NDSS), 2019

*DeTor: Provably Avoiding Geographic Regions in Tor*

Zhihao Li, **Stephen Herwig**, Dave Levin  
USENIX Security Symposium, 2017

*secmodel\_sandbox: An application sandbox for NetBSD*

**Stephen Herwig**  
BSDCan, 2017

## Workshop Publications

*Towards Protecting Billions and Billions of Bits on the Interplanetary Internet*

**Stephen Herwig**  
Workshop on Security of Space and Satellite Systems (SpaceSec), 2023  
(co-located with NDSS)

*DNSql: Processing Massive DNS Collections*

**Stephen Herwig**, Dave Levin, Bobby Bhattacharjee, Neil Spring  
DNS And Internet Naming Research Directions (DINR) Workshop, USC/ISI, 2016

## Posters

*AKESO: Bringing Post-Compromise Security to Cloud Storage*

Lily Gloudemans, Pankaj Niroula, Aashutosh Poudel, **Stephen Herwig**  
USENIX Security Symposium, Poster Session, 2024

*SIPS, IPSS, or Oops! An Analysis of the Security and Privacy of DNS Service Discovery*

Joseph Call, Mostafa Ahmed, **Stephen Herwig**  
USENIX Security Symposium, Poster Session, 2024

*Bento: Bringing Network Function Virtualization to Tor*

Michael Reiningger, Arushi Arora, **Stephen Herwig**, Nicholas Francino, Christina Garman, Dave Levin  
ACM Conference on Computer and Communications Security (CCS), Poster Session, 2020

*Measurement and Analysis of Hajime: A Peer-to-peer IoT Botnet*

**Stephen Herwig**, Katura Harvey, George Hughey, Richard Roberts, Dave Levin  
ACM Internet Measurement Conference (IMC) Poster Session, 2018

## TALKS

*SecureCDN: Providing End-to-End Security in Content Delivery Networks*

DC-Area Anonymity, Privacy, and Security Seminar, Georgetown University, 2018

## PROFESSIONAL SERVICE

### External Service

#### Funding Agency Proposal Review

- National Science Foundation (NSF) Secure and Trustworthy Cyberspace (SaTC) Reviewer: 2024

- National Science Foundation (NSF) Secure and Trustworthy Cyberspace (SaTC) Panelist: 2024

#### **Conference Technical Program Committee**

- Annual Computer Security Applications Conference (ACSAC): 2024
- ACM Conference on Computer and Communications Security (CCS): 2024
- IEEE International Conference on Distributed Computing Systems (ICDCS): 2024
- ACM Internet Measurement Conference (IMC): 2025, 2024
- Network and Distributed System Security Symposium (NDSS): 2025
- Privacy Enhancing Technologies Symposium (PETS): 2025
- IEEE Secure Development Conference (SecDev): 2024
- IEEE Symposium on Security and Privacy (S&P): 2025

#### **Conference Artifact Evaluation Program Committee**

- Annual Computer Security Applications Conference (ACSAC): 2024, 2023

#### **Workshop Technical Program Committee**

- Workshop on Artificial Intelligence System with Confidential Computing (AISCC): 2024 (co-located with NDSS)
- Hardware and Architectural Support for Security and Privacy (HASP): 2024 (co-located with MICRO), 2023 (co-located with MICRO)
- Workshop on the Security of Space and Satellite Systems (SpaceSec): 2025 (co-located with NDSS)

#### **Journal Reviewer**

- ACM Transactions on Privacy and Security (TOPS): 2018

### **Service at William & Mary**

#### **School of Arts & Sciences**

- Session Chair, *Graduate & Honors Research Symposium*, March 22, 2024

#### **Cybersecurity Center**

- Co-chair, *TribeCTF*, October 4–6, 2024  
Co-organized W&M’s inaugural Capture-The-Flag (CTF) competition, which hosted 33 teams (70 participants) from four schools (William & Mary, George Mason University, Virginia Tech, and the University of Virginia) in a three-day, in-person, cybersecurity challenge. Sponsored by ManTech International.

#### **Department of Computer Science**

- Cybersecurity Committee: AY 2024, 2023
- Graduate Admissions Committee: AY 2024, 2023
- Graduate Symposium Committee: AY 2024, 2023
- Undergraduate Curriculum Committee: AY 2022
- Graduate Curriculum Committee: AY 2022
- Colloquium Committee: AY 2022

## **ADVISING**

### **Doctoral Thesis Committee Member**

- Kaushal Kaffle, *Investigating the Latent Security and Privacy Risks in Consumer-oriented Software Systems*, 2024
- Tao Zhang, *Exploring Transient Execution Vulnerabilities, Side-Channel Attacks, and Defenses*, 2024

## Masters Thesis Committee Member

- Andrés Bencomo Magana, *Overview of Variations for Multiprocessor Scheduling Problems*, 2023

## TEACHING

### William & Mary

- CSCI 780 - Distributed System Security: Spring 2024 (6)
- CSCI 780 - Secure & Trusted Computing: Spring 2023 (7)
- CSCI 515/415 - Systems Programming: Fall 2024 (35), Fall 2023 (35), Fall 2022 (39)
- CSCI 420 - Secure Cloud Storage: Fall 2023 (1)
- CSCI 320 - Directed Study: Fall 2024 (1), Spring 2023 (1), Fall 2023 (3)

### Salisbury University

- COSC 117 - Programming Fundamentals: Fall 2022

## OUTREACH

### K–12 Education

- Instructor for *Create Your Own Arcade Games* at William & Mary School of Education's *Summer Enrichment Program*, Aug 12–16, 2024.  
Taught 4<sup>th</sup>–6<sup>th</sup> graders how to create classic video games using Microsoft MakeCode.
- Speaker, William & Mary School of Education's *Focusing on the Future Conference*, March 16, 2024  
Encouraged middle and high school students to pursue computer science by providing an overview of the computer science major and its career opportunities.