

Stuart Steiner

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RESEARCH INTERESTS

The Internet of Things and Smart Grid and water treatment security, especially related to detection and incident response; cybersecurity education; web security applied to both front-end/back-end vulnerabilities

EDUCATION

Doctor of Philosophy in Computer Science, 2018

University of Idaho, Moscow, ID

Dissertation Topic: *A Semantic Least Privilege and Semi-Automated Approach to Preventing Cyber Attacks on Web Applications*

Master of Science in Computer Science, 2001

Eastern Washington University, Cheney, WA

Thesis Topic: *An Introduction to Embedded Linux Programming for a Personal Digital Assistant*

Bachelor of Science in Business Management and Business Finance, 1991

Montana State University – Billings, Billings, MT

Summa Cum Laude: 3.93 GPA

ACADEMIC EXPERIENCE

Director, September 2020 – Present

Center for Network Computing and Cyber Security, Eastern Washington University

Senior Lecturer, September 2006 – August 2020

Department of Computer Science, Eastern Washington University

Graduate Instructor, August 2010 – May 2011

Department of Computer Science, University of Idaho

Graduate Teaching Assistant, August 2008 – May 2010

Department of Computer Science, University of Idaho

Lecturer, September 2001 – August 2006

Department of Computer Science, Eastern Washington University

Graduate Instructor, September 1997 – August 2001

Department of Computer Science, Eastern Washington University

PROFESSIONAL EXPERIENCE

Visiting Scholar, May 2000 – September 2000

National Aeronautics and Space Administration

Developer on various projects utilizing a Beowulf High Performance Computing Cluster

Information Technology Consultant, June 1999 – September 1999

Eastern Washington University Office of Information Technology

Integrated Python scripts into IBM VAX for various projects including virus scanning of emails

Web Developer, June 1999 – September 1999

Contract Positions

Developer on various websites utilizing JavaScript, PHP and Adobe Flash

Software Developer, June 1998 – September 1998

Soph-Ware Associates

Developer on secure XML and HL7 projects; utilized Java, Visual Basic, C, and C++

PUBLICATIONS

Refereed Journal Publications

Colton Hotchkiss, Ananth Jillepalli, Stu Steiner, and Daniel Conte de Leon (2022), *Building and Testing an Economic Faraday Cage for Wireless, IoT Computing Education and Research*, American Society for Engineering Education (*Under Review*)

Stu Steiner, Ananth Jillepalli, and Daniel Conte de Leon (2022), *A Survey of Cloud-hosted, Publicly-available, Cyber-ranges for Educational Institutions*, Journal of Computing Sciences in Colleges, vol. 38, no. 1

Animesh Pattanayak, Stu Steiner, and Daniel Conte de Leon (2021), *Hands-on Educational Labs for Cyber Defense Competition Training*, Journal of The Colloquium for Information Systems Security Education, vol. 9, no. 1

Matthew J Kirkland, Stu Steiner, and Daniel Conte de Leon (2021), *vWaterLabs: Design and Characteristics of a Virtual Testbed for Water-focused ICS Cybersecurity Education*, Journal of Computing Sciences in Colleges, vol. 36, no. 8

Stu Steiner, Matthew J Kirkland, and Daniel Conte de Leon (2021), *vWaterLabs: Developing Hands-On Laboratories for Water-focused Industrial Control Systems Cybersecurity Education*, Journal of Computing Sciences in Colleges, vol. 36, no. 10

Jillepalli, Ananth and Conte de Leon, Daniel and Steiner, Stu. and Alves-Foss, Jim (2018), *Analysis of web browser security configuration options*, KSII Transactions on Internet and Information Systems, vol. 12, no. 12, pp. 6139-6160

Bill Clark, Genevieve Orr, Jerry Rosenberg, Terrel Smith, Stuart Steiner, and Scott A, Wallace (2007), *Game Development Courses in the Computer Science Curriculum*, Journal of Computing Sciences in Colleges, vol. 23, no. 2, pp. 65-66

Stuart Steiner (2001), *Building and installing a Beowulf cluster*, Journal of Computing Sciences in Colleges, vol. 17, no. 2, pp. 78-87

Refereed Book Chapters

Richard A. Sevenich, Stuart Steiner, and Paul H. Schimpf (2000), *An Introduction to Embedded Programming in a Linux Environment*, Lineo Corp

Refereed Conference Proceedings

Rodney Thomas, Stuart Steiner, and Daniel Conte de Leon (2022), *HESPIDS: A Hierarchical and Extensible System for Process Injection Detection using Sysmon*, 55th Hawaii International Conference on System Sciences, Maui, HI

Stuart Steiner, Ibukun Oyewumi, and Daniel Conte de Leon (2021), *MAHIVE: Modular Analysis Hierarchical Intrusion Detection System Visualization Event Cybersecurity Engine for Cyber-Physical Systems & Internet of Things Devices*, 54th Hawaii International Conference on System Sciences, Kauai, HI

Awarded Best Paper of Track

Stuart Steiner, Daniel Conte De Leon, and Ananth A. Jillepalli (2018), *Hardening Web Applications Using a Least Privilege DBMS Access Model*, ACM 2018 Third Annual Cybersecurity Symposium, Coeur d'Alene, ID

Ananth A. Jillepalli, Daniel Conte de Leon, Stuart Steiner, Fredrick T. Sheldon, and Michael Haney (2017), *Hardening the Client-side: A Guide to Enterprise-level Hardening of Web Browsers*, IEEE 15th International Conference on Dependable, Autonomic and Secure Computing, 15th International Conference on Pervasive Intelligence and Computing, 3rd International Conference on Big Data Intelligence and Computing and Cyber Science and Technology Congress, Orlando, FL

Stuart Steiner, Daniel Conte de Leon, and Jim Alves-Foss (2017), *A Structured Analysis of SQL Injection Runtime Mitigation Techniques*, 50th Hawaii International Conference on System Sciences, Kona, HI
Awarded Best Paper of Track

Andrew Scholtz, Nigel Davies, Tristan Lehmbecker, Rachelle Boyette and Stuart Steiner (2017), *An In-House Digital Advancement of Geology 100 Labs*, 2017 Geological Society of America Annual Meeting, Seattle, WA

Ananth A. Jillepalli, Daniel Conte de Leon, Stuart Steiner and Frederick T. Sheldon (2016), *HERMES: A High-Level Policy Language for High-Granularity Enterprise-Wide Secure Browser Configuration Management*, 2016 IEEE Symposium Series on Computational Intelligence, Athens, Greece

Jim Alves-Foss, Jia Song, Andrew S. Amack, Lawrence Kerr, and Stuart Steiner (2015), *Evaluating the Use of Security Tags in Security Policy Enforcement Mechanisms*, 48th Hawaii International Conference on System Sciences, Honolulu, HI

Stuart Steiner, Linda Kieffer, and Stacey Roestel (2005), *Moving the Creation of Learning Objects Beyond the CS 1 Environment*, Proceedings of the World Conference on Educational Multimedia, Hypermedia and Telecommunications, Montreal, Quebec

Linda M. Kieffer and Stuart Steiner (2004), *Creating and Implementing Learning Objects in a CS 1 Environment*, Proceedings of the World Conference on Educational Multimedia, Hypermedia and Telecommunications, Lugano, Switzerland

Richard A. Sevenich and Stuart Steiner (2001), *Creating a Development Environment for Embedded Linux*, O'Reilly Open Source Conference, San Diego, CA

Conference Poster Presentations

Stuart Steiner (2017), *Modeling Least Privilege Security for Web Applications*, EWUniversity, Successful, Mentoring, Administration, Advising, Arts, Research, Teaching Symposium, Cheney, WA

Stuart Steiner (2014), *Living, Learning and Laundry; Taking a Holistic Approach with Faculty Involvement in the Lives of Students*, NASPA Gold Award Poster, NASPA Annual Conference, Orlando, FL

TEACHING ACCOMPLISHMENTS

Computer Science Courses Taught

- CSCD 210 – Programming Principles I (Java)
- CSCD 211 – Programming Principles II (Java)
- CSCD 212 – Object Oriented Programming with Design Patterns
- CSCD 225 – Programming Principles I (C++)
- CSCD 226 – Programming Principles II (C++)
- CSCD 228 – Introduction to UNIX
- CSCD 229 – C Programming Language
- CSCD 240 – C & UNIX Programming

CSCD 255 – C Programming for Engineers
CSCD 260 – Assembly Language Programming
CSCD 298 – Python Programming
CSCD 305 – C++ Programming
CSCD 326 – Data Structures (C++)
CSCD 340 – Operating Systems
CSCD 440 – Advanced Operating Systems
CSCD 488 – Senior Project
CSCD 490 – Senior Capstone
CSCD 500 – Graduate Colloquium Series
CSCD 506 – Graduate Research Methods

Cybersecurity Courses Taught

CSCD 303 – Computer & Information Security
CSCD 434/534 – Network Security
CSCD 437/539 – Secure Code
CSCD 496 – Security Operations Analyst
CSCD 496 – Cyber Defense Against the Dark Arts

Mobile and Web Courses Developed and Taught

CSCD 298 – Ruby on Rails
CSCD 378 – Web Programming with PHP and JavaScript
CSCD 379 – Web Programming with ASP.Net and JavaScript
CSCD 439 – iPhone/iOS Development
CSCD 479 – Web Programming Security
CSCD 498 – Android Mobile Development

SUPERVISED UNDERGRADUATE RESEARCH

Current

- Lilly Fetzer, Computer Science, Web Security, September 2022 – Present
- David Parker, Computer Science, IoT Edge Devices, September 2022 – Present

Previous

- Amy Washington, Computer Science, Cyber Ranges, September 2021 – 2022
- Kevin Underwood, Computer Science, Cyber-Physical Systems, 2019 – 2021
- Emilio Campos, Computer Science, Reverse Malware Analysis, 2019 – 2020
- Luna Lord, Computer Science, Reverse Malware Analysis, 2018 – 2020
- Alysha Randall, Computer Science, Survey of Tools for Teaching Networking, 2019
- Rachel Wilson, Mathematics, Cryptography: Encryption and Hash Functions, 2019
- Rodney Thomas, Computer Science, Detection of IoT Security Vulnerabilities, 2019

CURRENT SERVICE

Computer Science and Electrical Engineering Department

- Computer Science Tenure Track Search Chair
- Graduate Affairs Committee member
- Undergraduate Computer Science Curriculum Chair
- Undergraduate Computer Science Students Academic Advisor

Eastern Washington University

- Eastern Washington University Foundation Board Director

PREVIOUS SERVICE

Computer Science Department

- Animation Production Studio Director
- Assessment Committee Member
- Bachelor of Arts Computer Science: Game Development Coordinator
- Chair Search Committee Member
- Computer Information Systems Curriculum Committee Member
- Computer Science Lecturer Search Chair
- Curriculum Committee Member
- Graduate Affairs Committee Member
- Internship Coordinator
- Java Transition Committee Member
- Planning and Budgeting Committee Chair
- Planning and Budgeting Committee Member
- Scholarship Committee Member
- Special Faculty Hiring Committee Member
- Student Tutor Program Coordinator
- Tenure/Tenure Track Faculty Hiring Committee Member
- Undergraduate Affairs Committee Chair

Eastern Washington University

- College of Science, Technology, Engineering and Mathematics Internship Coordinator
- General Education Reform Course Approval Committee Member
- University Academic Computing Council College Representative
- University Course and Program Approval Committee Co-Chair
- University Course and Program Approval Committee Member

External

- 2023 The 56th Hawaii International Conference on System Sciences Paper Reviewer
- 2022 Special Interest Group Computer Science Education National Conference Paper Reviewer
- 2022 The 55th Hawaii International Conference on System Sciences Paper Reviewer
- 2021 The 54th Hawaii International Conference on System Sciences Paper Reviewer
- 2019 Grace Hopper Celebration of Women in Computing Conference Faculty Scholarship Reviewer
- 2017 Grace Hopper Celebration of Women in Computing Conference Student Scholarship Reviewer
- 2017 NASPA Student Affairs Professionals in Higher Education National Conference Paper Reviewer
- 2017 The 50th Hawaii International Conference on System Sciences Paper Reviewer
- 2015 National Conference on Undergraduate Research Abstract Reviewer

THESIS AND GRADUATE PROJECTS SUPERVISED

Committee Chair

Intrusion Detection for Industrial Control Systems, Kurt Lamon, MS Computer Science, March 2021

Password-less Two-Factor Authentication Using Scannable Barcodes on a Mobile Device, Grant Callant II, MS Computer Science, June 2021

Provisioning and Optimizing a SQL Server Database in a Cloud-based SaaS Production Environment, Steven Rogers, MS Computer Science, December 2019

Candygram PHP, an API-centric, multi-client, rapid development web framework for PHP, Andrew Canfield, MS Computer Science, August 2014

Committee Member

- Virtual Reality Developer Toolkit for Blockchain Education*, Bradley Armstrong, MS Computer Science, December 2021
- HYPER-L: Content Building Language*, Bradley Howard, MS Computer Science, May 2021
- Analysis of Hashtag Trends on Twitter*, Kayla Foremski, MS Computer Science, March 2021
- Automated GIS Processing for COVID-19 Operations Dashboard*, Amanda Reich, MS Computer Science, December 2020
- A Recommendation Engine for Relevant Segmentation Retrieval of Transcribed Podcasts*, Vivian Ellis, MS Computer Science, October 2020
- Using Twitter to Map Outbreaks of the Flu*, Elisha Burnette, MS Computer Science, September 2019
- Determining Vulnerability Using Attack Graphs: An Expansion of the Current FAIR Model*, Beth Anderson, MS Computer Science, June 2018
- GPU Accelerated Risk Quantification*, Forrest Ireland, MS Computer Science, June 2018
- Evaluating MapReduce on an Inexpensive Cluster of ARM64 Single-board Computers*, Daniel McDermott, MS Computer Science, March 2018
- Biological Prospective Simulation Using Data Mining and Immersive Virtual Reality Analysis*, Joshua Cotes, MS Computer Science, August 2017
- Near Real-Time Early Cancer Detection Using a Graphic Processing Unit*, Jason Helms, MS Computer Science, March 2016
- Development of a Secure Health IT Web Application Infrastructure*, Daniel McKenzie Murphy, MS Computer Science, July 2014
- kForth – A Simple Tiny Portable Interpreted Language*, Ken Farr, MS Computer Science, December 2014
- The Dynamic World Engine*, Shawn Cowles, MS Computer Science, June 2014
- Mining Multi-Granular Multivariate Medical Measurements*, Conrad Sykes, MS Computer Science, June 2014
- Improving the Performance of Skeletal Mesh Animations in the Blender Game Engine*, Mitchell Stokes, MS Computer Science, June 2014
- 3D Image Acquisition System for Facial Recognition*, James Pearson, MS Computer Science, March 2014
- GPU Ray Tracing with CUDA*, Thomas Pitkin, MS Computer Science, January 2014

GRANTS, CONTRACTS, GIFTS, AWARDS AND PROPOSALS

External Grants Received: \$70,402.52

CyberCorp® Scholarship for Service, National Science Foundation, PI: Stu Steiner, December 2022, Received \$217,352.00 over 2 years

Spokane Area GenCyber Cybersecurity Camp, National Security Agency, PI: Stu Steiner, April 2022, Received \$70,402.52 over 1 year

Equipment Gifts Received: \$750,500

Gift of high-end industry servers for curriculum development and student collaboration including outreach of local area high school and middle school cybersecurity competitions, December 2018

External Funds Received: \$16,000

Single corporate gift of \$2,500 to fund attendance of four computer science females for The Grace Hopper Celebration of Women in Computing Conference, October 2020

Single corporate gift of \$2,500, and three individual gifts of \$1500 to fund attendance of for computer science females for The Grace Hopper Celebration of Women in Computing Conference, October 2019

Two single corporate gifts for a total of \$4,000 to fund attendance of four computer science females for The Grace Hopper Celebration of Women in Computing Conference, September 2018

Single corporate gift of \$2,500 to fund attendance of two computer science females for The Grace Hopper Celebration of Women in Computing Conference, September 2017

Department Scholarship: \$255,000

Women In Computing Degrees, Created March 2017, Endowed December 2021, Awards four \$250 scholarships per year

Computer Science Alumni Scholarship, Created April 2011, Endowed December 2014, Awards eight \$1,500 scholarships per year

Unfunded Grants:

Spokane Area GenCyber Cybersecurity Camp, National Security Agency, PI: Stu Steiner, October 2021, Requested \$79,600 over 1 year

Hierarchical Adversarial Risk Assessment Extensible (HARAE) Framework for Wastewater Treatment Facilities, National Science Foundation, Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII), PI: Stu Steiner, September 2021, Requested \$174,500 over 2 years

Eastern Washington University CyberCorps(R) Scholarship for Service, National Science Foundation, PI: Stu Steiner, Co-PI: Dan Tappan, July 2021, Requested \$1,512,300 over 5 years

Spokane Area GenCyber Cybersecurity Camp, National Security Agency, PI: Stu Steiner, April 2021, Requested \$51,000 over 1 year

Securing Websites with Machine Learning and Least Privilege, Eastern Washington University Faculty Research and Creative Works Grant, PI: Stuart Steiner; co-PI: Collienne Covey, December 2017, Requested \$8,000 over 1 year

Transactive Monitoring for Real-Time Energy Control of a Commercial Building, ACM Collaborative Research Experiences for Undergraduates (CREU), PI: Stuart Steiner; co-PIs: Uri Rogers, Kayla Lambert, Ana Guerrero, and Miguel Calvillo, June 2017, Requested \$10,000 over 1 year

B.U.G.S. - Bettering Undergraduate Studies in Computer Science, ACM Collaborative Research Experiences for Undergraduates (CREU), PI: Stuart Steiner; co-PI: Jennifer Quinton, Gina Sprint, Madeleine Fletcher, Ylan Salsbury, and Sumayah Almohana, June 2011, Requested \$10,000 over 1 year

HONORS AND AWARDS

- College of STEM Chair's Excellence Award, Eastern Washington University, June 2022
- Associated Students of EWU Faculty of the Year Award, Eastern Washington University, May 2022
- College of STEM Chair's Excellence Award, Eastern Washington University, May 2017
- Excellence in Teaching and Mentoring Award, Eastern Washington University, April 2015
- Star Fish Student Service Award, Eastern Washington University, December 2014
- Outstanding Service Award, Eastern Washington University, March 2012
- College of SHE Dean's Excellence Award, Eastern Washington University May 2008

MENTORING

- Association of Computing Machinery, Faculty Advisor, 2021 – Present
- Department of Energy CyberForce Competition, Faculty Advisor, 2019 – Present
- Cybersecurity Club, Faculty Advisor, September 2018 – Present
- People of Diversity, Faculty Advisor, September 2018 – June 2019
- Women in Engineering, Faculty Advisor, September 2015 – June 2018
- Eastern Washington University ACM-W, Faculty Advisor, September 2013 – June 2015

PROFESSIONAL MEMBERSHIPS

- Association for Computing Machinery
 - Special-Interest Group: Computer Science Education
- Computer Science Teachers Association
- Colloquium for Information Systems Security Education
- Consortium for Computing Sciences in Colleges
- Institute of Electrical and Electronics Engineers
 - Special-Interest Group: Computer Society
- WiCyS – Women in Cybersecurity