

Curriculum Vitae

Zachary N. J. Peterson

Department of Computer Science and Software Engineering
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Current Position

Professor, Department of Computer Science and Software Engineering, Cal Poly, San Luis Obispo, CA

Interests

Secure Storage Systems, Applied Cryptography, Cybersecurity Education

Education

- PhD 2006 The Johns Hopkins University, Computer Science
Dissertation: Toward Regulatory Compliant Storage Systems
Research: Federally compliant storage systems employing cryptography, file system versioning, secure deletion, and authentic provenance data.
Advisor: Professor Randal Burns
- MS 2005 The Johns Hopkins University Information Security Institute, Security Informatics
Project: Secure Deletion for a Versioning File System
Research: Electronic record and content management policy, digital rights, intellectual property, and privacy issues.
Advisors: Professor Gerry Masson and Professor Aviel D. Rubin
- MS 2002 University of California, Santa Cruz, Computer Science
Thesis: Data Placement for Copy-on-Write Using Virtual Contiguity
Research: Data placement and allocation policies, MEMS-based storage.
Advisor: Professor Darrell D. E. Long
- BS 2000 University of California, Santa Cruz, Computer Engineering
Liberal arts emphasis in music.

Employment History

- 2022– **Cal Poly, San Luis Obispo**, *Professor*, Computer Science, San Luis Obispo, CA.
- 2018–22 **WhiteFox Defense, Inc.**, *Head of Autonomous Vehicle Security*, San Luis Obispo, CA.
- 2016–22 **Cal Poly, San Luis Obispo**, *Associate Professor*, Computer Science, San Luis Obispo, CA.
- 2016 **University College London**, *Honorary Senior Lecturer*, Computer Science, London, England.
- 2013–16 **Cal Poly, San Luis Obispo**, *Assistant Professor*, Computer Science, San Luis Obispo, CA.
- 2013 **California State University, Monterey Bay**, *Lecturer*, Monterey, CA.
- 2010–13 **Naval Postgraduate School**, *Assistant Professor*, Computer Science, Monterey, CA.
- 2008–10 **The Johns Hopkins University**, *Assistant Research Scientist*, Computer Science, Baltimore, MD.
- 2006–10 **Independent Security Evaluators**, *Senior Security Analyst*, Baltimore, MD.

- 2008 **McDaniel College**, *Adjunct Lecturer*, Mathematics and Computer Science, Westminster, MD.
- 2002–06 **The Johns Hopkins University**, *Graduate Researcher*, Hopkins Storage Systems Lab, Baltimore, MD.
- 2000–02 **University of California, Santa Cruz**, *Graduate Researcher*, Computer Systems Lab, Santa Cruz, CA.
- 2000–02 **International Business Machines**, *Research Associate*, Almaden Research Center, San Jose, CA.
- 1999–00 **eBay Inc.**, *Software Engineering Intern*, Santa Cruz, CA.
- 1999–00 **Education Opportunity Program**, *Tutor*, University of California Santa Cruz, Santa Cruz, CA.
- 1998–99 **NetMind Technologies**, *Software Engineering Associate*, Santa Cruz, CA.
- 1997–98 **@Home Networks**, *Software Engineering Intern*, Redwood City, CA.

Publications

Journals

1. P. Pusey, M. Gondree, and Z. Peterson. The Outcomes of Cybersecurity Competitions and the Implications for Underrepresented Populations. *IEEE Security & Privacy*, 14(6), pp. 90-95, November-December 2016.
2. M. Gondree, Z.N.J. Peterson, and P. Pusey. Talking about Talking about Cybersecurity Games. *USENIX ;login:*, 41(1), pp. 36-39, Spring 2016.
3. M. Gondree, Z.N.J. Peterson, T. Denning. Security through Play. *IEEE Security & Privacy*, 11(3), pp.64-67, 2013.
4. G. Ateniese, R. Burns, R. Curtmola, J. Herring, O. Khan, L. Kissner, Z. Peterson and Dawn Song. Remote Data Checking Using Provable Data Possession. *ACM Transactions on Information and System Security (TISSEC)*, 14(1), May 2011.
5. R. Burns and Z. Peterson. Security Constructs for Regulatory Compliant Storage. *Communications of the ACM*, 53(1):126-130, January 2010.
6. Z. Peterson and R. Burns. Ext3cow: A Time-Shifting File System for Regulatory Compliance. *ACM Transactions on Storage*, 1(2):190–212, May 2005.

Refereed Conferences

1. E. Lau³ and Z. Peterson. A Research Framework and Initial Study of Browser Security for the Visually Impaired. In: *Proceedings of the USENIX Security Symposium*, 2023.
2. N. Fowler¹, E. Cuellar¹, and Z. Peterson. On Stablecoins: Stability Mechanisms and Use Cases for Real People. In: *Proceedings of the Third International Symposium on Foundations and Applications of Blockchain*, 2020.
3. M. Zinkus¹, O. Curry¹, M. Moore¹, Z. Peterson, and Z. J. Wood. Fakesbook: A social networking platform for teaching security and privacy concepts to secondary school students. In: *Proceedings of the ACM Technical Symposium on Computing Science Education (SIGCSE)*, 2019.
4. J. R. Morelock² and Z. Peterson. Authenticity, Ethicality, and Motivation: A Formal Evaluation of a 10-week Computer Security Alternate Reality Game for CS Undergraduates. In: *Proceedings of the USENIX Advances in Security Education Workshop (ASE)*, 2018. *Acceptance rate: 35.4% (11/31)*
5. Z. J. Wood, J. Clements, Z. Peterson, D. Janzen, H. Smith, M. Haungs, J. Workman, J. Bellardo, and B. DeBruhl. Mixed approaches to CS0: Exploring topic and pedagogy variance after six years of CS0. In: *Proceedings of the ACM Technical Symposium on Computing Science Education (SIGCSE)*, 2018.
6. M. Moore¹, M. Zinkus¹, N. Lemay¹, Z. Peterson, and B. DeBruhl. Introducing Privacy to Undergraduate Computing Students. In: *Proceedings of the Consortium for Computing in the Colleges Southwest Region Conference*, 2018.

¹Cal Poly undergraduate student.

²UVA PhD student, now a Research Professor at the University of Georgia.

7. T. Peters³, M. Gondree and Z.N.J. Peterson. DEFY: Deniable Encrypted File System for YAFFS. In: *Proceedings of the Network and Distributed System Security (NDSS) Symposium*, 2015. Acceptance rate: 15.8% (50/315).
8. M. Gondree and Z.N.J. Peterson. Geolocation of Data in the Cloud. In: *Proceeding of the Conference on Data and Application Security and Privacy (CODASPY)*, ACM, 2013. Acceptance rate: 22% (24/107)
9. G. Ateniese, R. Burns, R. Curtmola, J. Herring, L. Kissner, Z. Peterson and D. Song. Provable Data Possession at Untrusted Stores. In: *Proceedings of the Conference on Computer and Communication Security (CCS)*, ACM, 2007. Acceptance rate: 18% (55/303)
10. Z.N.J. Peterson, R. Burns, G. Ateniese and S. Bono. The Design and Implementation of Audit Trails for a Versioning File System. In: *Proceedings of the Conference on File and Storage Technologies (FAST)*, USENIX, 2007. Acceptance rate: 19% (19/98)
11. Z.N.J. Peterson, R. Burns, J. Herring, A. Stubblefield and A. Rubin. Secure Deletion for a Versioning File System. In: *Proceedings of the Conference on File and Storage Technologies (FAST)*, USENIX, 2005. Acceptance rate: 25% (20/125)
12. B. Hong, S.A. Brandt, D.D.E. Long, E.L. Miller, K.A. Glocer and Z.N.J. Peterson. Zone-Based Shortest Positioning Time First Scheduling for MEMS-Based Storage Devices. In: *Proceedings of the International Symposium on Modeling, Analysis, and Simulation in Computer and Telecommunication Systems (MASCOTS)*, IEEE, 2003. Acceptance rate: 30%
13. S.A. Banachowski, Z.N.J. Peterson, E.L. Miller and S.A. Brandt. Intra-File Security for a Distributed File System. In: *Proceedings of the NASA Goddard Conference on Mass Storage Systems and Technologies*, IEEE, 2002. Acceptance rate: 35%

Refereed Workshops and Short Papers

1. E. Lau² and Z.N.J. Peterson. A Research Framework and Initial Study of Browser Security for the Visually Impaired. In: *Proceedings of the Workshop on Inclusive Privacy and Security (WIPS)*, 2015.
2. T. Flushman, M.A. Gondree and Z.N.J. Peterson. This is Not a Game: Early Observations on Using Alternate Reality Games for Teaching Security Concepts to First-Year Undergraduates. In: *Proceedings of the Workshop on Cyber Security Experimentation and Test (CSET)*, USENIX, 2015. Acceptance rate: 30.76% (8/26)
3. M. Gondree and Z.N.J. Peterson. Valuing Security by Getting [d0x3d!]: Experiences with a network security board game. In: *Proceedings of the Workshop on Cyber Security Experimentation and Test (CSET)*, USENIX, 2013. Acceptance rate: 31% (9/29)
4. J.A. Akinyele, M.W. Pagano, M.D. Green, C.U. Lehmann, Z.N.J. Peterson and A.D. Rubin. Securing Electronic Medical Records Using Attribute-Based Encryption On Mobile Devices. In: *Proceedings of the CCS Workshop on Security and Privacy in Mobile Devices*, ACM, 2011. Acceptance rate: 47% (9/19)
5. Z.N.J. Peterson, M. Gondree and R. Beverly. A Position Paper on Data Sovereignty: The Importance of Geolocating Data in the Cloud. In: *Proceedings of the Workshop on Hot Topics in Cloud Computing (HotCloud)*, USENIX, 2011. Acceptance rate: 32% (23/72)
6. C. Miller and Z.N.J. Peterson. Analysis of Mutation and Generation-Based Fuzzing. Presented at: *DEFCON 15*, 2007.
7. Z.N.J. Peterson and R. Burns. Building Regulatory Compliant Storage Systems. In: *Proceedings of the Conference on Digital Government Research (dg.o)*, ACM, 2006.
8. R. Burns, Z. Peterson, G. Ateniese and S. Bono. Verifiable Audit Trails for a Versioning File System. In: *Proceedings of the CCS Workshop on Storage Security and Survivability (SSS)*, ACM, 2005.

³Cal Poly masters student.

9. Z.N.J. Peterson, R. Burns and A. Stubblefield. Limiting Liability in a Federally Compliant File System. In: *the PORTIA Workshop on Sensitive Data in Medical, Financial, and Content-Distribution Systems, Privacy, Obligations, and Rights in Technologies of Information Assessment (PORTIA)*, 2004.
10. Z.N.J. Peterson and R.C. Burns. Limiting Liability in a Federally Compliant File System. A Work in Progress at: *the Conference on File and Storage Technologies (FAST)*, USENIX, 2004.
11. Z.N.J. Peterson, S.A. Brandt and D.D.E. Long. Data Placement Based on the Seek Time Analysis of a MEMS-based Storage Device. A Work in Progress at: *the Conference on File and Storage Technologies (FAST)*, USENIX, 2002.

Miscellanea

1. Z. Peterson. Forward. L. Sheldon. *The Multiplayer Classroom: Game Plans*. ISBN-13: 978-0367249014. March 2021.
2. Z.N.J. Peterson. Data Placement for Copy-on-Write Using Virtual Contiguity. Master's thesis, University of California, Santa Cruz, September 2002.
3. R.C. Burns, R.M. Rees, Z.N.J. Peterson, and D.D.E. Long. Allocation and Data Placement Using Virtual Contiguity. iNIST/SSRC/01-001. 2001.

Research Artifacts

ASTM F3411: Remote ID and Tracking Subcommittee F38.02 Contributed as a technical expert for security and help influenced the standard to include mechanisms for authenticity and non-repudiation.

[d0x3d!]: A Network Security Game. <http://www.d0x3d.com>. [d0x3d!] is a non-digital board game designed to introduce high school and undergraduate students to network security terminology, attack mechanics and basic computer security constructs. In [d0x3d!], two to four students take on the roles of black hat hackers working in cooperation to infiltrate and compromise a computer network, winning only when they collectively extract four valuable resources: personally-identifiable information, financial information, intellectual property and authentication credentials. The intent of [d0x3d!] is to engage students in computer science while removing common barriers associated with using a computer, such as feeling of isolation, lack of computer “comfort” or financial limitations. The game attempts to improve security literacy, encourage students to think adversarially, and introduce players to possible STEM career paths.

The Firewall Game. A cross between MasterMind and Red Rover, The Firewall Game has teams of students take on the role of “spies” tasked with reverse engineering the access control policy of an opposing team’s “castle” in order to sneak all members of their team inside. Students learn (perhaps, unknowingly) about state machines, logic and flow control, best practices in designing access control policies, and the difficulties in designing secure access control policies when requirements become too numerous or contradictory.

The Fakesbook. A simulated social network that allows students to explore the implications of various privacy settings, what can be garnered from other users and the site administrators through inference, and the strategies advertisers use in marketing products to cliques of users.

The Cal Poly Night Game. <https://www.nightgame.net>. An annual game held in the Winter on Cal Poly’s campus, the Night Game is a digital scavenger hunt, in which teams of students score points by finding insecure services hosted on rogue WiFi networks, solving cryptograms and physical puzzles, and defeating other cybersecurity-themed challenges, all under cover of darkness! Variants of the Cal Poly Night Game have been hosted at the Stanford iD Tech Summer Camp, Cal Poly Engineering Possibilities in College (EPIC) summer camp, and at Coast Union High School.

TableTop Security. <http://tabletopsecurity.com>. TableTopSecurity is my collaborative research project that serves the purpose of an umbrella organization for the community of researchers and practitioners interested investigating the use of games both in and out of classroom for computer security education. We host security exercises, educational

puzzles, non-digital games and a variety of methods and resources designed to engage students in thinking adversarially about systems in responsible and accessible contexts.

The Provable Data Possession (PDP) software libraries. This site makes available a collection of provable data possession software libraries that each provide cryptographically strong evidence that storage service providers meet their contractual obligations. Using PDP, users that store their data at an untrusted server can have probabilistic guarantees that the server possesses the original data. The client needs only to store his cryptographic keys and never has to retrieve the file. PDP uses homomorphic verifiable tags that minimize the amount of server computation, network traffic and block accesses while achieving a strong guarantee of data possession. More details on PDP can be found in the paper: Provable Data Possession at Untrusted Stores.

The ext3cow file system. Ext3cow builds upon the popular ext3 file system, the default file system for most Linux distributions, to provide continuous file versioning and file system snapshot. Ext3cow's novel time-shifting interface permits a real-time and continuous view of data in the past. Ext3cow was designed to meet the federal auditability and real-time disclosure requirements set forth in legislation such as Sarbanes-Oxley and HIPAA. It has gone on to be a foundation for developing technical solutions to a wide array of regulatory storage challenges such as: secure deletion, authenticated encryption and verifiable audit trails. Our release of ext3cow for the Linux 2.6 kernel was reported on both slashdot.org and digg.com. The software has been downloaded thousands times and has an active development community. Ext3cow is used as the basis for on-going research projects at the Johns Hopkins University, UC Berkeley, Columbia University, the University of Utah, and UC Santa Cruz. A startup once used ext3cow as the file system in their object-based storage product.

Course Instruction

Su18	Munich University of Applied Science, <i>Instructor</i> , Engineering Cryptocurrencies.
F14, W16–	Cal Poly, San Luis Obispo, <i>Instructor</i> , CSC323: Cryptography Engineering.
F14–	Cal Poly, San Luis Obispo, <i>Instructor</i> , CPE123: Introduction to Computing Through Security.
S14	Cal Poly, San Luis Obispo, <i>Preceptor</i> , CPE485: Defense Against the Dark Arts.
W14–	Cal Poly, San Luis Obispo, <i>Instructor</i> , CPE321: Introduction to Computer Security.
F13–	Cal Poly, San Luis Obispo, <i>Instructor</i> , CPE453: Operating Systems.
W13	California State University, Monterey Bay, <i>Instructor</i> , CST312: Network Security.
W13	Naval Postgraduate School, <i>Instructor</i> , CS3600: Introduction to Computer Security.
F12	Naval Postgraduate School, <i>Instructor</i> , CY4650: “Big Data” for Cyber Operations.
Su12	Naval Postgraduate School, <i>Instructor</i> , CS4614: Advanced Topics in Computer Security.
W, Su, F 11	Naval Postgraduate School, <i>Instructor</i> , CS3600: Introduction to Computer Security.
Su11	Naval Postgraduate School, <i>Co-Instructor</i> , CS2140: Low-Level Programming.
2010–11	Naval Postgraduate School, <i>Invited Lecturer</i> , CS4900: Technology and Transformation.
2009–10	The Johns Hopkins University, <i>Invited Lecturer</i> , 650.445: Practical Cryptographic Systems.
S08	McDaniel College, <i>Instructor</i> , CSC-3365: Topics in Secure Systems.
2007–10	The Johns Hopkins University, <i>Invited Lecturer</i> , 650.442: Security and Privacy in Computing.
2007	The Johns Hopkins University, <i>Invited Lecturer</i> , 600.419: Storage Systems.
2006	The Johns Hopkins University, <i>Co-Lecturer</i> , 600.419: Storage Systems.
2005	The Johns Hopkins University, <i>Teaching Assistant</i> , 600.107: Introduction to Programming in Java.
2004–05	The Johns Hopkins University, <i>Invited Lecturer</i> , 600.105: Freshman Experience.
2002	The Johns Hopkins University, <i>Teaching Assistant</i> , 600.419: Storage Systems.

Grants

National Security Agency (NSA). *GenCyber Program*. Grant # H98230-20-1-0061, \$88,249.60. 2020. Zachary Peterson (Instructional Lead), John Oliver (Program Director), Lola Berber-Jimenez (Pedagogical Lead)

National Security Agency (NSA). *GenCyber Program*. Grant # H98230-18-1-0099, \$97,629.18. 2018. Zachary Peterson (Instructional Lead), John Oliver (Program Director)

NSF Secure and Trustworthy Cyberspace Education (SaTC EDU). *Re-energizing K-12 Extramural Programs with Security Activities*. Award #1628726, \$299,782. Zachary N. J. Peterson (PI). Co-PI: Zoe Wood. 3/2016 – 5/2017.

Google Computer Science Engagement Award. \$5,000. Zachary N. J. Peterson (PI), 2015

Intel-NSF-Georgia Tech Information Security Center Security Education Micro-grant Program. *Teaching Computer Security Concepts in a First Year Course* \$5,000. Zachary N. J. Peterson (PI). 2014

NSF Secure and Trustworthy Cyberspace Education (SaTC EDU). *This is Not a Game—Using ARGs for Teaching Security Concepts to First-Year Undergraduates*. Award #1419318, \$196,073. Zachary N. J. Peterson (PI). 10/2014 – 9/2016.

NSF Federal Cyber Service: Scholarship for Service (SFS). *Monarch II: Cyber Corps Through Transformation*. Award #1241432, \$1,964,754. Cynthia Irvine (PI). Co-PIs: Zachary N. J. Peterson, Mark Gondree, Ted Huffmire. 2013

NSF Transforming Undergraduate Education: *Collaborative Research: Teaching Computer Security Concepts Through Interactive (Non-Digital) Games*. Award #1140561, \$196,594. Zachary N. J. Peterson (PI). Co-PIs: Mark Gondree (NPS), Kate Lockwood (CSU Monterey Bay), Joe Welch (Hartnell Community College). 9/2012 – 8/2014

National Reconnaissance Office. *Cloud Technologies for Automated Tagging and Cryptographic Binding*. \$437,996. Craig Martell (PI). Co-PIs: Mark Gondree and Zachary N. J. Peterson. 11/2011 – 9/2012.

NSF EARly-Concept Grants for Exploratory Research (EAGER): *HealthWave—Secure, Federated Protocols for Electronic Medical Records*. Award #1143573, \$92,063. Zachary N. J. Peterson (PI). 2010

Amazon Web Services in Education Grant: *Rethinking Provable Data Possession*. Zachary N. J. Peterson (PI). 2010

Identity and Database Challenges for Force Protection (Team Monterey). \$109,994. Senior Personnel with Cynthia Irvine (PI). 10/2010–6/2011

NSF Trustworthy Computing: *TC: Large: Self Protecting Electronic Medical Records*. \$1,733,881. Aviel D. Rubin (PI). Co-PIs: Christoph Lehmann, Matthew Green, Zachary N. J. Peterson. NSF CNS Award #1010928. 10/2010–9/2014.

Department of Health and Human Services. *Strategic Healthcare Information Technology Advanced Research Projects on Security (SHARPS)*, Research Focus Area: Security of Health Information Technology. \$15,000,000 total; \$1,600,399 Johns Hopkins University portion. Zachary N. J. Peterson, Senior Personnel with Carl Gunter (Director) *et al.*

Awards, Scholarships & Fellowships

2018-19 Cybersecurity Policy Fellow, New America, Washington, DC

2016 Cyber Security Fulbright Scholar, University College London, London, England

2014 Cal Poly ACM Professor of the Year

Patents

- 2021 Integrated secure device manager systems and methods for cyber-physical vehicles. US Patent 20210092604A1. (with Luke Fox, Ryan Jenkins, Bruce Edward DeBruhl, Clark Turner, Calvin Balke).
- 2019 Systems and methods for cyber-physical vehicle management, detection and control. US Patent 20200008059A1. (with Luke Richard Fox, Bruce Edward DeBruhl, and Clark Savage Turner).
- 2010 Method and Apparatus for Limiting Access to Sensitive Data. US Patent 7,840,795. (with A. Stubblefield, S. Bono, M. Green).

Invited Talks & Panels

- 2021 Invited Panelist. “Connected and Protected: Resilient and Secure Amid Cybersecurity Threats.” 2021 AUVSI XPONENTIAL. Atlanta, Georgia.
- 2021 Invited Speaker. “Securing Drone Identity.” Sonoma State Computer Science Colloquium. Virtual. *Host:* Lynn Stauffer.
- 2019 Invited Speaker. “Authentic Learning Through Alternative Realities Games.” 2019 NICE K12 Cybersecurity Conference. Anaheim, California.
- 2019 Invited Panelist. “Industry Successes.” DRONE ENABLE, ICAO’s Third Unmanned Aircraft Systems Industry Symposium. United Nations International Civil Aviation Organization (ICAO). Montreal, Canada.
- 2019 Invited Speaker. “Securing Remote ID.” Saudi Drone Summit. Riyadh, Saudi Arabia.
- 2019 Invited Panelist. “Remote ID & Securing Autonomy.” AVUSI All About Autonomy Symposium.
- 2018 Invited Panelist. “Cybersecurity Workforce Development in R&E Environments.” CENIC Annual Conference, *Host:* Sean Peisert.
- 2016 Invited Speaker. “How Games Can Fix Computer Security Education.” Research Institute in Science of Cyber Security.
- 2016 Invited Speaker. “How Games Can Fix Computer Security Education.” University of Edinburgh.
- 2016 Invited Speaker. “How Games Can Fix Computer Security Education.” University of Leeds.
- 2016 Invited Speaker. “How Games Can Fix Computer Security Education.” University of Liverpool.
- 2016 Invited Speaker. “How Games Can Fix Computer Security Education.” University College London, *Host:* Jens Groth.
- 2016 Invited Speaker. “How Games Can Fix Computer Security Education.” Royal Holloway, University of London, *Host:* Lorenzo Cavallaro.
- 2016 Invited Panelist. “Cyber CSI II: Apple vs. FBI. Encryption, Privacy, and Policy.” Robert E Kennedy Data Studio Presents, *Host:* Jeanine Scaramozzino.
- 2016 Invited Panelist. “Teaching Computer Security: Thoughts from the Field.” USENIX Security Symposium, *Moderator:* Adrienne Porter-Felt.
- 2016 Invited Speaker. “A Million Hit Points and Infinite Charisma: How Games Can Fix Computer Security Education.” USENIX Enigma Conference, *Chairs:* David Brumley and Parisa Tabriz.
- 2015 Invited Panelist. “Cyber CSI: Working to Solve the Data Security Crisis.” Robert E Kennedy Data Studio Presents, *Host:* Jeanine Scaramozzino.
- 2015 Invited Speaker. “This is Not a Game: Using Alternate Realities to Teach Security Concepts to First-Year Undergraduates.” Georgia Tech/Intel/National Science Foundation Security Education Workshop, *Host:* Wenke Lee.
- 2015 Invited Panelist. “Educating Everyone.” National Science Foundation Secure and Trustworthy Cyberspace PI Meeting, *Host:* David Evans.

- 2014 Invited Speaker. “Valuing Security by Getting [d0x3d!]: security outreach using a network security board game.” Symposium on Curriculum Development in Security and Information Assurance (CDSIA), *Host*: Sigurd Meldal.
- 2013 Invited Speaker. “Games for Cybersecurity Education.” National Science Foundation Scholarship for Service Symposium, *Host*: Victor Piotrowski.
- 2012 Invited Speaker. “Cryptography for a Cloud Appliance.” Nebula, Inc., *Host*: Bryan Payne.
- 2011 Invited Speaker. “Storage, Security and You.” Hartnell Community College, *Host*: Prof. Joe Welch.
- 2010 Invited Panelist. Security and Privacy in Medical and Home-Care Systems (SPIMACS).
- 2010 Invited Speaker. “Security Constructs for Regulatory-Compliant Storage.” Georgetown University, *Host*: Prof. Clay Shields.
- 2007 Toward Regulatory Compliant Storage Systems. McDaniel College, *Host*: Prof. Italo Simonelli.
- 2006 Toward Regulatory Compliant Storage Systems. The Johns Hopkins University Institute for Security Informatics, *Host*: Prof. Gerry Masson.
- 2002 Virtual Contiguity: Data Placement for a Versioning File System. IBM Almaden Research Center, *Host*: Bernie Lopez.
- 2001 Storage Technology for High Performance Computing. Lawrence Livermore National Laboratory, *Host*: Steve Louis.

Professional Activities

- Workshop Founder USENIX Advances in Security Education (ASE)
USENIX Summit on Gaming, Games, and Gamification in Security Education (3GSE)
- Steering Committee USENIX Advances in Security Education (ASE)
USENIX Workshop on Health Information Technologies (HealthTech) ‘13
- Program Chair USENIX Advances in Security Education (ASE) ‘16
USENIX Summit on Gaming, Games, and Gamification in Security Education (3GSE) ‘14, ‘15
USENIX Workshop on Health Information Technologies (HealthTech) ‘13, Co-Chair
USENIX Workshop on Health Security and Privacy (HealthSec) ‘12, Co-Chair
- Chair IEEE Security & Privacy Workshops ‘16
- Vice Chair IEEE Security & Privacy Workshops ‘14, ‘15
- Program Committee ACM Special Interest Group in Computer Science Education (SIGCSE) ‘17, ‘18, ‘19, ‘20, ‘21, ‘22
USENIX Enigma Conference ‘17, ‘18
USENIX Security Symposium ‘14, ‘15, ‘16, ‘18, ‘19, ‘20
Annual Computer Security Applications Conference (ACSAC) ‘13, ‘14, ‘15, ‘16, ‘18
International Symposium on Research in Attacks, Intrusions and Defenses (RAID) ‘15
ACM Symposium on Information, Computer and Communication Security (ASIACCS) ‘13, ‘14, ‘15
USENIX Workshop on Cyber Security Experimentation and Test (CSET) ‘14, ‘15, ‘20
International Symposium on Engineering Secure Software and Systems (ESSoS) ‘13
IEEE Symposium on Security and Privacy (Oakland) ‘12
International Workshop on Storage Security and Survivability (StorageSS) ‘06
- External Reviewer ACM Transaction on Storage ‘10, ‘14
IEEE Transactions on Dependable and Secure Computing ‘13
IEEE Transactions on Information Forensics and Security ‘10, ‘11, ‘12
IEEE Security and Privacy Magazine ‘10, ‘11, ‘12

USENIX Conference on File and Storage Technologies '02, '09, '11
IET Software '10
Communications of the ACM '06
IBM Systems Journal '06

Service and Outreach

2022– Executive Committee, Cal Poly Noyce School of Applied Computing
2022 Steering Committee, Cal Poly Noyce School of Applied Computing
2021– Advisor, Cal Poly Blockchain Club, Cal Poly
2021– Peer Review Committee, Fulbright Scholarship
2020– Steering Committee & Mentor, Cal-Bridge Scholarship Program
2016– Program Assessment Coordinator, Computer Science and Software Engineering Department, Cal Poly
2016–17 Selection Committee for the NCWIT Aspirations in Computing for the Central California Affiliate
2015, 17–19 Chair, Computer Science Department Cybersecurity Faculty Search Committee, Cal Poly
2016 Member, Computer Science Department High Performance Computing Faculty Search Committee, Cal Poly
2014– Permanent member, Selection Committee for Scholarships for Women Studying Information Security (SWSIS)
2014–2021 Co-Advisor, Cal Poly White Hat Computer Security Club, Cal Poly
2014 Instructor, Paramount Summer Academy, Cal Poly
2014–15 Chair, Computer Science Department Cybersecurity Faculty Search Committee, Cal Poly
2013–14 Member, Computer Science Department Cybersecurity Faculty Search Committee, Cal Poly
2013–2019 Instructor, Engineering Possibilities in College (EPIC) Summer Camp, Cal Poly
2012 Mentor, Undergraduate Research Opportunities Center (UROC), CSU Monterey Bay
2012 Mentor, Community College Catalyst (3C), Cebrowski Institute
2012 Instructor, CyberAdventurer Week, Cebrowski Institute
2012 Member, Computer Science Department Curriculum Committee, Naval Postgraduate School
2011–12 Judge, Monterey County Science and Engineering Fair, Monterey, CA
2011 Member, Computer Science Department Faculty Search Committee, Naval Postgraduate School
2011 Member, Computer Science Department Symposium Committee, Naval Postgraduate School