Daniel Zappala

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Biography

My graduate work at the University of Southern California designed multicast routing protocols to support real-time applications such as voice and video. This work was undertaken as part of the federally-funded RSVP project, in turn part of an effort to design an Internet that could offer quality of service guarantees to applications using real-time voice and video.

My first academic job was at the University of Oregon, where I continued to work on multicast routing, then eventually branched into peer-to-peer and wireless networking. I taught classes in operating systems and networking.

In 2004 I moved to Brigham Young University to find a better balance between teaching and research. I am particularly attracted by the university's mission, which puts students at the core of every aspect of our responsibilities. I enjoy helping each student reach their potential, whether in class or in our research lab. In about 2013 I changed research areas to security, with an emphasis on usable security and privacy. I have taught classes in networking, web programming, security, and usability, along with experimental courses in network science and digital humanities.

Our research lab has a strong focus on both systems security and usability. We enjoy building systems that empower people to be more secure and to have stronger privacy guarantees. I am particularly interested in understanding human behavior and how software developers can create applications that respect human agency and preferences. Ultimately, people know their own security and privacy contexts best, and software that is well designed can help them make choices aligning with their values.

Research Interests

Usable security and privacy, network security.

Education

Doctor of Philosophy in Computer Science, University of Southern California, 1997. Dissertation: *Multicast Routing Support for Real-Time Applications*. Adviser: Deborah Estrin.

Bachelor of Science in Electrical Engineering, Stanford University, 1990.

Academic Experience

Professor, Computer Science, Brigham Young University, 2019 – present

Associate Professor, Computer Science, Brigham Young University, 2004 – 2019

Assistant Professor, Computer Science, University of Oregon, 1997 – 2004

Consultant, Information Sciences Institute, University of Southern California, 1997 – 1998

Research Assistant, Information Sciences Institute, University of Southern California, 1994 – 1997

Summer Intern, Xerox Palo Alto Research Center, 1992

Research Assistant, University of Southern California, 1991 – 1994

Conference and Journal Publications

Conference publications are the primary venue in Computer Science, so they are listed with journals. For student-led papers, the first author is generally the student who led the project and he last author is the faculty adviser for that student. For collaborations, authors are generally listed alphabetically.

– 2019 –

"Something isn't secure, but I'm not sure how that translates into a problem": Promoting autonomy by designing for understanding in Signal, Justin Wu, Cyrus Gatrell, Devon Howard, Jake Tyler, Elham Vaziripour, Kent Seamons, and Daniel Zappala, *USENIX Symposium on Usable Privacy and Security (SOUPS)*, August 2019. Data at https://signal.internet.byu.edu.

I Don't Even Have to Bother Them! Using Social Media to Automate the Authentication Ceremony in Secure Messaging, Elham Vaziripour, Devon Howard, Jake Tyler, Mark O'Neill, Justin Wu, Kent Seamons, and Daniel Zappala, *Proceedings of the 37th Annual ACM Conference on Human Factors in Computing Systems (CHI 2019)*, May 2019.

A Usability Study of Four Secure Email Tools Using Paired Participants, Scott Ruoti, Jeff Anderson, Luke Dickinson, Scott Heidbrink, Tyler Monson, Mark O'Neill, Ken Reese, Brad Spendlove, Elham Vaziripour, Justin Wu, Daniel Zappala, and Kent Seamons, *ACM Transactions on Privacy and Security (TOPS)*, Volume 22, Number 2, April 2019.

– 2018 –

The Secure Socket API: TLS as an Operating System Service, Mark O'Neill, Scott Heidbrink, Jordan Whitehead, Tanner Perdue, Luke Dickinson, Torstein Collett, Nick Bonner, Kent Seamons, and Daniel Zappala, *USENIX Security*, August 2018, 18 pages. Second Place, Facebook Internet Defense Prize ($60,000). Data and code at https://owntrust.org.

When is a Tree Really a Truck? Exploring Mental Models of Encryption, Justin Wu and Daniel Zappala, *USENIX Symposium on Usable Privacy and Security (SOUPS)*, August 2018. Honorable Mention for the Distinguished Paper Award. Data at https://mentalmodels.internet.byu.edu.

Action Needed! Helping Users Find and Complete the Authentication Ceremony in Signal, Elham Vaziripour, Justin Wu, Mark O'Neill, Daniel Metro, Josh Cockrell, Timothy Moffett, Jordan Whitehead, Nick Bonner, Kent Seamons, and Daniel Zappala, *USENIX Symposium on Usable Privacy and Security (SOUPS)*, August 2018. Data at https://action.internet.byu.edu.

A Comparative Usability Study of Key Management in Secure Email, Scott Ruoti, Jeff Andersen, Tyler Monson, Daniel Zappala, and Kent Seamons, *USENIX Symposium on Usable Privacy and Security (SOUPS)*, August 2018. Data at https://isrl.byu.edu/data/soups2018/.

– 2017 –

Layering Security at Global Control Points to Secure Unmodified Software, Scott Ruoti, Kent Seamons, and Daniel Zappala, *IEEE Secure Development Conference (SecDev)*, September 2017. Best Paper Award.

TrustBase: An Architecture to Repair and Strengthen Certificate-based Authentication, Mark O'Neill, Scott Heidbrink, Scott Ruoti, Jordan Whitehead, Dan Bunker, Luke Dickinson, Travis Hendershot, Joshua Reynolds, Kent Seamons, and Daniel Zappala, *USENIX Security*, August 2017.
Data and code at https://owntrust.org.

Is that you, Alice? A Usability Study of the Authentication Ceremony of Secure Messaging Applications, Elham Vaziripour, Justin Wu, Mark O'Neill, Ray Clinton, Jordan Whitehead, Scott Heidbrink, Kent Seamons, and Daniel Zappala, *USENIX Symposium on Usable Privacy and Security (SOUPS)*, July 2017. Data at https://alice.internet.byu.edu.

Weighing Context and Trade-offs: How Suburban Adults Selected Their Online Security Posture, Scott Ruoti, Tyler Monson, Justin Wu, Daniel Zappala, and Kent Seamons, Brigham Young University, *USENIX Symposium on Usable Privacy and Security (SOUPS)*, July 2017. Data at https://isrl.byu.edu/data/soups2017/.

– 2016 –

TLS Proxies: Friend or Foe?, Mark O'Neill, Scott Ruoti, Kent Seamons, and Daniel Zappala, *ACM Internet Measurement Conference*, November, 2016. Data at http://tlsresearch.byu.edu/datasets/.

Condensing Steam: Distilling the Diversity of Gamer Behavior, Mark O'Neill, Elham Vaziripour, Justin Wu, and Daniel Zappala, *ACM Internet Measurement Conference*, November, 2016. Data at https://steam.internet.byu.edu.

Private Webmail 2.0: Simple and Easy-to- Use Secure Email, Scott Ruoti, Jeff Anderson, Travis Hendershot, Daniel Zappala, and Kent Seamons, *ACM Symposium on User Interface Software and Technology (UIST 2016)*, October, 2016. Data at https://isrl.byu.edu/data/uist2016/.

Content-Based Security for the Web, Alexander Afanasyev, J. Alex Halderman, Scott Ruoti, Kent Seamons, Yingdi Yu, Daniel Zappala, and Lixia Zhang, *New Security Paradigms Workshop (NSPW)*, September, 2016.

User Attitudes Toward the Inspection of Encrypted Traffic, Scott Ruoti, Mark O'Neil, Daniel Zappala, and Kent Seamons, *Symposium on Usable Privacy and Security (SOUPS)*, July 2016. Data at https://isrl.byu.edu/data/soups2016/.

A Case Study of a Systematic Attack Design Method for Critical Cyber-Physical Systems, David Grimsman, Vasu Chetty, Nathan Scott Woodbury, Elham Vaziripour, Sandip Roy, Daniel Zappala, and Sean Warnick, *American Control Conference (ACC)*, July 2016.

"We're on the Same Page": A Usability Study of Secure Email Using Pairs of Novice Users, Scott Ruoti, Jeff Andersen, Scott Heidbrink, Mark O'Neill, Elham Vaziripour, Justin Wu, and Daniel Zappala, Kent Seamons, *ACM Conference on Human Factors in Computing Systems (CHI)*, May 2016. Honorable Mention Award. Data at: https://isrl.byu.edu/data/chi2016/.

Analyzing the Political Sentiment of Tweets in Farsi, Elham Vaziripour, Christophe Giraud-Carrier, and Daniel Zappala, *International AAAI Conference on Web and Social Media (ICWSM)*, May 2016.

– 2012 – 2010 –

WiFu: A Composable Toolkit for Experimental Wireless Transport Protocols, Randy Buck, Rich Lee, Phil Lundrigan, and Daniel Zappala, *IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS)*, October 2012.

Quality selection for Dynamic Adaptive Streaming over HTTP with Scalable Video Coding, Travis Andelin, Vasu Chetty, Devon Harbaugh, Sean Warnick, Daniel Zappala, *ACM Multimedia Systems Conference (MMSys)*, February 2012.

First Principles Modeling of Wireless Networks for Rate Control, David Ripplinger, Sean Warnick and Daniel Zappala, *IEEE Conference on Decision and Control (CDC)*, December 2011.

Experimental Performance Evaluation of ATP in a Wireless Mesh Network, Xingang Zhang, Randy Buck, and Daniel Zappala, *IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS)*, October 2011, 10 pages.

A Convex Optimization Approach to Decentralized Rate Control in Wireless Networks with Partial Interference, Lei Wang, David Ripplinger, Anurag Rai, Sean Warnick, and Daniel Zappala, *IEEE Conference on Decision and Control (CDC)*, December 2010.

– 2009 –2007 –

Reducing Source Load in BitTorrent, Brian Sanderson and Daniel Zappala, *International Conference on Computer Communications and Networks (ICCCN 2009)*, August, 2009.

HxH: A Hop-by-Hop Transport Protocol for Multi-Hop Wireless Networks, Daniel Scofield, Lei Wang and Daniel Zappala, *International Wireless Internet Conference (WICON)*, November 2008.

Hop-by-Hop Multicast Transport for Mobile Ad Hoc Wireless Networks, Manoj Pandey and Daniel Zappala, *IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS)*, October 2008.

Link Quality Prediction for Wireless Devices with Multiple Radios, Qiuyi Duan, Lei Wang, Charles D. Knutson and Daniel Zappala, *IEEE International Symposium on World of Wireless, Mobile and Multimedia Networks (WoWMoM),* June 2008.

To Repair or Not to Repair: Helping Routing Protocols to Distinguish Mobility From Congestion, Manoj Pandey, Roger Pack, Lei Wang, Qiuyi Duan and Daniel Zappala, *IEEE Infocom*, May 2007.

RIA: An RF Interference Avoidance Algorithm for Heterogeneous Wireless Networks, Manoj Pandey, Daniel Delorey, Qiuyi Duan, Lei Wang, Charles Knutson, Daniel Zappala, and Ryan Woodings, *IEEE WCNC*, March 2007.

– 2005 – 2004 –

A Scenario Based Evaluation of Mobile Ad Hoc Multicast Routing Protocols, Manoj Pandey and Daniel Zappala, *IEEE International Symposium on World of Wireless, Mobile and Multimedia Networks (WoWMoM)*, June 2005.

The Scalability of Swarming Peer-to-Peer Content Delivery, Daniel Stutzbach, Daniel Zappala, and Reza Rejaie, *IFIP Networking 2005*, May, 2005.

The Multicast Address Allocation Problem: Theory and Practice. Computer Networks, Daniel Zappala, Virginia Lo, and Chris GauthierDickey. *Special Issue on the Global Internet*, Elsevier Science, Volume 45, Issue 1, Pages

55 - 73, May 2004. Best papers from Global Internet Symposium 2002.

Spanners and Message Distribution in Networks, Art Farley, Andrzej Proskurowski, Daniel Zappala, and Kurt Windisch, *Discrete Applied Mathematics*, Elsevier Science, Volume 137, Issue 2.

Alternate Path Routing for Multicast, Daniel Zappala, *IEEE/ACM Transactions on Networking*, Volume 12, Issue 1, Pages 30 - 43, February 2004.

– 2002 –

RSVP: A New Resource ReSerVation Protocol, Lixia Zhang, Steve Deering, Deborah Estrin, Scott Shenker, and Daniel Zappala, *IEEE Network,* September 1993. Re-published in IEEE Communications Magazine, 50th Anniversary Issue, 10 Landmark Articles from the IEEE Communications Society, 2002.

Modeling the Multicast Address Allocation Problem, Daniel Zappala, Chris GauthierDickey, and Virginia Lo, IEEE *Global Internet Symposium (Globecom)*, November 2002.

A Theoretical Framework for the Multicast Address Allocation Problem, Virginia Lo, Daniel Zappala, Chris GauthierDickey, and Tim Singer, *IEEE Global Internet Symposium (Globecom)*, November 2002.

Performance Evaluation of Path Searching Heuristics for Multicast QoS Routing, Daniel Zappala and Dayi Zhou, *IEEE International Conference on Computer Communications and Networks (ICCCN)*, October 2002.

– 2001 – 2000 –

An Evaluation of Shared Multicast Trees with Multiple Cores, Daniel Zappala, Aaron Fabbri, and Virginia Lo, *Journal of Telecommunication Systems*, Kluwer Academic Publishers, March 2002. Best papers from ICN 2001.

Using SSM Proxies to Provide Efficient Multiple-Source Multicast Delivery, Daniel Zappala, and Aaron Fabbri, *IEEE Global Internet Symposium (Globecom)*, November 2001. Top rated paper.

An Evaluation of Shared Multicast Trees with Multiple Active Cores, Daniel Zappala and Aaron Fabbri, *IEEE International Conference on Networking (ICN)*, July 2001.

Alternate Path Routing for Multicast, Daniel Zappala, *IEEE Infocom* 2000, March 2000.

Workshops and Talks

– 2019 – 2018 –

Let's Authenticate: Automated Cryptographic Authentication for the Web with Simple Account Recovery, James S. Conners and Daniel Zappala, *Who Are You?! Adventures in Authentication Workshop*, August 2019.

Using Architecture and Abstractions to Design a Security Layer for TLS, Daniel Zappala, *USENIX Enigma*, January 2019.

A Usability Study of Secure Email Deletion, Tyler Monson, Joshua Reynolds, Trevor Smith, Scott Ruoti, Daniel Zappala, and Kent Seamons. *European Workshop on Usable Security (EuroUSEC)*, April 2018. Data at https://isrl.byu.edu/data/eurousec2018/.

Private But Not Secure: A Survey Of the Privacy Preferences and Practices of Iranian Users of Telegram, Elham Vaziripour, Reza Farahbakhsh, Mark O'Neill, Justin Wu, Kent Seamons, and Daniel Zappala, *Workshop on Usable Security (USEC)*, February 2018. Data at https://telegram.internet.byu.edu.

Making TLS Client Authentication Usable, Daniel Zappala, *USENIX Summit on Hot Topics in Security (HotSec)*, August 2018.

– 2016 – 2015 –

Social Authentication for End-to-End Encryption, Elham Vaziripour, Mark O'Neill, Justin Wu, Scott Heidbrink, Kent Seamons, and Daniel Zappala, *Who Are You?! Adventures in Authentication Workshop*, July 2016.

TLS Proxies: Friend or Foe?, Daniel Zappala and Kent Seamons, Federal Labs Symposium, March 2016.

Usable Security, Kent Seamons and Daniel Zappala, Federal Labs Symposium, March 2016.

Secure Email, Kent Seamons and Daniel Zappala, Federal Labs Symposium, March 2016.

– 2015 – 2012 –

Measurements and Certificate-Based Authentication, Daniel Zappala, Workshop on Active Internet Measurements (AIMS), March 2015.

Using Visualization and Search to Locate Genealogy Holes, Daniel Zappala, *Family History Technology Workshop*, March 2013.

The Twenty Minute Genealogist: Assisting Family History Research through Navigation and Context Preservation, Charles Knutson and Daniel Zappala, *Family History Technology Workshop*, March 2012.

– 2008 –

Scalable Multicast Routing for Ad Hoc Networks, Manoj Pandey and Daniel Zappala, *International Workshop on Localized Communication and Topology Protocols for Ad Hoc Networks (LOCAN)*, October 2008.

A Hybrid Architecture for Massively Multiplayer Online Games, Jared Jardine and Daniel Zappala, *ACM SIGCOMM Workshop on Network and Systems Support for Games (NetGames)*, October 2008.

Autonomous and Intelligent Radio Switching for Heterogeneous Wireless Networks, Qiuyi Duan, Lei Wang, Charles D. Knutson and Daniel Zappala, *IEEE International Workshop Heterogeneous Multi-Hop Wireless and Mobile Networks (MHWMN)*, October, 2008.

– 2005 – 2004 –

Using N-Trees for Scalable Event Ordering in Peer-to-Peer Games, Chris GauthierDickey, Virginia Lo, and Daniel Zappala. *ACM International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV)*, June 2005.

A Distributed Architecture for Massively Multiplayer Online Games, Chris GauthierDickey, Daniel Zappala, and Virginia Lo, *ACM SIGCOMM Workshop on Network and System Support for Games*, September 2004.

Low Latency and Cheat-Proof Event Ordering for Peer-to-Peer Games, Chris GauthierDickey, Daniel Zappala, Virginia Lo, and James Maar, *ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)*, June 2004.

Cluster Computing on the Fly: P2P Scheduling of Idle Cycles in the Internet, Virginia Lo, Daniel Zappala, Dayi Zhao, Yuhong Liu, and Shanyu Zhao, *International Workshop on Peer-to-Peer Systems*, February 2004, 6 pages.

– 2001 – 1992 –

Issues in Scalable Multicast Protocols, Art Farley, Virginia Lo, Andrzej Proskurowski, and Daniel Zappala, *DIMACS Workshop on Multicasting: Architecture, Algorithms, and Applications*, May 2001.

Deploying SSM Proxies for Efficient Multiple-Source Multicast Delivery, Daniel Zappala and Aaron Fabbri, *Internet2 Network Research Workshop*, April 2001.

Cyclic Block Allocation, Marilynn Livingston, Virginia Lo, Kurt Windisch, and Daniel Zappala, *International Workshop on Networked Group Communication*, November 1999.

Exploiting Locality to Provide Adaptive Routing of Real-Time Flows in Global Internets, Lee Breslau, Deborah Estrin, Daniel Zappala, and Lixia Zhang, IEEE ComSoc International Workshop on Multimedia Communication, April 1992.

Magazines

The Secure Socket API: TLS as an Operating System Service, Mark O'Neill, Kent Seamons, and Daniel Zappala , *;login:, The USENIX Magazine*, Winter 2018, volume 43, number 4.

TLS Inspection: How Often and Who Cares?, Mark O'Neill, Scott Ruoti, Kent Seamons, and Daniel Zappala. *IEEE Internet Computing*, May/June 2017.

RFCs and Technical Reports

Improving Simulation for Network Research, Sandeep Bajaj, Lee Breslau, Deborah Estrin, Kevin Fall, Sally Floyd, Padma Haldar, Mark Handley, Ahmed Helmy, John Heidemann, Polly Huang, Satish Kumar, Steven McCanne, Reza Rejaie, Puneet Sharma, Kannan Varadhan, Haobo Yu, Ya Xu, and Daniel Zappala, Technical Report, Department of Computer Science, University of Southern California, USC-CS-TR-98-702, March 1999.

Virtual InterNetwork Testbed: Status and Research Agenda, Sandeep Bajaj, Lee Breslau, Deborah Estrin, Kevin Fall, Sally Floyd, Padma Haldar, Mark Handley, Ahmed Helmy, John Heidemann, Polly Huang, Satish Kumar, Steven McCanne, Reja Rejaie, Puneet Sharma, Scott Shenker, Kannan Varadhan, Haobo Yu, Ya Xu, and Daniel Zappala, Technical Report, Department of Computer Science, University of Southern California, USC-CS-TR-98-678, July 1998.

Alternate Path Routing and Pinning for Interdomain Multicast Routing, Daniel Zappala, Deborah Estrin, and Scott Shenker, Technical Report, Department of Computer Science, University of Southern California, USC-CS-TR-97-655, July 1997.

RSRR: A Routing Interface for RSVP, Daniel Zappala, and Jeff Kann, Internet Draft for RSVP Working Group, July 1998.

Source Demand Routing Protocol: Packet Format and Forwarding Specification, Deborah Estrin, Tony Li, Yakov Rekhter, Kannan Varahdan, and Daniel Zappala, RFC 1940, May 1996.

RSVP Loop Prevention for Wildcard Reservations, Daniel Zappala, RSVP Working Group Draft, February 1996.

Limited Distribution Updates to Reduce Overhead in Adaptive Internetwork Routing, Lee Breslau, Deborah Estrin, Daniel Zappala, and Lixia Zhang, Technical Report, Department of Computer Science, University of Southern California, USC-CS-TR-93-532, 1993.

Grants and Gifts

– Security and Usable Security –

- NSF CNS/SaTC, TWC Small: Usable Key Management and Forward Secrecy for Secure Email, 2018-2021, $498,213 (PIs: Kent Seamons, Daniel Zappala)
- DHS, TrustBase: A Platform for Deploying Certificate-Based Authentication Services, 2016-2018, $527,112 (PIs: Daniel Zappala, Kent Seamons)
- NSF CNS/SaTC, TWC Small: Middleware for Certificate-Based Authentication, 2015-2018, $496,900 (PIs: Kent Seamons, Daniel Zappala)
- BYU, College High Impact Research Proposal: Usable Secure Email, 2015-2016, $30,850 (PIs Kent Seamons, Daniel Zappala)
- Google Faculty Research Award: Friend or Foe? Detection and Reporting of TLS Proxies, 2014-2015, $30,952 (PI: Kent Seamons, Daniel Zappala)
- BYU, College High Impact Research Proposal: TLS Proxy Analysis, 2013-2014, $10,000 (PIs Kent Seamons, Daniel Zappala)

– Wireless Networking and Control –

- Verisign: IPv6 Spam Measurement, 2014, $5,000 gift (PI: Daniel Zappala)
- DHS: Attack Modeling for Distributed Decision Architectures, 2013-2015, $329,389 (PIs: Sean Warnick, Daniel Zappala)
- AFRL: Fast, Non-Invasive Topology Discovery, Geolocation and Intrusion Detection in Wireless Networks, 2012-2013, $129,990 (PIs: Sean Warnick, Daniel Zappala)
- Subset Software: Video Streaming, 2012-2013, $35,000 gift (PI: Daniel Zappala)
- AFRL: Analysis and Design of Complex Network Environments, 2011-2012, $100,425 (PIs: Sean Warnick, Daniel Zappala)
- AFRL: Analysis and Design of Complex Network Environments, 2010-2011, $100,317 (PIs: Sean Warnick, Daniel Zappala)
- NSF CNS, NeTS Small: Wifu: A Software Toolkit for Wireless Transport Protocols, 2009-2012, $298,216 (PI: Daniel Zappala)
- AFRL: Analysis and Design of Complex Network Environments, 2009-2010, $79,501 (PIs: Sean Warnick, Daniel Zappala)

– Networking –

- Subset Software: Video Streaming, 2011-2012, $5,000 gift (PI: Daniel Zappala)
- Google Equipment Donation: Android Phones for Educational use, 2010, $12,500. (PI: Daniel Zappala)
- Cisco Systems, University Research Program (URP) Award: Building A Global Multicast Service, 2002-2003, $100,000 (PIs: Daniel Zappala, Kevin Almeroth)
- NSF Special Projects: Virtual Topologies for Multiparty Communication. 1999-2003, $922,825 (PIs: Virginia Lo, Arthur Farley, Andrzej Proskurowski, Daniel Zappala)
- Intel Equipment Donation: Equipment for Network Research Lab. 2001, $13,327 (PI: Daniel Zappala)
- Intel/OCECS Faculty Fellowship: New Laboratory-based Courses in Networking and Operating Systems. 2000-2002, $70,000 (PIs: Virginia Lo, Daniel Zappala, Allen Malony)

Supervised Ph.D. Students

– Brigham Young University –

- Justin Wu, Identifying and Overcoming Obstacles to the Grassroots Adoption of End-to-End Encryption, August 2019.
- Mark O'Neill, The Security Layer, January 2019.
- Elham Vaziripour, Addressing Usability Challenges in the Authentication Ceremony of Secure Messaging Applications, December 2018.
- Lei Wang, Modeling and Designing Fair Rate Control for Wireless Mesh Networks With Partial Interference, December 2011.
- Manoj Pandey, A Hop-by-Hop Architecture of Multicast Transport in Ad Hoc Wireless Networks, December 2009.
- Qiuyi Duan, Autonomous and Intelligent Radio Switching, December 2008. (co-chair)

– University of Oregon –

- Chris GauthierDickey, Fall 2002 – Spring 2004.
- James Hiebert, Fall 2002 – Spring 2004.
- Daniel Stutzbach, Fall 2001 – Spring 2004.

Supervised M.S. Students

– Brigham Young University –

- Matt Holt, A Localized Algorithm and User-Agent Interface for Assessing and Communicating the Risk of Interactions with Websites, April 2019.
- Scott Heidbrink, A Large-Scale Analysis of How OpenSSL is Used in Open Source Software, April 2018.
- Randy Buck, WiFu Transport: A User-level Protocol Framework, April 2012.
- Ryan Padilla, Performance Evaluation of Optimal Rate Allocation Models for Wireless Networks, April 2012.
- Rich Lee, Feasibility of TCP for Wireless Mesh Networks, April 2012.

- Travis Andelin, Quality Selection for Dynamic Adaptive Streaming over HTTP with Scalable Video Coding, December 2011.
- Xingang Zhang, Experimental Evaluation of ATP in a Wireless Mesh Network, August 2011.
- Michael Heath, Asynchronous Database Drivers, December 2010.
- Roger Pack, Automatic Transition to Peer-to-Peer Download, April 2010.
- Tim Larsen, Studying the Performance of Wireless Mesh Networks Using the HxH Transport Control Protocol, February 2010.
- Jared Jardine, The Hybrid Game Architecture: Distributing Bandwidth for MMOGs While Maintaining Central Control, December 2008.
- Brian Sanderson, Reducing Seed Load in the BitTorrent File Sharing System, August 2008.
- Robert Larsen, A BitTorrent Proxy, April 2008.
- Daniel Scofield, Hop-by-Hop Transport Control for Multi-Hop Wireless Networks, April 2007.
- Michael Simonsen, Design and Measurement of a Real-Time Peer-to-Peer Game, April, 2006.

– University of Oregon –

- ChrisGauthierDickey, NEO: A Low-Latency and Cheat-proof Event Ordering Protocol for Peer-to-Peer Games,University of Oregon, June 2002.
- Aaron Fabbri, Multiple-Source Multicast Using SSM Proxies, University of Oregon, June 2001.
- Rayen Mohanty, Evaluation of Alternate Path Routing, University of Oregon, June 2000.
- Prajna Dasgupta and Nita Viswanath, Real-Time Display of Multicast Routing State, University of Oregon, June 2000.
- Tobias Brick, Muthu Muthiah, and Laxman Pulumati, VSAM: Visual SNMP Monitor, University of Oregon, June 2000.
- Jiangbi Lin, Alternate Path Construction for Unicast and Multicast, University of Oregon, June 1999.

Courses Taught

– Brigham Young University –

- CS 601R Usable Security and Privacy 2019–
- CS 665 Advanced Computer Security, 2016, 2019
- CS 660 Computer Networks, 2005–2017
- CS 601R Advanced Operating Systems, 2017
- CS 601R Topics in Usability Research, 2016
- CS 601R Topics in Social Networking, 2013
- CS 601R Wireless Mesh Networks, 2008
- CS 601R Peer-to-Peer Networking, 2005
- CS 465 Computer Security, 2018–

- CS 460 Computer Communications and Networking, 2005–2017
- CS 360 Internet Programming, 2006–2016
- CS 345 Operating Systems, 2005
- CS 260 Web Programming, 2018–
- Honors 250/261 Networks, Crowds, and Markets, 2012
- Honors 202 Western Civilization 2 (Digital Civilization), 2010–2012

– University of Oregon –

- CIS 632 Computer Networks, 1998–2004
- CIS 610 Peer-to-Peer Networking, 2003-2004
- CIS 607 Seminar on Advanced Topics in Computer Networks, 1999,2002–2003 • CIS 607 Seminar on Multicast Routing, 1999,2001
- CIS 607 Seminar on Multicast Address Allocation, 1999-2000
- CIS 432/532 Introduction to Computer Networks, 1998–2004
- CIS 415 Operating Systems, 1999–2003

Professional Service

- 2020: Publicity Coordinator for ACSAC, co-Chair Tutorials and Workshops for SOUPS, TPC for PETs, TPC for USENIX Security, TPC for CCS,
- 2019: Publicity Coordinator for ACSAC, co-Chair Tutorials and Workshops for SOUPS, TPC for PETs, TPC for USENIX Security, TPC for USEC
- 2018: Publicity Coordinator for ACSAC, TPC for PETs, TPC for ACSAC, Publicity Chair for Family History Technology Workshop, TPC for Information Centric Networking Solutions for Real World Applications Workshop
- 2017: Publicity Coordinator for ACSAC, Publicity Chair for Family History Technology Workshop
- 2016: TPC for Named Data Networks for Challenged Communication Environments (NDN-CCE), Globecom workshop, Publicity Chair for Family History Technology Workshop
- 2015: Chair for Family History Technology Workshop.
- 2014: Chair for Family History Technology Workshop.
- 2013: Chair for Family History Technology Workshop, Chair for the Network Mapping and Measurement Conference, TPC for IFIP Networking.
- 2012: TPC for IEEE Infocom, reviewer for CDC
- 2011: TPC for IEEE Infocom, TPC for IEEE ICNP
- 2010: TPC for IEEE Infocom, TPC for IEEE SECON, TPC for IEEE Global Internet
- 2009: TPC for IEEE Infocom, IEEE PerCom Workshop on Pervasive Wireless Networking, IEEE Global Internet, Reviewer for GENI (Global Environment for Network Innovations) Solicitation 2
- 2008: TPC for IEEE Infocom and IEEE Global Internet

- 2007: TPC for IEEE Global Internet and IFIP Networking Conference, Reviewer for Infocom
- 2006: Reviewer for IEEE WCNC, NTMS, and Elsevier Science Computer Networks
- 2005: TPC for IFIP Networking Conference, SIGCOMM Poster Committee, Reviewer for IEEE Wireless Communications Magazine and IEEE/ACM Transactions on Networks
- 2004: TPC for IFIP Networking Conference, Infocom Travel Grant Committee, Reviewer for IPDPS
- 2003: TPC for Conference on High Performance Computing, Reviewer for Infocom, IFIP Networking, IEEE/ ACM Transactions on Networks, and Elsevier Science Computer Networks
- 2002: TPC for ACM NOSSDAV, Reviewer for ICC
- 2001: TPC for ACM NOSSDAV and Globecom/Global Internet Symposium, Organized and chaired Topology Generation/Measurement panel at Global Internet Symposium, served on NSF CISE Research Infrastructure Panel
- 2000: TPC for Globecom/Global Internet Symposium

University Service

- CS Department Faculty Adviser, 2019–
- BYU Departmental Committees: Leadership Committee, Teaching Committee, Graduate Committee, Recruiting Committee, Computing Committee, Undergraduate Education, PhD Recruiting, External Funding
- UO Departmental Committees: Computer Resources, Faculty Hiring, Graduate Education, Undergraduate Education, CIT Minor, Constitution.

Community Service

- Cedar Hills City Council, August 2012 - December 2017
- Cedar Hills City Planning Commission, January 2010 - August 2012