Micah Sherr

Georgetown University
Department of Computer Science
St. Mary's Hall, Room 337
3700 Reservoir Road, NW
Washington, DC 20057

Phone: (202) 687-4381
Email: msherr@cs.georgetown.edu
Homepage: http://www.cs.georgetown.edu/~msherr

Professional Experience

Provost's Distinguished Associate Professor *(w. tenure)*, Georgetown University *Feb. 2016 – Current*

Department of Computer Science

Visiting Professor, Northeastern University *(while on sabbatical)* *January 2018 – June 2018*

College of Computer & Information Science

Director, Georgetown Institute for Information Assurance (GIIA) *January 2016 – Current*

Associate Professor *(with tenure)*, Georgetown University *August 2015 – Current*

Department of Computer Science

Assistant Professor, Georgetown University *August 2010 – July 2015*

Department of Computer Science

Postdoctoral Researcher, University of Pennsylvania *August 2009 – July 2010*

Ph.D. Candidate, University of Pennsylvania *September 2003 – August 2009*

Intel Research Intern, Intel Corporation *June 2006 – March 2007*

Programmer / Analyst, Columbia University *August 2001 – June 2003*

Consultant, Scient, Inc. *July 2000 – June 2001*

Education

Ph.D. in Computer and Information Science, *September 2003 - August 2009*
University of Pennsylvania

Thesis: *Coordinate-Based Routing for High Performance Anonymity*
(Awarded the 2010 Morris and Dorothy Rubinoff Award)
Advisors: Matthew Blaze and Boon Thau Loo
Committee Members: Roch Guerin, Jonathan Smith, David Wagner, and Steve Zdancewic

M.S.E. in Computer and Information Science, *September 2003 - May 2005*
University of Pennsylvania

B.S.E. in Computer Science and Engineering, *September 1996 - May 2000*
University of Pennsylvania

Awards and Honors

Best Paper Award, NYU Cyber Security Awareness Week Applied Research Competition; awarded for *Hidden Voice Commands* (appeared in USENIX Security 2016), November 2016.

2016 Distinguished Georgetown Investigator, March 2016.

Provost's Distinguished Associate Professor (honorific title), Georgetown University, February 2016.

National Science Foundation Faculty Early Career Development (CAREER) Award, 2012.

Morris and Dorothy Rubinoff Award "...for the completion of a doctoral dissertation which represents an advance in innovative applications of computer technology." Awarded by the School of Engineering and Applied Science, University of Pennsylvania, April 2010.

Publications

Conference Papers

(Peer-reviewed, unless marked as "Invited Paper")

1. Akshaya Mani, T Wilson Brown, Rob Jansen, Aaron Johnson, and Micah Sherr. *Understanding Tor Usage with Privacy-Preserving Measurement.* In ACM Internet Measurement Conference (IMC), October 2018.
2. Ellis Fenske, Akshaya Mani, Aaron Johnson, and Micah Sherr. *Distributed Measurement with Private Set-Union Cardinality.* In ACM Conference on Computer and Communications Security (CCS), November 2017.
3. Akshaya Mani and Micah Sherr. *HisTorϵ: Differentially Private and Robust Statistics Collection for Tor*. In Annual Network and Distributed System Security Symposium (NDSS), February 2017.
4. Brendan Sheridan and Micah Sherr. *On Manufacturing Resilient Opaque Constructs Against Static Analysis*. In European Symposium on Research in Computer Security (ESORICS), September 2016.
5. Nicholas Carlini, Pratyush Mishra, Tavish Vaidya, Yuankai Zhang, Micah Sherr, Clay Shields, David Wagner, and Wenchao Zhou. *Hidden Voice Commands*. In USENIX Security Symposium (USENIX), August 2016.
6. Lisa Singh, Grace Hui Yang, Micah Sherr, Andrew Hian-Cheong, Kevin Tian, Janet Zhu, and Sicong Zhang. *Public Information Exposure Detection: Helping Users Understand Their Web Footprints*. In IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), August 2015.
7. W. Brad Moore, Henry Tan, Micah Sherr, and Marcus A. Maloof. *Multi-Class Traffic Morphing for Encrypted VoIP Communication.* In Financial Cryptography and Data Security (FC), January 2015.
8. Henry Tan, Chris Wacek, Calvin Newport, and Micah Sherr. *A Disruption-Resistant MAC Layer for Multichannel Wireless Networks.* In International Conference on Principles of Distributed Systems (OPODIS), December 2014.
9. Ang Chen, W. Brad Moore, Hanjun Xiao, Andreas Haeberlen, Linh Thi Xuan Phan, Micah Sherr, and Wenchao Zhou. *Detecting Covert Timing Channels with Time-Deterministic Replay.* In USENIX Symposium on Operating Systems Design and Implementation (OSDI), October 2014.
10. Rob Jansen, John Geddes, Chris Wacek, Micah Sherr, and Paul Syverson. *Never Been KIST: Tor's Congestion Management Blossoms with Kernel-Informed Socket Transport.* In USENIX Security Symposium (USENIX Security), August 2014.

11. Jeremy Fineman, Calvin Newport, Micah Sherr, and Tonghe Wang. *Fair Maximal Independent Sets.* In IEEE International Parallel & Distributed Processing Symposium (IPDPS), May 2014.

12. Jordan Wilberding, Andrew Yates, Micah Sherr, and Wenchao Zhou. *Validating Web Content with Senser.* In Annual Computer Security Applications Conference (ACSAC), December 2013.

13. Aaron Johnson, Chris Wacek, Rob Jansen, Micah Sherr, and Paul Syverson. *Users Get Routed: Traffic Correlation on Tor By Realistic Adversaries.* In ACM Conference on Computer and Communications Security (CCS), November 2013.

14. W. Brad Moore, Yifang Wei, Adam Orshefsky, Micah Sherr, Lisa Singh, and Hui Yang. *Understanding Site-Based Inference Potential for Identifying Hidden Attributes.* (Short paper) In ASE/IEEE International Conference on Information Privacy, Security, Risk and Trust (PASSAT), Sept. 2013.

15. John Ferro, Lisa Singh, and Micah Sherr. *Identifying Individual Vulnerability Based on Public Data.* In International Conference on Privacy, Security and Trust (PST), July 2013.

16. Chris Wacek, Henry Tan, Kevin Bauer, and Micah Sherr. *An Empirical Evaluation of Relay Selection in Tor.* In Annual Network and Distributed System Security Symposium (NDSS), February 2013.

17. Adam Aviv, Micah Sherr, Matt Blaze, and Jonathan Smith. *Privacy-Aware Message Exchanges for Geographically Routed Human Movement Networks.* In European Symposium on Research in Computer Security (ESORICS), September 2012.

18. Mingchen Zhao, Wenchao Zhou, Alexander Gurney, Andreas Haeberlen, Micah Sherr, and Boon Thau Loo. *Private and Verifiable Interdomain Routing Decisions.* In Conference on Applications, Technologies, Architectures, and Protocols for Computer Communications (SIGCOMM), Aug. 2012.

19. Adam Bates, Kevin Butler, Micah Sherr, Clay Shields, Patrick Traynor, and Dan Wallach. *Accountable Wiretapping -or- I Know They Can Hear You Now.* In Annual Network and Distributed System Security Symposium (NDSS), February 2012.

20. Boon Thau Loo, Harjot Gill, Changbin Liu, Yun Mao, William R. Marczak, Micah Sherr, Anduo Wang, and Wenchao Zhou. *Recent Advances in Declarative Networking.* (Invited paper) In International Symposium on Practical Aspects of Declarative Languages (PADL), January 2012.

21. Brad Moore, Chris Wacek, and Micah Sherr. *Exploring the Potential Benefits of Expanded Rate Limiting in Tor: Slow and Steady Wins the Race With Tortoise.* In Annual Computer Security Applications Conference (ACSAC), December 2011.

22. Wenchao Zhou, Qiong Fei, Arjun Narayan, Andreas Haeberlen, Boon Thau Loo, and Micah Sherr. *Secure Network Provenance.* In ACM Symposium on Operating Systems Principles (SOSP), Oct. 2011.

23. Wenchao Zhou, Micah Sherr, Tao Tao, Xiaozhou Li, Boon Thau Loo, and Yun Mao. *Efficient Querying and Maintenance of Network Provenance at Internet-Scale.* In ACM SIGMOD International Conference on Management of Data (SIGMOD), June 2010.

24. William Marczak, Shan Shan Huang, Martin Bravenboer, Micah Sherr, Boon Thau Loo, and Molham Aref. *SecureBlox: Customizable Secure Distributed Data Processing.* In ACM SIGMOD International Conference on Management of Data (SIGMOD), June 2010.

25. Micah Sherr, Andrew Mao, William R. Marczak, Wenchao Zhou, Boon Thau Loo, and Matt Blaze. *A^3: An Extensible Platform for Application-Aware Anonymity.* In Network and Distributed System Security Symposium (NDSS), February 2010.

26. Micah Sherr, Gaurav Shah, Eric Cronin, Sandy Clark, and Matt Blaze. *Can They Hear Me Now? A Security Analysis of Law Enforcement Wiretaps.* In ACM Conference on Computer and Communications Security (CCS), November 2009.
27. Micah Sherr, Matt Blaze, and Boon Thau Loo. *Scalable Link-Based Relay Selection for Anonymous Routing.* In Privacy Enhancing Technologies Symposium (PETS), August 2009.
28. Micah Sherr, Matt Blaze, and Boon Thau Loo. *Veracity: Practical Secure Network Coordinates via Vote-based Agreements.* In USENIX Annual Technical Conference (USENIX ATC), June 2009.
29. Eric Cronin, Micah Sherr, and Matt Blaze. *On the Reliability of Current Generation Network Eavesdropping Tools.* In IFIP WG 11.9 International Conference on Digital Forensics, January 2006.

Journal Articles

(Peer-reviewed)

1. Yuankai Zhang, Adam O'Neill, Micah Sherr, and Wenchao Zhou. *Privacy-preserving Network Provenance*. Proceedings of the VLDB Endowment (PVLDB), 10, 2017.
2. Henry Tan, Micah Sherr, and Wenchao Zhou. *Data-plane Defenses against Routing Attacks on Tor*. In Proceedings on Privacy Enhancing Technologies Symposium (PoPETS), July, 2016.
3. Dong Lin, Micah Sherr, and Boon Thau Loo. *Scalable and Anonymous Group Communication with MTor*. In Proceedings on Privacy Enhancing Technologies Symposium (PoPETS), July, 2016.
4. Mingchen Zhao, Wenchao Zhou, Alexander Gurney, Andreas Haeberlen, Micah Sherr, and Boon Thau Loo. *Private and Verifiable Interdomain Routing Decisions.* Accepted for publication to IEEE/ACM Transactions on Networking (ToN), 2015.
5. Adam Bates, Kevin Butler, Micah Sherr, Clay Shields, Patrick Traynor, and Dan Wallach. *Accountable Wiretapping -or- I Know They Can Hear You Now.* Journal of Computer Security (JCS), 23:167-195, 2015.
6. Adam Aviv, Micah Sherr, Matt Blaze, and Jonathan Smith. *Privacy-Aware Message Exchanges for Humanets.* Elsevier Computer Communications. 48:30-43, July 2014.
7. Micah Sherr, Harjot Gill, Taher Aquil Saeed, Andrew Mao, William R. Marczak, Saravana Soundararajan, Wenchao Zhou, Boon Thau Loo, and Matt Blaze. *The Design and Implementation of the A^3 Application-Aware Anonymity Platform.* Elsevier Computer Networks. 58:206-227, Jan. 2014.
8. Wenchao Zhou, Suyog Mapara, Yiqing Ren, Yang Li, Andreas Haeberlen, Zachary Ives, Boon Thau Loo, and Micah Sherr. *Distributed Time-aware Provenance.* Proceedings of the VLDB Endowment 6(2):49-60, December 2012.
9. Eric Cronin, Micah Sherr, and Matt Blaze. *On the (un)Reliability of Eavesdropping.* International Journal of Security and Networks (IJSN). 3(2):103-113, February 2008.
10. Mark Weiner, Micah Sherr, and Abigail Cohen. *Metadata Tables to Enable Dynamic Data Modeling and Web Interface Design.* International Journal of Medical Informatics, 65(1):51-58, April 2002.

Workshop Papers

(Peer-reviewed, unless marked as "Invited Paper")

1. Tavish Vaidya, Eric Burger, Micah Sherr, and Clay Shields. *Where art thou, Eve? Experiences Laying Traps for Internet Eavesdroppers.* In USENIX Workshop on Cyber Security Experimentation and Test (CSET), August 2017.

2. Ang Chen, Akshay Sriraman, Tavish Vaidya, Yuankai Zhang, Andreas Haeberlen, Boon Thau Loo, Linh Thi Xuan Phan, Micah Sherr, Clay Shields, and Wenchao Zhou. *Dispersing Asymmetric DDoS Attacks with SplitStack.* In ACM Workshop on Hot Topics in Networks (HotNets), November 2016.

3. Tavish Vaidya, Yuankai Zhang, Micah Sherr, and Clay Shields. *Cocaine Noodles: Exploiting the Gap between Human and Machine Speech Recognition.* In USENIX Workshop on Offensive Technologies (WOOT), August 2015.

4. Tavish Vaidya and Micah Sherr. *Mind your (R, Φ)s: Location-Based Privacy Controls for Consumer Drone.* In Security Protocols Workshop (SPW), March 2015.

5. Henry Tan and Micah Sherr. *Censorship Resistance as a Side-Effect.* In Security Protocols Workshop (SPW), March 2014.

6. Adam Bates, Kevin Butler, Andreas Haeberlen, Micah Sherr, and Wenchao Zhou. *Let SDN Be Your Eyes: Secure Forensics in Data Center Networks.* In Workshop on Security of Emerging Networking Technologies (SENT), February 2014.

7. Sandy Clark, Chris Wacek, Matt Blaze, Boon Thau Loo, Micah Sherr, Clay Shields, and Jonathan Smith. *Collaborative Red Teaming for Anonymity System Evaluation.* In Workshop on Cyber Security Experimentation and Test (CSET), August 2012.

8. Andreas Haeberlen, Mingchen Zhao, Wenchao Zhou, Alexander Gurney, Micah Sherr, and Boon Thau Loo. *Privacy-Preserving Collaborative Verification Protocols.* (Invited paper) In Workshop on Large-Scale Distributed Systems and Middleware (LADIS), July 2012.

9. Alexander Gurney, Andreas Haeberlen, Wenchao Zhou, Micah Sherr, and Boon Thau Loo. *Having your Cake and Eating it too: Routing Security with Privacy Protections.* In ACM Workshop on Hot Topics in Networks (HotNets), November 2011.

10. Kevin Bauer, Micah Sherr, Damon McCoy, and Dirk Grunwald. *ExperimenTor: A Testbed for Safe and Realistic Tor Experimentation.* In Workshop on Cyber Security Experimentation and Test (CSET), August 2011.

11. Wenchao Zhou, Qiong Fei, Andreas Haeberlen, Boon Thau Loo, and Micah Sherr. *Towards Self-Explaining Networks.* In Future Internet Workshop (FIW), June 2011.

12. Wenchao Zhou, Micah Sherr, William R. Marczak, Zhuoyao Zhang, Tao Tao, Boon Thau Loo, and Insup Lee. *Towards a Data-centric View of Cloud Security.* In International Workshop on Cloud Data Management (CloudDB), October 2010.

13. Adam J. Aviv, Micah Sherr, Matt Blaze, and Jonathan M. Smith. *Evading Cellular Data Monitoring with Human Movement Networks.* In USENIX Workshop on Hot Topics in Security (HotSec), Aug. 2010.

14. Micah Sherr and Matt Blaze. *Application Containers without Virtual Machines.* In ACM Workshop on Virtual Machine Security (VMSec), November 2009. (Position Paper)

15. Adam Aviv, Pavol Černý, Sandy Clark, Eric Cronin, Gaurav Shah, Micah Sherr, and Matt Blaze. *Security Evaluation of the ES&S Voting Machines and Election Management System.* In USENIX/ACCURATE Electronic Voting Technology Workshop (EVT), August 2008.

16. Micah Sherr, Boon Thau Loo, and Matt Blaze. *Veracity: A Fully Decentralized Service for Securing Network Coordinate Systems.* In International Workshop on Peer-to-Peer Systems (IPTPS), February 2008.

17. Micah Sherr, Boon Thau Loo, and Matt Blaze. *Towards Application-Aware Anonymous Routing.* In Workshop on Hot Topics in Security (HotSec), August 2007.

18. Micah Sherr, Eric Cronin, and Matt Blaze. *Measurable Security through Isotropic Channels.* In Security Protocols Workshop (SPW), April 2007.

19. Madhukar Anand, Eric Cronin, Micah Sherr, Matt Blaze, Zachary Ives, and Insup Lee. *Security Challenges in Next Generation Cyber Physical Systems.* In National Workshop on Beyond SCADA: Networked Embedded Control for Cyber Physical Systems, November 2006. (Position Paper)

20. Madhukar Anand, Eric Cronin, Micah Sherr, Matt Blaze, Zachary Ives, and Insup Lee. *Sensor Network Security: More Interesting than you Think.* In Workshop on Hot Topics in Security (HotSec), April 2006.

21. Micah Sherr, Michael Greenwald, Carl A. Gunter, Sanjeev Khanna, and Santosh S. Venkatesh. *Mitigating DoS Attacks Through Selective Bin Verification.* In Workshop on Secure Network Protocols (NPSec), November 2005.

22. Eric Cronin, Micah Sherr, and Matt Blaze. *Listen Too Closely and You May be Confused.* In International Workshop on Security Protocols (SPW), April 2005.

Magazine Articles *(Peer-reviewed)*

1. Micah Sherr, Eric Cronin, Sandy Clark, and Matt Blaze. *Signaling Vulnerabilities in Wiretapping Systems.* IEEE Security & Privacy Magazine, 3(6):13-25, November 2005.

Posters and Demos *(Peer-reviewed)*

1. Henri Maxime Demoulin, Tavish Vaidya, Isaac Pedisich, Nik Sultana, Yuankai Zhang, Ang Chen, Andreas Haeberlen, Boon Thau Loo, Linh Thi Xuan Phan, Micah Sherr, Clay Shields, and Wenchao Zhou. A Demonstration of the DeDoS Platform for Defusing Asymmetric DDoS Attacks in Data Centers (Demo). In Conference on Applications, Technologies, Architectures, and Protocols for Computer Communications (SIGCOMM), August 2017.

2. Tavish Vaidya, Eric Burger, Micah Sherr, and Clay Shields. *Studying the Pervasiveness of Internet Interception with Honey{POP,SMTP,Telnet}* (Poster) In USENIX Security Symposium, August 2015.

3. Lisa Singh, Grace Hui Yang, Micah Sherr, Yifang Wei, Andrew Hian-Cheon, Kevin Tian, Janet Zhu, Sicong Zhang, Tavish Vaidya, and Elchin Asgarli. *Helping Users Understand Their Webfootprints.* (Poster) In International World Wide Web Conference (WWW), May 2015.

4. Mingchen Zhao, Wenchao Zhou, Alexander Gurney, Andreas Haeberlen, Micah Sherr, and Boon Thau Loo. *Collaborative Verification with Privacy Guarantees.* (Poster) In USENIX Symposium on Operating Systems Design and Implementation (OSDI), October 2012.

5. Henry Tan, Nazli Goharian, and Micah Sherr. *$100,000 Prize Jackpot. Call Now! Identifying the Pertinent Features of SMS Spam.* (Poster) In ACM Conference on Research and Development in Information Retrieval (SIGIR), August 2012.

6. Wenchao Zhou, Qiong Fei, Sandy Sun, Tao Tao, Andreas Haeberlen, Zachary Ives, Boon Thau Loo, and Micah Sherr. *NetTrails: A Declarative Platform for Provenance Maintenance and Querying in Distributed Systems.* (Demo) In ACM SIGMOD International Conference on Management of Data (SIGMOD), June 2011.

7. Wenchao Zhou, Qiong Fei, Arjun Narayan, Andreas Haeberlen, Boon Thau Loo, and Micah Sherr. *Secure Forensics without Trusted Components.* (Poster) In USENIX Symposium on Networked Systems Design and Implementation (NSDI), March 2011.

Book Contributions

1. Micah Sherr. "Eavesdropping". *Encyclopedia of Cryptography and Security (2nd Edition)*. Henk C.A. van Tilborg and Sushil Jajodia (Eds.), Springer. 2011.

Non-refereed Publications

1. Ben Adida, Collin Anderson, Annie I. Anton, Matt Blaze, Roger Dingledine, Edward W. Felten, Matthew D. Green, J. Alex Halderman, David R. Jefferson, Cullen Jennings, Susan Landau, Navroop Mitter, Peter G. Neumann, Eric Rescorla, Fred B. Schneider, Bruce Schneier, Hovav Shacham, Micah Sherr, David Wagner, and Philip Zimmermann. *CALEA II: Risks of Wiretap Modifications to Endpoints.* Policy statement, coordinated by the Center for Democracy & Technology. Available at https://security.cs.georgetown.edu/~msherr/papers/CALEAII-techreport.pdf. May 2013.

2. Wenchao Zhou, William R. Marczak, Tao Tao, Zhuoyao Zhang, Micah Sherr, Boon Thau Loo, and Insup Lee. *Towards Secure Cloud Data Management.* University of Pennsylvania Technical Report, number MS-CIS-10-10. June 2010.

3. Micah Sherr. *Coordinate-Based Routing for High Performance Anonymity.* Ph.D. Thesis, University of Pennsylvania. July 2009.

4. Patrick McDaniel, Kevin Butler, William Enck, Harri Hursti, Stephen McLaughlin, Patrick Traynor, Matt Blaze, Adam Aviv, Pavol Černý, Sandy Clark, Eric Cronin, Gaurav Shah, Micah Sherr, Giovanni Vigna, Richard Kemmerer, David Balzarotti, Greg Banks, Marco Cova, Viktoria Felmetsger, William Robertson, Fredrik Valeur, Joseph Lorenzo Hall, and Laura Quilter. *EVEREST: Evaluation and Validation of Election-Related Equipment, Standards and Testing.* Part of the Ohio Secretary of State EVEREST Review of electronic voting machines. December 2007.

5. Matt Blaze, Arel Cordero, Sophie Engle, Chris Karlof, Naveen Sastry, Micah Sherr, Till Stegers, and Ka-Ping Yee. *Source Code Review of the Sequoia Voting System.* Part of the California Secretary of State Top-to-Bottom Review of electronic voting machines. July 2007.

6. Micah Sherr. *Approaches to Anonymity on the Internet: Measurements and Limitations.* WPE-II Written Report. Department of Computer and Information Science, University of Pennsylvania. March 2007.

7. Madhukar Anand, Eric Cronin, Micah Sherr, Matt Blaze, and Sampath Kannan. *Security Protocols with Isotropic Channels.* University of Pennsylvania Technical Report, number TR-CIS-06-18, November 2006.

8. Eric Cronin, Micah Sherr, and Matt Blaze. *The Eavesdropper's Dilemma.* University of Pennsylvania Technical Report, number MS-CIS-05-24. August 2005.

Patents (Filed, Pending, and Issued)

Filed

1. Ophir Frieder, Micah Sherr, and Jordan Wilberding. *Method and System for Managing Information on Mobile Devices.* U.S. Patent 9191811. Issued November 17, 2015.

2. Ophir Frieder, Micah Sherr, and Jordan Wilberding. *Method and System for Managing Information on Mobile Devices.* U.S. Patent 8819448. Issued October 26, 2014.

Pending

1. Thomas C. Shields, Tavish Vaidya, Yuankai Zhang, Wenchao Zhou, and Micah Sherr. *Exploiting the Gap between Human and Machine Speech Recognition.* Patent pending, U.S. Patent Office, Application number 62/203,156, filed on August 10, 2015.
2. Ang Chen, Andreas Haeberlen, W. Brad Moore, Linh Thi Xuan Phan, Micah Sherr, Hanjun Xiao, and Wenchao Zhou. *Methods, Systems, and Computer Readable Media for Detecting Covert Timing Channels.* Patent pending, U.S. Patent Office, Application number 62/059,503, filed on October 3, 2014.

Invited Talks and Panel Participation

(excludes presentations at conferences and workshops)

1. *Understanding the Anonymity Ecosystem*, Tufts University, April 2018.
2. *Understanding the Anonymity Ecosystem*, Northeastern University, March 2018.
3. *The Good, the Bad, and the Ugly of Tor: Shining some light on the so-called "Dark Web"*, United States Naval Academy, November 2017.
4. *Hidden Voice Commands*, Federal Trade Commission, November 2017.
5. Panelist, *Rigor in Experimentation*, USENIX Workshop on Cyber Security Experimentation and Test (CSET), August 2017.
6. *Security Vulnerabilities in Electronic Voting Machine Systems: A Summary of Two Academic Studies of Fielded Voting Systems*, Library of Congress, October 2016.
7. *Enhancing Anonymity Network Resilience against Pervasive Internet Attacks*, Transparent Computing Meeting, July 2016.
8. Panelist, *The Future of the Science of Security: Predictions and Challenges*, Military Communications Conference (MILCOM), October 2014.
9. Panelist, *Surveillance Costs: The NSA's Impact on The Economy, Information Security, and Internet Freedom*, New America Foundation, Washington, D.C., February 2014.
10. *Legally Authorized Telephone Surveillance: Problems and (Some) Solutions*, George Washington University, November 2012.
11. *Security Vulnerabilities in Electronic Voting Machine Systems: A Summary of Two Academic Studies of Fielded Voting Systems*, Library of Congress, October 2012.
12. *Security Vulnerabilities in Electronic Voting Machines: A Summary of Two Academic Studies of Fielded Voting Systems*, U.S. Food and Drug Administration, October 2012.
13. *Security and Privacy of Legally Authorized Telephone Surveillance*, University of Waterloo, July 2012.
14. *Security in the Cloud (An Academic's Perspective)*, Cloud Computing for DoD & Government Summit, Arlington, VA, February 2012.
15. *Legally Authorized Telephone Surveillance: Problems and (Some) Solutions*, George Mason University, November 2011.
16. Panelist, *Cybersecurity Beyond the Kill Switch: Government Powers and Cybersecurity Policy*, Computers, Freedom, and Privacy (CFP), Washington, D.C., June 2011.

17. *SAFEST: Selectable Anonymity for Enabling Safer Telecommunications*, Virginia Polytechnic Institute and State University, National Capital Region, April 2011.
18. *Selectable Anonymity for Enabling SAFER Telecommunications (SAFEST)*, DARPA SAFER Warfighter Communications Kickoff Meeting, December 2010.
19. *Security Vulnerabilities in US Voting Machine Systems: A Summary of Two Academic Studies of Fielded Voting Systems*, Library of Congress, October 2010.
20. *Extensible Anonymity*, Stevens Institute of Technology, March 2010.
21. *Extensible Anonymity*, University of Massachusetts-Boston, March 2010.
22. *Extensible Anonymity*, Villanova University, March 2010.
23. *Extensible Anonymity*, University of Denver, March 2010.
24. *Extensible Privacy-Preserving Networking*, Georgetown University, February 2010.
25. *Extensible Anonymity*, George Washington University, February 2010.
26. *Designing and Implementing an Extensible Privacy-Preserving Communication Network*, MIT Lincoln Laboratory, January 2010.
27. *Vulnerabilities in Law Enforcement Wiretap Systems*, Pennsylvania State University, December 2009.
28. *Security Vulnerabilities in US Voting Machine Systems: A Summary of Two Large-scale Academic Studies of Electronic Voting Systems*, George Mason University, December 2009.
29. *Vulnerabilities and Architectural Weaknesses in US Law Enforcement Wiretap Systems*, Georgia Institute of Technology, November 2009.
30. *Application-Aware Anonymous Routing for the Masses*, AT&T Research, November 2008.
31. *Law Enforcement Wiretaps: Background and Vulnerabilities*, Sixth Hackers on Planet Earth (HOPE), July 2006.

Invited Testimony

1. *Testimony to the Maryland Joint Committee on Election Cybersecurity*, Maryland House Ways and Means Committee and Maryland Senate Education, Health, and Environmental Affairs Committee, September 2017.
2. *Testimony to the West Virginia Judicial Subcommittee on the Findings of the EVEREST Report*, West Virginia Joint Judicial Subcommittee, August 2009.

Grants / Funding

1. NSF CNS-1718498: *SaTC: CORE: Small: Practical and Robust Hidden Voice Commands.* Micah Sherr (PI), Wenchao Zhou (co-PI), Clay Shields (co-PI). $506,313. September 2017-August 2020.
2. NSF DGE-1663060: *Cybersecurity Fellows: The Scholarship for Service Program at Georgetown University.* Clay Shields (PI), Eric Burger (co-PI), Mark Maloof (Co-PI), Anne Rosenwald (co-PI), Micah Sherr (co-PI). $4,999,563. January 2017-December 2021.

3. DARPA HR0011-16-C-0056: *DeDOS: Declarative Dispersion-Oriented Software.* Wenchao Zhou (Georgetown PI), Micah Sherr (co-PI), Clay Shields (co-PI); $1,678,062 (Georgetown award; this is collaborative work with the University of Pennsylvania). April 2016-March 2019.

4. NSF CNS-1527401: *TWC: TTP Option: Small: Collaborative: Enhancing Anonymity Network Resilience against Pervasive Internet Attacks.* Micah Sherr (PI), Rob Jansen (Co-PI). $449,781. October 2015-September 2018.

5. Comcast: $13,000, Symantec: $3,500. Funded through the Georgetown Security & Software Engineering Research Center (S^2ERC). *HoneyMail: Is Someone Reading your Email? Who and Where?* Micah Sherr (PI), Eric Burger (co-PI), Clay Shields (co-PI). $16,500. July 2014.

6. NSF CNS-1445967: *EAGER: Collaborative: Secure and Efficient Data Provenance.* Micah Sherr (Georgetown PI), Kevin Butler (University of Oregon PI). $96,664 (Georgetown), $206,739 (total award; collaborative work with the University of Oregon). October 2014-March 2016.

7. Navy N00244-13-1-0051: *Improving Partial Text Matching with Space-efficient Probabilistic Token Storage.* Clay Shields (PI), Ophir Frieder (co-PI), Mark Maloof (co-PI), Micah Sherr (co-PI). $331,985. September 2013-July 2015.

8. NSF CNS-1223825: *TWC: Small: Assessing Online Information Exposure Using Web Footprints.* Lisa Singh (PI), Micah Sherr (co-PI), Grace Hui Yang (co-PI). $499,996. January 2013-December 2015.

9. NSF CNS-1204347: *II-NEW: Infrastructure for Change: From a Teaching Department to National Prominence.* Ophir Frieder (PI), Micah Sherr (co-PI), Nazli Goharian (co-PI), Marcus A. Maloof (co-PI), Clay Shields (co-PI). $460,000. July 2012-June 2014.

10. NSF CAREER CNS-1149832: *CAREER: Private Communication in Strongly Adversarial Networks.* Micah Sherr (PI). $405,322 (expected; continuing grant renewable each year until May 2017, with $336,582 currently awarded). June 2012-May 2017.

    Additional $8,000 awarded April 2015 for Research Experiences for Undergraduates (REU) supplement for Summer 2015 semester.

    Additional $8,000 awarded July 2016 for Research Experiences for Undergraduates (REU) supplement for Summer 2016 semester.

11. NSF CNS-1064986: *Collaborative: Tracking Adversarial Behavior in Distributed Systems with Secure Networked Provenance.* Micah Sherr (Georgetown PI). $352,378 (Georgetown), $1,198,225 (total award; collaborative work with the University of Pennsylvania). September 2012-August 2015.

    Additional $8,000 awarded April 2014 for Research Experiences for Undergraduates (REU) supplement for Summer 2014 semester.

12. NSSC NPS N00244-11-1-0008: *Improving Forensic Triage with Rapid Text Document Similarity Matching.* Clay Shields (PI), Ophir Frieder (co-PI), Mark Maloof (co-PI), Micah Sherr (co-PI). $175,361 (initial grant; October 2010-October 2011); $191,720 (follow-up contract N00104-11-M-Q978; August 2011-July 2012

13. DARPA N66001-11-C-4020: *Selectable Anonymity for Enabling SAFER Telecommunications (SAFEST).* Micah Sherr (Georgetown PI), Clay Shields (co-PI). $1,191,113 (Georgetown), $3,300,000 (total award; collaborative work with the University of Pennsylvania). December 2010-November 2014.

Totals: **$11,378,758** in funding awarded to Georgetown University ($3,042,071 as PI)

Teaching Experience

Georgetown University
(denotes new course development; instructor rating based on "What is your overall evaluation of the instructor?")*

Instructor, Introduction to Network Security (COSC235) *Spring 2017*

Instructor Rating: 4.83/5.00

Instructor, Advanced Programming (COSC150) *Fall 2016*

Instructor Rating: 4.60/5.00

Instructor, Network Security (COSC535) *Fall 2016*

Instructor Rating: 5.00/5.00

Instructor, Introduction to Network Security (COSC235) *Spring 2016*

Instructor Rating: 4.79/5.00

Instructor, Network Security (COSC535) *Fall 2015*

Instructor Rating: 5.00/5.00

Instructor, Doctoral Seminar in Computer Security* (COSC835) *Fall 2015*

Programming Languages Security
Instructor Rating: 5.00/5.00

Instructor, Network Security (COSC535) *Spring 2015*

Instructor Rating: 4.86/5.00

Instructor, Introduction to Network Security (COSC235) *Fall 2014*

Instructor Rating: 4.91/5.00

Instructor, Topics in Network Security* (COSC755) *Spring 2014*

Specialized Topics in Surveillance and Censorship
Instructor Rating: 4.90/5.00

Instructor, Introduction to Network Security (COSC235) *Spring 2013*

Instructor Rating: 5.00/5.00

Instructor, Network Security (COSC535) *Fall 2012*

Instructor Rating: 4.75/5.00

Instructor, Doctoral Seminar in Computer Security* (COSC835) *Spring 2012*

Web Security
Instructor Rating: 5.00/5.00

Instructor, Introduction to Network Security* (COSC235) *Fall 2011*

Instructor Rating: 4.89/5.00

Instructor, Topics in Computer Security* (COSC755) *Spring 2011*

Special Topics in Privacy Enhancing Technologies

Instructor Rating: 5.00/5.00

Instructor, Network Security* (COSC555) *Fall 2010*

Instructor Rating: 5.00/5.00

Supervisor of Independent Study *Spring 2011, Spring 2012, Fall 2013, Fall 2014, Fall 2016*

See also *Student Supervision* below.

Other

Science Instructor, General Education Development (GED) Test. *Spring 2001, Spring 2002*

Volunteer GED (high school equivalency exam) science teacher for the Jobs and Education Empowerment Project (J.E.E.P) at Columbia University.

Student Supervision

Ph.D. students:

W. Brad Moore (first employment: Invincea Labs)	*Spring 2016*
Zha Di Henry Tan (first employment: Google)	*Spring 2016*
Akshaya Mani	*Spring 2019 (expected)*
Tavish Vaidya	*Spring 2018 (expected)*

Visiting researchers:

Sumaya Almanee	*Fall 2015-Summer 2016*

Master's students:

W. Brad Moore	*Spring 2012*
Chris Wacek (Master's thesis, awarded with distinction)	*Fall 2013*

Undergraduate thesis supervision:

John Ferro (co-advised with Prof. Lisa Singh)	*Spring 2012*
Matthew Davis (co-advised with Prof. Lisa Singh)	*Spring 2011*

Ph.D. committee memberships:

Yuankai Zhang, Georgetown University	*Spring 2019 (expected)*
Brendan Sheridan, Georgetown University	*Fall 2017*
Tonghe Wang, Georgetown University	*Fall 2017*
Sicong Zhang, Georgetown University	*Fall 2017*
Andrew Yates, Georgetown University	*Spring 2016*
Jason Soo, Georgetown University	*Spring 2016*
Arjun Ravi Narayan, University of Pennsylvania	*Summer 2015*

Dong Lin, University of Pennsylvania *Spring 2015*
Wenchao (Steven) Zhou, University of Pennsylvania *Summer 2012*

Master's committee memberships:

Robert Churchill, Georgetown University *Spring 2017*
Saravana Soundararajan, University of Pennsylvania *Spring 2012*

Undergraduate theses committee memberships:

Kevin Tian, Georgetown University *Spring 2016*

Service

University Service

University Honor Council, Georgetown University *Fall 2015-Current*
Research Executive Faculty, Georgetown University *Fall 2015-Current*
Academic Appeals Board, Georgetown College *Summer 2013-Spring 2015*

Departmental Service

Director of Graduate Students *Summer 2018–Current*
Space Committee *Summer 2016*
Bylaws Committee *Fall 2015–Spring 2016*
Department Self Study Committee *Fall 2015–Fall 2017*
Graduate Committee *Fall 2010, Spring 2011, Fall 2014-Spring 2016*
Seminar Committee *Fall 2010-Spring 2015*
Faculty Search Committee *Fall 2011, Spring 2012*

Technical Program Committees

Program Committee, Network and Distributed System Security Symposium (NDSS 2019)

Program Committee, 11th Workshop on Cybersecurity Experimentation and Test (CSET 2018)

Program Committee, 27th USENIX Security Symposium (Security 2018)

Program Committee, 24th ACM Conference on Computer and Communications Security (CCS 2017)

Program Committee, 25th USENIX Security Symposium (Security 2016)

Program Committee and Editorial Board Member, 16th Privacy Enhancing Technologies Symposium (PETS 2016) and Proceedings on Privacy Enhancing Technologies (PoPETs)

Program Committee, 24th USENIX Security Symposium (Security 2015)

Program Committee Chair, 31st Annual Computer Security Applications Conference (ACSAC 2015)

Program Committee and Editorial Board Member, 15th Privacy Enhancing Technologies Symposium (PETS 2015) and Proceedings on Privacy Enhancing Technologies (PoPETs)

Program Committee, 4th Free and Open Communications on the Internet (FOCI 2014)

Program Committee, 14th Privacy Enhancing Technologies Symposium (PETS 2014)

Program Committee Co-Chair, 30th Annual Computer Security Applications Conference (ACSAC 2014)

Program Committee, 9th ACM Symposium on Information, Computer and Communications Security (ASIACCS 2014)

Program Committee, 11th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA 2014)

Program Committee, 7th ACM Conference on Security and Privacy in Wireless and Mobile Networks (Wisec 2014)

Program Committee, 29th Annual Computer Security Applications Conference (ACSAC 2013)

Program Committee, 22nd USENIX Security Symposium (Security 2013)

Program Committee Co-Chair, 6th Workshop on Cyber Security Experimentation and Test (CSET 2013)

Program Committee, 9th ICST Conference on Security and Privacy in Communication Networks (SecureComm 2013)

Program Committee, 28th Annual Computer Security Applications Conference (ACSAC 2012)

Program Committee, 8th ICST Conference on Security and Privacy in Communication Networks (SecureComm 2012)

Program Committee, 12th IEEE Conference on Peer-to-Peer Computing (P2P 2012)

Program Committee, 12th Digital Forensics Research Conference (DFRWS 2012)

Program Committee, 7th ICST Conference on Security and Privacy in Communication Networks (SecureComm 2011)

Program Committee, 20th USENIX Security Symposium (Security 2011)

Program Committee, 20th World Wide Web Conference (WWW 2011)

Poster/Demo Program Committee, 18th ACM Conference on Computer and Communications Security (CCS 2011)

Program Committee, 19th USENIX Security Symposium (Security 2010)

Program Committee, 2nd Workshop on Virtual Machine Security (VMSec 2009)

Program Committee, 18th USENIX Security Symposium (Security 2009)

Program Committee, 17th USENIX Security Symposium (Security 2008)

Grant Proposal Review Committees

NSF Panel, 2018

NSF Panel, 2016

NSF Panel, 2015

NSF Panel, 2014

NSF Panel, 2012

NSF Panel, 2011a

NSF Panel, 2011b

NSF Panel, 2010

Journal Review

Reviewer, ACM Transactions on Embedded Computing Systems (TECS)

Reviewer, IEEE/ACM Transactions on Networking (TON)

Reviewer, IEEE Transactions on Information and System Security (TISSEC)

Reviewer, Elsevier Computer Networks

Reviewer, Elsevier Computers & Security

Reviewer, IEEE Transactions on Parallel and Distributed Systems (TPDS)

Reviewer, IEEE Transactions on Computers (TC)

Reviewer, Communications of the ACM (CACM)

Reviewer, IEEE Transactions on Dependable and Secure Computing (TDSC)

Reviewer, ACM Transactions on Internet Technology (TOIT)

Reviewer, IEEE Transactions on Information Forensics and Security (TIFS)

Reviewer, IEEE Security & Privacy (Magazine)

Conference Organization *(excludes program committee chairmanship; see above)*

Poster Chair, NSF Secure and Trustworthy Cyberspace (SaTC) Principal Investigators Meeting (2012)

Web Chair, 28th IEEE International Conference on Data Engineering (ICDE 2012)

External Reviews

External reviewer, ARO Young Investigator Program (YIP), 2017

External reviewer, 11th Privacy Enhancing Technologies Symposium (PETS 2011)

External reviewer, 5th Conference on Emerging Networking Experiments and Technologies (CoNEXT 2009)

External reviewer, 16th Conference on Computer and Communications Security (CCS 2009)

External reviewer, 39th International Conference on Dependable Systems and Networks (DSN 2009)

External reviewer, 28th Conference on Computer Communications (Infocom 2009)

External reviewer, 3rd International Conference on Very Large Databases (VLDB 2007)

External reviewer, 26th International Conference on Distributed Computing Systems (ICDCS 2006)

External reviewer, 47th Symposium on Foundations of Computer Science (FOCS 2006)

External reviewer, 3rd Applied Cryptography and Network Security (ACNS 2005)

Other Service

Nifty Fifty Speaker, *Computer Security in Hollywood vs Reality*, Wheaton High School, Silver Spring, MD, 2017.

Judge and seminar presenter, Junior Science and Humanities Symposium (JSHS), 2017.

Judge and seminar presenter, Junior Science and Humanities Symposium (JSHS), 2016.

Paper reviewer and seminar presenter, Junior Science and Humanities Symposium (JSHS), 2015.

Participant, NSF/SRI Study Group on Hard Problems for Cybersecurity Experimentation of the Future (CEF), 2014.

Participant, Army Research Laboratory Meeting on Cyber-Security Research Challenges, 2014.

Roundtable Participant, US Strategic Command (STRATCOM) IPv6 and Cyber Security Outreach Program, 2010.

Proposed (with Ophir Frieder) computerized rank and tenure review process for Georgetown University, 2010.

Member, University of Pennsylvania Department of Computer and Information Science Alumni Advisory Board. Spring 2007 – August 2009.

Expert Witnessing and Consulting

Technical expert for the plaintiffs, Whalen vs. SEI/Aaron's Inc. *April 2016–present*

Technical expert for the plaintiffs, Byrd vs. Aaron's, Inc. *August 2013–present*

Selected Media Coverage of Research

Craig S. Smith, *Alexa and Siri Can Hear This Hidden Command. You Can't*, **New York Times**, May 10, 2018. https://www.nytimes.com/2018/05/10/technology/alexa-siri-hidden-command-audio-attacks.html

Dave Gershgorn, *Fooling the Machine: The Byzantine Science of Deceiving Artificial Intelligence*, **Popular Science**, March, 2016. http://www.popsci.com/byzantine-science-deceiving-artificial-intelligence

Tom Simonite, *Anonymity Network Tor Needs a Tune-up to Protect Users from Surveillance*, **MIT Technology Review**, October 25, 2013. http://www.technologyreview.com/news/520141/anonymity-network-tor-needs-a-tune-up-to-protect-users-from-surveillance

Hal Hodson, *Silk Road bust hints at FBI's new cybercrime powers*, **New Scientist Magazine**, October 4, 2013. http://www.newscientist.com/article/dn24345-silk-road-bust-hints-at-fbis-new-cybercrime-powers.html

Cyrus Farivar, *Snoops can identify Tor users given enough time, experts say*, **Ars Technica**, September 5, 2013. http://arstechnica.com/security/2013/09/snoops-can-identify-tor-users-given-enough-time-experts-say/ (also reprinted in **Wired.co.uk**, September 6, 2013)

JJ Worrall, *Anonymity-based Tor platform has security issues according to report*, **The Irish Times**, September 5, 2013.

Meghan Neal, *Tor Is Less Anonymous Than You Think*, **Vice Magazine**, September 4, 2013. http://motherboard.vice.com/blog/tor-is-less-anonymous-than-you-think

Tor-Benutzer leicht zu enttarnen (translation: "Tor users easily to expose"), **Heise Online**, September 4, 2013. http://m.heise.de/newsticker/meldung/Tor-Benutzer-leicht-zu-enttarnen-1949449.html

Zeljka Zorz, *Persistent adversaries can identify Tor users*, **Help Net Security**, September 3, 2013. http://www.net-security.org/secworld.php?id=15504

Tor is Not as Safe as You May Think, **Infosecurity Magazine**, September 2, 2013. http://www.infosecurity-magazine.com/view/34294/tor-is-not-as-safe-as-you-may-think/

Richard Chirgwin, *Boffins follow TOR breadcrumbs to identify users*, **The Register**, September 1, 2013. http://www.theregister.co.uk/2013/09/01/tor_correlation_follows_the_breadcrumbs_back_to_the_users/

Brian Duggan, *Government Plan to Build "Back Doors" for Online Surveillance Could Create Dangerous Vulnerabilities*, **Slate**, May 23, 2013. http://www.slate.com/blogs/future_tense/2013/05/23/calea_reform_to_build_back_doors_into_online_communications_could_create.html

Timothy B. Lee, *How the FBI's online wiretapping plan could get your computer hacked*, **The Washington Post**, Wonkblog, May 17, 2013. http://washingtonpost.com/blogs/wonkblog/wp/2013/05/17/how-the-fbis-online-wiretapping-plan-could-get-your-compute

Somini Sengupta, *Concerns Arise on U.S. Effort to Allow Internet Wiretaps*, **The New York Times**, May 16, 2013. http://www.nytimes.com/2013/05/17/business/concerns-arise-on-us-effort-to-allow-internet-wiretaps.html

Christina Gossmann, *Why is Google+ Built to Hold More Users than There Are People on the Planet?*, **Slate**, July 28, 2011. http://www.slate.com/blogs/browbeat/2011/07/28/google_why_is_it_built_to_hold_more_users_than_there_are_people_.html

Nina Lincoff, *The pop culture spy*, **Medill National Security Zone**, March 11, 2011.

Anna Waugh, *The 3-Minute Interview: Micah Sherr*, **Washington Examiner**, December 21, 2010. http://washingtonexaminer.com/the-3-minute-interview-micah-sherr/article/108659

Amanda Schaffer, *The Spy Who Didn't Shag Me*, **Slate**, February 6, 2006. http://slate.com/articles/health_and_science/science/2006/02/the_spy_who_didnt_shag_me.html

John Schwartz and John Markoff, *Security Flaw Allows Wiretaps to Be Evaded, Study Finds*, **The New York Times**, November 30, 2005. http://www.nytimes.com/2005/11/30/national/30tap.html