

Phillipa Gill

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RESEARCH INTERESTS

My research interests are in the broad area of computer networking and security with an emphasis on network measurement. I am particularly interested in designing new tools and techniques that push the boundaries of what we can learn from measurements. I apply these techniques to study routing security, Web privacy, online information controls (e.g., censorship) and circumvention technologies.

EDUCATION

- Ph.D., University of Toronto**, Department of Computer Science **2008 - 2012**
Supervisory Committee: Yashar Ganjali, David Lie, Sharon Goldberg
Research areas: Economic incentives for security and privacy, large-scale systems reliability
- M.Sc., University of Calgary**, Department of Computer Science **2006 - 2008**
Advisors: Anirban Mahanti, Zongpeng Li
Thesis: YouTube Workload Characterization
- B.Sc., University of Calgary**, Department of Computer Science **2003 - 2006**

EMPLOYMENT & AFFILIATIONS

- Computer Science, University of Massachusetts – Amherst**, Associate Professor **2018 - present**
Berkman Klein Center, Harvard University, Faculty Associate **2017 - present**
School of Public Policy, University of Massachusetts, Faculty Associate **2017 - present**
Computer Science, University of Massachusetts – Amherst, Assistant Professor **2016 - 2018**
Computer Science, Stony Brook University, Assistant Professor **2013 - 2016**
The Citizen Lab, University of Toronto, Postdoctoral Researcher **2012 - 2013**
AT&T Labs – Research, Visiting Researcher **Fall 2011**
Computer Science, Boston University, Visiting Scholar **Fall/Winter 2010 - 2011**
Microsoft Research Redmond, Research Intern **Summer 2010**
HP Labs Palo Alto (located in Calgary, AB), Research Intern **Summer 2008**
Computer Science, University of Calgary, Research Assistant **2005 - 2006**
TRI-Faculty Lab, University of Calgary, Computer Lab Supervisor **Summer-Fall 2004**
iTiva Development Corporation, Junior Engineer **Summer 2004**

AWARDS

- Top Innovators under 35** MIT Tech Review **2017**
Michael Dukakis Leadership Fellow, Boston Global Forum **2017**
Google Faculty Research Award, Google **2014, 2017**
10 Women in Networking/Communications That You Should Watch, N2Women **2016**
Best Student Paper – Runner Up, PETS **2016**
NSF CAREER Award, National Science Foundation **2014**
Best Paper Award, ACM Internet Measurement Conference **2013**
Best Presentation Award, IBM Workshop for Frontiers of Cloud Computing **2011**
Canada Anita Borg Finalist, Google **2009, 2010**
Alexander Graham Bell Canada Graduate Scholarship (CGS), NSERC **2008 - 2010**

Helen Sawyer Hogg Award , Dept. of Computer Science, University of Toronto	2008
Best Paper Award , Passive and Active Measurement Conference	2008
Graduate Student Award , Alberta Learning	2008
Teaching Assistant Award , Dept. of Computer Science, University of Calgary	2007
Department Research Award , Dept. of Computer Science, University of Calgary	2007
Canada Graduate Scholarship (CGS) , NSERC	2006 - 2008
Graduate Student Scholarship , iCORE	2006 - 2008
Dean's Research Excellence Award , University of Calgary	2006
Undergraduate Student Research Award (USRA) , NSERC	2005, 2006
Louise McKinney Scholarship , Alberta Learning	2004
Dean's List , University of Calgary	2003 - 2006
Merit Award , University of Calgary	2003 - 2006
Alexander Rutherford Scholarship , Alberta Learning	2003

FUNDING

1. **Co-Principal Investigator.** Department of State **2017-2019**
Global Internet Censorship Measurement Consortium. (with Co-PIs Rob Faris at Harvard University, Nick Feamster at Princeton University, and Vern Paxson at ICSI/UC Berkeley)
\$299K (at UMass.) Awarded August 2017. Duration 2 years.
2. **Co-Principal Investigator.** National Science Foundation **2017-2019**
EAGER:USBRCR:Improving Network Security at the Network Edge. (with Co-PIs Don Towsley, and Edmundo A. de Souza e Silva (UFRJ, Brazil))
\$300K (at UMass.) Awarded June 2017. Duration 2 years.
3. **Co-Principal Investigator.** National Science Foundation **2017-2020**
ICN-WEN: Collaborative Research: Light-Speed Networking (LSN): Refactoring the Wireless Network Stack to Dramatically Reduce Information Response Time (with Co-PIs Arun Venkataramani, Deepak Ganesan, Amir Houmansadr at University of Massachusetts – Amherst, and Suman Banerjee, Aditya Akella, and Younghyun Kim at University of Wisconsin – Madison)
\$3M (\$1.8M at U. Mass.) Awarded March 2017. Duration 3 years.
4. **Principal Investigator.** Google Faculty Research Award **2017**
PathCache: An Internet Path Prediction Toolkit.
\$53K. Awarded February 2017
5. **Co-Principal Investigator.** National Science Foundation **2016-2017**
EAGER: Collaborative Research: Exploring Internet Balkanization Through the Lens of Regional Discrimination (with Co-PI Vern Paxson at ICSI/UC Berkeley))
\$300K (\$75K at U. Mass.) Awarded October 2016. Duration 1 year.
6. **Principal Investigator.** National Science Foundation **2016**
NeTS: Student Travel Support for the 2016 SIGCOMM Conference
\$25K. Awarded July 2016.
7. **Co-Principal Investigator.** National Science Foundation **2015-2020**
TWC: TTP Option: Large: Collaborative: Towards a Science of Censorship Resistance (with Co-PI: Vern Paxson at International Computer Science Institute, Jedidiah Crandall at University of New Mexico, and Nick Feamster at Princeton University)
\$3M (\$324K at U. Mass). Awarded August 2015. Duration 5 years.
8. **Principal Investigator.** National Science Foundation **2015**
NeTS: Student Travel Support for the 2015 CoNEXT Conference.
\$20K. Awarded June 2015.

9. **Co-Principal Investigator.** National Science Foundation **2014-2017**
TWC: TTP Option: Small: Collaborative: Detecting and Characterizing Internet Traffic Interception based on BGP Hijacking (with Co-PI: Alberto Dainotti at the Center for Applied Internet Data Analysis (CAIDA) at UCSD)
\$500K (\$150K at Stony Brook U.). Awarded June 2014. Duration 3 years.
10. **Principal Investigator.** Comcast Tech Fund **2015**
Detecting and Characterizing Internet Traffic Interception Based on BGP Hijacking.
\$65K. Awarded February 2015.
11. **Principal Investigator.** Google Faculty Research Award **2014**
Internet Censorship Lab: Illuminating Internet Censorship with Principled Network Measurements.
\$43K. Awarded February 2014.
12. **Principal investigator.** National Science Foundation **2014-2019**
CAREER: Illuminating the Impacts of Internet Censorship with Principled Network Measurements.
\$514K. Awarded February 2014. Duration 5 years.

RESEARCH CONTRIBUTION SUMMARY

Since my first research assistantship in 2005, I have published a total of 37 conference papers, 6 workshop papers, 11 journal papers and 5 posters. My work has been cited a total of 3,868 times with an h-index of 24 (according to Google Scholar as of October 2018). The following section enumerates these papers along with citation counts for those with more than 50 citations.

Real world impact. Our 2007 IMC paper that characterized YouTube usage on our university campus, informed the design of SPECWeb2009¹, an industry standard Web server benchmarking tool. More recently, my work on BGPsec deployment (published in SIGCOMM 2011) spurred the creation of a working group in the FCC². My ongoing work on Internet censorship is informed by interactions with political scientists and civil society organizations. My measurements have provided solid empirical data that has been the basis for white papers and write ups by these groups, highlighting issues related to human rights and online information controls (see press coverage below). More recently, our work on measuring traffic differentiation in mobile networks (IMC 15, 16 and 17) has been used to inform discussions in the FCC about network neutrality³

PUBLICATIONS

Journal

1. Meddle: Enabling Transparency and Control for Mobile Internet Traffic. Ashwin Rao, Arash Molavi Kakhki, Abbas Razaghpanah, Anke Li, David Choffnes, Arnaud Legout, Alan Mislove, and Phillipa Gill. *In Journal of Technology Science (JoTS)*, Oct. 2015.
2. Characterizing Web Censorship Worldwide: Another Look at the OpenNet Initiative Data. Phillipa Gill, Masashi Crete-Nishihata, Jakub Dalek, Sharon Goldberg, Adam Senft, and Greg Wiseman. *ACM Transactions on Web.* 9 (1). Jan. 2015.
3. A Survey of Interdomain Routing Policies. Phillipa Gill, Michael Schapira, and Sharon Goldberg. *ACM SIGCOMM Computer Communication Review (CCR)*. Jan. 2014. (**58 citations**)
4. Privacy on Twitter: A Content Analysis of Personal Information. Lee Humphreys, Phillipa Gill, and Balachander Krishnamurthy. *Information, Communication & Society*. (Online Oct. 2013)
5. Historicizing New Media: A Content Analysis of Twitter. Lee Humphreys, Phillipa Gill, Balachander Krishnamurthy, and Elizabeth Newbury. *The Journal of Communication*. June 2013. (62 citations as of July 2018)

¹<https://www.spec.org/web2009/>

²http://transition.fcc.gov/pshs/advisory/csric3/wg-descriptions_v1.pdf

³<https://ecfsapi.fcc.gov/file/10829966722377/choffnes-fcc-public-comment.pdf>

6. Modeling on Quicksand: Dealing with the Scarcity of Ground Truth in Interdomain Routing Data. Phillipa Gill, Michael Schapira, and Sharon Goldberg. *ACM SIGCOMM Computer Communication Review (CCR)*. Jan. 2012.
7. Characterizing Organizational Use of Web-based Services: Methodology, Challenges, Observations, and Insights. Phillipa Gill, Martin Arlitt, Niklas Carlsson, Anirban Mahanti, and Carey Williamson. *ACM Transactions on the Web (TWeb)*. 5(4). Oct. 2011.
8. Characterizing Intelligence Gathering and Control on an Edge Network. Martin Arlitt, Niklas Carlsson, Phillipa Gill, Aniket Mahanti and Carey Williamson. *ACM Transactions on Internet Technology (TOIT)* 11(1). July 2011.
9. A Socratic Method for Validation of Measurement-based Networking Research. Balachander Krishnamurthy, Walter Willinger, Phillipa Gill and Martin Arlitt. *Computer Communications*. 34(1). Jan. 2011.
10. Understanding Latent Sector Errors and How to Protect Against Them. Bianca Schroeder, Sotirios Damouras and Phillipa Gill. *Transaction on Storage (ToS)*. 6(3). Sept. 2010.
11. Scalable On-Demand Media Streaming for Heterogeneous Clients. Phillipa Gill, Liqi Shi, Anirban Mahanti, Zongpeng Li, and Derek Eager. *ACM Transactions on Multimedia Computing, Communications, and Applications*. 5(1). Oct. 2008.

Conference

1. Information Market for Web Browsing: Design, Usability and Incremental Adoption. Arash Molavi Kakhki, Vijay Erramilli, Phillipa Gill, Augustin Chaintreau, Konstantina Papagiannaki, and Balachander Krishnamurthy. In *IFIP Performance 2018*. Toulouse, FR. Dec. 2018
2. Characterizing the deployment and performance of multi-CDNs. Rachee Singh, Arun Dunna, and Phillipa Gill. In *ACM Internet Measurement Conference (IMC)*, Boston, MA. Nov. 2018. (Accept rate 25%)
3. How to Catch when Proxies Lie: Verifying the Physical Locations of Network Proxies with Active Geolocation. Zachary Weinberg, Shinyoung Cho, Nicolas Christin, Vyas Sekar, and Phillipa Gill. In *ACM Internet Measurement Conference (IMC)*, Boston, MA. Nov. 2018. (Accept rate 25%)
4. RADWAN: Rate Adaptive Wide Area Network. Rachee Singh, Monia Ghobadi, Klaus-Tycho Foerster, Mark Filer, and Phillipa Gill. In *ACM SIGCOMM*. Budapest, HU. Aug. 2018 (Accept rate 18%)
5. The Cloud that Runs the Mobile Internet. Foivos Michelinakis, Hossein Doroud, Abbas Razaghpanah, Andra Lutu, Narseo Vallina-Rodriguez, Phillipa Gill, and Joerg Widmer. In *IEEE Infocom 2018*, Honolulu, HI. Apr. 2018 (Accept rate 19%)
6. Apps, Trackers, Privacy and Regulators: A Global Study of the Mobile Tracking Ecosystem. Abbas Razaghpanah, Rishab Nithyanand, Narseo Vallina-Rodriguez, Srikanth Sundaresan, Mark Allman, Christian Kreibich, and Phillipa Gill. In *NDSS 2018*. San Diego, USA. Feb. 2018.(Accept rate: 21%)
7. Studying TLS usage in Android Apps. Abbas Razaghpanah, Arian Akhavan Niaki, Narseo Vallina-Rodriguez, Srikanth Sundaresan, Johanna Amman, and Phillipa Gill. In *ACM CoNEXT*, Seoul, KR. Dec. 2017. (Accept rate: 18%)
8. A Churn for the Better: Localizing Censorship using Network-level Path Churn and Network Tomography. Shinyoung Cho, Rishab Nithyanand, Abbas Razaghpanah, and Phillipa Gill. In *ACM CoNEXT*, Seoul, KR. Dec. 2017. (Accept rate: 18%)
9. lib•erate, (n): A library for exposing (traffic-classification) rules and avoiding them efficiently. Fangfan Li, Abbas Razaghpanah, Arash Molavi Kakhki, Arian Akhavan Niaki, David Choffnes, Phillipa Gill, and Alan Mislove. In *ACM Internet Measurement Conference (IMC)*, London, UK. Nov. 2017. (Accept rate: 23%)

10. An Empirical Evaluation of Deployed DPI Middleboxes and Their Implications for Policymakers. David Choffnes, Phillipa Gill, and Alan Mislove. In *Proceedings of the 45th Research Conference on Communications, Information and Internet Policy*, Washington, D.C., September 2017 (note: invited publication based on abstract submission).
11. Characterizing the Nature and Dynamics of Tor Exit Blocking. Rachee Singh, Rishab Nithyanand, Sadia Afroz, Paul Pearce, Michael Tschantz, Phillipa Gill, and Vern Paxson. In *the 26th USENIX Security Symposium*. Vancouver, Canada. Aug. 2017 (Accept rate: 16%)
12. Classifiers Unclassified: An Efficient Approach to Revealing IP-Traffic Classification Rules. Fangfan Li, Arash Molavi-Kakhki, David Choffnes, Phillipa Gill, and Alan Mislove. In *ACM Internet Measurement Conference (IMC)*, Santa Monica, USA. Nov. 2016. (Accept rate: 25%)
13. Games Without Frontiers: Investigating Video Games as a Covert Channel. Bridger Hahn, Rishab Nithyanand, Phillipa Gill, and Rob Johnson. In *European Symposium on Security and Privacy (EuroS&P)*. Saarbrücken, DE. Mar. 2016. (Accept rate 17%)
14. Measuring and Mitigating AS-level adversaries against Tor. Rishab Nithyanand, Oleksii Starov, Adva Zair, Phillipa Gill, and Michael Schapira. In *NDSS symposium*. San Diego, USA. Feb. 2016. (Accept rate 16%)
15. Are You Sure You Want to Contact Us? Quantifying the Leakage of PII via Website Contact Forms. Oleksii Starov, Nick Nikiforakis, Phillipa Gill. In *PETS 2016*. July 2016. (**Best Student Paper – Runner Up**).
16. Identifying Traffic Differentiation in Mobile Networks. Arash Molavi Kakhki, Abbas Razaghpanah, Anke Li, Hyungjoon Koo, Rajeshkumar Golani, David Choffnes, Phillipa Gill, Alan Mislove. In *ACM Internet Measurement Conference (IMC)*, Tokyo, JP. Oct. 2015 (Accept rate: 25%)
17. Investigating Interdomain Routing Policies in the Wild. Ruwaifa Anwar, Haseeb Niaz, David Choffnes, Italo Cunha, Phillipa Gill, Ethan Katz-Bassett. In *ACM Internet Measurement Conference (IMC)*, Tokyo, JP. Oct. 2015 (Accept rate: 25%)
18. Internet Outages, the Eyewitness Accounts: Analysis of the Outages Mailing List. Ritwik Banerjee, Abbas Razaghpanah, Luis Chiang, Akassh Mishra, Vyas Sekar, Yejin Choi, and Phillipa Gill. In *Proc. of the Passive and Active Measurement Conference (PAM)*. New York, USA. Mar. 2015. (Accept rate 27%)
19. Automated Detection and Fingerprinting of Censorship Block Pages. Ben Jones, Tzu-Wen Lee, Nick Feamster, and Phillipa Gill. In *ACM Internet Measurement Conference (IMC)*. Vancouver, Canada. Nov. 2014 (Accept rate: 22%)
20. A First Look at Performance in Mobile Virtual Network Operators. Fatima Zarinni, Ayon Chakraborty, Vyas Sekar, Phillipa Gill, and Samir Das. In *ACM Internet Measurement Conference (IMC)*. Vancouver, Canada. Nov. 2014 (**Best Paper Nominee**, Accept rate: 22%)
21. Targeted Threat Index: Characterizing and Quantifying Politically-Motivated Targeted Malware. Seth Hardy, Masashi Crete-Nishihata, Katharine Kleemola, Adam Senft, Byron Sonne, Greg Wiseman, Phillipa Gill, and Ronald J. Deibert. In *proceedings of the 23rd Usenix Security Symposium*. San Diego, USA. Aug. 2014 (Accept rate: 19%)
22. A Method for Identifying and Confirming the Use of URL Filtering Products for Censorship. Jakub Dalek, Bennett Haselton, Helmi Noman, Adam Senft, Masashi Crete-Nishihata, Phillipa Gill, and Ronald J. Deibert. In *ACM Internet Measurement Conference (IMC)*. Barcelona, ES. Oct. 2013. (Accept rate: 24%)
23. Follow the Money: Understanding Economics of Online Aggregation and Advertising. Phillipa Gill, Vijay Erramilli, Augustin Chaintreau, Balachander Krishnamurthy, Konstantina Papagiannaki, and Pablo Rodriguez. In *ACM Internet Measurement Conference (IMC)*. Barcelona, ES. Oct. 2013. (**Best Paper Award**; Accept rate: 24%; **90 citations**)

24. Characterizing Large-scale Routing Anomalies: A Case Study of the China Telecom Incident. Rahul Hiran, Niklas Carlsson, and Phillipa Gill. *In proceedings of the PAM Conference 2013*. Hong Kong. Mar. 2013. (Accept rate: 32%)
25. Historicizing New Media: A Content Analysis of Twitter. Lee Humphreys, Phillipa Gill, Balachander Krishnamurthy, and Elizabeth Newbury. *In proceedings of the Conference of International Communication Association*. Phoenix, USA. May 2012. (**64 citations**)
26. Let the Market Drive Deployment: A Strategy for Transitioning to BGP Security. Phillipa Gill, Michael Schapira and Sharon Goldberg. *In proceedings of ACM SIGCOMM 2011*. Toronto, Canada. Aug. 2011. (Accept rate: 14% , **105 citations**)
27. Understanding Network Failures in Data Centers: Measurement, Analysis, and Implications. Phillipa Gill, Navendu Jain and Nachi Nagappan. *In proceedings of ACM SIGCOMM 2011*. Toronto, Canada. Aug. 2011. (Accept rate: 14% , **552 citations**)
28. Dude, Where's that IP? Circumventing Measurement-based IP Geolocation. Phillipa Gill, Yashar Ganjali, Bernard Wong and David Lie. *In proceedings of the 19th Usenix Security Symposium*. Washington D.C., USA. Aug. 2010. (Accept rate: 15% , **65 citations**)
29. How Much is Too Much? Privacy Issues on Twitter. Lee Humphreys, Phillipa Gill and Balachander Krishnamurthy. *In proceedings of the Conference of International Communication Association*. Singapore. June 2010. (**70 citations**)
30. Understanding Latent Sector Errors and How to Protect Against Them. Bianca Schroeder, Sotirios Damouras and Phillipa Gill. *In proceedings of the 8th Usenix Conference on File and Storage Technologies (FAST 2010)*. San Jose, USA. Feb. 2010. (Accept rate: 24%, **127 citations**)
31. Network Information Flow in Network of Queues. Phillipa Gill, Zongpeng Li, Anirban Mahanti, Jingxiang Luo and Carey Williamson. *In proceedings of the 16th IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS)*. Baltimore, USA. Sept. 2008.
32. The Flattening Internet Topology: Natural Evolution, Unsightly Barnacles or Contrived Collapse? Phillipa Gill, Martin Arlitt, Zongpeng Li, and Anirban Mahanti. *In proceedings of the PAM Conference*. Cleveland, USA. Apr. 2008. (**Best Paper Award**; Accept rate: 32% , **141 citations as of August 2017**)
33. Characterizing User Sessions on YouTube. Phillipa Gill, Martin Arlitt, Zongpeng Li, and Anirban Mahanti. . *In proceedings of ACM/SPIE MMCN*. San Jose, USA. Jan. 2008. (**56 citations**)
34. YouTube Traffic Characterization: A View From the Edge. Phillipa Gill, Martin Arlitt, Zongpeng Li, and Anirban Mahanti. *In ACM Internet Measurement Conference (IMC)*. San Diego, USA. Oct. 2007. (Accept rate: 24% for full papers, **975 citations**)
35. Video to Go: The Effects of Mobility on Streaming Media in a CDMA2000 1xEV-DO Network. Phillipa Sessini, Matei Leventer, and Anirban Mahanti. *In proceedings of the ACM/SPIE Multimedia Computing and Networking Conference (MMCN)*. San Jose, USA. Jan. 2007. (Accept rate: 30%)
36. Scalable Streaming for Heterogeneous Clients. Liqi Shi, Phillipa Sessini, Anirban Mahanti, Zongpeng Li, and Derek Eager. *In proceedings of ACM Multimedia 2006*. Santa Barbara, USA. Oct. 2006. (Accept rate: 16%; **57 citations**)
37. Observations on the Round-Trip Times of TCP Connections. Phillipa Sessini and Anirban Mahanti. *In proceedings of the Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS) 2006*. Calgary, Canada. July/Aug. 2006.

Workshop

1. Analyzing China's Blocking of Unpublished Tor Bridges. Arun Dunna, Ciaran O'Brien, and Phillipa Gill. *In USENIX Workshop on Free and Open Communication on the Internet (FOCI)*. Baltimore, MD. Aug. 2018.

2. Run, Walk, Crawl: Towards Dynamic Link Capacities. Rachee Singh, Monia Ghobadi, Klaus-Tycho Foerster, Mark Filer, and Phillipa Gill. In *ACM Workshop on Hot Topics in Networks (HotNets 2017)*. Palo Alto, CA. Dec. 2017. (Accept rate: 23%)
3. Measuring Offensive Speech in Online Political Discourse. Rishab Nithyanand, Brian Schaffner, and Phillipa Gill. In *USENIX Workshop on Free and Open Communications on the Internet (FOCI)*. Vancouver, Canada. Aug. 2017
4. The Politics of Routing: Investigating the Relationship Between AS Connectivity and Internet Freedom. Rachee Singh, Hyungjoon Koo, Najmehalsadat Miramirkhani, Fahimeh Mirhaj, Leman Akoglu and Phillipa Gill. In *USENIX Workshop on Free and Open Communication on the Internet (FOCI)*. Austin, USA. Aug. 2016.
5. Short Paper: A Look at SmartPhone Permission Models. Kathy Au, Billy Zhou, Zhen Huang, Phillipa Gill and David Lie. In *proceedings of ACM CCS Workshop on Security and Privacy in Smartphones and Mobile Devices*. Chicago, USA. Oct. 2011. (**86 citations**)
6. A Few Chirps About Twitter. Balachander Krishnamurthy, Phillipa Gill, and Martin Arlitt. In *proceedings of ACM SIGCOMM Workshop on Online Social Networks*. Seattle, USA. Aug. 2008. (Accept rate: 35% , **871 citations**)

Poster

1. A client-side analysis of TLS usage in mobile apps. *USENIX Security Poster session*. Austin, USA. Aug. 2016.
2. PathCache: A Path Prediction Toolkit. Rachee Singh and Phillipa Gill. *ACM SIGCOMM Poster and Demo Session*. Florianopolis, Brazil. Aug. 2016. (**Runner up in ACM Student Research Competition at SIGCOMM '16**)
3. Haystack: In Situ Mobile Traffic Analysis in User Space. Abbas Razaghpanah, Narseo Vallina-Rodriguez, Srikanth Sundaresan, Christian Kreibich, Phillipa Gill, Mark Allman, and Vern Paxson. *Poster in ACM Hotmobile*. St. Augustine, USA. Feb. 2016.
4. Poster: Games Without Frontiers: Investigating Video Games as a Covert Channel. Bridger Hahn, Rishab Nithyanand, Phillipa Gill, and Rob Johnson. *Poster at IEEE Security & Privacy*. San Jose, USA. May 2015.
5. Identifying Traffic Differentiation in Cellular Data Networks. Arash Molavi Kakhki, Abbas Razaghpanah, Rajesh Golani, David Choffnes, Phillipa Gill, and Alan Mislove. *ACM SIGCOMM Poster and Demo Session*. Chicago, USA. Aug. 2014. (**Runner up in ACM Student Research Competition at SIGCOMM '14**)

Technical Report

1. Exploring the Design Space of Longitudinal Censorship Measurement Platforms. Abbas Razaghpanah, Anke Li, Arturo Filasto, Rishab Nithyanand, Vasilis Ververis, Will Scott, and Phillipa Gill. ArXiv Tech Report. <https://arxiv.org/abs/1606.01979> May 2016.
2. Holding all the ASes: Identifying and Circumventing the Pitfalls of AS-aware Tor Client Design. Rishab Nithyanand, Rachee Singh, Shinyoung Cho, and Phillipa Gill. ArXiv Tech Report. <https://arxiv.org/abs/1605.03596> May 2016.
3. Information Controls during Military Operations: The case of Yemen during the 2015 political and armed conflict. Jake Dalek, Ronald Deibert, Sarah McKune, Phillipa Gill, Naser Noor, and Adam Senft. Citizen Lab White Paper. Oct. 2015. <https://citizenlab.org/2015/10/information-controls-military-operations-yemen/>
4. Haystack: In Situ Mobile Traffic Analysis in User Space. Abbas Razaghpanah, Narseo Vallina-Rodriguez, Srikanth Sundaresan, Christian Kreibich, Phillipa Gill, Mark Allman, and Vern Paxson. ArXiv Tech Report. <http://arxiv.org/abs/1510.01419> Oct. 2015.
5. Modeling the Gaia Hypothesis: Daisyworld. Phillipa Sessini. *Dept. of Computer Science, University of Calgary*. Tech Report #2007-857-09. Apr. 2007.

Dissertation

1. Improving Dependability for Internet-scale Services. Phillipa Gill. PhD Dissertation, *Dept. of Computer Science, University of Toronto*. Sept 2012. (Defended: Sept. 7, 2012).
2. YouTube Workload Characterization. Phillipa Gill. MSc. Thesis, *Dept. of Computer Science, University of Calgary*. March 2008. (Defended: March 7, 2008).

Patent

1. Method and system for determining the impact of failures in data center networks. Navendu Jain, Phillipa Gill, US Patent Application (US 20130232382 A1). Filed: Mar. 2012.

PRESS COVERAGE

1. LED Programming Workshop Documentation and Resources #NeoPixels. Adafruit blog post about the introductory programming workshop I developed with colleagues at U. Mass.
2. Apple Is Blocking an App That Detects Net Neutrality Violations From the App Store. J. Koebler. Vice: Motherboard. Jan. 2018. Article about our network neutrality measurement application based on our IMC 2015, 2016 and 2017 papers on fingerprinting network middleboxes.
3. “Trump effect” has created a “partisan garbage fire” of commentary written at 1st grade reading level: study. B. Brigham. Raw Story. Dec. 2017. Article about our analysis of political discourse on Twitter around the election.
4. As politicians become less civil, so does the Internet. R. Nithyanand, B. Schaffner, and P. Gill. Vox - Mischief of Faction blog posting. Aug. 2017. Vox published a short blog posting we wrote summarizing our FOCI 2017 paper on political discourse during the 2016 election.
5. 70% Of Mobile Apps Share Your Data With Third Parties. Covered by: Forbes, Newsweek among others. June 2017. Coverage of our Lumen mobile privacy monitoring app. More detailed results in our October 2017 tech report.
6. Q&A: The Science of Online Censorship. J. Bohannon. Science Magazine. Nov. 2016. Interview about my NSF large grant and research program on measuring and evading Internet censorship.
7. Yemen rebels using Canadian software to censor Internet, report finds. M. Pizzi. Al Jazeera America. Oct. 2015. Coverage of work with the Citizen Lab using ICLab to characterize censorship products used in Yemen.
8. Canadian Web Co. Helps Yemen Censor Net. S. Harris. The Daily Beast. Oct. 2015. Coverage of work with the Citizen Lab using ICLab to characterize censorship products used in Yemen.
9. Canadian Internet-filtering company accused of aiding censorship in Yemen. Metro News. Oct. 2015. Coverage of work with the Citizen Lab using ICLab to characterize censorship products used in Yemen.
10. Canadian software tied to Yemen civil war, report alleges. C. Freeze. The Globe and Mail. Oct. 2015. Coverage of work with the Citizen Lab using ICLab to characterize censorship products used in Yemen.
11. Canadian Internet-filtering company accused of aiding censorship in war-torn Yemen. J. Kestler-D’Amours. Toronto Star. Oct. 2015. Coverage of work with the Citizen Lab using ICLab to characterize censorship products used in Yemen.
12. Researchers Accuse Canadian Internet Company of Helping Yemen Censor The Web. L. Franceschi-Bicchierai. Motherboard. Oct. 2015. Coverage of work with the Citizen Lab using ICLab to characterize censorship products used in Yemen.
13. Canadian software tied to Yemen civil war, report alleges. C. Freeze. The Globe and Mail. Oct. 2015. Coverage of work with the Citizen Lab using ICLab to characterize censorship products used in Yemen.
14. Tool makes it easier to evade online censors. T. Simonite. MIT Tech Review Aug. 2015. Quotation about evolvability of censorship tools as a design point in the arms race against censors.
15. Hackers build a new Tor client designed to beat the NSA. P. Howell O’Neill. The Daily Dot. May 2015. Coverage of our AS-aware Tor client, Astoria.

16. New relay selection fix for Tor to spoil spooks' fun (eventually). A. Martin. The Register. May 2015. Coverage of our AS-aware Tor client, Astoria.
17. Researchers design new Tor client resistant to NSA attacks. L. Caldwell. Slash Gear. May 2015. Coverage of our AS-aware Tor client, Astoria.
18. An app that hides secret messages in Starcraft-style games. A. Greenberg. Wired. April 2015. Coverage of our video game-based covert channel system, Castle.
19. Anti-censorship technology uses online video games to bypass Chinese Internet restrictions. J. Griffiths. South China Morning Post. April 2015. Coverage of our video game-based covert channel system, Castle.
20. Inside Citizen Lab, the "Hacker Hothouse" protecting you from Big Brother. J. Kopstein. Arstechnica. July 2014. Quotation in relation to my postdoctoral research with the Citizen Lab and ongoing work on the ICLab platform.
21. Study Shows Google's Dominance of Online Advertising. T. Simonite. MIT Tech Review Dec. 2013. Article about my IMC 2013 paper on online aggregators.
22. Is it Wrong to Use Data from the World's First 'Nice' Botnet? R. McMillan. Wired. May 2013. Quotation in article about the ethics of using data from the Carna bonnet.

PRESENTATIONS

1. **Understanding Internet Censorship Resistance: Opportunities and Challenges for Network Measurement**
 USENIX Enigma Conference 2018, Santa Clara, CA Jan. 2018
 MIT TR Emtech 2017, Boston, MA Nov. 2017
2. **Studying TLS Usage in Android Apps**
 ACM CoNEXT 2017, Incheon, KR Dec. 2017
3. **Measuring Offensive Speech in Online Political Discourse**
 USENIX FOCI Workshop, Vancouver, Canada Aug. 2017
4. **Censorship 101: A Primer on Internet Censorship, How it Works & How We Measure It**
 Tutorial at Hebrew University Networking Summer, Jerusalem, Israel June 2017
5. **Developing a Science of Internet Censorship Resistance: Opportunities and Challenges for Network Measurement**
 IMDEA Networking Workshop, IMDEA, Madrid, Spain June 2017
 Hebrew University Networking Summer Workshop, Jerusalem, Israel June 2017
 Computing Community Consortium Workshop, Washington, DC. Oct. 2017
6. **Experiences Measuring Internet Censorship**
 Google Networking Research Summit, Mountain View, CA Feb. 2017
7. **Developing a Science of Internet Censorship: Experiences and Open Challenges**
 MC2 Workshop on Data-Driven Security, U. Maryland-College Park Jan. 2017
8. **Understanding Politically-Motivated Adversaries: Targeted Threats and Censorship Product Fingerprinting**
 Guest lecture Amherst College, Amherst, MA Nov. 2017
 UMass - DCS Women Lunch, Amherst, MA Nov. 2016
 UMass - Alumni Night, Needham, MA Nov. 2016
 Princeton University, Princeton, NJ Oct. 2015
 University of California - Berkeley, Berkeley, CA Apr. 2015
 Hebrew U. Networking Summer 1st Workshop, Jerusalem, Israel June 2015
 NAE Germany-America Frontiers of Engineering, Potsdam, Germany Apr. 2015
9. **Measuring and Mitigating AS-level Adversaries Against Tor**
 CyLab Distinguished Seminar, CMU, Pittsburgh, PA Oct. 2016

10. **Measuring network interference & censorship: Opportunities and Challenges – Revisited**
Citizen Lab Summer Institute, Toronto, Canada July 2016
11. **Measurement & Anonymity Systems**
ISAT/DARPA Tech. Disruptions of Societies and Organizations, Washington DC. Mar. 2016
12. **Winning the Censorship Arms Race**
Yale University, New Haven, CT Feb. 2016
University of British Columbia, Vancouver, Canada Feb. 2016
UMass Amherst, Amherst, MA Feb. 2016
Northeastern University, Boston, MA Mar. 2016
13. **Measuring and Mitigating AS-level Adversaries Against Tor**
Berkman Center, Harvard University Dec. 2015
UMass Amherst, Amherst, MA Oct. 2015
New England Security Day, Amherst, MA Sept. 2015
New England Network and Systems Day, Boston, MA Oct. 2015
14. **Session Preview Security, Privacy, and Censorship**
SIGCOMM 2015 Preview Sessions, London, UK Aug. 2015
15. **Measuring network interference & censorship: Opportunities and Challenges**
Citizen Lab Summer Institute, Toronto, Canada June 2015
16. **What’s a researcher to do? Case study of ethics in network measurement research**
Intl. Assn. For Computing and Philosophy - CEPE, Newark, DE June 2015
17. **Targeted Threat Index: Characterizing and Quantifying Politically-Motivated Targeted Malware**
University of Illinois - Urbana Champaign Sept. 2014
New England Networking Systems Day (Keynote), Boston, MA Oct. 2014
UMD Workshop on Data Driven Security and Privacy, College Park, MD Jan. 2015
18. **ICLab: A Platform for Measuring Online Information Controls**
Workshop on Active Internet Measurements (AIMS), San Diego, CA Mar. 2015
USENIX FOCI Workshop (Work in Progress session), San Diego, CA Aug. 2014
Citizen Lab Summer Institute, Toronto, Canada July 2014
19. **Security for the next billion Internet users**
NSF SATC CyberSpace 2025 Workshop, Washington DC Apr. 2014
20. **Measuring Cyber-attacks: A Network Measurement Perspective**
Known-knowns and Unknowns about the Internet: Measuring the Economic, Social, and Governance Impact of the Web, Washington DC Nov. 2013
21. **Characterizing Web Censorship Worldwide**
Boston Freedom in Online Communications Day, Boston, MA Mar. 2013
22. **Characterizing Global Web Censorship: Why is it so hard?**
Workshop on Active Internet Measurements (AIMS), San Diego, CA Feb. 2013
Cyber Stewards Workshop, Toronto, Canada Apr. 2013
23. **A Survey of Interdomain Routing Policies**
NANOG56, Dallas, TX Oct. 2012
24. **Things that go bump in the net (Data center net. reliability + China Telecom incident)**
Renesys, Hanover, NH July 2012
25. **Security and Reliability for Internet-scale Services**
University of Toronto, Toronto, Canada Mar. 2012
Stony Brook University, Stony Brook, NY Mar. 2012
Cornell University, Ithaca, NY Mar. 2012
University of Illinois - Urbana-Champaign, Urbana-Champaign, IL Mar. 2012
Boston University, Boston, MA Feb. 2012

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| University of Illinois - Chicago, Chicago, IL | Feb. 2012 |
| University of British Columbia, Vancouver, Canada | Feb. 2012 |
| Northeastern University, Boston, MA | Feb. 2012 |
| Microsoft Research, Redmond, WA | Mar. 2012 |
| AT&T Labs – Research, Florham Park, NJ | Mar. 2012 |
| 26. Understanding Network Failures in Data Centers | |
| IBM Student Workshop for Frontiers of Cloud Computing, Hawthorne, NY | Dec. 2011 |
| SIGCOMM 2011, Toronto, ON | Aug. 2011 |
| 27. Let the Market Drive Deployment: A Strategy for Transitioning to BGP Security | |
| Columbia University, New York, NY | Nov. 2011 |
| University of Calgary, Calgary, Canada | July 2011 |
| Princeton University, Princeton, NJ | Mar. 2011 |
| Georgia Tech, Atlanta, GA | Mar. 2011 |
| AT&T Security Research Center, New York, NY | Nov. 2011 |
| AT&T Labs – Research, Florham Park, NJ | Oct. 2011 |
| Telefonica I+D, Barcelona, Spain | June 2012 |
| SIGCOMM 2011, Toronto, Canada | Aug. 2011 |
| 28. Modeling Adoption of Secure BGP | |
| Boston Azure Users Group, Boston, MA | Dec. 2010 |
| 29. Dude, Where's that IP? Circumventing measurement-based IP geolocation | |
| Google Scholars' Retreat, San Francisco, CA | June 2010 |
| AT&T Labs – Research, Florham Park, NJ | Dec. 2010 |
| NSERC ISSNet Workshop, Ottawa, Canada | Apr. 2010 |
| Usenix Security 2010, Washington, DC | Aug. 2010 |
| 30. A Few Chirps About Twitter | |
| Workshop on Online Social Networks, Seattle, WA | Aug. 2008 |
| 31. Characterizing User Sessions on YouTube | |
| Multimedia Computing and Networking, San Jose, CA | Jan. 2008 |
| 32. YouTube Workload Characterization: A View From the Edge | |
| Internet Measurement Conference, San Diego, CA | Oct. 2007 |
| 33. Video to Go: The Effects of Mobility on Streaming Media in a CDMA2000 1xEV-DO Network | |
| Multimedia Computing and Networking, San Jose, CA | Jan. 2007 |
| 34. Scalable Streaming for Heterogeneous Clients | |
| ACM Multimedia, Santa Barbara, CA | Oct. 2006 |
| 35. Observations on the Round-Trip Times of TCP Connections | |
| Symposium on Performance Evaluation of Computer and Telecommunication Systems | July 2006 |

STUDENTS/MENTEES

Current

1. Albert Williams (PhD, University of Massachusetts – Amherst) **Fall 2018 - present**
2. Shahrooz Pouryousef (PhD, UMass – Amherst, co-advised with V. Arun) **Spring 2018 - present**
3. Arian Niaki (PhD, University of Massachusetts – Amherst) **Fall 2016 - present**
4. Rachee Singh (PhD, University of Massachusetts – Amherst) **Fall 2015 - present**
5. Shinyoung Cho (PhD, Stony Brook University) **Spring 2016 - present**
6. Abbas Razaghpanah (PhD, Stony Brook University) **Fall 2013 - present**
7. Jerry Chai (Masters, University of Massachusetts – Amherst) **Fall 2018 - present**
8. Arun Dunna (Masters, University of Massachusetts – Amherst) **Spring 2017 - present**
9. Nguyen Phong Hoang (OTF Fellow, Visitor at UMass – Amherst) **Fall 2018 - present**

Graduated PhD

1. Rishab Nithyanand (PhD, Stony Brook U.; co-advised with Rob Johnson) **Spring 2015 - Fall 2016**
Thesis: DOCTor: Defending and Opening Communication via Tor
Current position: Faculty at University of Iowa

PhD Committees

1. Kimberly Ferguson Walter (PhD, University of Massachusetts) **Fall 2018 - present**
2. Geoffrey Alexander (PhD, University of New Mexico) **Fall 2018 - present**
3. Zachary Weinberg (PhD, Carnegie Mellon University) **Summer 2017 - present**
4. Arash Molavi Kakhki (PhD, Northeastern University) **Spring 2016 - Spring 2017**
Thesis title: *Measuring and understanding performance in the mobile Internet*
5. Zafar Qazi (PhD, Stony Brook University) **Fall 2015**
Thesis title: *Minimally Disruptive Management Frameworks for Network Functions*
6. Xiang Cai (PhD, Stony Brook University) **Summer 2014**
Thesis title: *Website Fingerprinting Attacks And Defenses On Anonymity Networks*
7. Sam Burnett (PhD, Georgia Tech) **Fall 2013 - Spring 2014**
Thesis title: *Empowering bystanders to facilitate Internet censorship measurement and circumvention*

Graduated MS

1. Siva Prasad (MS, UMass – Amherst) **Spring 2018**
Topic: Internet of Things measurement
2. Isaac Vawter (MS, UMass – Amherst) **Spring 2017 - Fall 2017**
Topic: Analyzing the Ethereum Cryptocurrency
3. Sharath Paduru (MS, Stony Brook University) **Spring 2016 - Fall 2016**
Topic: ICLab
4. Michael Liuzzi (MS, Stony Brook University) **Spring 2016 - Fall 2016**
Topic: Haystack, mobile application security
First job: Booz Allen
5. Ruwaifa Anwar (MS, Stony Brook University) **Fall 2014 - Fall 2016**
Topic: Internet routing, prefix hijacks and interceptions.
First job: Cisco
6. Adrian (Anke) Li (MS, Stony Brook University) **Fall 2014 - Fall 2016**
Topic: Traffic differentiation and ICLab.
First job: Facebook

7. Nikhil Mohan (MS, Stony Brook University) **Fall 2015 - Fall 2016**
Topic: Internet routing security
8. Ravi Sadineni (MS, Stony Brook University) **Spring 2015 - Fall 2015**
Topic: ICLab Web interface
9. Ashish Singh (MS, Stony Brook University) **Spring 2015 - Fall 2015**
Topic: Routing policies measurements, ICLab development
10. Arpit Singh (MS, Stony Brook University) **Spring 2015 - Fall 2015**
Topic: Censorship circumvention and measurement
11. Praveen Alam (MS, Stony Brook University) **Spring 2015 - Fall 2015**
Topic: Mobile middlebox measurements.
12. Shriya Gupta (MS, Stony Brook University) **Summer 2015 - Fall 2015**
Topic: AS aware Tor, visualizing traceroutes
13. Haseeb Niaz (MS, Stony Brook University) **Fall 2013 - Spring 2015**
Topic: Routing policies measurements
Current job: Microsoft
14. Himanshu Shah (MS, Stony Brook University) **Spring 2014 - Spring 2015**
Topic: ICLab, Internet censorship measurements
First job: Apple
15. Rajesh Golani (MS, Stony Brook University) **Spring 2014 - Fall 2014**
Topic: Traffic differentiation in mobile networks.
First job: Windows Azure Developer, Microsoft

Other students I have worked with

1. John Geenty (Undergrad, UMass – Amherst) **Fall 2016 - Spring 2018**
Topic: Understanding where to deploy decoy routing.
2. Jack Zhao (Undergrad, Hampshire College) **Fall 2016 - Spring 2017**
Topic: Relationship between Internet routing and Internet freedom.
3. Xinwen (Jason) Wang (Undergraduate, Stony Brook University) **Fall 2015 - Fall 2016**
Topic: ICLab platform
4. Srinivas Muthunoori (MS, Stony Brook University) **Spring 2015**
Topic: Real time detection of BGP traffic interceptions
First job: HGST Inc.
5. Eric Goren (High school intern, Stony Brook University) **Summer 2014, Summer 2015**
Topic: ICLab development, specifically DNS.
Current position: Undergraduate at University of Maryland
6. Hyungjoon Koo (PhD, Stony Brook University) **Summer 2014 - Fall 2014**
Topic: Traffic differentiation in mobile networks.
7. Taha Khan (PhD, Stony Brook University) **Fall 2014**
Topic: Collateral damage of censorship
Current position: PhD Student at UI Chicago
8. Tzu-Wen Lee (PhD, Stony Brook University) **Fall 2013 - Spring 2014**
Topic: Detecting and fingerprinting censorship blockpages
9. Haneef Ghanim (Undergraduate, University of Toronto) **Summer 2011**
Topic: Facebook privacy application.
10. Serge Gorbunov (Undergraduate, University of Toronto) **Summer 2011**
Topic: Secure IP Geolocation.
Current position: Assistant Professor at University of Waterloo.

TEACHING

Department of Computer Science, University of Massachusetts – Amherst

Instructor

- **CS590B/690B: Detecting Interference in Networks** **Spring 2018**
Advanced course for a range of students (undergrad to PhD) covering issues related to Internet censorship and related information controls.
Notes: ~ 20 Undergrad, MS and PhD students.
- **CS653: Computer Networks** **Fall 2017**
Graduate level computer networking course covering background on Internet architecture, and current topics relating to content delivery and network design.
Notes: ~ 40 MS and PhD students.
- **INFO203/INFO290NW: A Networked World** **Spring 2017**
Networking course designed for non-majors. Mix of technical lectures on networking and discussion of how the Internet impacts society
Notes: New course. Taught to ~50 non-major undergraduate students
- **CS590B/690B: Detecting Interference in Networks** **Fall 2016**
Advanced course for a range of students (undergrad to PhD) covering issues related to Internet censorship and related information controls.
Notes: ~ 14 Undergrad, MS and PhD students.

Department of Computer Science, Stony Brook University

Instructor

- **CSE 592: Topics in Internet Security: Internet Censorship** **Fall 2015**
Graduate course covering issues related to Internet censorship and related information controls.
Notes: Revised assignments, projects, and evaluation methods. ~ 10 MS and PhD students.
- **CSE534: Fundamentals of Computer Networks** **Spring 2015**
Graduate level computer networking course covering background on Internet architecture, and current topics relating to content delivery and network design.
Notes: Completely revised course syllabus. ~ 65 MS and PhD students.
- **CSE390: Advanced Computer Networks** **Fall 2014**
Undergraduate course covering background on Internet architecture, and current topics in networking.
Notes: New course offering. ~ 10 undergraduate students.
- **CSE594: Internet Censorship** **Spring 2014**
Graduate course covering issues related to Internet censorship and related information controls.
Notes: New course offering, ~ 25 MS students.
- **CSE592: Internet Measurement** **Fall 2013**
Graduate course covering foundations and recent developments in Internet measurement research.
Notes: New course offering, ~ 5 PhD students.

Department of Computer Science, University of Toronto

Teaching Assistant

- **SCI199Y: Great Ideas in Computing** **Fall/Winter 2009-2010**
First year seminar course about various aspects of computer science for non-science majors.

Teaching and Learning Center, University of Calgary

Instructor Skills Workshop

Participated in a four day interdisciplinary workshop on improving teaching skills.

Aug. 2007

Department of Computer Science, University of Calgary

Teaching Assistant

- **CPSC325: Hardware/Software Interface** **Fall 2007**
Second year hardware course. Received **Teaching Assistant (TA) award** for this course.

- **CPSC313:** Introduction to Computability **Winter 2007**
Second year theory course on models of computation.
- **CPSC265:** Computer Architecture and Low-Level Programming **Fall 2006**
Introductory assembly language programming class (SPARC Assembler).

OUTREACH, PANELS, and ROUNDTABLES

Teaching Discussion Lunch Series. Amherst, MA **Spring 2018**
Worked with an instructor in the computer science department to put on a monthly talk/discussion series to enable faculty to share experiences and ask questions about teaching strategies. Topics include effectively teaching large classes, inclusivity, rubrics, etc.

LED Programming workshop with Girls Inc. Amherst, MA **Summer 2017, Summer 2018**
Developed a workshop for high school girls to learn about programming using LEDs and creative programming applications. Offered the course to an initial group of girls from Holyoke via the Girls Inc. program. Have open sourced the course materials (<https://github.com/phillipa/LED-Programming-Workshop>) and am working to help colleagues offer this workshop at other institutions.

CITP Internet Censorship Measurement Ethics workshop. Princeton, NJ **December 2016**
Interdisciplinary round table about the ethics of measuring Internet censorship at Princeton. Outputs will be a paper taxonomizing different types of censorship measurement, associated risks and a framework for reasoning about ethics.

Citizen Lab Summer Institute 2016. Toronto, Canada. **July 2016**
Participated in a panel discussion about measuring network interference at an interdisciplinary workshop. Panel focused on motivating censorship measurement and finding common ground for measurements.

SIGCOMM Workshop on NS Ethics **August 2015**
Participated in a day long interdisciplinary workshop following SIGCOMM 2015. Workshop took a hands on approach using breakout sessions to understand ethical challenges in network measurement and security research. This workshop continues a series of ethics related workshops initiated by the Oxford Internet Institute (see Oxford Internet Institute/MLab Workshop on Ethics in Mobile Measurement Workshop below).

SIGCOMM 2015 Preview sessions **August 2015**
Gave a high level overview of topics covered in the security, privacy, and censorship session at SIGCOMM 2015. The goal of these preview sessions was to give students at the conference the relevant background needed to understand the technical content of the paper presentations.

Citizen Lab Summer Institute 2015. Toronto, Canada. **June 2015**
Participated in a panel discussion about measuring network interference at an interdisciplinary workshop. Themes of the panel were the subject of breakout groups in the following two days of the workshop.

Philosophy meets Internet Engineering: Ethics in Networked Systems **June 2015**
Participated in a panel discussion at a philosophy conference focused on ethics of computing. Presented a case study of network measurements to highlight ethical issues faced when performing measurement research in practice. Outputs of this discussion will inform development of ethical guidelines for measurement research.

ICLab/Google Workshop on Network Inference Measurement. **May 2015**
Hosted the 4th iteration of the ICLab/Google workshop on network interference at Stony Brook University. Workshop was attended by academics and practitioners working in the area of online information controls/measurements. Workshop was followed by an afternoon session for middle school students to learn more about network security held at the Center for Science and Math Education (CESAME).

Ethics Feedback Panel for Networking and Security. **Summer 2014 - present**
Participating in a multi-disciplinary group that aims to provide feedback on ethical issues faced in network measurement/computer security studies. Particularly, I am working to help define/establish best practices for Internet censorship research where risks can be unclear and highly variable. This relates to our ICLab project that is working to manage these issues.

Citizen Lab Summer Institute 2014. Toronto, Canada. **July 2014**
Presented ICLab: A Platform for Measuring Online Information Controls on a panel at a multi-day interdisciplinary workshop focused on measuring online information controls.

NSF SaTC CyberSpace 2025 Workshop. Workshop in Washington, DC. **Apr. 2014**
Presented Security for the Next Billion Internet Users at a workshop comprised of government, industry and academic researchers focusing on cyber security challenges for the next decade and beyond.

Cyber Dialogue. Workshop at The Citizen Lab, Toronto, Canada **Mar. 2014**
Participated in a working group discussion about threats facing activist organizations and individuals around the globe.

Known-knowns and Unknowns about the Internet: Measuring the Economic, Social, and Governance Impact of the Web. Workshop in Washington, DC. **Nov. 2013**
Presented Measuring Cyber-Attacks: A Network Measurement Perspective at a workshop comprised of government, industry and academics interested in the economic impact of the Internet (attacks, performance issues, and reliability).

Cyber Stewards Workshop. Workshop at The Citizen Lab, Toronto, Canada. **Apr. 2013**
Presented Characterizing Global Web Censorship: Why is it So Hard? to the Citizen Lab's network of Cyber Stewards network who are located around the world engaged in research of online information controls.

Citizen Lab Summer Institute 2013. Toronto, Canada **July 2013**
Co-organized a workshop to bring together researchers working on measuring Internet censorship from both a political/social science perspective and computer science/network measurement perspective. Interactions at this workshop helped form the core for the current ICLab project.

OII/MLab Workshop on Ethics in Mobile Measurement. Oxford, UK. **June, 2013**
Roundtable discussion with legal and technical experts to map out the space of measurement ethics for mobile measurements. Output was a guideline for measurements by the synthesized Oxford Internet Institute.

ISOC Routing Resiliency Measurements Workshop. Atlanta, USA. **Nov. 2012**
This workshop overviewed the state of routing resiliency monitoring and highlighted the need for more unified metrics for assessing routing resilience to attacks and hijacks. Discussions at this workshop spurred collaboration between myself and Alberto Dainotti of CAIDA that was recently funded by NSF.

Internet Health Monitoring and Visualization. Harvard University. **Sept. 2012**
Roundtable about how to define Internet Health, both technical health in terms of reliability and social health in terms of Internet freedom were discussed as axes for quantifying network health. Data sets for assessing Internet health were discussed (e.g., technical data from organizations like CAIDA or data about Internet freedom from Citizen Lab).

SERVICE

Editorships

IEEE Security & Privacy Magazine, Associate Editor	2018 - present
ACM SIGCOMM Computer Communication Review (CCR), Editorial Board	2018 - 2020
ACM SIGCOMM Computer Communication Review (CCR), Editorial Board	2013 - 2015

Chairships

Applied Networking Research Workshop (ANRW), Co-Chair	2019
Dagstuhl Seminar: Secure Routing for the Internet, Co-Chair	2018
ACM CoNEXT, TPC Co-chair	2017
ACM Internet Measurement Conference (IMC), Co-chair	2016
USENIX Workshop on Free and Open Communication on the Internet (FOCI), Co-chair	2015
ACM CoNEXT Student Workshop, Co-chair	2013

Organizing Committee Memberships

USENIX FOCI, Steering committee member	2019 - present
ACM SIGCOMM, Travel grant co-chair	2016
ACM CoNEXT, Travel grant co-chair	2015
ACM SIGCOMM, Publicity committee	2014

Program Committee Memberships

ACM SIGCOMM, PC Member	2016, 2017, 2019
NDSS, PC Member	2019
USENIX Enigma, PC Member	2019
ACM Hotnets, PC Member	2014, 2018
ACM CoNEXT, PC Member	2014, 2015, 2018
ACM SIGCOMM, Poster and Demo Committee	2013, 2014, 2015, 2018
USENIX FOCI Workshop, PC Member	2013, 2014, 2016, 2018
IETF Applied Networking Research Workshop, PC Member	2018
USENIX Annual Technical Conference (ATC), PC Member	2013, 2015, 2018
Workshop on Internet of Things Security & Privacy, PC Member	2017, 2018
ACM CCS, PC Member	2017
ACM SIGCOMM Reproducibility Workshop, PC Member	2017
USENIX NSDI, PC Member	2017
MOBIDATA Workshop at Mobisys, PC Member	2016
Workshop on Data and Algorithmic Transparency, PC Member	2016
ACM Internet Measurement Conference (IMC), PC Member	2014, 2015, 2016
WWW Conference, PC Member - Security & Privacy Track	2016
ACM SIGCOMM, Poster and Demo Committee	2013, 2014, 2015
Conference on Applied Cryptography and Network Security (ACNS), PC Member	2015
Workshop on Traffic Monitoring and Analysis (TMA), PC Member	2014
Annual Computer Security Applications Conference (ACSAC), PC Member	2012, 2013
IEEE MASCOTS, PC Member	2013
USENIX NSDI, Poster/Demo committee	2013
ACM CoNEXT Student Workshop, PC Member	2012
Workshop on Privacy and Digital Economy, PC Member	2012

Organizing Committee Memberships

ACM SIGCOMM, Travel grant co-chair	2016
ACM CoNEXT, Travel grant co-chair	2015
ACM SIGCOMM, Publicity committee	2014

University/Departmental Service

AFR Committee, (U. Mass) Member	2017 - 2019
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CyberSecurity Hiring Committee , (U. Mass - Computer Science) Member	2017 - 2018
CyberSecurity Hiring Committee , (U. Mass - Public Policy School) Member	2016 - 2017
4+1 BS/MS Committee , (U. Mass) Member	2016 - 2017
Operations committee , (Stony Brook U) Member	2014 - 2016
Building planning committee , (Stony Brook U) Member	2014 - 2016
Graduate admissions committee , (Stony Brook U) Member	2013 - 2016
Computer Science Graduate Society , (University of Toronto) GSU representative	2009 - 2010
Graduate Students Assn 40th Anniversary Scholarship , (University of Calgary) Reviewer	2008
Computer Science Graduate Society , (University of Calgary) VP Communications	2007 - 2008
Computer Science Graduate Society , (University of Calgary) Lab Representative	2006 - 2007

Funding Review Panels

NSF SaTC , Review panel member	2015, 2017
NSF NeTS , Review panel member	2013, 2016, 2017
Telefonica Digital Technology Lab (DTL) Grants , Program committee member	2017

Additional Peer Review

ACM SIGCOMM Computer Communication Review (CCR) , Reviewer	2011 - 2013
ACM/IEEE Transactions on Networking (ToN) , Reviewer	2012 - 2013
Computer Communications , Reviewer	2012
ACM Internet Measurement Conference (IMC) , Reveiwer	2012
International Conference on Performance Engineering , Reviewer	2012
ACM SIGMETRICS , Reviewer	2011
USENIX Security , Reviewer	2010
Eurosys , Reviewer	2009
COMSWARE , Reviewer	2009
IEEE MASCOTS , Reviewer	2009