

## Allan A. Friedman, PhD

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CONTACT INFORMATION      1426 Rhode Island Ave NW      *Voice:* (617) 943-2190  
Unit A      *E-mail:* allanfriedman@gwu.edu  
Washington DC 20005 USA      *WWW:* <http://www.allan.friedmans.org>  
*Twitter:* @allanfriedman

RESEARCH & EXPERTISE      *Cybersecurity; Information Technology Policy; Telecommunications Policy and IT Industrial Organization; Privacy and Data Policy; Trade Policy and the Economics of Information Security; National Security Technology*

EDUCATION      **Harvard University**, Cambridge, MA USA

PhD, Public Policy, Kennedy School of Government (2009)

- Thesis title: “Privacy, Security, and the Dynamics of Networked Information Sharing”
- Committee: David Lazer (Chair), L. Jean Camp, Jan W. Rivkin, Michael D. Smith

**Swarthmore College**, Swarthmore, PA USA

B.A., Computer Science (2002)

RESEARCH POSITIONS      **The George Washington University**, Washington, DC USA

*Research Scientist, School of Engineering and Applied Sciences*      2014-Present

- Implementing an engineering-inspired multidisciplinary cybersecurity research agenda
- Serving as a policy advisor to policy makers and practitioners
- Active media presence on domestic and foreign print and TV journalism

**Brookings Institution**, Washington, DC USA

*Research Director and Fellow, Center for Technology Innovation*      2010-2013

- Drafted series of working papers addressing key technology policy questions at the intersection of technology, governance, and economics.
- Coordinated engagement between policy and technology communities, including chairing an cybersecurity policy meeting on the economics of information security
- Frequent public presentations on IT policy to national and international audiences
- Co-authored an internationally recognized book *Cybersecurity and Cyberwar: What Everyone Needs to Know*

**Harvard University**, Cambridge, MA USA

*Postdoctoral Fellow, Center for Research in Computation and Society*      2009 - 2010

- Developed and executed an interdisciplinary research agenda on IT policy and cybersecurity
- Joint appointment to the Berkman Center for Internet and Society

*Research Fellow, Belfer Center for Science and International Affairs*      2009 - 2010

- Conducted theoretical and empirical research on cybersecurity and international relations on a Harvard-MIT Defense Department grant
- Liason between technical and policy research groups.
- Served as a technical advisor to former senior administrator officials

**Instructor**, *Computer Science Department* 2007 - 2009

- Designed and co-taught new interdisciplinary course on Privacy and Technology

**Fellow**, *Program on Networked Governance* 2005 - 2009

PUBLISHED BOOKS P. W. Singer and Allan Friedman. Cybersecurity and Cyberwar: What Everyone Needs to Know. Oxford University Press. 2014.

BOOK CHAPTERS AND MONOGRAPHS Allan Friedman. Universal National Identifier, in The Economics of Identity Theft ed. L. Jean Camp. Springer, 2007.

Allan Friedman and L. Jean Camp. Security in Peer to Peer Systems. in The Handbook of Information Security ed. Hossein Bidgoli. John Wiley & Sons, 2005.

Luc Wathieu and Allan Friedman. "Intelliseek" Harvard Business School Case N9-505-061, 2005

PEER-REVIEWED

JOURNAL ARTICLES

Tyler Moore, Allan Friedman, and Ariel Procaccia. Would a 'Cyber Warrior' Protect Us? Exploring Trade-offs Between Attack and Defense of Information Systems. New Security Paradigms Workshop. (2010)

Luc Wathieu and Allan Friedman. An Empirical Approach to Understanding Privacy Concerns. *Journal of Interactive Marketing*. Under Revision.

David Lazer, Ines Mergel and Allan Friedman. Co-citation of prominent social network articles in sociology journals: The evolving canon. *Connections*. 29:1 (2009).

David Lazer and Allan Friedman. Parallel Problem Solving: The Social Structure of Exploration and Exploitation. *Administrative Science Quarterly*. 52:4 (2007)

Allan Friedman. Good Neighbors Make Good Fences: A Peer-to-peer User Security System. *IEEE Technology and Society*. 26:1 (2007)

Allan Friedman, Roshan Baliga, Deb Dasgupta, Anna Dreyer. Understanding the broadcast flag: a threat analysis model. *Telecommunications Policy* 28 (2004)

RESEARCH REPORTS

Allan Friedman, Austen Mack-Crane, and Ross Hammond. Cyber-enabled Competitive Data Theft: A Framework for Modeling Long-Run Cybersecurity Consequences, 2013

Allan Friedman. Cyber Theft of Competitive Data: Asking the Right Questions, 2013

Allan Friedman. Cybersecurity and Trade: National Policies, Global and Local Consequences, 2013.

Darrell West, Allan Friedman and Walter Valdivia. Building an Innovation Economy, 2012.

Allan Friedman and Darrell West. Health Information Exchanges and Megachange, 2012.

Allan Friedman Cybersecurity in the Balance: Weighing the Risks of the PROTECT IP Act and the Stop Online Piracy Act, 2011

Allan Friedman. Economic and Policy Frameworks for Cybersecurity Risks. Issues in Technology Innovation, 2011.

Allan Friedman, Patrick Crowley and Darrell West. Online Identity and Consumer Trust: Assessing Online Risk. Brookings Report, 2011.

Allan Friedman and Darrell West. Privacy and Security in Cloud Computing. Issues in Technology Innovation Vol. 3, 2010.

PEER REVIEWED  
CONFERENCE  
PAPERS

Allan Friedman and Lance Hoffman. The Internet of (Whose) Things?. Privacy Law Scholars Conference. George Washington University, June 2014.

Timothy Peacock and Allan Friedman. Automation and Disruption in Stolen Payment Card Markets. Workshop on the Economics of Information Security. Pennsylvania State University. June 2014.

Allan Friedman, Ethan Bernstein and David Lazer. Organizational Structure, Exploitation, and Exploitation on the ELICIT Experimental Platform. 15th International Command and Control Research Conference, Santa Monica CA, June 2010.

Alessandro Acquisti, Allan Friedman and Rahul Telang. Is There a Cost to Privacy Breaches? International Conference on Information Systems, Milwaukee WI, November 2006

Alessandro Acquisti, Allan Friedman and Rahul Telang Is There a Cost to Privacy Breaches? An Event Study Workshop on the Economics of Information Security, Cambridge UK. June 2006

David Lazer and Allan Friedman. Exploration and Exploitation in Networks. Poster Presentation at the National Conference on Digital Government Research, Atlanta , May 2005

David Lazer and Allan Friedman. The parable of the hare and the tortoise: Network structure of exploration and exploitation. American Sociological Association Annual Conference, Philadelphia PA, August 2005

Luc Wathieu and Allan Friedman. An empirical approach to understanding privacy valuation. Workshop on the Economics of Information Security, Cambridge MA, June 2005

Allan Friedman and L. Jean Camp. Making Security Manifest. Second Workshop on Economics and Information Security College Park, MA. May 2003.

ABSTRACT  
REVIEWED  
CONFERENCE  
PRESENTATIONS

Alessandro Acquisti and Allan Friedman. Understanding the Impact of Privacy Breaches. Telecommunications Policy Research Conference, Washington DC, September 2006.

Allan Friedman. The Tragedy of the Network. International Sunbelt Social Network Conference, Vancouver, April 2006

Jean Camp, Allan Friedman, and Alla Genkina. Net Trust: Designing for Human Trust Perception. Trustworthy Interfaces for Passwords and Personal Information. Palo Alto CA, June 2005.

Jean Camp, Allan Friedman, and Warigia Bowman. Voting, Vote Capture & Vote Counting Symposium. Proceedings of the 6th Annual National Conference on Digital Government Research, Atlanta GA, May 2005

Jean Camp and Allan Friedman. Peer Patching. 24th Army Science Conference, Orlando FL, December 2004

Allan Friedman, Roshan Baliga, Deb Dasgupta, and Anna Dreyer. Underlying Motivations in the Broadcast Flag Debate Telecommunications Policy Research Conference, Washington DC, September 2003.

Jean Camp and Allan Friedman. Peer to Peer Security. Telecommunications Policy Research Conference, Washington DC, September 2003.

INVITED  
PRESENTATIONS  
AND PANELS

A Critical View of Cybercrime Policy. Interpol Information Security Conference. Hong Kong, China, September 2010.

Empirical research: obstacles and solutions. Panel Chair and Participant. Workshop on the Economics of Securing Information Infrastructure. Washington DC, October 2006.

Incentives, Markets and Information Security. Panel Chair and Participant. Financial Cryptography and Data Security, Dominica, February 2005

Privacy and Rights Management. Invited Panel Participant. International Conference on Electronic Commerce, Pittsburgh PA, October 2003.

(Inter)national IDs. Panel Chair and Participant, Privacy Enhancing Technologies Workshop: Dresden, Germany, March 2003

Online Banking Privacy: A Slow, Confusing Start to Giving Customers Control over Their Information. Primary Researcher. Center for Democracy and Technology Report, 2001.

PROFESSIONAL  
EXPERIENCE

**National Academy of Science**, Washington, DC

*Consultant*

*2014-present*

- Supporting a National Academy of Science expert study on surveillance technology as a subject matter expert

**Parity Communications, Inc**, Needham, MA

*Analyst*

*April 2009 - October 2010*

- Worked as subcontractor to study U.S. Defense Department Command and Control Structure in light of intelligence gathering and social network structure.
- Designed and implemented laboratory models of information sharing patterns.

**MITRE Corporation**, Washington, DC

*Consultant*

*June 2006 - October 2006*

- Identified a modeling strategy for understanding the security of patient information flow and privacy risks in electronic medical record systems.
- Constructed and executed an empirical research pilot program

**Hewlett Packard Laboratories**, Palo Alto, CA

*Research Intern*

*June 2005 - August 2005*

- Applied social science and complex systems tools to IT problems
- Focused on economics of privacy and market-driven technology distribution systems and gave several internal presentations.

**Harvard Business School**, Cambridge, MA

*Research Assistant*

*2004 - 2007*

- Worked with Prof. Luc Wathieu to design and test economic theories of consumer privacy.
- Co-authored HBS case on the use of web information for marketing purposes, and worked on several others.

**Harvard Kennedy School**, Cambridge, MA

*Research Assistant*

*2002 - 2008*

- *With Prof. Jean Camp:* Combined technical expertise with policy analysis to draft reports on Identity in Electronic Authentication and Electronic Voting and Vote Counting; co-wrote several articles.
- *With Prof. David Lazer:* Designed agent-based models to test theories of organizational dynamics.
- *With Prof. Cary Coglianese:* Examined online presence of regulatory agencies and their use of internet technology for greater public participation in new field of E-Rulemaking.

**Center for Democracy and Technology**, Washington, DC

*Policy Intern*

*June 2001 - August 2001*

- Primary researcher of a published report on Online Banking Privacy.
- Chief aid in the launching of CDTs Standards Project examining policy impacts of technical decisions.

**Swarthmore Center for Social and Policy Studies**, Swarthmore, PA

*Research Assistant*

*2000 - 2002*

- Assisted senior faculty on a variety of research topics, both academic and applied.
- Individual research project on technology and civic engagement.

ACADEMIC &  
PROFESSIONAL  
SERVICE

Program Committee, Workshop on the Economics of Information Security (2010-2014)  
Reviewer, International Public Management Journal (2014) External reviewer, RAND  
corporation (2012-2014) Program Committee, IEEE International Symposium on Tech-  
nologies for Homeland Security (2013) Chair, Workshop on the Economics of Informa-  
tion Security (2013) Reviewer, IEEE Security and Privacy (2011-2013)  
External Reviewer, Greek Ministry of Education and Research (2011)  
General Chair, Workshop on the Economics Information Security (2010)  
Program Committee, Fourth Annual IFIP Working Group 11.10 International Confer-  
ence on Critical Infrastructure Protection (2010)  
Program Committee, Security and Privacy in Medical and Home-Care Systems (2009-  
2010)  
Program Committee, MIT-Sandia Workshop on Cyber Data Gap Analysis (2009)  
Reviewer, *topiCS: Journal of The Cognitive Science Society* (2008)  
External Reviewer, *Financial Cryptography and Data Security* (2007)  
Program Committee, Workshop on the Economics of Securing Information Infrastruc-  
ture (2006)  
General Chair, Workshop on the Economics of Information Security (2005)  
Reviewer, Fifth ACM Workshop on Digital Rights Management (2005)  
Reviewer, *New Media and Society Journal* (2005)  
Member, Association for Computing Machinery (ACM)  
Member, Culinary Historians of Boston