Susan Landau

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EDUCATION

1983 Ph.D., MIT.
1979 M.S., Cornell University.
1976 B.A., Princeton University.
1972 Bronx High School of Science.

EMPLOYMENT

2017-present Bridge Professor of Cyber Security and Policy, The Fletcher School and the School of Engineering, Department of Computer Science, Tufts University.
2024-present: Founding Director, Tufts Cybersecurity Center for the Public Good.
2019-2023: Founding Director, Masters program in Cybersecurity and Public Policy.
2018-present: Senior Fellow, Center for International Law and Governance, Fletcher School of Law & Diplomacy.

2015-2018; 2019-2022 Visiting Professor, Department of Computer Science, University College London.

2014-2017 Professor of Cybersecurity Policy, Department of Social Science and Policy Studies
2016-2017 Professor of Computer Science, Worcester Polytechnic Institute.

2013-2014 Senior Staff Privacy Analyst, Google.

2011-2012 Visiting Scholar, Department of Computer Science, Harvard University.
Spring 2012 Visiting Lecturer: taught freshman seminar on privacy.

2010-2011 Fellow, Radcliffe Institute for Advanced Study, Harvard University.

2005-2010 Distinguished Engineer, Sun Microsystems Laboratories, Burlington, Massachusetts.

1999-2005 Senior Staff Engineer, Sun Microsystems Laboratories, Burlington, Massachusetts.

1991-1999 Research Associate Professor, Computer Science Department, University of Massachusetts
1995-1996 Visiting Associate Professor, Cornell University.

1989-1991 Visiting Assistant Professor, Computer Science Department, University of Massachusetts (on leave from Wesleyan University).

1983 - 1991 Assistant Professor of Computer Science, Math Dept., Wesleyan University
Fall 1988 postdoctoral fellow, Mathematics Dept., Yale University.
Fall 1987 visiting assistant professor, Computer Science Dept., Yale University.
Fall 1985 visitor, Mathematical Sciences Research Institute, Berkeley.

Summers, 1993, 1983, 1979 Senior staff at Hampshire College Summer Studies in Mathematics, for high ability high school students.

Summers 1974-1977 Junior Staff, Hampshire College Summer Studies in Mathematics (NSF-SSTP).

PROFESSIONAL EXPERIENCE

Advisory Committees

member, Advisory Board, Electronic Privacy Information Center, 2024-present.

member, Division Committee of the Division of Engineering and Physical Sciences, National Academies of Sciences, Engineering, and Medicine, 2020-present.

member, Center for Democracy and Technology Advisory Council, 2018-2024.

member, Forum on Cyber Resilience, a National Academies of Sciences, Engineering, and Medicine Roundtable, 2016-2022.

member, Carnegie India Advisory Committee on Encryption, Carnegie Endowment for International Peace, 2021-2022.

member, Computer Science and Telecommunications Board, National Academies of Sciences, Engineering, and Medicine, 2010-2016.

member, Advisory Board, National Cyber Security Hall of Fame, 2012-2015.

advisory board member, Committee on Women in Science and Technology, Stevens Institute of Technology, 2011-2013.

member, Advisory Committee, National Science Foundation Directorate for Computer and Information Science and Engineering, 2009-2012 (co-chair, Breakthrough Proposals subcommittee, spring 2012).

member, Commission on Cyber Security for the 44th Presidency, Center for Strategic and International Studies, 2009-2011.

member, ACM-W Council Executive Committee, 2009-2012.

member, ACM Committee on Women Advisory Board, 2003 - 2008.

board member, Computing Research Association Committee on the Status of Women in Computing Research, 2003-2010.

member, Information Security and Privacy Advisory Board, National Institute of Standards and Technology, 2002-2008.

Editorial

area editor, political and policy perspectives, *Journal of Cybersecurity,* 2015-present.

contributing editor, Lawfareblog, 2015-present.

associate editor in chief, *IEEE Security and Privacy,* 2013-2016.

editor, special issue on privacy and social networks, *IEEE Security and Privacy,* May/June 2013.

associate editor, *IEEE Security and Privacy,* 2005-2012 (editor, Emerging Standards column, 2005-2008).

co-editor, special issue on identity management, *IEEE Security and Privacy,* March/April 2008.

section board member, Privacy and Security Viewpoints column, *Communications of the ACM,* 2008-2014.

member, DIMACS Module Series Editorial Board, 1997 – 1999.

associate editor, *Notices of the American Mathematical Society,* 1994-2001.

Program Committees and Related Work

co-organizer, Student Workshop in Advanced Automated Algorithsm, Contestability, and the Law, Tufts University, 2024.

co-organizer, Workshop in Advanced Automated Algorithsm, Contestability, and the Law, Alexandria, Virginia, 2024.

co-organizer, Putting the Tech into Cybersecurity Policy: A Workshop for Social Science and Legal Scholars, Tufts University, 2023.

program committee member, IEEE European Symposium on Security and Privacy, 2022.

member, Committee on International Security Studies, American Academy of Arts and Sciences, 2019-present.

member, Steering Committee, Workshop on Economics in Information Security, 2019-present.

member, Encryption Working Group, Carnegie Endowment for International Peace, 2018-2020.

program committee member, Privacy Enhancing Technologies Symposium (PETS) and member of editorial board, *Proceedings of PETS (PoPETS), 2019*.

committee member, Law Enforcement and Intelligence Access to Plaintext Information in an Era of Widespread Strong Encryption: Options and Trade Offs, National Academies of Sciences, Engineering, and Medicine, 2017-2018.

program committee member, Privacy Enhancing Technologies Symposium (PETS) and member of editorial board, *Proceedings of PETS (PoPETS), 2018*.

program committee member, Privacy Enhancing Technologies Symposium (PETS) and member of editorial board, *Proceedings of PETS (PoPETS), 2017*.

participant, Berkman Center Berklett Cybersecurity Project, *Don't Panic: Making Progress on the Going Dark Debate,* 2016.

member, ACM Policy Award Committee, 2015-2018.

member, Committee on the Workshop on Data Breach Aftermath and Recovery for Individuals and Institutions, National Academies of Sciences, Engineering, and Medicine, 2015-2016.

member, Intelligence Science and Technology Experts Group, National Academies of Sciences, Engineering, and Medicine, 2015-2023.

steering committee member, Committee on the Workshop on Privacy for the Intelligence Community: Emerging Technologies, Academic and Industry Research, and Best Practices, National Academies of Sciences, Engineering, and Medicine, 2015.

organizing committee member, Principles and Practice of Privacy Science Workshop, 2015.

organizing committee member, CCC Privacy by Design Workshops, 2014-2015.

program committee member, First International Workshop on Privacy Engineering, 2015.

steering committee member, Sackler Forum on Cybersecurity, National Academy of Science, 2014.

member, Committee on Responding to Section 5(d) of Presidential Decision Directive 28: The Feasability of Software to Provide Alternatives to Bulk Signals Intelligence Collection, National Research Council, 2014.

program committee member, ACM Workshop on Information Sharing and Collaboration, 2014.

member, Electorate Nominating Committee, Section on Information, Computing, and Communication, American Association for the Advancement of Science, 2014-present.

steering committee member, "Cybersecurity Ideas Lab," NSF, February 2014.

consultant, SRI, "Cybersecurity Policy Research at SRI: Scope, Value, and Challenges," 2013.

steering committee member, NSF Secure and Trustworthy Computing meeting, 2012.

program committee member, New Security Paradigms Workshop, 2012.

participant, Meeting of Experts, Department of Homeland Security's National Protection and Programs Directorate, Computer Science and Telecommunications Board, 2012.

committee member, Usability, Security, and Privacy of Computer Systems: a Workshop, National Academies of Sciences, Engineering, and Medicine, 2009-2010.

program committee member, Cloud Computing Security Workshop, CCS, 2009.

review committee member, NSF Future of the Internet program, April 2009.

member, Panels, Workshops, and Presentations Committee and Industry Advisory Committee, Grace Hopper Celebration of Women in Computer Science, 2007.

program committee member, Computers, Freedom, and Privacy, 2007.

program committee member, IEEE Symposium on Security and Privacy, 2006.

program committee member, Industry and Government Track, 12th ACM Conference on Computer and Communications Security, 2005.

program committee member, Workshop on Privacy in the Electronic Society, 2004.

advisory board member, Computers, Freedom, and Privacy, 2004.

program committee member, CRA "Grand Challenges in Information Security and Assurance" conference, 2003.

program committee member, Computers, Freedom, and Privacy, 2000.

distinguished lecturer, Sigma Xi, 1999-2001.

member, ACM Advisory Committee on Security and Privacy, 2001-2003.

member, ACM Committee on Law and Computing Technology, 1999-2003.

member-at-large, Mathematics Section, AAAS, 1994-1998.

member, Symbolic Computation Panel, NSF, 1997.

member (1995, 1996), chair (1997), Fulbright Scholars Discipline Advisory Committee: Computer Science.

consultant, National Research Council, 1996.

co-chair, Security and Privacy session, Massachusetts Telecommunications Conference, 1994.

program committee member, 1993 ISSAC Conference.

member, NSF PYI Panel, 1990.

member, NSF Panel on Scientific Computing Equipment in the Mathematical Sciences, 1987.

chair, NSF Graduate Panel on Computer Science, 1989.

member, NSF Graduate Panel on Computer Science, 1987, 1988.

organizer, Cornell Day at Wesleyan Conference, 1987.

Service in Support of Women in Science (see also advisory committees)

member, External Advisory Board, Cyber Policy Program, Spelman College, 2024-present.

Steering Committee, GREPSEC Workshops, 2020-present.

co-chair, GREPSEC IV Workshop, May 2019.

co-chair, GREPSEC III Workshop, May 2017.

co-chair, GREPSEC II Workshop, May 2015.

co-chair, GREPSEC Workshop, May 2013.

member, PhD Forum Committee, Grace Hopper Celebration of Women in Computer Science, 2011.

chair, ACM Athena Lecturership Selection Committee, 2006-2011.

founding co-chair, ACM-W Athena Lecturership, 2005-2006.

co-chair, Women Engineers@Sun meeting, October 2008.

co-organizer, Celebration of Women in Math at MIT, April 2008.

founder and moderator, ResearcHers, a mailing list for women computer science researchers (organized under the auspicies of CRA-W and the Anita Borg Institute for Women and Technology), 2004 - 2016.

member, Speaker's Bureau, Association for Women in Mathematics, 1980-1985.

member, Membership Committee, Association for Women in Mathematics, 1981-1983.

AWARDS

Bertrand Russell Prize, American Mathematical Society, 2024.

Lifetime Achievement Award, USENIX, with Steven Bellovin and Matt Blaze, 2023.

National Associate, National Academies of Sciences, Engineering, and Medicine, 2020.

Inductee, Information System Security Association Hall of Fame, 2018.

Fletcher Faculty Research Award, for *Listening In: Cybersecurity in an Insecure Age,* 2018.

EFF Pioneer Award, for *Keys under Doormats,* shared with Harold Abelson, Ross Anderson, Steve Bellovin, Josh Benaloh, Matt Blaze, Whitfield Diffie, John Gilmore, Matthew Green, Peter Neumann, Ronald Rivest, Jeffrey Schiller, Bruce Schneier, Michael Specter, and Daniel Weitzner, 2016.

Inductee, Cybersecurity Hall of Fame, 2015.

M^3AAWG J.D. Falk Award, for *Keys under Doormats,* shared with Harold Abelson, Ross Anderson, Steve Bellovin, Josh Benaloh, Matt Blaze, Whitfield Diffie, John Gilmore, Matthew Green, Peter Neumann, Ronald Rivest, Jeffrey Schiller, Bruce Schneier, Michael Specter, and Daniel Weitzner, 2015.

Surveillance Studies Book Prize, for *Surveillance or Security?,* 2012.

The Guardian's Open 20: Fighters for Internet Freedom, 2012.

Fellow, John S. Guggenheim Foundation, 2012.

Fellow, Association for Computing Machinery, 2011.

Women of Vision Social Impact Award, Anita Borg Institute of Women and Technology, 2008.

Distinguished Engineer, Association for Computing Machinery, 2006.

Fellow, American Association for the Advancement of Science, 2000.

IEEE-USA Award for Distinguished Literary Contributions Furthering Public Understanding of the Profession, for *Privacy on the Line*, shared with Whitfield Diffie, 1999.

McGannon Book Award for Social and Ethical Relevance in Communication Policy Research, Donald McGannon Communication Research Center (Fordham University), for *Privacy on the Line*, shared with Whitfield Diffie, 1998.

NSF Mathematical Sciences Postdoctoral Fellowship, 1988.

GOVERNMENT BRIEFINGS (recent)

Testimony, Bills concerning data use and data privacy, Joint Committee on Advanced Information Technology, the Internet, and Cybersecurity, State House, Commonwealth of Massachusetts, October 2023.

Testimony, Informational Hearing of the Joint Committee on Advanced Information Technology, the Internet and Cybersecurity, State House, Commonwealth of Massachusetts, March 2023.

Testimony, Subcommittee on Privacy, Technology, and the Law, Committee on Judiciary, US Senate, *Protecting Americans' Privacy Information from Hostile Foreign Powers,* September 2022.

Briefings with Cybercrime Unit, European Commission and with MEPs, February 2020.

Panelist, "Advancing the Discussion on Cybersecurity and ePrivacy: Metadata, Encryption, and Law Enforcement Access," Open Forum Europe, Brussels, November 2019.

Briefing, Renewing the CDR Portion of the *USA FREEDOM Act,* House Judiciary Committee staff, September 2019.

Panelist, Privacy and Civil Liberties Oversight Board Public Forum on the USA FREEDOM Act, May 2019.

Panelist, "Bring in the Nerds: What Policymakers Need to Know about Encryption and 'Special Access'," Senate staffers, May 2018.

Panelist, Cybersecurity Session, Second Session of the Massachusetts-Quebec Collaborative Research Council, Massachusetts Senate, August, 2017.

Panelist, Setting the Problem: The National Encryption Debate, and Modernizing Law Enforcement panels, Workshop on the Future of Encrypted Communications, Hoover Institution, December 2016.

Panelist, "The 'Going Dark' Debate: Encryption and Evolving Technology," Congressional Research Service Congressional Seminar, July 2016.

Briefing, House and Senate Judiciary Committee staffs, Breakdown of content/non-content distinction and third-party doctrine in face of IP communications, April 2016.

Briefing, Senate Select Committee on Intelligence Staff, on Berkman Center Berklett Cybersecurity Project, *Don't Panic: Making Progress on the Going Dark Debate* and related issues, March 2016 (also translated into Portuguese by Instituto de Tecnologia e Sociedade do Rio, 2019).

Testimony, House of Representatives Committee on the Judiciary, *The Encryption Tightrope: Balancing Americans' Security and Privacy,* March 2016.

Briefing, Federal Communications Commission (Public Safety and Homeland Security), August 2014.

Commentary, Privacy and Civil Liberties Oversight Board, February 2014.

Briefing, Senate and House Judiciary Staff, Senate Commerce Committee Staff, Wiretapping without Weakening Communications Infrastructure, December 2012.

Briefing, Federal Communications Commission (Public Safety and Homeland Security) and Department of Justice (Office of Legal Counsel), Security Risks of Extending *Communications Assistance for Law Enforcement Act,* December 2011.

Briefing, Senate Judiciary staff, Security Risks with Extending *Communications Assistance for Law Enforcement Act,* April 2011.

Testimony, House of Representatives Committee on the Judiciary, Subcommittee on Crime, Terrorism, and Homeland Security, *Going Dark: Lawful Electronic Surveillance in the Face of New Technologies,* February 2011.

Testimony, House of Representatives Committee on Science and Technology, Subcommittee on Technology and Innovation, *Cybersecurity Activities at NIST's Information Technology Laboratory,* October 2009.

Meeting with Sophia In't Veld and Alexander Alvaro, Members of European Parliament, security risks of the *Protect America Act,* May 2008.

Meeting with Achim Klabunde and Anna Buchta, European Commissions Directorate General Information, Society and Media, Electronic communications policy, security risks of *Protect America Act,* December 2007.

Meeting with Peter Hustinx, European Data Protection Supervisor, security risks of *Protect America Act,* December 2007.

Briefing, House Intelligence Committee, security risks of *Protect America Act,* October 2007.

Briefing, NSA Legal Staff, security risks of *Protect America Act,* October 2007.

Briefing European Commission, Information Society and Media, DRM, November 2007.

Meeting with Representative Zoe Lofgren re *Protect America Act,* August 2007 (with Whitfield Diffie).

Meeting with staff for Senator Mike DeWine, security risks in expansion of the *Communications Assistance for Law Enforcement Act,* September 2006.

PUBLICATIONS

Books

Susan Landau, *People Count: Contact-Tracing Apps and Public Health,* MIT Press, 2021; part of Chapter 5 reprinted in *Big Think,* May 24, 2021.

Committee on Law Enforcement and Intelligence Access to Plaintext Information in an Era of Widespread Strong Encryption: Options and Trade Offs, Computer Science and Telecommunications Board, National Academies of Sciences, Engineering, and Medicine, *Decrypting the Encryption Debate: A Framework for Decisionmakers*, 2018.

Susan Landau, *Listening In: Cybersecurity in an Insecure Age,* Yale University Press, 2017.

Winner of the 2018 Fletcher Faculty Research Award. Listed in "Highlights of this season's releases" *Nature*, 2019. Comments on the book include: "In *Listening In,* Landau gives us an authoritative and unflinching look at this challenge and confronts the urgent question of security in the digital age" Matt Olsen, Former Director, National Counterterrorism Center; "[Landau's] clean knowledgeable writing reflects the depth of her expertise as she traces the tug of war that has played out between law enforcement and cryptographers in recent decades," Kadhim Shubber, *Financial Times*, and cited by NSA General Counsel Glenn Gerstell in his 2018 Keynote to the American Bar Assocation as influencing his thinking.

Committee on Responding to Section 5(d) of Presidential Policy Directive 28: The Feasibility of Software to Provide Alternatives to Bulk Signals Intelligence Collections, National Research Council, *Bulk Collection of Signals Intelligence: Technical Options,* National Academies Press, 2015.

Susan Landau, *Surveillance or Security? The Risks Posed by New Wiretapping Technologies,* MIT Press, February 2011.

Winner of the 2012 Surveillance Studies Book Prize, given by the Surveillance Studies Network. Cited in *Liberty and Security in a Changing World,* 2013 (President's NSA Review Committee report). Comments on the book include: "This is an absolutely mandatory source book for everyone interested in the would-be conflicts," Peter Neumann (RISKS); "Landau's well-researched writing is a superb resource," Hilarie Orman *Cipher* (IEEE Committee on Security and Privacy); "the definitive text on the topic . . . a title that needs to be read," Ben Rothke, *Slashdot*; "the material is presented in

way that is accessible for the general public yet specific enough to guide policymakers in Congress and the Executive branch—for whom it should be required reading," Suzanne Spaulding, former Executive Director, National Commission on Terrorism; "Susan Landau has taken an exceptionally complex but vital subject and presented it in a clear and compelling way," Jonathan Zittrain, Harvard Law School. "There are few books that comprehensively cover the subtle and complex interactions between technology, law, and public policy, and this is one of them... This book ... will definitely be the standard reference for years to come." Earl Boebert.

Whitfield Diffie and Susan Landau, *Privacy on the Line: the Politics of Wiretapping and Encryption,* MIT Press, 1998 (rev. ed., 2007).

Winner, IEEE-USA Award for Distinguished Literary Contributions Furthering Public Understanding of the Profession, 1999, and McGannon Book Award for Social and Ethical Relevance in Communication Policy Research, Donald McGannon Communication Research Center (Fordham University), 1998.*Privacy on the Line* attracted international attention, including presentations on NPR and CSPAN's "About Books" program. The book was reviewed in *Business Week,Daily Telegraph* (British national newspaper), *The Guardian* (British national newspaper), *The Sciences,* and *Notices of the American Mathematical Society,*" and received short reviews in *Science News, New Scientist, European Business Report, On Wall Street* among others. Review comments include "This book should be considered urgent reading," Robert Bruen in *Cipher* (IEEE Committee on Security and Privacy); "[a] gem," *The Guardian*; "it's hard to imagine a better introduction to an issue that will be with us for years to come," Stewart Baker (former NSA counsel), in *Notices of the American Math Society*, and a listing as "recommended reading" in *Scientific American*. The Electronic Privacy Information Center distributed eighty copies to members of Congress.

Book Chapters

S. Landau, "The Development of a Crypto Policy Community: Diffie–Hellman's Impact on Public Policy," Rebecca Slayton, ed., *Democratizing Cryptography The Work of Whitfield Diffie and Martin Hellman,* Association for Computing Machinery, 2022, pp. 214-256.

S. Landau, "What AWM Has Meant to Me," Janet L. Beery, Sarah J. Greenwald, and Cathy Kessel, eds., *Fifty Years of Women in Mathematics: Reminiscences, History, and Visions for the Future of AWM,* Spring Verlag, 2022, pp. 301-306.

S. Bellovin, S. Landau, and H. Lin, "Limiting the Undesired Impact of Cyber Weapons: Technical Requirements and Policy Implications," in Herbert Lin and Amy Zegart, eds., *Bytes, Bombs, and Spies: The Strategic Dimensios of Offensive Cyber Operations,* Brookings Institution Press, 2018. This paper originally appeared in *Journal of Cybersecurity,* Vol. 3, Issue 1 (2017), pp. 59-68.

S. Landau, "CALEA: What's Next?" (opening argument, rejoinder, and last words), in Stewart Baker, Harvey Rishikof, and Bernie Horowitz, eds., *Patriot Debates II: Contemporary Issues in National Security,* American Bar Association, 2012, pp. 143-148, 151-154, 155-157.

W. Diffie and S. Landau, "The Export of Cryptography in the 20th Century and the 21st," *The History of Information Security: A Comprehensive Handbook,* Karl De Leeuw and Jan Bergstra (eds.), Elsevier, 2007, pp. 725-736. A modified version of this paper, "September 11th Did Not Change Cryptography Policy," *Notices of the Mathematical Society,* April 2002, pp. 450-454.

S. Landau, "Universities and the Two-Body Problem," in Bettye Anne Case and Anne Leggett (eds.), *Complexities: Women in Mathematics,* Princeton University Press, 2005, pp. 253-256. Originally appeared in *Computing Research Association Newsletter,* March, 1994, p.4, and was reprinted in the

Association for Women in Mathematics Newsletter, March 1994, pp. 12-14, and in *SIGACT News,* December 1994, pp. 41-43.

S. Landau, "Tenure Track, Mommy Track," in Bettye Anne Case and Anne Leggett (eds.), *Complexities: Women in Mathematics,* Princeton University Press, 2005, pp. 260-263. Originally appeared in *Association for Women in Mathematics Newsletter,* May-June 1991, and was reprinted in shortened form in *Notices of the American Mathematical Society,* September 1991, pp. 703-4.

S. Landau, "Computations with Algebraic Numbers," in J. Grabmeier, E. Kaltofen, V. Weispfennig (eds.), *Computer Algebra Handbook,* Springer Verlag, 2003, pp. 18-19.

S. Landau, "The Transformation of Global Surveillance," in R. Latham (ed.), *Bytes, Bombs, and Bandwidth: Information Technology and Global Security,* Social Science Research Council, pp. 117-131, 2003.

S. Landau, "The Responsible Use of 'Expert' Systems," in *Directions and Implications of Advanced Computing,* Volume I, Ablex Publishing Corp. (1989), pp. 191-202, and *Proceedings of the Symposium on Directions and Implications of Advanced Computing,* (1987), pp. 167-181.

Law Review Articles and Related Work

S. Landau and P. Vargas Leon, "Reversing Privacy Risks: Strict Limitations on the Use of Communications Metadata and Telemetry Information," *Colorado Technology Law Journal,*" Vol. 21, Issue 1 (2023), pp. 225-336.

N. Kostyuk and S. Landau, "Dueling over Dual_EC_DRBG: The Consequences of Corrupting a Cryptographic Standardization Process," *Harvard National Security Journal,* Volume 13, Issue 2 (2022), pp. 224-284.

S. Bellovin, M. Blaze, S. Landau, and B. Owsley, "Seeking the Source: Criminal Defendants' Constitutional Right to Source Code, *Ohio State Technology Law Journal,* Volume 17, No. 1 (Winter 2021), pp. 1-73. This paper has been cited in two New Jersey appellette court decisions: State v. Corey Pickett, 246 A.3d 279 (2021) and State v. Rochat, 470 N.J. Super. 392 (2023).

S. Landau and A. Lubin, Examining the Anomalies, Explaining the Value: Should the USA FREEDOM Act's Metadata Program be Extended?, *Harvard National Security Journal,* Vol. 11, Issue 3 (2020), pp. 308-358.

S. Landau, "If It Isn't Efficacious, Don't Do It," *European Data Protection Law Review,* Vol. 5, Issue 4 (2019), pp. 466-470.

S. Landau, "Comments on Privacy Docket No. 180821780–8780–01," submitted to the National Telecommunication and Information Administration Request for Comments on a New Approach to Consumer Data Privacy, October 24, 2018.

S. Bellovin, M. Blaze, S. Landau, and S. Pell, "It's Too Complicated: How the Internet Upends *Katz, Smith,* and Electronic Surveillance Law," *Harvard Journal of Law and Technology,* Vol. 30, No. 1 (2016), pp. 1-101.

S. Bellovin, M. Blaze, and S. Landau, "Comments on Proposed Search Rules," *Preliminary Draft of Proposed Amendments to the Federal Rules of Appellate, Bankruptcy, Civil, and Criminal Procedure,* October 31, 2014.

S. Landau, "Under the Radar: NSA's Efforts to Secure Private-Sector Telecommunications Infrastructure," *Journal of National Security Law and Policy,* Vol. 7, No. 3 (2014); one section, "The 1980s and 1990s — Who Controls Communication Security — The Department of Commerce or the NSA?" was reprinted in *Intelligence,* translation by Junichi Hiramatsu, Vol. 15, March 2015.

S. Bellovin, M. Blaze, S. Clark, and S. Landau, "Lawful Hacking: Using Existing Vulnerabilities for Wiretapping on the Internet," *Northwestern Journal of Technology and Intellectual Property,* Vol. 12, Issue 1 (2014).

S. Landau, "The Large Immortal Machine and the Ticking Time Bomb," *Journal of Telecommunications and High Technology Law,* Volume 11, Issue 1 (2013), pp. 1-43.

S. Bellovin, S. Bradner, W. Diffie, S. Landau, and J. Rexford, "Can It Really Work? Problems with Extending EINSTEIN to Critical Infrastructure," *Harvard National Security Journal,* Vol. 3, Issue 1 (2012). A short version of the paper appeared as "As Simple as Possible — But No Simpler," *Communications of the ACM,* Vol. 54, No. 8 (August 2011), pp. 30-33.

D. D. Clark and S. Landau, "Untangling Attribution," *Harvard National Security Journal,* Vol. 2, Issue 2 (2011); earlier version appeared in *Proceedings of a Workshop on Deterring Cyberattacks: Informing Strategies and Developing Options for U.S. Policy,* National Academies Press, 2010, pp. 25-40.

S. Landau, "National Security on the Line," *Journal of Telecommunications and High Technology Law,* Vol. 4, Issue 2, Spring 2006, pp. 409-447.

Refereed Technical Publications

Hal Abelson, Ross Anderson, Steven M. Bellovin, Josh Benaloh, Matt Blaze, Jon Callas, Whitfield Diffie, Susan Landau, Peter G. Neumann, Ronald L. Rivest, Jeffrey I. Schiller, Bruce Schneier, Vanessa Teague, and Carmela Troncoso, "Bugs in our Pocket: The Risks of Client-Side Scanning," *Journal of Cybersecurity,* Vol. 10, Issue 1 (2024), pp. 1-18.

S. Bellovin, S. Landau, and H. Lin, "Limiting the Undesired Impact of Cyber Weapons: Technical Requirements and Policy Implications," *Journal of Cybersecurity,* Vol. 3, Issue 1 (2017), pp. 59-68.

S. Bellovin, M. Blaze, and S. Landau, "Searching Securely: Technical Risks with Remote Computer Searches," *COMPUTER,* Vol. 49, No. 3 (March 2016) pp. 14-24; reprinted in *Computing Now,* June 2016.

H. Abelson, R. Anderson, S. Bellovin, J. Benaloh, M. Blaze, W. Diffie, J. Gilmore, M. Green, S. Landau, P. Neumann, R. Rivest, J. Schiller, B. Schneier, M. Specter, D. Weitzner, "Keys under Doormats: Mandating insecurity by requiring government access to all data and communications," *Journal of Cybersecurity,* Vol. 1; a short version of "Keys under Doormats," appeared in *Communications of the ACM,* Vol. 58, No. 10 (October 2015), pp. 24-26.

S. Landau, "NSA and Dual EC_DRBG: Deja Vu All Over Again?," *Mathematical Intelligencer,* Vol. 37, Issue 4 (December 2015), pp. 72-83.

S. Bellovin, M. Blaze, S. Clark, and S. Landau, "Going Bright: Wiretapping without Weakening Communications Infrastructure," *IEEE Security and Privacy,* Vol. 11, No. 1, January/February 2013, pp. 62-72. [Cited in *Washington Post* op-ed, "How to Break the Deadlock over Data Encryption," March 13, 2016, and *New York Times* editorial, "Eavesdropping on Internet Communications," May 20, 2013.]

C. Landwehr, D. Boneh, J. Mitchell, S. Bellovin, S. Landau, and M. Lesk, "Privacy and Cybersecurity: The Next 100 Years," *Proceedings of the IEEE,* Vol. 100, Issue: Special Centennial Issue (2012), 1659-1673.

S. Landau and T. Moore, "Economic Tussles in Federated Identity Management," *First Monday,* Vol. 17, No. 10 (October 2012). Originally appeared at *Workshop on Economics of Information Security,* 2011.

W. Diffie and S. Landau, "Communications Surveillance: Privacy and Security at Risk," *Communications of the ACM,* Vol. 52 No. 11 (November 2009), Pages 42-47, and Queue (October 2009).

S. Bellovin, M. Blaze, W. Diffie, S. Landau, P. Neumann, and J. Rexford, "Risking Communications Security: Potential Hazards of the 'Protect America Act'," *IEEE Security and Privacy,* Vol. 6, No. 1 (January/February 2008), pp. 24-33. A short version of this paper appeared as "Internal Risks, External Surveillance," Inside Risks 209, *Communications of the ACM* 50, p. 128, Dec, 2007.

S. Landau, "Find Me a Hash," *Notices of the American Mathematical Society,* March 2006, pp. 330-332; reprinted in *Mathematical Advance in Translation,* Chinese Academy of Sciences, 3 (2010) pp. 226-228.

S. Landau, "Security, Wiretapping, and the Internet," *IEEE Security and Privacy*, Vol. 3, No. 6 November/December 2005, pp. 26-33.

S. Landau, "Polynomials in the Nation's Service: Using Algebra to Design the Advanced Encryption Standard," *American Mathematical Monthly,* February 2004, pp. 89-117.

S. Landau and N. Immerman, "Embedding Linkages in Integer Lattices," *Algorithmica*, Vol. 32, No. 3 (2002), pp. 423-436, originally appeared in *MSI Workshop on Computational Geometry,* October 1994.

S. Landau, "Designing Cryptography for the New Century," *Communications of the ACM,* Vol. 43, No. 5, May 2000, pp. 115–120.

S. Landau "Communications Security for the Twenty-First Century: the Advanced Encryption Standard," *Notices of the American Mathematical Society,* April 2000, pp. 450–459. Reprinted, in translation, in "Surveys in Applied and Industrial Mathematics," TVP Publishers (Moscow), Vol. 7, No. 2 (2000), pp. 259-281.

S. Landau, "Standing the Test of Time: the Data Encryption Standard," *Notices of the American Mathematical Society,* March 2000, pp. 341-349. Reprinted, in translation, in "Surveys in Applied and Industrial Mathematics," TVP Publishers (Moscow), Vol. 7, No. 2 (2000), pp. 240-258.

S. Landau, "$\sqrt{2} + \sqrt{3}$: Four Different Views," *Mathematical Intelligencer*, Vol. 20, No. 4 (Fall 1998), pp. 55-60.

D. Kozen, S. Landau, and R. Zippel, "Decomposition of Algebraic Functions," *Journal of Symbolic Computation*, Vol. 22 (1996), pp. 235-246, originally appeared in *Algorithmic Number Theory Symposium (1994)*.

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Security Mom: The Podcast about Our Homeland: Decrypting Encryption, October 8, 2015.

Webinars

Zero Trust? Encryption and Other Approaches to Protecting Private Data and Communications, Privacy in an Age of Zero Trust Webinar Series, American Bar Associations Science and Technology Law section, cosponsored by ABA Center for Public Interest Law and ABA Criminal Justice Section, June 9, 2023.

Securing Our Homes, Project Sustainability, February 8, 2023.

Home Security and Safety, Project Sustainability, February 1, 2023.

Data: Have we lost the battle for data privacy and protection?, Gordon Institute, Tufts University and Albany Law School, January 18, 2023.

Encryption and Privacy, ABA Civil Rights and Social Justice Section, Chair Chat, December 28, 2022.

Cyber and Critical Infrastructure Collide: The Colonial Pipeline Attack, The Fletcher School, May 20, 2021.

The US and Taiwan after COVID: Preparing for the Next Crisis, Carnegie Endowment for International Peace, April 27, 2021.

In Lieu of Fun, with Ben Wittes and Katie Klonick, December 17, 2020.

Faculty Forum Online: Susan Landau PhD '83, MIT, October 28, 2020.

Out of the Political Trenches: Next Steps for Encryption Policy, Carnegie Endowment for International Policy and Center for Information Technology Policy, Princeton University, May 13, 2020.

Major Talks (including Keynotes)

"Shape-Shifting Crypto Wars," Keynote, M^{3}AAWG, February 2024.

"People Count: Contact-Tracing Apps and Public Health," Keynote, USENIX Security, August 2021.

"The Second Crypto War: What's Different Now," Invited Talk, USENIX. Security, August 2018.

"Listening In: Cybersecurity in an Insecure Age," Keynote, Women in Cybersecurity (part of CRA-W Distinguished Lecture series), Chicago, March 2018.

"Listening In: Cybersecurity in an Insecure Age," Keynote, GOTO Conference, Berlin, November 2017.

"Cybersecurity, National Security, Law, and Policy," CASCON, Toronto, November 2017.

"Crypto Wars: The Apple iPhone and the FBI," Keynote, DigiDark—The Dark Side of Digitization: Fraud, Surveillance, Sourveillance, Disinformation, Privacy Loss, and Cyber Extremism, Darmstadt, July 2016.

"Mining the Metadata — and Its Consequences," Keynote, International Conference on Software Engineering, May 2015.

"Lawful Hacking: Using Existing Vulnerabilities for Wiretapping on the Internet," Keynote, Conference on Detection of Intrusions and Malware and Vulnerability Assessment, July 2014.

"The Large Immortal Machine and the Ticking Time Bomb," Fifth Annual Privacy Lecture, Berkeley Center for Law and Technology, March 2012 (CLE credit).

"Surveillance or Security? The Risks Posed by New Wiretapping Technologies," Plenary, AusCERT, May 2012; Invited Talk, Large Installation System Administration Conference (LISA), December 2011.

"Privacy: It's All in the Use Case," Invited Essayist, Advanced Computer Security Applications Conference, December 2011.

"A Computer Scientist Goes to Washington: How to Be Effective When Facts are 10% of the Equation," SIGCSE Keynote, March 2011.

"Bits and Bytes: Explaining Communications Security (and Insecurity) in Washington and Brussels," Invited Talk, Grace Hopper Celebration of Women in Computer Science, October 2009.

"Internet Surveillance: Building our own Trojan Horse," Invited Talk, USENIX Annual Technical Conference, June 2008.

"Unsecuring the Internet: A New Government Policy?," Keynote, Northeastern Conference of the Consortium for Computing Sciences in Colleges, Plattsburgh, NY, April 2008.

"Wiretapping the Internet: Communications Insecurity," Keynote, British Columbia Privacy and Security Conference, February 2008.

"Keep Calm and Carry On," Invited Talk, HP Day, Royal Holloway College, December 2007.

"The Missing Link," Keynote, Privacy Enhancing Technologies Workshop, June 2006.

"Security, Trusted Computing, and DRM," Invited Talk, Javapolis 2004, Antwerp, December 2004.

"Security, Liberty, and Privacy," Invited Talk, CRYPTO, August, 2004.

"Old Math, New Math: Using Polynomials to Gain Insight into the Design of Cryptosystems," Invited Hour MAA Speaker, Joint Math Meetings, January 2002.

"U.S. Crypto Policy: Explaining the Inexplicable," Invited Talk, USENIX Security, Invited Talk, August 1999.

Other Invited Talks

"Shape-Shifting Crypto Wars," Math Department Colloquium, Tufts University, April 2023.

"The Current Encryption Wars: The Conflict over Encryption and Child Sexual Abuse and Exploitation, Rhetoric Removed," Kennedy School of Government, November 2023, Georgia Institute of Technology, October 2023.

"National Security and Personal Privacy: A Surprising Alignment of Interests," Università Bocconi, Milan, May 2023.

"The Reality of Cyberwar—in Ukraine and Elsewhere," Mid-Coast Forum on Foreign Relations, Rockland, Maine, April 2023; rebroadcast on "Speaking in Maine," Maine Public Radio, May 8, 2023.

Panelist, "Democratizing Cryptography," Center for International Strategy and Arms Control, Stanford University, February 2023.

"Securing US: How the Issue Isn't Really Security versus Privacy After All," Ethics of AI Colloquium Series, Université du Québec Montréal, March 2022.

"People Count: Contact-Tracing Apps and Public Health," Digital Fourth, April 2022; Osher Institute, US San Diego, May 2021; PACT All Hands, MIT, April 2021; Center for Applied Cybersecurity Research, Indiana University, February 2021; Computer Science Department Distinguished Lecture, Columbia University, November 2020.

"Contact-Tracing Apps and Public Health," Lightning Panel, Tufts 2020 COVID-19 Research Research Symposium, November 2020.

"Privacy, Technology, and Call Detail Records: What a Computer Scientist Can Add to Policy Discussions about Communications Metadata," Keynote, The 8th Technion Summer School on Cyber and Computer Security: Privacy in Challenging Times, September 2020.

"Flipping the Discourse," 2019 Conference on Cyber Norms, The Hague Center for Cyber Norms, November 2019.

"Limiting the Undesired Impact of Cyber Weapons," Belfer Center, Kennedy School of Government, Harvard University, February 2019.

"Does Privacy Matter?," Scientists in Synagogues program, Shir Hadash, Los Gatos, California, November 2018.

"Why is Cybersecurity so Damn Hard?," Keynote, Parents' Weekend, Tufts University, October 2018.

"Encryption," lecture for "Cybersecurity: The Intersection of Technology and Policy," Executive Education Course, Kennedy School of Government, July 2024, January 2024, August 2023, January 2023, August 2022, January 2022, July 2021, January 2021, July 2020, January 2020, July 2019, January 2019, July 2018.

"Crypto: A Look at the Current State of the Controversy," Lincoln Labs, September, 2018; Qualcomm Mobile Security Summit, San Diego, May 2018; Massachusetts Technology Leadership Council, May 2018.

"Listening In: Cybersecurity in an Insecure Age," Fermilab Arts and Lecture Series; March 2019; Graves Cyber Security Distinguished Lecture, University of Tulsa, March 2018; Center for Democracy and Technology, March 2018; International Spy Museum, February 2018; Worcester World Affairs Council, February 2018; Facebook, Menlo Park, California, January 2018; Harvard Book Store, Cambridge, MA, November 2017; Lunchtime Lectures, 92nd Street Y, New York, November 2017; Listening In: How Encryption Can Preserve Cybersecurity in an Insecure Age: New America Foundation, November 2017; Security by the Book: Hoover Book Soiree, November 2017.

"Cybersecurity," "Surveillance," Asia Pacific School on Internet Governance, Bangkok, July 2017.

"Protecting and Exposing Private Data," 9/11 Memorial Museum, May 2016.

"Architectures and the Differences They Create: Why Security, Authentication, and Attribution are Easy on the Phone Network and Hard in IP Networks," "A Brief history of Internet-Based attacks, and Why Security is So Hard," "Privacy Risks and Protections in an Internet Context," KAIST GLobal Lecture Series, May 2016.

Introductory Remarks before *The Conversation,* Science on Screen Series, Coolidge Corner Theatre, November 2015.

"The Second Crypto Wars in Context," Microsoft Briefing, October 2015.

"It's Too Complicated: The Conflict between the Technological Implications of IP-Based Communications and US Surveillance Law," Cyber Alliance Speaker Series, Boston University, January 2019; Information Security Project, Yale Law School, April 2017; The Academic Perspective on Cybersecurity Challenges, Blavatnik ICRC, Tel Aviv University, June 2016; KAIST CSRC/GSIS International Workshop on Legal Regulations for 21st Century, May, 2016; UCL Distinguished Lecture, October 2015.

"Crypto Wars: Plus ça Change, Plus c'est la Même Chose," Merck, July 2016; KAIST, May 2016; NSF WATCH series, April 2016, Twenty Years of Cryptography and Security at WPI Symposium, October 2015.

"Keys under Doormats: Mandating insecurity by requiring government access to all data and communications," Kennedy School Nye Cyber Seminar Series, October 2015.

"Lawful Hacking: Using Existing Vulnerabilities for Wiretapping on the Internet," Duo Tech Talk, September 2016; University of Massachusetts at Amherst, March 2015.

"Bulk Collection of Signals Intelligence: Technical Alternatives — or — There's no Technological Magic," CISAC, Stanford University, April 2015; Kennedy School Nye Cyber Seminar Series, March 2015; Columbia University Security Seminar, February 2015.

"Cryptography and Privacy — and the Role for Mathematicians: Parts I and II," G. Milton Wing Lecture Series, University of Rochester, October 2014.

"Cybersecurity Ideas Lab Report: Interdisciplinary Pathways towards a More Secure Internet," Kennedy School Nye Cyber Seminar Series, October 2014.

"NSA Crypto Trapdoors and the Damage to US Interests," Bureau of Intelligence and Research, State Department, August 2014.

"Does Wiretapping Make Us More Secure? What a Computer Scientist Has to Add to the National Conversation," University of Michigan Distinguished Lecture, Februry 2014.

"What's Significant in the NSA Revelations," G. Milton Wing Lectures, University of Rochester, October 2014; IDA 30th Year Celebration Seminar, Linkoping University, Sweden, October 2013.

"Primes, Surveillance, and the National Security Agency," Hampshire Summer Studies in Math, July 2013.

"The Future of Wiretapping," IEEE Webinar, June 2013.

"A US Wiretap Snapshot: May 2013," British Telecom Executive Visitor's Group, MIT, May 2013.

"Under the Radar: NSA's Efforts to Secure Private-Sector Communications Infrastructure," Kennedy School Minerva Working Group, April 2013.

"Can It Really Work? Problems with Extending EINSTEIN to Critical Infrastructure," Kennedy School Minerva Working Group, March 2012.

"Envisioning Cybersecurity Research — and Education — in New England," New England Summit on Cyber Security, Boston University, June 2011.

"Cybersecurity: Asking the Right Questions," Watson Institute, Brown University, February 2013; Distinguished Lecture, AT&T, May 2011.

"Cybersecurity and Cyber Freedom: The Future of Digital Surveillance Technology," Brookings Institution, February 2011.

"Surveillance or Security? The Risks Posed by New Wiretapping Technologies," ISPIA Distinguished Lecture, University of Calgary, April 2013; Bolt, Beranek, and Newman, January 2013; Sammet Lecture, Mt. Holyoke, November, 2012; Mitre, November 2012; Politecnico di Milano, September 2012; Triangle Distinguished Lecture (Duke, NCSU, UNC), November 2011; ETHZ/University of Zurich Workshop and Lecture Series on Technology: Policy, Law, and Economics, November, 2011; IEEE/ACM-CS Central New Jersey Chapter, April 2011; Berkman Institute for Internet and Society, Harvard University, March 2011; University of California at Berkeley, February 2011; Google, New York, November 2010; Distinguished Lecture, University of Waterloo, November 2010.

"Untangling Attribution: Designing for Requirements," Computational Cybersecurity in Compromised Environments (C3E), Arlington VA, June 2015; University of Calgary, April 2013; Invited Talk, Third Workshop on Mathematical Cryptology (WMC2012), Castro Urdiales, Spain, July 2012; Distinguished Lecture, Stevens Institute of Technology, April 2012; ETHZ/University of Zurich Workshop and Lecture Series on Technology: Policy, Law, and Economics, November, 2011; CRCS seminar, Harvard, November 2010; Kennedy School Minerva Working Group, November 2010; Information Science Department, Cornell University, November 2010.

"Building our own Trojan Horse: Communications Surveillance and Creating Communications (In)Security," Institute for Information Infrastructure, October 2009; Berkeley EECS, March 2009; MIT CSAIL, February 2009; LERIAS, University of Pittsburgh, November 2008; Interdisciplinary Studies in Information Security, Ascona, Switzerland, July 2008.

"Transactional Information is Remarkably Revelatory," Women's Institute in Summer Enrichment, Cornell, June 2008.

"The Logic of the Law: Warrants for Content, Subpoenas for Transactional Information," Women's Institute in Summer Enrichment, Cornell, June 2008.

"COMSEC v. COMINT, and is Terrorism the Right Question?," Ecole Polytechnique Fédérale Lausanne, July 2007.

"DRM: A Different Approach," Harvard CRCS seminar, November 2006.

"Polynomials in the Nation's Service: Designing the Advanced Encryption Standard," Tufts University, October 2002.

"Putting Precision into the 'Crypto' Wars," Social Science Research Council. Workshop on Information Technology and Social Research: Setting the Agenda, June 2002.

"The Internet, Security, and Privacy," ETH, Zurich, November 2001.

"The Profound Effect of Computer Science on Teaching and Research in Mathematics," Fundamentals of Computing Workshop, CSTB, National Research Council, July 2001.

"Cryptology: Technology and Policy," University of Puerto Rico, Ponce, February 2001; CERIAS seminar, Purdue, December 2000; Physics Colloquium, Argonne National Laboratory, December 2000; Williams College, November 2000; Stanford University, February 2000; Connecticut College, May 2000; C.K. Whitco (Uniroyal), September 1999; Hoffman LaRoche, May 1999; NASA Greenbelt, Maryland, March 1999; Rockefeller Distinguished Lecturer, Dartmouth College, March 1999; Institute for Defense Analyses, Alexandria, Virginia, February 1999; Corning Research Labs, February 1999; University Lecture Series, University of Wisconsin, December 1998; Institute for Science and Interdisciplinary Studies, Hampshire College, October 1998; Policy Program, University of Massachusetts, October 1998; Worcester Polytechnic Institute, April 1998; MSRI; January 1998, DIMACS Research and Education Institute, July 1997.

"Codes, Keys, and Conflicts: Issues in US Crypto Policy," Amherst College, November 1996, Distinguished Lecture, UC Irvine, January 1996; Cornell University, November 1995, DIMACS, February 1995.

"$\sqrt{2} + \sqrt{3}$: Four Different Views," MIT Math Department, February 2009; East Coast Algebra Day, Northeastern University, April 1997.

"Embedding Linkages in Integer Lattices," Combinatorics Day at Smith, February 1993.

"How to Tangle with a Nested Radical," Williams College, October 1992.

"Elegant Algorithms and Slow Solutions," University of Denver, May 1996, IBM, San Jose, July 1992, Haverford College, May 1992; CUNY, New York, March 1992; University of Cantabria, Santander, Spain, January 1992; Supercomputing Research Center, April 1991; Valley Geometry Seminar, Univ. of Mass., April, 1991.

"Simplification of Nested Radicals," Cornell, February, 1993; Algofest, New England Theory Network, Bristol, RI, April 1992; IBM, Yorktown Heights, June 1991; Purdue University, July 1990, SIAM Annual Meeting (Special Session on Symbolic Computation), July 1990; University of Texas, Austin, January, 1990; Northeastern University, November, 1989, Rensselaer Polytechnic Institute, September, 1989, University of Massachusetts Math Colloquim, September, 1989; AMS Annual Meeting (Special Session On Computational Number Theory), August, 1989; Greater Philadelphia Combinatorics Colloquim, February, 1989.

"Shrinking Lattice Polyhedra," AMS Meeting (Special Session on Computational Algebra), Hoboken, October, 1989.

"Some Remarks on Computing the Square Parts of Integers," MIT Theory of Computation seminar, October, 1988.

"Factoring Polynomials Quickly," IBM Research, Yorktown Heights, August, 1987; University of Washington, July, 1987; University of Warsaw, July, 1987; Sandia Labs, May, 1987.

"Polynomial Decomposition Algorithms," Bonn Workshop on Foundations of Computing, July, 1987; MIT, December, 1986; Cornell University, June, 1986.

"Solvability by Radicals is in Polynomial Time," Math Sciences Institute, Cornell, March 1993; University of Washington, May 1986; MSRI Workshop on Computation in Algebra and Number Theory, October, 1985; Dartmouth College, October, 1984; Williams College, September, 1984; Cornell University, August, 1984; Beijing Computer Institute, June, 1984; University of California, Berkeley, May, 1984; Stanford University, January, 1984; Women in Mathematics Mini-Conference, CUNY, December, 1983; University of Toronto, October, 1983; IBM, Yorktown Heights, April, 1983; Carnegie-Mellon, April, 1983; Bell Labs, January, 1983.

"The Complexity of Polynomial Factorization," Beijing Computer Institute, June, 1984; IBM San Jose, January, 1984; Assoc. for Women in Math, Boston Chapter, October 1982.

"The Parallel Complexity of Certain Algebraic Problems," Beijing Computer Institute, June, 1984.

"Factoring Polynomials over Algebraic Number Fields," Cornell University, August, 1982.

"Primes, Codes and the National Security Agency," Wellesley College, April 1993; Stanford University, October, 1985; Williams College, September, 1984; Academia Sinica, Beijing, June, 1984; Tufts University, February, 1981; Dartmouth College, October, 1980.

"Mapping the Universe," Connecticut Junior Science and Humanities Symposium, March, 1984; Hampshire College Summer Studies in Math, August, 1982.

Conference and Workshop Participation

Speaker, Panel on Research, Workshop on "What can a graduate degree in Computer Science or Engineering do for you?," CCNY, April 2024.

Co-organizer and Speaker, Workshop on Advanced Automated Systems, Contestability, and the Law, Alexandria, VA., 2024.

Panelist, "Vital Energy Supply Chains: Past, Present and Future," US Association for Energy Economics, November 2021.

Panelist, "Pandora's Box: Encryption v. Safety," CyFy 2021, October 2021.

Panelist, "Privacy, Surveillance, and Digital Forensics," SADFE (Systematic Approaches to Digital Forensics Engineering), May 2021.

Panelist, "Roundtable: Towards an Agenda for the Cryptic Commons," Cryptic Commons, Allborg University, Denmark (remote), May 2021.

Panelist, "E2EE: Stuck Between a Rock and a Hard Place," Fourteenth International Conference on Computers, Privacy, and Data Protection, online, January 2021.

Panelist, "Policy Debate on the Encrypted Internet and Lawful Access," Internet Governance Forum—United States (online), July 2020.

Panelist, "Who are the experts and what is the expertise necessary for sound technology policy and use of technology in governance?,' 24th Annual BCLT/BTLJ Symposium: The Roles of Technology Expertise in Law and Policy, Berkeley Law School, February 2020.

Panelist, The Never-Ending Crypto Wars, RSA, February 2020.

Panelist, Cybersecurity Panel, National Academy of Engineering-American Association of Engineering Societies 2018 Convocation of Professional Engineering Societies, April 2018.

Panelist, "Case Studies in Cybercrime, Surveillance, and Private Sector Law-Enforcement Cooperation," Yale Cyber Leadership Forum, April 2017.

Panelist, "Cybersecurity and Cyberwarfare: Understanding the Threat Landscape," The Kissinger Conference: Understanding Cyberwarefare and Artificial Intelligence, Yale University, April 2017.

Participant, Roundtable on "Guarding the Commons: Citizen Lab and Civil Society Counter-Intelligence," International Studies Association, April 2017.

Panelist, "The Evolving Discourse on Encryption and Electronic Evidence," District of Arizona Conference (for the Federal bench and bar), March 2018 (CLE credit).

Organizer and Moderator, "Cybersecurity: Why So Difficult?," breakout session, National Academies of Sciences Annual Meeting, April 2017.

Panelist, "New Platforms of Control (or Someone to Watch Over Me)," Princeton-Fung Global Forum: Can Liberty Survive the Digital Age, Berlin, March 2017.

Panelist, "Cybersecurity: Mathematics and Privacy," AAAS Annual Meeting, February 2017.

Panelist, Cryptographers' Panel, RSA Conference, February 2017.

Panelist, "Promoting Trust in the Evolving Security Landscape," BSA General Counsel Forum, November 2016.

Panelist, "The New Threats: Cyber Security," *The Atlantic's* Fifteen Years Later: Are We Any Safer?, September 2016.

Panelist, "Government Access to Encrypted Data," Microsoft Research Faculty Summit, July 2016.

Moderator, "The Security Economics of Surveillance," Workshop in Economics of Information Security, June 2016.

Panelist, "Why does privacy research need to be Interdisciplinary? How can we incentivize interdisciplinary research? What are the barriers?," Principles and Practices of Privacy Science Workshop, December 2015.

Participant, "Protecting Online Privacy by Enhancing IT Security and EU IT Autonomy," Civil Liberties Justice and Home Affairs Committee and Science and Technology Options Assessment Panel, European Parliament, December 2015.

Panelist, "Going Dark: The Balance between Encryption, Privacy, and Public Safety," Advanced Cyber Security Center, Boston, November, 2015.

Participant, "Global Encryption: Will it Make Us Safer?," East-West Institute, Global Cyberspace Cooperation Summit IV, September 2015.

Session Chair, "Tension between Civil Liberties and Security," Multi Disciplinary Workshop in Cyber Security, School of International Affairs, Columbia University, June 2015.

Panelist, "Security, Surveillance, and Encryption," Threats, Profits, and Security: Today's Cyber Challenges, Fordham University, April 2015 (CLE credit).

Panelist, "Impact of Technological Change on Norms, Policy, and Practice," Secrecy, Surveillance, Privacy, and International Relations, MIT, April 2015.

Panelist, "Privacy Perspective: Society," NITRD National Privacy Research Strategy Workshop, February 2015.

Panelist, "Post Snowden: Implications of the NSA and GCHQ Surveillance Programs Revelations for the PETs community," Privacy Enhancing Technologies Symposium, July 2014.

Panelist, "NSA in Historical and Diplomatic Perspective," The National Security Agency at the Crossroads, University of Texas at Austin, April 2014.

Panelist, "After Snowden: Privacy, Surveillance, & the NSA," SXSW, March 2014.

Discussion Leader, "Identity management: why don't we have it and do we actually need it?" NSF Secure and Trustworthy Computing meeting, November 2012.

Participant, "Cybersecurity and the Future of the Internet," Joint CASBS/CISAC meeting, Stanford University, November 2012.

Participant, "Transparency and Lawful Access," Google Brussels, September 2012.

Guest Scholar, Faculty Workshop: Civilian Cybersecurity Policy for an Age of Globalization,Center on Law and Information Policy, Fordham Law School, April 2012.

Panelist, "On the Rise of Smart Technologies, Surveillance, Privacy, and Ethics,"Fifth International Conference on Computers, Privacy, and Data Protection, Brussels, January 2012.

Panelist, "The Search for Meaningful Trustworthiness," ACSAC, December 2011.

Panelist, "Surveillance and Citizenship," MIT Communications Forum, October 2011.

Panelist, White House launch of National Strategy for Trusted Identities in Cyberspace, April 2011.

Moderator, "Privacy Concerns in Cybersecurity," Cybersecurity: Law, Privacy, and Warfare in a Digital World, Harvard Law School, March 2011.

Participant, "Internet Privacy Workshop: How can Technology Help to Improve Privacy on the Internet?," IAB, W3C, ISOC, and CSAIL, December 2010.

Participant, "No More Secrets: National Security Strategies for a Transparent World," ABA Standing Committee on Law and National Security, Office of the National Counterintelligence Executive, and National Security Forum, June, 2010.

Panelist, "The CIO Roadmap for Data Protection and Privacy," CIO Forum, Department of Homeland Security, March 2010.

Panelist, "Privacy in the Digital World of the Internet, E-Commerce, and Post-9/11 America," ABA Program on Data Privacy, Boston, February 2009 (CLE credit).

Panelist, "Managing Opportunities," CRA-W CAPP-L Workshop, Santa Fe, November 2008.

Moderator and Organizer, "Letting The Cup Overflow: Expanding Your Experiences Outside the Research Lab," Grace Hopper Celebration of Women in Computer Science, October 2008.

Panelist, "Security Risks of the Protect America Act," Modernization of FISA, Georgetown Law School, September 2007.

Panelist, "Government Security, Surveillance and Civil Liberties." ABA National Institue on Computing and the Law, June 2007 (CLE credit).

Panelist, "Engaging Privacy and Information Technology in a Digital Age: Discussion on the findings of the report of the National Research Council (US)," Computers, Freedom, and Privacy, May 2007.

Panelist, "Private Sector Initiatives to Design Technology to Enable (Some) Privileged Uses," Copyright, DRM Technologies, and Consumer Protection meeting, Boalt Hall School of Law, Berkeley, March 2007 (CLE credit).

Session Speaker, "Prime Numbers: New Developments in Ancient Problems," AAAS Annual Meeting, February 2007 (repeated, by invitation, at MAA Mathfest, August 2007).

Panelist, "Security and Privacy," Global Forum 2006, Paris November 2006.

Panelist, "Non-traditional Ways to Advance Your Career," Grace Hopper Celebration of Women in Computer Science, October 2006.

Panelist, "Lawful Intercept: Reconciling Privacy with National Security in an IP-enabled World," VON Fall meeting, September 2006.

Panelist, "Digital Rights Management," Computers, Freedom, and Privacy, 2006

Panelist, "Career Paths Contrasted," CRA-W Career Mentoring Workshop, 2005.

Moderator and Organizer, "National Leadership Opportunities," Grace Hopper Celebration of Women in Computer Science, October 2004.

Panelist, "Managing Career Change," Grace Hopper Celebration of Women in Computer Science, October 2004.

Participant, DTO/DNI Privacy Protection Workshop (series of three one-day meetings), Fall 2004.

Speaker, "Privacy and Civil Liberties Issues in Computing Applications Research and Development" workshop, Computers, Freedom, and Privacy, April 2004.

Speaker, "Who Are You? The Basics of Authentication, Privacy, and Identity Today" tutorial, Computers, Freedom, and Privacy, April 2004.

Participant, "Workshop on Proactive DRM Agenda," American Library Association and School of Information Management, UC Berkeley, January 2003.

Panelist, "Security, Freedom, and Privacy in a Post-September 11 World," Grace Hopper Celebration of Women in Computer Science, Vancouver, October 2002.

Participant, Public Design Workshop, NYU Law School, September 2002.

Participant, DARPA Workshop on e-Authentication, August 2002.

Panelist, "Visual Surveillance" and "Content Analysis" panels, Symposium on Security and Privacy, Zurich November 2001.

Participant, Cybercrime Workshop, Institute for Prospective Technical Studies, Joint Research Center, European Commission, Seville, January 2001.

Organizer, "Achieving Balance," Grace Hopper Celebration of Women in Computer Science, September 2000.

Panelist, "The Brave New World of the Net: Will Policy and Technology Liberate or Enslave Us?," Grace Hopper Celebration of Women in Computer Science, September 2000.

Organizer, "Battling the Crypto Wars," symposium at American Association for the Advancement of Science annual meeting, February 2000.

Panelist, "Cyberspace and Privacy," Stanford Law Review, Stanford, February 2000.

Panelist, "Anonymity on the Internet," ACM Conference on Computer and Communication Security, November 1998.

Panelist, "Conceptual Approaches to Security and Export Control on the Internet," The International Cyberlaw and Business Conference 1998: Conceptual Issues Across Borders, New York County Lawyers' Assocation, April 1998.

Panelist, "Washington Update," RSA Data Security Conference, January, 1998.

Panelist, "What are the Pros and Cons of Cryptography?," International Conference on Privacy, Montreal, September 1997.

Panelist, "Washington Update," RSA Data Security Conference, January, 1996.

Participant, "National Information Infrastructure Forum," Privacy and Security Track, National Institutes of Standards and Technology, February 28 – March 1, 1994.

Participant, "Women in Mathematics Workshop," National Security Agency, November, 1993.

Senior participant in "Individual Rights in the Information Age" workshop, Fourth International Student Pugwash Conference, Princeton University, June 23-29, 1985.

Student participant in "Computers and Society" workshop, Second International Student Pugwash Conference, Yale University, June 15-21, 1981.

GRANTS

P.I., NSF Collaborative Research: Conference: Workshop on Advanced Automated Systems, Contestability, and the Law, 2023-2024.

P.I., Hewlett Foundation, Integrating Tech and Policy in Cybersecurity Studies, 2021-2024.

P.I., NSF Frontier: Security and Privacy in the Lifecycle of IoT for Consumer Environments, 2020-2025.

P.I., Hewlett Foundation, Integrating Tech and Policy in Cybersecurity Studies, 2020-2021.

PI, NSF EAGER: Understanding and Categorizing Metadata, 2019-2023.

PI, Hewlett Foundation, Integrating Tech and Policy in Cybersecurity Studies, 2018-2020.

PI, Google Research Award, 2017.

co-P.I., NSF Grant: Scholarship Track: Scholarships for Service at WPI, 2015-2019.

P.I., CRA-W/CDC Grant: Discipline-Specific Workship Grant, GREPSEC II, 2015.

P.I., CRA-W/CDC Grant: Discipline-Specific Workship Grant, GREPSEC I, 2013.

P.I., NSF Grant: Certification of Security Protocols, 10/97-4/99.

P.I., Sun Microsystems, Cryptography and Public Policy research, 1997.

P.I., NSF Grant: ISSAC Travel Grant, 8/93-12/94.

P.I., NSF Grant: Algebraic Algorithms, 7/92-12/95.

P.I., NSF Grant: Algebraic Algorithms and Computational Complexity, 7/88-12/89.

MSRI Postdoctoral Fellowship, 9/85-12/85.

P.I., NSF Grant: Algebraic Algorithms and Computational Complexity, 5/84-11/86.

TUFTS SERVICE

2024-present: Founding director of Tufts Cybersecurity Center for Public Good.

2019-2023: Founding director of Tufts MS degree in Cybersecurity and Public Policy (CSPP), a joint degree between The Fletcher School and Tufts School of Engineering. This involved developing an innovative curriculum combining tech and policy in cybersecurity policy courses, obtaining foundation support, writing extensive aspects of the degree proposal and shepherding it through two Tufts schools that had not previously collaborated, instituting administrative processes between the two schools, developing a number of the courses, hiring faculty and teaching staff, chairing admissions to the CSPP program, advising the first three classes of CSPP students, and organizing speakers and meetings.

2022-2023: chair, Cybersecurity and Public Policy Governance Committee (university); member, Tenure-Track Ada Lovelace Search, Computer Science Department; member, Dean's Council, The Fletcher School.

2021-2022: chair, Cybersecurity and Public Policy Governance Committee (university); chair, Computer Security Search; member, Dean's Council, The Fletcher School.

2020-2021: chair, Cybersecurity and Public Policy Governance Committee (university); member, Data Intensive Studies Center Advisory Committee (university); member, AI Center Task Force (university); member, Dean's Council, The Fletcher School.

2019-2020: chair, Cybersecurity and Public Policy Governance Committee (university); member, Data Intensive Studies Center Advisory Committee (university); chair, Search Committee, Computer Security Search, Computer Science Department.

2018-2019: chair, search committee, Computer Security Search, Computer Science Department; member, Search Committee, Cybersecurity Faculty search, The Fletcher School; member, search committee, Director for the Data Intensive Studies Center.

2017-2018: chair, Search Committee, Computer Security search, Computer Science Department; member, Diversity and Inclusion Committee, The Fletcher School; member, Search Committee, Director for the Data Intensive Studies Center.

TUFTS TEACHING

Spring 2021, Spring 2022, Spring 2023: International Cyber Conflict.

Fall 2019, Fall 2020: Computer Science for Future Presidents (later renamed Cyber for Future Policymakers).

Spring 2018, Spring 2019: Privacy in the Digital Age (full-term course, spring 2019; module, spring 2018).

Fall 2018, Fall 2021, Fall 2022: Cyberlaw and Cyberpolicy.

Spring 2018: Cyber in the Civil Sector.

Note: this included developing: International Cyber Conflict (completely re-vamped curriculum); Computer Science for Future Presidents (labs and curriculum developed with Ming Chow); Privacy in the Digital Age (both module and then full-term course with labs); Cyberlaw and Cyberpolicy; Cyber in the Civil Sector.

POSTDOCS

Justin Canfil, Fletcher School of Law and Diplomacy, 2021-2022.

Patricia Vargas Leon, Fletcher School of Law and Diplomacy, 2020-2022.

Asaf Lubin, Fletcher School of Law and Diplomacy, 2018-2019.

STUDENTS, PhD

Amanda Current, Fletcher School of Law and Diplomacy, member, PhD committee (expected date: 2024).

Nadiya Kostyuk, University of Michigan, member, PhD committee, 2020.

Oshani Seneviratne, MIT, member, PhD committee, 2014.

STUDENTS, Predoctoral

Nadiya Kostyuk, 2019-2020.

STUDENTS, MS and Capstone

Misako Suzuki, Fletcher School of Law and Diplomacy, Capstone advisor, 2023.

Jade Collins, Fletcher School of Law and Diplomacy, Capstone advisor, 2023.

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