

# Jonathan Katz

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## Education

Ph.D. (with distinction), Computer Science, Columbia University, 2002

**Dissertation:** *Efficient Cryptographic Protocols Preventing “Man-in-the-Middle” Attacks*

**Advisors:** Zvi Galil and Moti Yung

Also advised by Rafail Ostrovsky (Telcordia Technologies)

M.Phil., Computer Science, Columbia University, 2001

M.A., Chemistry, Columbia University, 1998

S.B., Mathematics, Massachusetts Institute of Technology, 1996

S.B., Chemistry, Massachusetts Institute of Technology, 1996

## Employment History

**Director**, Maryland Cybersecurity Center (MC2)

*October, 2013 – present*

**Professor**, University of Maryland

*July, 2013 – present*

**Associate Professor**, University of Maryland

*July, 2008 – June, 2013*

**Assistant Professor**, University of Maryland

*July, 2002 – June, 2008*

Responsible for maintaining a world-class research program in cryptography and information security. Duties include supervising graduate students and designing and teaching courses in cryptography, theoretical computer science, and network security.

**Independent Cryptography/Cybersecurity Consultant**, various positions

*August, 2002 – present*

I have consulted for several companies and government agencies on the design, analysis, and implementation of cryptographic protocols and algorithms. I have also delivered tailored courses on a wide range of topics in cryptography and cybersecurity to audiences in industry, academia, and government. Finally, I have provided expert testimony in intellectual property disputes.

**Visiting Research Scientist**, IBM T.J. Watson Research Center (Hawthorne, NY)

*August, 2008 – July, 2009*

Visited and collaborated with the cryptography research group at IBM.

**Visiting Professor**, École Normale Supérieure (Paris, France)

*June – July, 2008*

Presented three lectures on my research; collaborated with the cryptography research group at ENS.

**Research Fellow**, Institute for Pure and Applied Mathematics, UCLA

*September – December, 2006*

Invited as a core participant for the Fall 2006 program on “Securing Cyberspace: Applications and Foundations of Cryptography and Computer Security.”

**Visiting Research Scientist**, DIMACS

*March – May, 2002*

Conducted research in both theoretical and applied cryptography, leading to two published papers.

**Instructor**, Columbia University

*Summer, 1999 – Spring, 2002*

Taught *Computability and Models of Computation* (Summer '01, Spring '02), *Introduction to Cryptography* (Spring '01), and *Introduction to Computer Programming in C* (Summer '99, Spring '00).

**Research Scientist**, Telcordia Technologies

*March, 2000 – October, 2001*

Member of the Mathematical Sciences Research Center. Conducted basic research in cryptography leading to the filing of two provisional patents. Provided security consulting services for other research groups within Telcordia.

**Security Consultant**, Counterpane Systems

*May, 1999 – March, 2000*

Discovered security flaws in email encryption software (PGP); this work was widely covered in the press and led to two published papers and a refinement of the current standards for email encryption. Designed and implemented secure web-based protocols for clients. Contributed to *Secrets and Lies: Digital Security in a Networked World*, by B. Schneier (J. Wiley & Sons, 2000).

## Honors and Awards

University of Maryland Distinguished Scholar-Teacher Award, 2017–2018

Member, State of Maryland Cybersecurity Council and Chair, Subcommittee on Education and Workforce Development, 2015–present

Member, steering committee, IEEE Cybersecurity Initiative, 2014–2017

Humboldt Research Award, 2015

Named one of Daily Record’s “50 Influential Marylanders,” 2014

Invited participant, DARPA Computer Science Study Group, 2009–2010

NSF CAREER award, 2005–2010

University of Maryland GRB semester award, 2005–2006

National Defense Science and Engineering Graduate Fellowship, 1996–1999

NSF Graduate Fellowship, 1996 (declined)

Alpha Chi Sigma award for academic excellence, MIT, 1996

## Research Grants

(Dollar amounts listed reflect the University of Maryland portion of the award. Unless indicated otherwise, I am the sole PI on the award.)

“Scholarship for Service (SFS) for ACES,” NSF, \$5,046,316

*January, 2018 – December, 2022*

PI: Michel Cukier; co-PIs: Jonathan Katz, Lawrence Gordon, William Nolte, and Jan Plane

“LL/University of Maryland Research Collaboration on Secure Multi-Party Computation,”  
Lincoln Laboratory, \$49,892

*April, 2017 – May, 2018*

“Automated Analysis and Synthesis of Secure Cryptographic Algorithms,” NRL, \$266,004  
*September, 2016 – September, 2019*

“TWC: Medium: Collaborative: New Protocols and Systems for RAM-Based Secure Computation,” NSF (CNS-1563722), \$484,196

*May, 2016 – April, 2019*

PI: Jonathan Katz; co-PI: Mike Hicks

“Design and Analysis of (Quantum-Resistant) Hash-Based Signatures,” Cisco, \$68,694

*April, 2016 – March, 2017*

“Provable Security for Next-Generation Cryptography,” NIST, \$1,097,937.

*September, 2015 – August, 2018*

PI: Jonathan Katz; co-PIs: Dana Dachman-Soled and Babis Papamanthou

“TWC: Large: Collaborative: The Science and Applications of Crypto-Currency,” NSF (CNS-1518765), \$1,935,783.

PI: Elaine Shi; co-PIs: Michael Hicks, Jonathan Katz, and David Van Horn

*July, 2015 – June, 2018*

“TWC: Medium: Apollo: An Architecture for Scalable Verifiable Computing,” NSF (CNS-1514261), \$1,200,000.

PI: Babis Papamanthou; co-PIs: Amol Deshpande, Jonathan Katz, and Elaine Shi

*July, 2015 – June, 2018*

“US-Europe Workshop on Cryptography and Hardware Security for the Internet of Things,” ARO, \$35,000.

*June, 2015 – June, 2016*

PI: Gang Qu; co-PI: Jonathan Katz

“Secure Information Flows in Hybrid Coalition Networks,” US Army Research Laboratory/UK Ministry of Defence (International Technology Alliance in Network and Information Science), \$179,708.

PI: Michael Hicks; co-PI: Jonathan Katz

*May, 2015 – May, 2016*

“Secure Network-Centric Data Distribution and Processing,” US Army Research Laboratory/UK Ministry of Defence (International Technology Alliance in Network and Information Science), \$64,525.

*May, 2015 – May, 2016*

“EAGER: Physical, Social, and Situational Factors as Determents of Public WiFi Users’ Online Behaviors,” NSF (CNS-1444633), \$215,002.

co-PIs: Jonathan Katz and David Maimon

*October, 2014 – September, 2016*

“Establishing a Science of Security Research Lablet at the University of Maryland,” NSA, \$4,737,089.

Lead PI: Jonathan Katz

*March, 2014 – March, 2017*

“Automating Secure Computation,” DARPA (via subcontract to ACS), \$51,213.

PI: Elaine Shi; co-PI: Jonathan Katz

*January, 2014 – February, 2015*

“Network Security: Efficient Protocols for Message Integrity in DTNs,” Laboratory for Telecommunications Sciences, \$176,353.

*April, 2013 – March, 2015*

“Secure Information Flows in Hybrid Coalition Networks,” US Army Research Laboratory/UK Ministry of Defence (International Technology Alliance in Network and Information Science), \$356,615.

PI: Michael Hicks; co-PI: Jonathan Katz

*May, 2013 – May, 2015*

“Secure Network-Centric Data Distribution and Processing,” US Army Research Laboratory/UK Ministry of Defence (International Technology Alliance in Network and Information Science), \$108,016.

*May, 2013 – May, 2015*

“TWC: Small: Exploring Cryptographic Models and Setup Assumptions,” NSF (CNS-1223623), \$400,945.

*September, 2012 – August, 2015*

“Developing a Science of Cybersecurity,” US Army Research Laboratory, \$2,813,768.

Lead PI: Jonathan Katz

*October, 2011 – September, 2013*

“TC: Large: Collaborative Research: Practical Secure Two-Party Computation: Techniques, Tools, and Applications,” NSF (CNS-1111599), \$1,000,000.

PI: Jonathan Katz; co-PI: Michael Hicks

*August, 2011 – August 2016*

“Delegated, Outsourced, and Distributed Computation,” US Army Research Laboratory/UK Ministry of Defence (International Technology Alliance in Network and Information Science), \$199,226.

*May, 2011 – April, 2013*

“Toward Practical Cryptographic Protocols for Secure Information Sharing, Phase II CSSG,” DARPA, \$400,000.

*September, 2010 – August, 2012*

“NetSE: Medium: Collaborative Research: Privacy-Preserving Social Systems,” NSF (IIS-0964541), \$880,000.

PI: Bobby Bhattacharjee; co-PIs: Jonathan Katz and Neil Spring

*September, 2010 – August, 2013*

Supplement for “CAREER: Models and Cryptographic Protocols for Unstructured, Decentralized Systems,” NSF (CNS-0447075), \$80,000.

*August, 2009 – August, 2010*

“Energy Efficient Security Architectures and Infrastructures,” US Army Research Laboratory/UK Ministry of Defence (International Technology Alliance in Network and Information Science), \$162,450.

*May, 2009 – April, 2011*

“Cryptographic Primitives and Protocols for Security in Complex Systems,” DARPA, \$100,000.

*March, 2009 – March, 2010*

“Understanding Fairness in Secure Two-Party and Multi-Party Computation,” NSF (CCF-0830464), \$277,782.

*September, 2008 – August, 2011*

“Collaborative Research: CT-ISG: Efficient Cryptography Based on Lattices,” NSF (CNS-0716651), \$138,500.

*September, 2007 – August, 2010*

“Efficient Security Techniques for Information Flows in Coalition Environments,” US Army Research Laboratory/UK Ministry of Defence (International Technology Alliance in Network and Information Science), \$395,026.

PIs: Jonathan Katz and Michael Hicks

*May, 2007 – April, 2009*

“Designing Reliable and Secure Tactical MANETs,” DoD MURI, \$1,442,324.

PIs: John Baras, Virgil Gligor, and Jonathan Katz

*May, 2007 – April, 2012*

“New Techniques for Authenticating Humans (and Other Resource-Constrained Devices),” NSF (CNS-0627306), \$300,000.

*September, 2006 – August, 2009*

“Feasibility and Efficiency of Secure Computation,” United States-Israel Binational Science Foundation, \$120,000.

*September, 2005 – August, 2009*

“CAREER: Models and Cryptographic Protocols for Unstructured, Decentralized Systems,” NSF (CNS-0447075), \$400,000.

*February, 2005 – January, 2010*

“Secure Design and Usage of Cryptographic Hash Functions,” University of Maryland GRB semester award.

*2005–2006 academic year*

“ITR-(ASE+NHS)-(DMC+INT+SOC): Resilient Storage and Querying in Decentralized Networks,” NSF (CNS-0426683), \$720,000.

PI: Bobby Bhattacharjee; co-PIs: Sudarshan Chawathe, Jonathan Katz, and Aravind Srinivasan

*September, 2004 – August, 2008*

“Distributed Trust Computations for Decentralized Systems,” NSF (CNS-0310499), \$375,000.

PI: Bobby Bhattacharjee; co-PI: Jonathan Katz

*August, 2003 – July, 2006*

“Collaborative Research: Mitigating the Damaging Effects of Key Exposure,” NSF (CNS-0310751), \$240,000.

*August, 2003 – July, 2006*

## PhD Students

### Graduated:

Yupeng Zhang (graduated in 2018, co-advised with Babis Papamanthou)

Will join Texas A&M as an assistant professor after a postdoc at Berkeley

Xiao Wang (graduated in 2018)

Will join Northwestern University as an assistant professor after a postdoc at MIT/BU

Kartik Nayak (graduated in 2018, co-advised with Elaine Shi)

Will join Duke University as an assistant professor after a postdoc at VMware

Daniel Apon (graduated in 2017)

Currently a researcher at NIST

Aishwarya Thiruvengadam (graduated in 2017, co-advised with Dana Dachman-Soled)

Currently a postdoctoral research at UCSB

Andrew Miller (graduated in 2016, co-advised with Elaine Shi)

Currently assistant professor at UIUC

Alex Malozemoff (graduated in 2016)

Currently at Galois, Inc.

Adam Groce (graduated in 2014)

Currently assistant professor at Reed College

Ranjit Kumaresan (graduated in 2012)  
Currently at Microsoft Research, Redmond

Arkady Yerukhimovich (graduated in 2011)  
Currently assistant professor at George Washington University

S. Dov Gordon (graduated in 2010)  
Currently assistant professor at George Mason University

Omer Horvitz (graduated in 2007, co-advised with Prof. Gligor)  
Currently at techmeme.com

Chiu-Yuen Koo (graduated in 2007)  
Currently at Google Labs, Mountain View, CA

Ruggero Morselli, (graduated in 2006, co-advised with Prof. Bhattacharjee)  
Currently at Google Labs, Pittsburgh, PA

## **Postdoctoral Researchers**

Daniel Genkin, 2016 – 2018  
Currently assistant professor at the University of Michigan

Samuel Ranellucci, 2016 – 2018  
Currently at Unbound Tech

Dimitris Papadopoulos, 2016 – 2017  
Currently assistant professor at Hong Kong University

Jacob Alperin-Sheriff, 2015 – 2016  
Currently a researcher at NIST

Hoang Viet Tung, 2014 – 2015  
Currently assistant professor at Florida State University

Feng-Hao Liu, 2013 – 2015  
Currently assistant professor at Florida Atlantic University

Jean Paul Degabriele, 2013 – 2014  
Currently a postdoc at Royal Holloway University of London

Yan Huang, 2012 – 2014  
Currently assistant professor at Indiana University

Hong-Sheng Zhou, 2010 – 2013  
Currently assistant professor at Virginia Commonwealth University

Dominique Schröder, 2011 – 2012  
Currently a professor and chair for applied cryptography at University of Erlangen-Nuremberg

Raef Bassily, 2012  
Current assistant professor at The Ohio State University

Seung Geol Choi, 2010 – 2012  
Currently associate professor at the US Naval Academy

Vassilis Zikas, 2010 – 2012

Currently associate professor at University of Edinburgh

Lior Malka, 2009 – 2010

Ik Rae Jeong, 2005 – 2006

Currently professor at Korea University

## Professional Activities

### Editorial board:

- Journal of Cryptology (2011–present)
- International Journal of Applied Cryptography (2007–present)
- Proceedings on Privacy Enhancing Technologies (2015–2017)
- Information & Computation (2012–2017)
- Journal of Computer and System Sciences (2013–2014)
- IET Information Security (2005–2012)
- Fundamenta Informaticae (2006–2011)

### Program chair:

- ACM Conf. Computer and Comm. Security (area chair, cryptography) 2018
- Crypto 2016–2017
- Symposium and Bootcamp on the Science of Security (HoTSoS) 2017
- Intl. Conference on Practice and Theory in Public-Key Cryptography (PKC) 2015
- Conference on Decision and Game Theory for Security (GameSec) 2011
- Cryptography Track, 12th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2010
- Applied Cryptography and Network Security (ACNS) 2007

### Organizer:

- Winter School on Cryptocurrency and Blockchain Technologies (Shanghai, China), 2017

### Steering committees:

- Co-chair, IEEE Cybersecurity Award Selection Committee (2017–present)
- International Symposium on Cyber Security, Cryptography and Machine Learning (CSCML), 2016–present

### Program committees:

- Real World Cryptography (RWC) 2019
- ACM Conf. on Computer and Comm. Security (CCS) 2005, 2006, 2011, 2012, 2013, 2017
- Computer Security and Information Privacy Track, 19th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2017
- IndoCrypt 2017
- IEEE European Symposium on Security & Privacy 2016, 2017
- Network and Distributed System Security (NDSS) 2016
- Theory of Cryptography Conference (TCC) 2006, 2007, 2012, 2016
- Mycrypt 2016
- Symposium and Bootcamp on the Science of Security (HotSoS) 2015, 2016, 2018

- IEEE Symposium on Security & Privacy (Oakland) 2009, 2015
- European Symposium on Security in Computer Security (ESORICS) 2013
- Crypto 2003, 2005, 2006, 2009, 2013
- Eurocrypt 2006, 2008, 2009, 2011, 2013
- Asiacrypt 2004, 2007, 2008, 2010, 2012
- RSA—Cryptographers’ Track 2006, 2007, 2010, 2012
- Financial Cryptography 2012
- ACM-SIAM Symposium on Discrete Algorithms (SODA) 2011
- Intl. Conf. on Cryptology and Network Security (CANS) 2010
- Intl. Conf. on Pairing-Based Cryptography (Pairing) 2010
- Public-Key Cryptography (PKC) 2007, 2010
- ACM Symposium on Theory of Computing (STOC) 2009
- Applied Cryptography and Network Security (ACNS) 2006, 2009
- IEEE Symposium on Foundations of Computer Science (FOCS) 2008
- Security in Communication Networks 2008
- ICALP 2007
- ACM Workshop on Security and Sensor Networks (SASN) 2004, 2005, 2006
- Security and Cryptography for Networks (SCN) 2006
- VietCrypt 2006
- International Conference on Information Security and Cryptology (ICISC) 2005, 2006
- UCLA/IPAM workshop on “Locally decodable codes...,” 2006
- Workshop on Cryptography over Ad Hoc Networks (WCAN) 2005, 2006
- International Conference on Cryptology in Malaysia (Mycrypt) 2005
- Workshop in Information Security and Applications (WISA) 2004

## **Courses/Tutorials**

3-hour tutorial: “Incentives and Game-Theoretic Considerations in Bitcoin,” Winter School on Cryptocurrency and Blockchain Technologies (Shanghai, China), January 2017.

7-week on-line course: “Cryptography,” Coursera, 2014.

1-hour tutorial: “Message Authentication Codes (an Introduction),” Army Research Laboratory (Adelphi, MD), October 2009.

Half-day tutorial: “Ruminations on Defining Rational Multi-Party Computation,” Summer School on Rational Cryptography (Bertinoro, Italy), June 2008.

1-hour tutorial: “The Basics of Public-Key Encryption,” Booz Allen Hamilton (Linthicum, MD), October 2007.

2<sup>+</sup>-hour tutorial: “A Survey of Modern Cryptography,” ACM Sigmetrics, June 2007.

Week-long course: “Zero Knowledge: Foundations and Applications,” (Bertinoro, Italy), October 2006.

Half-day tutorial: “Black-Box Reductions, Impossibility Results, and Efficiency Lower Bounds,” UCLA/IPAM, September 2006.

## Invited Panel and Session Participation

ATARC Federal CISO Summit: moderator, “Addressing the Cybersecurity Skills Gap,” January 2018.

Big Data in Finance, University of Michigan: panel participant, October 2016.

3rd Annual Conference on Cyber Security and the Law (French American Foundation, Washington, D.C.): panel participant, September 2016.

11th Colloquium for Information System Security Education (Boston University): panel member, “How to Teach Cryptology,” June 2007.

## Invited Talks

TPMPC Workshop (Aarhus, Denmark): “Optimizing ZK Proofs from Secure Computation,” May 2018.

Sandia National Laboratories: “A Survey of Secure Computation,” March 2018.

UT Dallas Distinguished Lecture Series: “Post-Quantum Signatures from Secure Computation,” November 2017.

New Jersey Institute of Technology Distinguished Speaker Series: “Post-Quantum Signatures from Secure Computation,” October 2017.

Cyberweek—Academic Perspectives on Cybersecurity Challenges (Tel Aviv, Israel): “Secure Distributed Computation,” June 2017.

2nd Hebrew University Networking Summer (Jerusalem, Israel): “Recent Progress in Generic Secure Computation,” June 2017.

MITRE Distinguished Speaker Series (McLean, VA): “Recent Progress in Efficient Secure Computation,” May 2017.

IEEE Cybersecurity Development Conference (Boston, MA): “How to Think about Cryptography: Common Crypto Flaws and How to Avoid Them,” November 2016.

Cyber Community of Interest Meeting, ONR: “Automated Analysis and Synthesis of Symmetric-Key Modes of Encryption,” September 2016.

Computing Research Association: Addressing National Priorities and Societal Needs (Computing Community Consortium, Washington, D.C.): “Better Privacy and Security via Secure Multiparty Computation,” May 2016.

Workshop on Human Factors in Cybersecurity Design, Hebrew University (Jerusalem, Israel): “Taking the Human into Account in Cryptographic Design,” March 2016.

George Washington University Department of Mathematics: “The Nature of Proofs: A Computational Perspective,” February 2016.

Foundations of Cyber Security and Privacy Symposium, Max Planck Society (Munich, Germany): “Cryptography as a Nucleus for Cybersecurity Research,” July 2015.

Privacy Enhancing Technologies Symposium (PETS) 2015: “Secure Computation: Where Do We Go From Here?” June 2015.

Naval Postgraduate School Foundation, President’s Circle Retreat: “Privacy-Preserving Distributed Computation,” April 2014.

Georgetown University: “Secure Computation in the RAM Model,” April 2014.

Rutgers University: “Privacy-Preserving Computation: How, What, and Why?” November 2013.

First EasyCrypt workshop (University of Pennsylvania): “EasyCrypt 0.2 Feedback and Recommendations,” July 2013.

Workshop on Real-World Cryptography (Stanford): “Practical Anonymous Subscriptions,” January 2013.

Workshop on Theory and Practice of Multiparty Computation (Aarhus, Denmark): “Recent Results on Game Theory and Secure Computation,” June 2012.

Indiana University: “Is (Generic) Secure Two-Party Computation Practical?” November 2011.

Microsoft Research (Redmond, WA): “(Ever More) Efficient Secure Two-Party Computation,” March 2011.

PerAda Workshop on Security, Trust, and Privacy (Rome, Italy): “Privacy, Trust, and Security in Pervasive Computing: Challenges and Opportunities,” November 2010.

Tsinghua University (Beijing, China): “Fairness and Partial Fairness in Two-Party Computation,” June 2010

Beijing Institute of Technology: “Rational Secret Sharing,” June 2010.

SKLOIS: The State Key Laboratory Of Information Security (Beijing, China): “Leakage-Resilient Cryptography,” June 2010.

SKLOIS: The State Key Laboratory Of Information Security (Beijing, China): “Rational Secret Sharing,” June 2010.

Workshop on Decentralized Mechanism Design, Distributed Computing, and Cryptography (Princeton University): “Rational Secret Sharing: A Survey,” June 2010.

Microsoft Research (Cambridge, MA): “Rational Secret Sharing,” April 2009.

AT&T Labs: “Fairness and Partial Fairness in Secure Two-Party Computation,” February 2009.

University of Toronto: “Fairness and Partial Fairness in Secure Two-Party Computation,” February 2009.

Joint Mathematics Meetings, AMS Special Session on Algebraic Cryptography and Generic Complexity: “Public-Key Cryptography from a (Theoretical) Cryptographer’s Perspective,” January 2009.

Dagstuhl workshop on Theoretical Foundations of Practical Information Security (Germany): “Partial Fairness in Secure Two-Party Computation,” December 2008.

École Normale Supérieure (Paris, France): “Efficient Cryptographic Protocols Based on the Hardness of Learning Parity with Noise,” July 2008.

École Normale Supérieure (Paris, France): “Predicate Encryption: A New Paradigm for Public-Key Encryption,” July 2008.

École Normale Supérieure (Paris, France): “Fairness in Secure Computation,” June 2008.

UC Berkeley: “Predicate Encryption: A New Paradigm for Public-Key Encryption,” May 2008.

5th Theory of Cryptography Conference (TCC) 2008 (New York): “Bridging Game Theory and Cryptography: Recent Results and Future Directions,” March 2008.

MIT Cryptography and Information Security Seminar: “Complete Fairness in Secure Two-Party Computation,” March 2008.

11th IMA Intl. Conference on Cryptography and Coding Theory (Cirencester, UK): “Efficient Cryptographic Protocols Based on the Hardness of Learning Parity with Noise,” December 2007.

INDOCRYPT 2007 (Chennai, India): “Capability-Based Encryption: A New Paradigm for Public-Key Encryption,” December 2007.

Pennsylvania State University: “Universally-Composable Multi-Party Computation using Tamper-Proof Hardware,” April 2007.

Workshop on Cryptography: Underlying Mathematics, Provability, and Foundations (Fields Institute, Toronto): “Blind Signatures: Definitions and Constructions,” November 2006.

Workshop on Foundations of Secure Multi-Party Computation (UCLA/IPAM): “On Expected Constant-Round Protocols for Broadcast,” November 2006.

Workshop on Public-Key Systems with Special Properties (UCLA/IPAM): “Blind Signatures: Definitions and Constructions,” October 2006.

13th SIAM Meeting on Discrete Mathematics (Victoria, Canada): “New Techniques for Authenticating Humans,” June 2006.

Boston University: “New Techniques for Authenticating Humans (and other Resource-Constrained Devices),” April 2006.

Stevens Institute of Technology: “New Techniques for Authenticating Humans (and other Resource-Constrained Devices),” March 2006.

Georgia Tech: “New Techniques for Authenticating Humans (and other Resource-Constrained Devices),” November 2005.

University of Modena: “Secure Authentication without Traditional Cryptographic Keys,” July 2005.

Workshop on the Past, Present, and Future of Oblivious Transfer (Haifa, Israel): “Round-Optimal Secure Two-Party Computation,” May, 2005.

UCLA: “Secure Remote Authentication Using Biometric Data,” March, 2005.

Luminy Workshop on Cryptography (Marseilles, France): “Secure Remote Authentication Using Biometric Data,” November, 2004.

DIMACS Workshop on *Cryptography: Theory Meets Practice*: “Using Biometric Data for Secure Network-Based Authentication,” October, 2004.

MIT Cryptography and Information Security Seminar: “Round-Optimal Secure Two-Party Computation,” April, 2004.

Korea University: “Scalable and Efficient Protocols for Authenticated Group Key Exchange,” November, 2003.

Korea Information Security Agency (KISA): “Efficient Protocols for Password-Only Authenticated Key Exchange,” November, 2003.

6th Annual International Conference on Information Security and Cryptology (ICISC 2003): “Binary Tree Encryption: Constructions and Applications,” November, 2003.

National Science Foundation (NSF) — Washington Area Trustworthy Systems Hour: “Maintaining Security in the Event of Key Exposure,” April, 2003.

New York University: “Efficient and Non-Malleable Proofs of Plaintext Knowledge and Applications,” July, 2002.

IBM T.J. Watson Research Center: “A Forward-Secure Public-Key Encryption Scheme,” July, 2002.

DIMACS Workshop on *Cryptographic Protocols in Complex Environments*: “Efficient and Non-Malleable Proofs of Plaintext Knowledge and Applications,” May, 2002.

IBM T.J. Watson Research Center: “Practical Password-Authenticated Key Exchange Provably Secure Against Off-Line Dictionary Attacks,” December, 2000.

MIT Cryptography and Information Security Seminar: “Practical and Provably Secure Password-Authenticated Key Exchange,” December, 2000.

Bell Labs (Lucent Technologies) Crypto/Security Seminar: “Cryptographic Counters and Applications to Electronic Voting,” November, 2000.

## Publications

### Books Authored or Edited

1. J. Katz and H. Shacham, eds. *Advances in Cryptology—Crypto 2017, Proceedings*. LNCS vols. 10401–10403, Springer, 2017.
2. J. Katz and M. Robshaw, eds. *Advances in Cryptology—Crypto 2016, Proceedings*. LNCS vols. 9814–9816, Springer, 2016.
3. J. Katz, ed. *Public-Key Cryptography (PKC) 2015, Proceedings*. LNCS vol. 9020, Springer, 2015.
4. J. Katz and Y. Lindell. *Introduction to Modern Cryptography, second edition*. Chapman & Hall/CRC Press, 2014. (First edition published in 2007.)

5. J.S. Baras, J. Katz, and E. Altman. *Decision and Game Theory for Security, Second Intl. Conference, GameSec 2011, Proceedings*. LNCS vol. 7037, Springer, 2011.
6. J. Katz. *Digital Signatures*. Springer, 2010.
7. J. Katz and M. Yung, eds. *Applied Cryptography and Network Security, 5th International Conference, ACNS 2007, Proceedings*. LNCS vol. 4521, Springer, 2007.

## Book Chapters

1. J. Katz. “Cryptography.” In *Computing Handbook (3rd edition), vol. 1: Computer Science and Software Engineering*, A. Tucker, T. Gonzalez, and J. Diaz-Herrera, eds., Chapman & Hall/CRC Press, 2014.
2. J. Katz. “Public-Key Cryptography.” In *Handbook of Information and Communication Security*, P. Stavroulakis and M. Stamp, eds., Springer, 2010.
3. J. Katz. “Cryptography.” In *Wiley Encyclopedia of Computer Science and Engineering*, B.W. Wah, ed., John Wiley & Sons, 2008.
4. J. Katz. “Symmetric-Key Encryption.” In *The Handbook of Information Security*, H. Bidgoli, ed., John Wiley & Sons, Inc., 2005.
5. J. Katz. “Cryptography.” In *Computer Science Handbook, 2nd edition*, A. Tucker, ed., CRC Press, 2004.

## Journal Articles

1. S.G. Choi, J. Katz, D. Schröder, A. Yerukhimovich, and H.-S. Zhou. “(Efficient) Universally Composable Oblivious Transfer Using a Minimal Number of Stateless Tokens.” *J. Cryptology*, to appear. **One of three papers from TCC 2014 invited to this journal.**
2. M. Lee, A. Dunn, J. Katz, B. Waters, and E. Witchel. “Anon-Pass: Practical Anonymous Subscriptions.” *IEEE Security & Privacy* 12(3): 20–27, 2014. **Invited to a special issue for papers from the IEEE Symp. on Security & Privacy, 2014.**
3. S. D. Gordon, J. Katz, R. Kumaresan, and A. Yerukhimovich. “Authenticated Broadcast with a Partially Compromised Public-Key Infrastructure.” *Information & Computation* 234: 17–25, 2014. **Invited to a special issue of this journal for papers from SSS 2010.**
4. D. Apon, J. Katz, and A. Malozemoff. “One-Round Multi-Party Communication Complexity of Distinguishing Sums.” *Theoretical Computer Science* 501: 101–108, 2013.
5. J. Katz and V. Vaikuntanathan. “Round-Optimal Password-Based Authenticated Key Exchange.” *J. Cryptology* 26(4): 714–743, 2013. **One of three papers from TCC 2011 invited to this journal.**

6. J. Katz, A. Sahai, and B. Waters. “Predicate Encryption Supporting Disjunctions, Polynomial Equations, and Inner Products.” *J. Cryptology* 26(2): 191–224, 2013. **One of four papers from Eurocrypt 2008 invited to this journal.**
7. Y. Dodis, B. Kanakurthi, J. Katz, L. Reyzin, and A. Smith. “Robust Fuzzy Extractors and Authenticated Key Agreement from Close Secrets.” *IEEE Transactions on Information Theory* 58(9): 6207–6222, 2012.
8. J. Katz, P. MacKenzie, G. Taban, and V. Gligor. “Two-Server Password-Only Authenticated Key Exchange.” *J. Computer and System Sciences* 78(2): 651–669, 2012.
9. J. Katz. “Which Languages Have 4-Round Zero-Knowledge Proofs?” *J. Cryptology* 25(1): 41–56, 2012. **One of three papers from TCC 2008 invited to this journal.**
10. S.D. Gordon and J. Katz. “Partial Fairness in Secure Two-Party Computation.” *J. Cryptology* 25(1): 14–40, 2012.
11. S.D. Gordon, C. Hazay, J. Katz, and Y. Lindell. “Complete Fairness in Secure Two-Party Computation.” *J. of the ACM* 58(6): 1–36, 2011.
12. Y. Ishai, J. Katz, E. Kushilevitz, Y. Lindell, and E. Petrank. “On Achieving the ‘Best of Both Worlds’ in Secure Multiparty Computation.” *SIAM J. Computing* 40(1): 122–141, 2011.
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