
Eleanor Birrell
Associate Professor
Department of Computer Science, Pomona College

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Education

- August 2018** ***Ph.D., Computer Science, Cornell University***
Thesis Title: A Reactive Approach for Use-based Privacy
Advisor: Fred Schneider
- May 2014** ***M.S., Computer Science, Cornell University***
Advisors: Fred Schneider, Rafael Pass
- June 2009** ***B.A. cum laude, Computer Science and Mathematics, Harvard University***
Thesis Title: Composition of Zero-Knowledge Proofs
Advisor: Salil Vadhan

Academic Positions

- 2024 - present** ***Associate Professor, Department of Computer Science, Pomona College***
- 2018 - 2024** ***Assistant Professor, Department of Computer Science, Pomona College***
- 2021 - 2022** ***Visiting Professor, CyLab, Carnegie Mellon University***
- 2017 - 2018** ***Lecturer, Department of Computer Science, Cornell University***

Research

My current research interests are primarily in the area of usable security and privacy, with a focus on the interactions between this area and psychology, law, and political science. My work investigates new approaches to understanding, expressing, and enforcing security and privacy. Current projects include exploring how patterns in human cognition impact interactions with security and privacy mechanisms, evaluating the impact of privacy regulations on Internet privacy, and investigating people's perceptions of privacy threats.

Publications

- C. Moremen, J. Hoogsteden, and E. Birrell. Generational Differences in Understandings of Privacy Terminology. To appear in *Privacy Enhancing Technologies Symposium (PETS)*, Vol. 2024(3), 2024.
- E. Birrell, J. Rodolitz, A. Ding, J. Lee, E. McReynolds, J. Hutson, and A. Lerner. SoK: The Technical Implementation and Human Impact of Privacy Regulations. In *IEEE Symposium on Security and Privacy*, 2024.
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- J. Charatan and E. Birrell. Two Steps Forward and One Step Back: The Right to Opt-out of Sale under CPRA. In *Proceedings on Privacy Enhancing Technologies (PETS)*, Vol. 2024(2), pages 91-105, 2024.
- Y. Lin, J. Juneja, E. Birrell and L. Cranor. Data Safety versus App Privacy: Comparing Usability of iOS and Android Privacy Labels. In *Proceedings on Privacy Enhancing Technologies (PETS)*, Vol. 2024(2), pages 182-210, 2024.
- J. Amador, Y. Ma, S. Hasama, E. Lumba, G. Lee, and E. Birrell. Prospects for Improving Password Selection. In *Symposium on Usable Privacy and Security (SOUPS)*, pages 263-282, 2023.
- E. Bouma-Sims, M. Li, Y. Lin, A. Sakura-Lemessy, A. Nisenoff, E. Young, E. Birrell, L. Cranor, and H. Habib. A US-UK Usability Evaluation of Consent Management Platform Cookie Consent Interface Design on Desktop and Mobile. In *CHI Conference on Human Factors in Computing Systems (CHI)*, 2023.
- J. Tang, E. Birrell, and A. Lerner. How Well Do My Results Generalize Now? The External Validity of Online Privacy and Security Surveys. In *Symposium on Usable Privacy and Security (SOUPS)*, pages 367-385, 2022.
- Y. Ma and E. Birrell. Prospective Consent: The Effect of Framing on Cookie Consent Decisions. In *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI)*, 2022.
- A. Siebel† and E. Birrell. The Impact of Visibility on CCPA’s Right to Opt-out of Sale. *arXiv:2206.10545*. 2022.
- S. O’Connor, R. Nurwono, A. Siebel, and E. Birrell. (Un)clear and (In)conspicuous: The Right to Opt-out of Sale under CCPA. In *Workshop on Privacy in Electronic Society (WPES)*, 2021.
- A. DeGiulio, H. Lee, and E. Birrell. "Ask App Not to Track": The Effect of Opt-in Tracking Authorization on Mobile Privacy. In *4th Workshop on Emerging Technologies for Authorization and Authentication (ETAA)*, 2021.
- J. Tang, H. Shoemaker, A. Lerner, and E. Birrell. Defining Privacy: How Users Interpret Technical Terms in Privacy Policies. In *Privacy Enhancing Technologies Symposium (PETS)*, 2021.
- K. Katevas, E. Bagdasaryan, J. Waterman, M. Safadieh†, E. Birrell, H. Haddadi, and D. Estrin. Policy-Based Federated Learning. *arXiv:2003.06612*. 2021.
- W. Guo, J. Rodolitz, and E. Birrell. Poli-See: A Visualization Tool for Privacy Policies. In *Workshop on Privacy in Electronic Society (WPES)*, 2020.
- E. Bagdasaryan, G. Berlstein, J. Waterman, M. Griffith, E. Birrell, F. B. Schneider, N. Foster, D. Estrin. Ancile: A Practical System for Supporting Privacy-Aware Ubiquitous Computing Applications. In *Workshop on Privacy in Electronic Society (WPES)*, 2019.
- E. Birrell, A. Gjerdrum, H. Johansen, D. Johansen, R. van Renesse, and F. B. Schneider. SGX Enforcement of Use-based Privacy. In *Workshop on Privacy in Electronic Society (WPES)*, 2018.
- E. Birrell and F. B. Schneider. A Reactive Approach for Use-based Privacy. Technical Report 1813-54843. Cornell University. 2018.
- H. Johansen, E. Birrell, R. van Renesse, F. B. Schneider, M. Stenhaus, and D. Johansen. Enforcing Privacy Policies with Meta-Code. In *Asia-Pacific Workshop on Systems (APSys)*, pages 16:1-16:7, 2015.
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- E. Birrell and F. B. Schneider. Fine-Grained User Privacy from Avenance Tags. Technical Report 1813-36285. Cornell University. 2014.
- E. Birrell and F. B. Schneider. Federated Identity Management Systems: A Privacy-based Characterization. *IEEE Security & Privacy*, Vol. 11(5), pages 36-48, Sept/Oct 2013.
- E. Birrell, K.-M. Chung, R. Pass, and S. Telang. Randomness-Dependent Message Security. In *Tenth IACR Theory of Cryptography Conference (TCC)*, pages 699-718, 2013.
- E. Birrell and R. Pass. Approximately Strategy-Proof Voting. In *International Joint Conferences on Artificial Intelligence (IJCAI)*, pages 67-72, 2011.
- E. Birrell and S. Vadhan. Composition of Zero-Knowledge Proofs with Efficient Provers. In *Seventh IACR Theory of Cryptography Conference (TCC)*, pages 572-587, 2010.

Program Committees

2025	USENIX Security — Program Committee
2025, 2024, 2023	Privacy Enhancing Technologies Symposium (PETS) — Program Committee / Proceedings on Privacy Enhancing Technologies (PoPETs) — Editorial Board
2024	Computer and Communications Security — Program Committee
2024, 2023	Symposium on Usable Privacy and Security (SOUPS) — Program Committee
2024	European Conference on Computer Systems (EuroSys) — Program Committee
2023, 2021	USENIX Annual Technical Conference (ATC) — Program Committee
2022, 2021	Workshop on Foundations of Computer Security (FCS) — Program Committee
2020	Workshop on Privacy in Electronic Society (WPES) — Program Committee
2019	ACM Workshop on Programming Languages and Analysis of Security (PLAS) — Program Committee

Invited Talks

October 2023	<i>The Pomona Academic Experience</i> Faculty Panel, Family Weekend
March 2022	<i>Researching Usable Security and Privacy</i> Panel Series, HackGwinett
March 2022	<i>Internet Privacy after CCPA</i> Current Topics in Privacy Seminar, Carnegie Mellon University

October 2021	<i>Prospect-Driven Usable Security and Privacy</i> CyLab Seminar, Carnegie Mellon University
April 2021	<i>Beyond the Ratio</i> Faculty Panel, Admitted Students' Weekend
February 2021	<i>Designing for Security</i> Code Jam, Whitney High School
February 2021	<i>Usable Security: Computer Science through a Liberal Arts Perspective</i> Ideas@Pomona, Family Weekend
June 2020	<i>Backstories: Professor Eleanor Birrell</i> Pomona College Sagecast
June 2019	<i>A Reactive Approach for Use-Based Privacy</i> CyLab Seminar, Carnegie Mellon University
May 2019	<i>Data Privacy for the 21st Century</i> Ideas@Pomona, Alumni Weekend
January - February 2018	<i>Use-Based Privacy</i> Colloquium Talk: Smith College, Santa Clara University, Swarthmore College, Wellesley College, Amherst College, Pomona College, UC San Diego, Harvey Mudd College
November 2017	<i>The Avenance Project</i> DataBox Symposium, London, England
September 2017	<i>SGX Enforcement of Use-Based Privacy</i> ASRG Seminar, Cisco, Morrisville, NC
August 2017	<i>SGX Enforcement of Use-Based Privacy</i> International Personal Data Systems Workshop, Sommarøy, Norway
September 2016	<i>Use-Based Privacy</i> International Personal Data Systems Workshop, Tromsø, Norway
March 2012	<i>Approximately Strategy-Free Voting</i> Cryptography Colloquium, Microsoft Research, Redmond, WA

Conference Presentations

July 2024	<i>Two Steps Forward and One Step Back: The Right to Opt-out of Sale under CPRA</i> Privacy Enhancing Technologies Symposium, Bristol, England
May 2024	<i>The Technical Implementation and Human Impact of Privacy Regulations</i> IEEE Symposium on Security and Privacy, San Francisco, CA

September 2021	<i>How do I opt out? Do Not Sell Mechanisms under CCPA</i> International Workshop on Privacy Engineering, Online
July 2021	<i>(Un)clear and (In)conspicuous: The Right to Opt-out of Sale under CCPA</i> Workshop on Hot Topics in Privacy Enhancing Technologies (HotPETs), Online
October 2018	<i>SGX Enforcement of Use-based Privacy</i> Workshop on Privacy in Electronic Society, London, England
July 2011	<i>Approximately Strategy-Proof Voting</i> International Joint Conferences on Artificial Intelligence, Barcelona, Spain
February 2010	<i>Composition of Zero-Knowledge Proofs with Efficient Provers</i> Theory of Cryptography Conference, Zurich, Switzerland

Teaching

Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Spring 2023, Fall 2023, Spring 2024, Fall 2024	<i>CS 105: Computer Systems</i> Pomona College
Fall 2024	<i>CS 190: Senior Seminar</i> Pomona College
Fall 2018, Fall 2020, Spring 2024	<i>CS 181S: System Security</i> Pomona College
Fall 2018, Spring 2019, Fall 2019, Fall 2022, Fall 2023	<i>CS 51P: Introduction to Computer Science in Python</i> Pomona College
Fall 2022	<i>CS 181W: Usable Security and Privacy</i> Pomona College
Spring 2018	<i>CS 5430: System Security</i> Cornell University
Spring 2017, Spring 2018	<i>CS 5431: Practicum in System Security</i> Cornell University
Fall 2017, Spring 2018	<i>CS 2110: Object-Oriented Programming and Data Structures</i> Cornell University
Fall 2017, Spring 2018	<i>CS 2111: Programming Practicum</i> Cornell University

Awards and Honors

2021 *Wig Distinguished Teaching Award*

2017 *Outstanding Teaching Award*

Fellowships and Grants

2023 - 2026 *NSF DASS (\$749,999, Pomona's Share: \$249,527)*
Empirically Evaluating Data Fiduciary Privacy Laws (co-PIs: A. Lerner, A. Waldman)

2022 - 2023 *Large Faculty Research Grant (\$2,500)*
Course-Based Research on Usable Security and Privacy

2010 - 2013 *NSF Graduate Research Fellowship*

Diversity and Outreach

2023 - 2024 *Pomona College DEI Faculty Cohort Coordinator*
Organized and led a reading and discussion group on how to improve Diversity, Equity, and Inclusion in STEM fields. Formulated recommendations for individual, departmental, and institutional changes to improve Pomona culture on these fronts.

2021 - 2024 *Pomona Black and Brown in CS (BBICS) (co-)Advisor*
Work with Yi Chen and with student leaders to found and advise a CS cohort for traditionally underrepresented students.

2020 - 2021 *Division II DEI Faculty Cohort Member*
Participated in a reading and discussion group on how to improve Diversity, Equity, and Inclusion in STEM fields. Formulated recommendations for individual, departmental, and institutional changes to improve Pomona culture on these fronts.

2018 - 2021 *Pomona College Organizer, Grace Hopper Celebration*
The Grace Hopper Celebration (GHC) is an annual conference for women in computer science; it includes technical sessions, professional development sessions, and career opportunities for women in computer science. Working with Melanie Wu, I organize and lead a trip for our female students to attend the conference.

2010 - 2017 *Workshop Leader, Expanding Your Horizons*
Expanding Your Horizons (EYH) is a one-day conference for junior high girls that introduces them to different STEM fields through a series of hands-on workshops. As a graduate student, I designed and ran workshops that introduce these girls to different areas of computer science including programming (with Scratch) and networking (with paper airplanes).
