

Lindsey Kuper

Cumulative Biobibliography

Last updated: April 28, 2026

Assistant Professor, Computer Science and Engineering Department
Baskin School of Engineering
University of California, Santa Cruz
Santa Cruz, California, USA

lkuper@ucsc.edu
<https://users.soe.ucsc.edu/~lkuper>
<https://decomposition.al>

Research interests

My work draws on the research traditions of programming languages, distributed systems, and software verification. The goal of my research is to use programming-language-based techniques to enable concurrent and distributed systems that are elegant, correct, efficient, and fault-tolerant.

Employment history

- July 2018– **Baskin School of Engineering, University of California, Santa Cruz**
Assistant Professor, Computer Science and Engineering
Intel Labs, Intel Corporation, Santa Clara, CA
- Sept. 2014–May 2018 *Research Scientist, Parallel Computing Lab (2016-18) and Programming Systems Lab (2014-16)*
School of Informatics and Computing, Indiana University, Bloomington, IN
- Jan. 2009–Aug. 2014 *Research Assistant and Associate Instructor*
Mozilla Corporation, Mountain View, CA
- May–Aug. 2012 *Research Engineering Intern, Rust programming language team*
March–Aug. 2011 *Research Engineering Intern, Rust programming language team*
GammaTech, Inc., Ithaca, NY
- May 2010–Aug. 2010 *Software Engineering Intern*
Bedford, Freeman and Worth Publishing Group, New York, NY and Portland, OR
- July 2006–June 2008 *Associate Project Manager*
IBCTV, LLC, Chicago, IL and Portland, OR
- Aug. 2004–June 2006 *Web Designer/Developer*

Education

- 2015 Ph.D., Computer Science, **Indiana University School of Informatics and Computing**
Research committee: Ryan R. Newton (chair), Lawrence S. Moss, Amr Sabry, Chung-chieh Shan
Dissertation: *Lattice-based Data Structures for Deterministic Parallel and Distributed Programming*
- 2010 M.S., Computer Science, **Indiana University School of Informatics and Computing**
- 2004 B.A., Computer Science and Music (with honors), **Grinnell College**

Honors and awards

- 2026 **Distinguished Artifact Award, OOPSLA 2025**
- 2025 **Distinguished Reviewer Award, OOPSLA 2025**
- 2023 **Distinguished Paper Award, ICFP 2023**
- 2022 **Keynote speaker, FLOPS 2022**
- 2022 **NSF CAREER Award**
- 2020 **Google Faculty Research Award**
- 2013 **PLMW 2013 travel award for POPL**

- 2012 [PLMW 2012](#) travel award for POPL
- 2010 [CRA-W Grad Cohort Workshop](#) invitation and travel award
- 2009 [CRA-W Grad Cohort Workshop](#) invitation and travel award
- 2009 [Google Workshop for Women Engineers](#) invitation and travel award
- 2008–09 Indiana University [Graduate Women in Science Fellowship](#)

Funding

- 2026 PI: Stellar Development Foundation Academic Research Grant, “Ironwright: A Bridge from Bounded Model Checking to Full Verification” (\$101,938)
- 2023 PI: Stellar Development Foundation Academic Research Grant, “Choreographic Consensus” (\$50,000)
- 2022–27 PI: NSF grant CCF-2145367, “[CAREER: Building Reliable Distributed Systems with Refinement Types](#)” (\$619,731; REU Supplement, 2024: \$10,000)
- 2020 PI: Gift from Amazon Web Services, Inc. to support research toward programming-language-level enforcement of distributed data consistency properties (\$78,000)
- 2020 PI: Google Faculty Research Award, “Consistency-Aware Solvers for Trustworthy Distributed Systems” (\$59,961)
- 2012–15 Collaborator: Co-wrote (with PI Ryan Newton) NSF grant CCF-1218375, “[Generalizing Monotonic Data Structures for Expressive, Deterministic Parallel Programming](#)” (\$377,315), which funded my dissertation work

Scholarly and creative work

† denotes a student co-author who is one of my advisees or graduated former advisees.

Journal articles

- J6. Patrick Redmond[†], Jonathan Castello[†], José Manuel Calderón Trilla, and **Lindsey Kuper**. “[Exploring the theory and practice of concurrency in the Entity-Component-System pattern.](#)” *Proc. ACM Program. Lang.* 9, OOPSLA2, Article 272 (October 2025).
Distinguished Artifact Award.
- J5. Nathan Liittschwager[†], Jonathan Castello[†], Stelios Tsampas, and **Lindsey Kuper**. “[CRDT emulation, simulation, and representation independence.](#)” *Proc. ACM Program. Lang.* 9, ICFP, Article 259 (August 2025).
- J4. Mako Bates, Shun Kashiwa[†], Syed Jafri, Gan Shen[†], **Lindsey Kuper**, and Joseph P. Near. “[Efficient, portable, census-polymorphic choreographic programming.](#)” *Proc. ACM Program. Lang.* 9, PLDI, Article 193 (June 2025).
- J3. Jonathan Castello[†], Patrick Redmond[†], and **Lindsey Kuper**. “[Inductive diagrams for causal reasoning.](#)” *Proc. ACM Program. Lang.* 8, OOPSLA1, Article 113 (April 2024).
- J2. Gan Shen[†], Shun Kashiwa[†], and **Lindsey Kuper**. “[HasChor: functional choreographic programming for all \(functional pearl\).](#)” *Proc. ACM Program. Lang.* 7, ICFP, Article 207 (August 2023).
Distinguished Paper Award.
- J1. Yiyun Liu, James Parker, Patrick Redmond[†], **Lindsey Kuper**, Michael Hicks, and Niki Vazou. “[Verifying replicated data types with typeclass refinements in Liquid Haskell.](#)” *Proc. ACM Program. Lang.* 4, OOPSLA, Article 216 (November 2020).

Papers in conference proceedings

- C8. Grant VanDomelen, Gan Shen[†], **Lindsey Kuper**, and Yao Li.
 “Freer arrows and why you need them in Haskell.”
18th ACM SIGPLAN International Haskell Symposium (Haskell 2025), Singapore, October 2025.
- C7. Patrick Redmond[†] and **Lindsey Kuper**.
 “An exceptional actor system (functional pearl).”
16th ACM SIGPLAN International Haskell Symposium (Haskell 2023), Seattle, WA, USA, September 2023.
- C6. Nathan Liittschwager[†], Stelios Tsampas, Jonathan Castello[†], and **Lindsey Kuper**.
 “CRDTs, coalgebraically.”
10th Conference on Algebra and Coalgebra in Computer Science (CALCO 2023), Bloomington, IN, USA, June 2023.
- C5. Patrick Redmond[†], Gan Shen[†], Niki Vazou, and **Lindsey Kuper**.
 “Verified causal broadcast with Liquid Haskell.”
34th Symposium on Implementation and Application of Functional Languages (IFL 2022), Copenhagen, Denmark, August 2022.
- C4. **Lindsey Kuper** and Peter Alvaro.
 “Toward domain-specific solvers for distributed consistency.”
3rd Summit on Advances in Programming Languages (SNAPL 2019), Providence, RI, USA, May 2019.
- C3. Todd A. Anderson, Hai Liu, **Lindsey Kuper**, Ehsan Toton, Jan Vitek, and Tatiana Shpeisman.
 “Parallelizing Julia with a non-invasive DSL.”
31st European Conference on Object-Oriented Programming (ECOOP 2017), Barcelona, Spain, June 2017.
- C2. **Lindsey Kuper**, Aaron Todd, Sam Tobin-Hochstadt, and Ryan R. Newton.
 “Taming the parallel effect zoo: extensible deterministic parallelism with LVish.”
35th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2014), Edinburgh, UK, June 2014.
- C1. **Lindsey Kuper**, Aaron Turon, Neelakantan R. Krishnaswami, and Ryan R. Newton.
 “Freeze after writing: quasi-deterministic parallel programming with LVars.”
41st ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL 2014), San Diego, CA, USA, January 2014.

Peer-reviewed workshop publications

- W11. Yan Tong[†], Nathan Liittschwager[†], and **Lindsey Kuper**.
 “Can you keep a secret? A new protocol for sender-side enforcement of causal message delivery.”
13th Workshop on Principles and Practice of Consistency for Distributed Data (PaPoC 2026), Edinburgh, UK, April 2026.
- W10. Tim Goodwin[†], Esteban Ramos, Andi Quinn, and **Lindsey Kuper**.
 “Monolift: automating distribution with the tools you have at home.”
13th Workshop on Programming Languages and Operating Systems (PLOS 2025), Seoul, Korea, October 2025.
- W9. Shun Kashiwa[†] and **Lindsey Kuper**.
 “ChoRus: library-level choreographic programming in Rust.”
1st International Workshop on Choreographic Programming (CP 2024), Copenhagen, Denmark, June 2024.

- W8. Gan Shen[†] and **Lindsey Kuper**.
 “Toward verified library-level choreographic programming with algebraic effects.”
1st International Workshop on Choreographic Programming (CP 2024), Copenhagen, Denmark, June 2024.
- W7. Tim Goodwin[†], Andi Quinn, and **Lindsey Kuper**.
 “What goes wrong in serverless runtimes? A survey of bugs in Knative Serving.”
1st Workshop on SErverless Systems, Applications and METHodologies (SESAME 2023), Rome, Italy, May 2023.
- W6. Patrick Redmond[†], Gan Shen[†], and **Lindsey Kuper**.
 “Toward hole-driven development in Liquid Haskell.”
Human Aspects of Types and Reasoning Assistants (HATRA) 2021, Chicago, IL, USA, October 2021.
- W5. Gan Shen[†] and **Lindsey Kuper**.
 “Toward SMT-based refinement types in Agda.”
Human Aspects of Types and Reasoning Assistants (HATRA) 2021, Chicago, IL, USA, October 2021.
- W4. **Lindsey Kuper**, Guy Katz, Justin Gottschlich, Kyle Julian, Clark Barrett, and Mykel J. Kochenderfer.
 “Toward scalable verification for safety-critical deep networks.”
Conference on Systems and Machine Learning (SysML) 2018, Stanford, CA, USA, February 2018. (Poster available.)
- W3. **Lindsey Kuper** and Ryan R. Newton.
 “Joining forces: toward a unified account of LVars and convergent replicated data types.”
5th Workshop on Determinism and Correctness in Parallel Programming (WoDet 2014), Salt Lake City, UT, USA, March 2014.
- W2. **Lindsey Kuper** and Ryan R. Newton.
 “LVars: lattice-based data structures for deterministic parallelism.”
2nd ACM SIGPLAN Workshop on Functional High-Performance Computing (FHPC 2013), Boston, MA, USA, September 2013.
- W1. Andrew W. Keep, Michael D. Adams, **Lindsey Kuper**, William E. Byrd, and Daniel P. Friedman.
 “A pattern matcher for miniKanren, or, how to get into trouble with CPS macros.”
10th Annual Workshop on Scheme and Functional Programming (Scheme 2009), Boston, MA, USA, August 2009.

Technical reports

- TR3. **Lindsey Kuper**, Aaron Turon, Neelakantan R. Krishnaswami, and Ryan R. Newton.
 “Freeze after writing: quasi-deterministic parallel programming with LVars.” (56 pages)
 Indiana University Technical Report TR710, November 2013.
- TR2. **Lindsey Kuper** and Ryan R. Newton.
 “A lattice-theoretical approach to deterministic parallelism with shared state.” (60 pages)
 Indiana University Technical Report TR702, October 2012.
- TR1. David Cok, John Phillips, Scott Wisniewski, Suan Hsi Yong, Nathan Lloyd, **Lindsey Kuper**, Denis Gopan, and Alexey Loginov.
 “Safety in numbers.” (105 pages)
 ONR project final report, November 2010.

Invited articles

- I1. **Lindsey Kuper**.
 “My first fifteen compilers.”
PL Perspectives (the SIGPLAN blog), July 2019.

Patents

- P2. “Detecting mobile device sensor malfunctions.”
Lindsey Kuper and Justin E. Gottschlich.
[U.S. Patent 10,591,313](#), issued March 17, 2020.
- P1. “Autonomous vehicle advanced sensing and response.”
 Barath Lakshamanan, Linda L. Hurd, Ben J. Ashbaugh, Elmoustapha Ould-Ahmed-Vall, Liwei Ma, Jingyi Jin, Justin E. Gottschlich, Chandrasekaran Sakthivel, Michael S. Strickland, Brian T. Lewis, **Lindsey Kuper**, Altug Koker, Abhishek R. Appu, Prasoorkumar Surti, Joydeep Ray, Balaji Vembu, Javier S. Turek, and Naila Farooqui.
[U.S. Patent 10,332,320](#), issued June 25, 2019.

Peer-reviewed artifacts

These are software artifacts that have been formally evaluated separately from the companion paper.

- A6. Patrick Redmond[†], Jonathan Castello[†], José Manuel Calderón Trilla, and **Lindsey Kuper**.
[“Exploring the Theory and Practice of Concurrency in the Entity-Component-System Pattern \(Artifact\).”](#)
 Designated *Reusable* by the OOPSLA 2025 Artifact Evaluation Committee.
Distinguished Artifact Award.
- A5. Mako Bates, Shun Kashiwa[†], Syed Jafri, Gan Shen[†], **Lindsey Kuper**, and Joseph P. Near.
[“Efficient, portable, census-polymorphic choreographic programming \(Artifact\).”](#)
 Designated *Reusable* by the PLDI 2025 Artifact Evaluation Committee.
- A4. Gan Shen[†], Shun Kashiwa[†], and **Lindsey Kuper**.
[“HasChor: functional choreographic programming for all \(Artifact\).”](#)
 Designated *Reusable* by the ICFP 2023 Artifact Evaluation Committee.
- A3. Yiyun Liu, James Parker, Patrick Redmond[†], **Lindsey Kuper**, Michael Hicks, and Niki Vazou.
[“Verifying replicated data types with typeclass refinements in Liquid Haskell.”](#)
 Designated *Functional* by the SPLASH 2020 OOPSLA Artifact Evaluation Committee.
- A2. Todd A. Anderson, Hai Liu, **Lindsey Kuper**, Ehsan Toton, Jan Vitek, and Tatiana Shpeisman.
[“Parallelizing Julia with a non-invasive DSL \(Artifact\).”](#)
 Appeared in *Dagstuhl Artifacts Series*, 2017.
- A1. **Lindsey Kuper**, Aaron Todd, Sam Tobin-Hochstadt, and Ryan R. Newton.
[“Taming the parallel effect zoo: extensible deterministic parallelism with LVish.”](#)
 Accepted by the PLDI 2014 Artifact Evaluation Committee.

Selected open source software contributions

- 2015–17 Contributor to [ParallelAccelerator.jl](#), a library and compiler for high-performance, high-level array-style programming in Julia.
- 2014–15 Contributor to [River Trail](#), a library, JIT compiler, and web browser extension to enable parallel programming in JavaScript.
- 2013–15 Contributor to [LVish](#), the Haskell library for deterministic and quasi-deterministic parallel programming based on my dissertation work on LVars.
- 2011–14 Contributor to the first ten releases of [the Rust programming language](#), and various pre-release versions.

Professional activities

Talks and panel appearances

- June 16, 2026 [“Interpreters everywhere!”](#) (**Keynote talk**, Choreographic Programming 2026, Boulder, CO, USA)
- April 27, 2026 “Can you keep a secret? A new protocol for sender-side enforcement of causal message delivery.” (PaPoC 2026, Edinburgh, UK)
- April 12, 2026 “We made zines, and so can you.” (Sunday Assembly Silicon Valley, Mountain View, CA, USA)
- Jan. 23, 2026 “Interpreters everywhere!” (Programming Languages Seminar, Northeastern University, online)
- Nov. 7, 2025 “Interpreters everywhere!” (Computer Science Colloquium, Indiana University, online)
- July 21-25, 2025 “A few ideas from distributed systems for PL folk.” (Three guest lectures at the [Scottish Programming Languages and Verification Summer School 2025](#), Edinburgh, UK)
- Dec. 3, 2024 “Library-level choreographic programming.” (IFIP TC2 Working Group 2.11 (Program Generation), Edinburgh, UK)
- March 5, 2024 “Library-level choreographic programming.” (IFIP TC2 Working Group 2.16 (Programming Language Design), Pittsburgh, PA, USA)
- Aug. 13, 2023 [“What could go wrong?”](#) (Sunday Assembly Silicon Valley, Mountain View, CA, USA)
- March 23, 2023 “Verified causal broadcast with Liquid Haskell.” (Programming Languages and Verification Seminar, Portland State University, online)
- March 13, 2023 “Verified causal broadcast with Liquid Haskell.” ([Dagstuhl Seminar 23112: Unifying Formal Methods for Trustworthy Distributed Systems](#), Wadern, Germany)
- Jan. 11, 2023 [“Causally ordered communication, cooked three ways.”](#) (IFIP TC2 Working Group 2.16 (Programming Language Design), Claremont, CA, USA)
- Oct. 24, 2022 [“Verified causal broadcast with Liquid Haskell.”](#) (Programming Systems Seminar, University of California Berkeley, Berkeley, CA, USA)
- Oct. 12, 2022 [“Verified causal broadcast with Liquid Haskell.”](#) (Programming Languages & Software Engineering Seminar, National University of Singapore, online)
- Aug. 31, 2022 [“Verified causal broadcast with Liquid Haskell.”](#) (IFL 2022, Copenhagen, Denmark)
- May 10, 2022 [“Adventures in building reliable distributed systems with Liquid Haskell.”](#) (**Keynote talk**, FLOPS 2022, online)
- June 21, 2021 [“Reasoning under uncertainty in SMT solving, research, and life.”](#) (Programming Languages Mentoring Workshop at PLDI 2021, online)
- Dec. 11, 2020 “Using solver-aided languages to build reliable distributed systems.” (CSE Colloquium, University of California Riverside, online)
- Oct. 14, 2020 “LVars: lattice-based data structures for deterministic parallel and distributed programming.” (Guest lecture for [CS294-170: Programming the Cloud](#), University of California Berkeley, online)
- Jan. 21, 2020 [“Reasoning under uncertainty in SMT solving, research, and life.”](#) (Programming Languages Mentoring Workshop at POPL 2020, New Orleans, LA, USA)
- July 24, 2019 “A few big ideas from distributed systems.” (Blizzard Entertainment, Inc., Irvine, CA, USA)
- July 2, 2019 “Toward domain-specific solvers for distributed consistency.” (Shonan Meeting No. 143: Programming Language Support for Data-Intensive Applications, Hayama, Japan)

- May 16, 2019 “Toward domain-specific solvers for distributed consistency.” (SNAPL 2019, Providence, RI, USA)
- Feb. 6, 2019 “Domain-specific SMT solving for neural network verification or anything else.” (IFIP TC2 Working Group 2.16 (Programming Language Design), Portland, OR, USA)
- Jan. 24, 2019 “Abstractions for expressive, efficient parallel and distributed computing.” (Jane Street Tech Talk, New York, NY, USA)
- March 5, 2018 “Abstractions for expressive, efficient parallel and distributed computing.” (UC Santa Cruz, Santa Cruz, CA)
- May 8, 2017 “Proving that safety-critical neural networks do what they’re supposed to!” (The Recurse Center, New York, NY, USA)
- Jan. 18, 2017 “A tour of ParallelAccelerator.jl: a library and compiler for high-level, high-performance scientific computing in Julia.” (Center for Computer Research in Music and Acoustics, Stanford University, Palo Alto, CA, USA)
- June 24, 2016 “A tour of ParallelAccelerator.jl: a library and compiler for high-level, high-performance scientific computing in Julia.” (JuliaCon 2016, Cambridge, MA, USA)
- April 14, 2016 “Prospect: a library and compiler for high-level, high-performance scientific computing in Julia.” (University of California Berkeley, Berkeley, CA, USA)
- Jan. 19, 2016 Panelist, Young Researcher Panel (Programming Languages Mentoring Workshop at POPL 2016, St. Petersburg, FL, USA)
- Oct. 29, 2015 “Prospect: finding and exploiting parallelism in a productivity language for scientific computing.” (SPLASH-I 2015, Pittsburgh, PA, USA)
- Oct. 28, 2015 Panelist, “The Future of Programming Languages and Programmers” panel (SPLASH 2015, Pittsburgh, PA, USA)
- May 26, 2015 “LVars for distributed programming, or, LVars and CRDTs join forces.” (IFIP TC2 Working Group 2.8 (Functional Programming), Kefalonia, Greece)
- Jan. 31, 2015 “LVars: lattice-based data structures for deterministic parallel and distributed programming.” (Compose::Conference, New York, NY, USA)
- March 24, 2014 “LVars: lattice-based data structures for deterministic parallel and distributed programming.” (The Recurse Center, New York, NY, USA)
- March 21, 2014 “LVars: lattice-based data structures for deterministic parallel and distributed programming.” (Intel Labs, Santa Clara, CA, USA)
- March 4, 2014 “LVars: lattice-based data structures for deterministic parallel and distributed programming.” (University of Utah, Salt Lake City, UT, USA)
- March 2, 2014 “Joining forces: toward a unified account of LVars and convergent replicated data types.” (WoDet 2014, Salt Lake City, UT, USA)
- Jan. 27, 2014 “LVars: lattice-based data structures for deterministic parallel and distributed programming.” (Microsoft Research, Mountain View, CA, USA)
- Jan. 23, 2014 “Freeze after writing: quasi-deterministic parallel programming with LVars.” (POPL 2014, San Diego, CA, USA)
- Oct. 31, 2013 “LVars: lattice-based data structures for deterministic parallelism.” (Mozilla Corporation, Mountain View, CA, USA)
- Oct. 29, 2013 “LVars: lattice-based data structures for deterministic parallelism.” (RICON West 2013, San Francisco, CA, USA)
- Sept. 23, 2013 “LVars: lattice-based data structures for deterministic parallelism.” (FHPC 2013, Boston, MA, USA)
- June 10, 2013 “LVars: lattice-based data structures for deterministic parallelism.” (The Recurse Center, New York, NY, USA)

- Jan. 30, 2013 [“A lattice-based approach to deterministic parallelism.”](#) (MPI-SWS, Saarbrücken, Germany)
- Jan. 25, 2013 [“A lattice-based approach to deterministic parallelism.”](#) (POPL 2013 student talk session, Rome, Italy)
- Sept. 14, 2012 [“A lattice-based approach to deterministic parallelism with shared state.”](#) (Aarhus University, Aarhus, Denmark)
- Aug. 16, 2012 [“A lattice-based approach to deterministic parallelism with shared state.”](#) (University of California Berkeley, Berkeley, CA, USA)
- Aug. 9, 2012 [“Rust typeclasses turn trait-er.”](#) (Mozilla Corporation, Mountain View, CA, USA)
- April 5, 2012 [“Hacking the Rust object system at Mozilla.”](#) (Grinnell College, Grinnell, IA, USA; hosted by the Grinnell Alumni Scholars Program)
- Aug. 18, 2011 [“Some pieces of the Rust object system: extension, overriding, and self.”](#) (Mozilla Corporation, Mountain View, CA, USA)
- Feb. 23, 2011 [“Parametric polymorphism through run-time sealing, or, theorems for low, low prices!”](#) (Northeastern University, Boston, MA, USA)
- Aug. 20, 2010 [“A system for testing specifications of CPU semantics, or, what I did on my summer vacation.”](#) (GammaTech, Inc., Ithaca, NY, USA)

Leadership positions in professional organizations

- 2024– Steering committee member, ACM SIGPLAN Workshop on Choreographic Programming
- 2023– Member, [IFIP TC2 Working Group 2.16 \(Programming Language Design\)](#)
- 2026 Program co-chair, [Haskell Symposium 2026](#)
- 2026 Program co-chair, [13th Workshop on Principles and Practice of Consistency for Distributed Data \(PaPoC 2026\)](#)
- 2020–25 Member at Large, Board of Directors of the [Exclamation Foundation](#), the nonprofit entity that organizes the [!!Con](#) and [!!Con West](#) conferences
- 2024 Program co-chair, [Choreographic Programming @ PLDI 2024](#)
- 2021–23 Steering committee member, [ACM SIGPLAN Programming Languages Mentoring Workshop \(PLMW\)](#)
- 2021 Program co-chair, [Programming Languages Mentoring Workshop \(PLMW\) @ ICFP 2021](#)
Accessibility co-chair, [26th ACM SIGPLAN International Conference on Functional Programming \(ICFP 2021\)](#)
- 2020 Co-chair, [Programming Languages Mentoring Workshop \(PLMW\) @ ICFP 2020](#)
Accessibility co-chair, [25th ACM SIGPLAN International Conference on Functional Programming \(ICFP 2020\)](#)
- 2019–20 President, Board of Directors of the [Exclamation Foundation](#)
- 2015–18 Steering committee member and publicity chair, [ACM SIGPLAN International Conference on Functional Programming \(ICFP\)](#)
- 2018 Program co-chair, [2018 Workshop on Domain-Specific Language Design and Implementation \(DSLDI 2018\)](#)
- 2017 Program co-chair, [2017 Workshop on Domain-Specific Language Design and Implementation \(DSLDI 2017\)](#)
General chair, [Off the Beaten Track 2017](#)
- 2016 Program chair, [Off the Beaten Track 2016](#)

Program committee membership and other reviewing service

- 2026 Program committee, [SPLASH 2026 Doctoral Symposium](#)

- 2025 Program committee, [2025 International Conference on Object-Oriented Programming, Systems, Languages, and Applications \(OOPSLA 2025\)](#)
Reviewer, [ICFP 2025](#)
Reviewer, [alt.chi 2025](#)
- 2024 Program committee, [29th ACM SIGPLAN International Conference on Functional Programming \(ICFP 2024\)](#)
- 2023 Program committee, [4th International Workshop on Human Aspects of Types and Reasoning Assistants \(HATRA 2023\)](#)
Program committee, [10th ACM SIGPLAN International Workshop on Functional High-Performance and Numerical Computing \(FHPNC 2023\)](#)
Program committee, [10th Workshop on Principles and Practice of Consistency for Distributed Data \(PaPoC\) 2023](#)
Reviewer, [ICFP 2023](#)
Program committee, [50th ACM SIGPLAN Symposium on Principles of Programming Languages \(POPL 2023\)](#)
- 2022 Review panelist, National Science Foundation, Directorate for Computer & Information Science & Engineering
- 2021 Reviewer, *Foundations and Trends in Programming Languages*
External review committee, [2021 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications \(OOPSLA 2021\)](#)
Program committee, [42nd ACM SIGPLAN Conference on Programming Language Design and Implementation \(PLDI 2021\)](#)
Program committee, [26th International Conference on Architectural Support for Programming Languages and Operating Systems \(ASPLOS 2021\)](#)
- 2020 External review committee, [41st ACM SIGPLAN Conference on Programming Language Design and Implementation \(PLDI 2020\)](#)
Reviewer, [POPL 2020](#)
- 2019 Review panelist, National Science Foundation, Directorate for Computer & Information Science & Engineering
Program committee, [10th Workshop on Programming Languages and Operating Systems \(PLOS 2019\)](#)
Program committee, [6th Workshop on Principles and Practice of Consistency for Distributed Data \(PaPoC\) 2019](#)
External review committee, [40th ACM SIGPLAN Conference on Programming Language Design and Implementation \(PLDI 2019\)](#)
- 2018 Program committee, [2018 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications \(OOPSLA 2018\)](#)
Program committee, [SPLASH 2018 Doctoral Symposium](#)
Program committee, [5th Workshop on Principles and Practice of Consistency for Distributed Data \(PaPoC 2018\)](#)
External review committee, [39th ACM SIGPLAN Conference on Programming Language Design and Implementation \(PLDI 2018\)](#)
- 2017 Program committee, [22nd ACM SIGPLAN International Conference on Functional Programming \(ICFP 2017\)](#)
- 2016 Review panelist, National Science Foundation, Directorate for Computer & Information Science & Engineering
Program committee, [2016 Workshop on Domain-Specific Language Design and Implementation \(DSLDI 2016\)](#)

- External review committee, [30th European Conference on Object-Oriented Programming \(ECOOP 2016\)](#)
 External review committee, [43rd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages \(POPL 2016\)](#)
 Reviewer, [PODC 2016](#)
- 2015 Program committee, [27th Symposium on the Implementation and Application of Functional Programming Languages \(IFL 2015\)](#)
 Program committee, [Onward! Papers 2015](#)
 Program committee, [2015 Workshop on Principles and Practice of Consistency for Distributed Data \(PaPoC 2015\)](#)
 Program committee, [Off the Beaten Track 2015](#)
 Reviewer, [PLDI 2015](#)
 Reviewer, [Distributed Computing](#)
- 2014 Program committee, [26th Symposium on the Implementation and Application of Functional Programming Languages \(IFL 2014\)](#)
 Program committee, [ACM SIGPLAN Haskell Symposium 2014](#)
- 2013 Reviewer, [ICFP 2013](#)
 Reviewer, [PPoPP 2013](#)
- 2012 Reviewer, [ACM Transactions on Programming Languages and Systems \(TOPLAS\)](#)
 Reviewer, [PLPV 2012](#)

Media appearances

- 2023 [“#34: Lindsey Kuper.”](#) *The Haskell Interlude* podcast, October 2023.
 2020 [“Not your Typical Tech Conference: !!Con West Brings Joy, Excitement, and Surprise to Computing.”](#) *Santa Cruz Tech Beat*, March 2020.
 2019 [“The thrill of computing: Inaugural !!Con West Conference revels in the playful side of high tech, letting participants ‘experience computing viscerally.’”](#) *UC Santa Cruz Magazine*, March 2019.
 2018 [“#267: Cute and Squishy.”](#) *Embedded.fm* podcast, Nov. 8, 2018.
 2016 [“Episode 13: Lindsey Kuper on a new kind of computing conference.”](#) *PG Podcast*, Aug. 23, 2016.

Other professional activities

- Dec. 2024 Invited participant, [IFIP TC2 Working Group 2.11 \(Program Generation\)](#)
 March 2023 Invited participant, [Dagstuhl Seminar 23112: Unifying Formal Methods for Trustworthy Distributed Systems](#)
 Jan. 2023 Invited participant, [IFIP TC2 Working Group 2.16 \(Programming Language Design\)](#)
 July 2019 Invited participant, [Shonan Meeting No. 143: Programming Language Support for Data-Intensive Applications](#)
 Feb. 2019 Invited participant, [IFIP TC2 Working Group 2.16 \(Programming Language Design\)](#)
 May 2015 Invited participant, [IFIP TC2 Working Group 2.8 \(Functional Programming\)](#)
 2013–14 Three week-long invited residencies (summer 2013, fall 2014, winter 2014) at the [Recurse Center](#), a free, self-directed educational retreat for programmers

University and public service

Service to the Department

- 2020– Co-organizer of the [Languages, Systems, and Data Seminar](#) weekly talk series

- 2024–25 Chair of Colloquium Committee
- 2024–25 Member of Personnel Committee
- 2023–24 Organizer, CSE Colloquium
- 2023–24 Member of Faculty Recruitment Committee, Green Computing
- 2021–22 Member of Faculty Recruitment Committee, Experimental Computer Systems
- 2021–22 Member of Space Committee (aka the “Space Force”)
- 2019–22 Member of Undergraduate Curriculum Committee
- 2019–20 Member of Graduate Admissions Committee
- 2018–19 Member of Faculty Recruitment Committee, Software Foundations

Service to the Baskin School of Engineering

- April 12, 2019 Panelist for presentation to [CSin3](#) cohort students on BSOE graduate programs, CSU Monterey Bay

Service to the University

- Jan. 30, 2019 Faculty Dinner, [Scientist in Residence Program](#), Oakes College
- Oct. 11, 2018 Panelist, *Word from the W.I.S.E. (Women in Science and Engineering)* event, Oakes College

Other service and outreach activities

- 2014–24 Co-founder and organizer of the [!!Con](#) and [!!Con West](#) conferences of ten-minute talks on the joy, excitement, and surprise of computing
- June 26, 2024 Panelist, [Women@PLDI Dinner](#), PLDI 2024
- Sept. 6, 2023 Co-chair, [Women@ICFP Dinner](#), ICFP 2023
- 2021 Mentor, [SIGPLAN-M](#) Long-Term Mentoring Committee
- 2015 Program committee member, *Tiny Transactions on Computer Science volume 3*, the premier venue for peer-reviewed computer science research of ≤ 140 characters

At Indiana University

- 2013–14 Student member of Graduate Education Committee, Computer Science Program
- 2010–14 Website and mailing list administrator, [Programming Languages Group](#)
- 2011–13 Officer, [Computer Science Club](#)
- 2012 Co-organizer and program committee member, [Indiana Celebration of Women in Computing \(InWIC\) 2012](#)
- 2010–12 Organizer, [Programming Languages Colloquium Series](#)
- 2010–11 President, Computer Science Graduate Student Association
- 2010–11 Steering Committee member, [Women in Informatics and Computing](#)

Mentoring and student advising

Doctoral students

Dates	Relationship	Deg. Year	Name and Activities
2026–	Primary Supervisor		Sabrina Reis
2024–	Primary Supervisor		Yan Tong <ul style="list-style-type: none"> • Publications: W11
2024	Other Advisor	2024	Priyanka Mondal <ul style="list-style-type: none"> • Member of Dissertation Committee • Dissertation title: “Towards Making Distributed Systems Trustless”

2023–25	Other Advisor	2025	Nick Rioux (University of Pennsylvania) <ul style="list-style-type: none"> • External Member of Thesis Committee • Dissertation title: “Principled Parallel Composition and the Separation of Concerns” • Thesis proposal title: “Eventually Consistent Functional Programming: Composing Distributed Systems in Granite”
2023–25	Other Advisor	2025	Federico Mora Rocha (UC Berkeley) <ul style="list-style-type: none"> • External Member of Thesis Committee, External Member of Qualifying Examination Committee • Dissertation title: “Scalable and Usable Domain-Specific Automated Reasoning” • Thesis proposal title: “Learning-Enabled Verification of Distributed Systems with End-to-End Proofs”
2022–	Primary Supervisor		Jonathan Castello <ul style="list-style-type: none"> • Advanced Spring 2026 • Advancement proposal title: “Space mission simulation from the outside in” • Publications: J6, J5, J3, C6
2022–	Primary Supervisor		Tim Goodwin (co-advised with Andi Quinn) <ul style="list-style-type: none"> • Publications: W10, W7
2021–	Primary Supervisor		Nathan Liittschwager <ul style="list-style-type: none"> • Advanced Winter 2026 • Advancement proposal title: “Simulation Is Not Enough! A Proposal for Characterizing Replicated Systems and Emulators” • Publications: J5, C6, W11
2021–24	Other Advisor	2024	Haofan Zheng <ul style="list-style-type: none"> • Member of Dissertation Committee, Member of Qualifying Examination Committee • Dissertation title: “Building Secure Distributed Applications the Decent Way”
2021–23	Other Advisor	2023	Zehui Cheng <ul style="list-style-type: none"> • Member of Dissertation Committee, Member of Advancement Committee • Dissertation title: “Some Aspects of Temporal Data Exchange”
2020–	Primary Supervisor		Patrick Redmond <ul style="list-style-type: none"> • Advanced Winter 2025 • Advancement proposal title: “The Entity-Component-System Pattern is a General-Purpose Concurrent Machine” • Publications: J6, J3, J1, C7, C5, W6

2020–	Primary Supervisor		Gan Shen <ul style="list-style-type: none"> • Advanced Fall 2023 • Advancement proposal title: “Toward Asynchronous and Fault-Tolerant Choreographic Programming” • Publications: J4, J2, C8, C5, W8, W6, W5 • ACM SIGPLAN Distinguished Paper Award, ICFP 2023 (J2)
2019–22	Other Advisor	2022	Kamala Ramasubramanian <ul style="list-style-type: none"> • Member of Dissertation Committee, Member of Qualifying Examination Committee • Dissertation title: “Seeing the forest and the trees: Tackling distributed systems problems by querying observations of executions”

Master’s students

Dates	Relationship	Deg. Year	Name and Activities
2024	Other Advisor	2024	Vincent Titterton <ul style="list-style-type: none"> • MS project: “Load Balancing Large Distributed Graphs for the Actor Graph Library”
2024	Other Advisor	2024	Nithyasree Sampath <ul style="list-style-type: none"> • MS project: “Safe Scheduler UI with joinWith Wrapper”
2023–24	Primary Supervisor	2024	Shun Kashiwa <ul style="list-style-type: none"> • MS thesis: “Portable, Efficient, and Practical Library-Level Choreographic Programming” • Publications: J4, J2, W9 • SIGPLAN Distinguished Paper Award, ICFP 2023 (J2) • Now a PhD student at UC San Diego
2022	Other Advisor	2022	David Lung <ul style="list-style-type: none"> • MS project: “A compounding test framework to help grow test suites in Haskell”
2019–20	Primary Supervisor	-	Gan Shen <ul style="list-style-type: none"> • Continued in my group as a PhD student from 2020
2019	Other Advisor	2019	Ana McTaggart <ul style="list-style-type: none"> • MS project: “FLORAM: improving the efficiency of Oblivious RAM with formal languages”

Undergraduate students

Dates	Relationship	Deg. Year	Name and Activities
Spring 2026	Primary Supervisor	2026	Clara Ceerla <ul style="list-style-type: none"> • BS thesis
2025–26	Primary Supervisor	2026	Ayush Manocha <ul style="list-style-type: none"> • First author of “Carol’s Causal Conundrum”
Spring 2025	Other Advisor	2025	Julian Martinov <ul style="list-style-type: none"> • BS thesis: “An Investigation into Objects and Capabilities in Twizzler: A Capability Based Operating System” • Now a PhD student at UC Santa Cruz

Spring 2025	Other Advisor	2025	Steven Xue <ul style="list-style-type: none"> • BS thesis: “An Analysis and Application of Graphene on Alibaba”
2024	Primary Supervisor	2024	Ali Ali <ul style="list-style-type: none"> • First author of “Communicating Chorrrectly with a Choreography”
2021–22	Other Advisor	2022	Simon Guo <ul style="list-style-type: none"> • Now a PhD student at UC Irvine
2019–20	Other Advisor	2020	Matthew Rhea
2013	Other Advisor	2015	Isaiah Weating (Indiana University) <ul style="list-style-type: none"> • Mentor for undergraduate research project • Awarded third place in Indiana University Undergraduate Research Opportunities in Computing (UROC) poster competition for “Parallel Programming with LVars”, May 2013

Courses taught

2025-26

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Spring	CSE114A Foundations of Programming Languages	150	no	

2024-25

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Fall	CSE232 Distributed Systems	11	no	82%
Winter	CSE114A Foundations of Programming Languages	157	no	54%
Spring	CSE114A Foundations of Programming Languages	167	no	49%

2023-24

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Fall	CSE232 Distributed Systems	40	no	48%
Winter	CSE138 Distributed Systems	76	no	49%
Spring	CSE114A Foundations of Programming Languages	149	no	47%

2022-23

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Winter	CSE290S Advanced Topics in Computer Systems: Distributed Software Systems: Global-First and Local-First Perspectives	11	no	55%
Spring	CSE114A Foundations of Programming Languages	139	no	35%

2021-22

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Fall	CSE138 Distributed Systems	60	no	32%
Fall	CSE232 Distributed Systems	32	no	66%
Spring	CSE114A Foundations of Programming Languages	253	no	38%

2020-21

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Fall	CSE232 Distributed Systems	16	no	81%
Spring	CSE138 Distributed Systems	86	no	28%

2019-20

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Fall	CSE290Q Topics in Programming Languages: SMT Solving and Solver-Aided Systems	8	no	50%
Winter	CSE30 Programming Abstractions: Python	231	no	15%
Spring	CSE138 Distributed Systems	99	no	40%

2018-19

Quarter	Name	Enrolled	Co-taught	% Evals Retd.
Fall	CMPS290S Advanced Topics in Computer Systems: Languages and Abstractions for Distributed Programming	6	no	67%
Spring	CMPS128 Distributed Systems	84	no	55%

At Indiana University (Associate Instructor)

Fall 2011	CSCI H211 Introduction to Computer Science, Honors , taught by Will Byrd
Spring 2010	CSCI C311 Programming Languages , taught by Dan Friedman
Fall 2009	CSCI B521 Programming Language Principles , taught by Dan Friedman
Fall 2009	CSCI C311 Programming Languages , taught by Dan Friedman
Spring 2009	CSCI C311 Programming Languages , taught by Dan Friedman