

Lindsey Kuper

Programming Languages Group

Indiana University School of Informatics and Computing

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Research interests

Theory, design, semantics, and implementation of programming languages; compilers; type systems; functional programming; logic programming; integrated static and dynamic typing; mechanized metatheory.

Education

- **Indiana University**

- Ph.D. student in Computer Science. 2008–present
Co-advised by Ryan Newton and Amal Ahmed.
- M.S. Computer Science, 2010. 2008–2010
Graduate Women in Science Fellowship, 2008–2009.

- **Grinnell College**

- B.A. Computer Science and Music (with honors), 2004. 2000–2004

Professional experience

- **Indiana University School of Informatics and Computing**, Bloomington, IN

- *Associate Instructor* August–December 2011
Teaching assistant and lab instructor for [H211 Introduction to Computer Science, Honors](#), taught by Will Byrd. Teaching Scheme programming and Arduino development.
- *Research Assistant* August–December 2010
Helped develop a proof of parametricity for a multi-language system that combines statically and dynamically typed languages. Supervised by Amal Ahmed.
- *Associate Instructor* January 2009–May 2010
Teaching assistant and lab instructor for [C311 Programming Languages](#) and [B521 Programming Language Principles](#), taught by Daniel P. Friedman. Nominated by students for 2009–2010 Associate Instructor of the Year award. Helped develop a pattern matcher for miniKanren, a declarative logic programming system implemented in a pure functional subset of Scheme.

- **Mozilla Corporation**, Mountain View, CA

- *Research Engineering Intern* March–August 2011
Worked on the design and implementation of the [Rust programming language](#). Implemented self-dispatch, object extension, and method overriding in the self-hosted Rust compiler. Began work on a PLT Redex model of Rust. Supervised by David Herman.

- **GrammaTech, Inc.**, Ithaca, NY
 - *Software Engineering Intern* May–August 2010
As part of the [Safety in Numbers](#) project, developed a Linux debugger-like tool to compare abstract interpretations of machine code semantic specifications against the behavior of a physical CPU. Contributed to a ~1-million-line C/C++ codebase. Supervised by David Melski.
- **Bedford, Freeman and Worth Publishing Group**, New York, NY and Portland, OR
 - *Associate Project Manager* 2006–2008
- **IBCTV, LLC**, Chicago, IL and Portland, OR
 - *Web Designer/Developer* 2004–2006
- **internalDrive, Inc.**, Austin, TX and Evanston, IL
 - *Instructor, Digital Music Editing and Web Design* Summer 2003, Summer 2004

Invited talks

- [Parametric Polymorphism Through Run-time Sealing, or, Theorems for Low, Low Prices!](#)
Programming Languages Seminar, Northeastern University, Boston, Massachusetts, February 23, 2011.

Publications

- 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.](#)
In *Proceedings of the 2009 Scheme and Functional Programming Workshop*, pages 37–45, Boston, Massachusetts, August 2009.

Technical reports

- David Melski, David Cok, John Phillips, Scott Wisniewski, Suan Hsi Yong, Nathan Lloyd, **Lindsey Kuper**, Denis Gopan, and Alexey Loginov.
[Safety in Numbers](#). (104 pages)
Available at: <http://handle.dtic.mil/100.2/ADA532995>, November 2010.

Open source software contributions

- Contributor to the Rust programming language, March 2011–present: <http://rust-lang.org>.
- Various GPL'd side projects, 2008–present: <http://narorumo.googlecode.com>.

Professional service

- Secondary reviewer, PLPV 2012.

University service

- Co-organizer, [Indiana Celebration of Women in Computing \(InWIC\)](#) 2012.
- Steering Committee member, [Indiana University Computer Science Club](#), 2011–present.
- Organizer, [Indiana University PL Colloquium Series](#), 2010–present. Coordinate speakers and administer website for weekly talk series.
- President, Indiana University Computer Science Graduate Student Association, 2010–2011.
- Steering Committee member, [Indiana University Women in Informatics and Computing](#), 2010–2011.

Awards and fellowships

- Indiana University [Graduate Women in Science Fellowship](#), 2008–2009.
- National Merit Scholarship, 2000–2004.
- Travel awards:
 - [CRA-W/CDC/SIGPLAN Mentoring Workshop Scholarship Award](#), 2012.
 - [CRA-W Grad Cohort Workshop](#) invitation and travel award, 2010.
 - [CRA-W Grad Cohort Workshop](#) invitation and travel award, 2009.
 - [Google Workshop for Women Engineers](#) invitation and travel award, 2009.

Other activities

- Competed in 6 marathons since 2004, most recently in March 2011. Best time so far: 4:29:16.
- Competed in the [ICFP Programming Contest](#), 2011, 2009, 2008.
- [Contemporary Vocal Ensemble](#), Indiana University Jacobs School of Music, 2009.
- [University Chorale](#), Indiana University Jacobs School of Music, 2008–2009.
- [Grinnell Singers](#), Grinnell College Department of Music, 2000–2004.