

Curriculum Vitæ

Matthew Might

Fall 2018

Contact

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Professional experience

- **University of Alabama at Birmingham** Birmingham, Alabama, U.S.A.
Director, Hugh Kaul Precision Medicine Institute. July 2017–Present.
Hugh Kaul Endowed Chair in Personalized Medicine. July 2017–Present.
Professor (General Internal Medicine), Tenured. July 2017–Present.
Professor (Computer Science). July 2017–Present.
- **Executive Office of the President** at The White House. Washington, D.C., U.S.A.
Strategist. March 2016–January 2018.
 - Advisor to the President’s Precision Medicine Initiative.
 - Advisor to VA’s *Million Veterans Program*.
 - Advisor to NIH’s *All of Us* Million-Person Genomics Cohort Program.
 - Member of Office of Management and Budget.
 - Member of United States Digital Service Headquarters.
 - Received Top Secret Security Clearance.
 - Delegated to Office Science and Technology Policy (May 2017–January 2018).
- **Harvard Medical School**, Department of Biomedical Informatics. Boston, Massachusetts, U.S.A.
Senior Lecturer. July 2017–present.
Associate Professor, Visiting. July 2015–June 2017.

- Advisor to Undiagnosed Diseases Network Coordinating Center.
- Developed social-media/SEO-driven patient matchmaking service.
- Lead PEPMA: White House-launched effort to rapidly diagnose and treat novel disorders.
- **U.S. Department of Veterans Affairs, Boston VAMC.** Jamaica Plain, Massachusetts, U.S.A.
Research Affiliate. July 2016–July 2018.
 - Rehabilitating genomics research environment at VA for Million Veterans Program.
 - Creating genomics research environment at Department of Energy at Oak Ridge National Labs.
 - Aiding informatics in precision oncology.
- **Pairnomix, LLC** Minneapolis, Minnesota, U.S.A.
Co-founder & Scientific Advisor. November 2015–Present.
 - Developed *in vitro* compound-screening platform for individualized therapeutics.
 - Developed *in silico* compound-screening platform for individualized therapeutics.
 - Can test entire FDA-approved library against individual genotypes for epilepsy.
 - Discovered approved therapeutics for previously untreatable epilepsy: SCN8A
 - Discovered approved therapeutics for more (currently undisclosed) genetic epilepsies.
 - Took less than \$5 million in venture funding over 3 years.
 - Acquired in October 2018 by Q State Biosciences for \$20 million.
- **University of Utah, School of Computing & College of Pharmacy** Salt Lake City, Utah, U.S.A.
Presidential Scholar. July 2014–June 2017.
Associate Professor (Computer Science), Tenured. July 2014–June 2017.
Associate Professor (Computer Science), Adjunct. July 2017–Present.
Associate Professor (Pharmaceutical Chemistry), Adjunct. July 2016–Present.
Assistant Professor (Computer Science), Tenure-Track. Fall 2008–June 2014.
 - Founder, U-Combinator software systems research team: www.ucombinator.org
- **Diagis, LLC.** Atlanta, Georgia, U.S.A.
Chief Research Officer. Fall 2006–Summer 2008.
 - Cofounded company to commercialize static analysis research.
 - Developed software to find vulnerabilities at compile time.
 - Managed team of five researchers/developers.
 - Raised \$50,000 from GRA (G13); \$100,000 from NSF (G14).
 - Software: S5; Publications: J10, C28.
- **Yaplet, LLC.** Atlanta, Georgia, U.S.A.
Chief Technology Officer. Fall 2006–Summer 2008.
 - Cofounded company to deliver web chat service without installation or registration.
 - Built high-scalability server and client to power thousands of simultaneous chatters.
 - Raised \$47,500 from Georgia Tech Business Plan Competition.
 - Managed servers handling thousands of chat sessions per hour.
- **ScanTech Sciences.** Atlanta, GA
Research Scientist, x-ray physics. Summer 2003
Developed patented technologies for cargo container security scanning related to 3D content visualization, substance identification and tampering detection.
 - Patents: L1, L2

Research interests

I research the use, the design, the analysis and the implementation of programming languages. The primary application of my work in programming languages is to improve – and in some cases guarantee – cybersecurity at a foundational level. I focus on *scripting languages* (such as Python, JavaScript, PHP, MATLAB, Perl, Ruby and bash) and *functional languages* (such as Racket, Lisp, Haskell, Scala and ML), but I have done significant research on traditional languages (such as C, C++ and Java) as well. I have several foci within programming languages:

1. *Static analysis*: My chief interest is improving the speed, precision and power of analyses that can conservatively bound and predict the behavior of software. My goal is to use these analyses to improve the security, performance and correctness of programs.
2. *Domain-specific languages for scientific computing*: I am particularly interested in language design, and domain-specific language design for high-performance environments in particular. My goal is to make it easier for **biologists, chemists, physicists and engineers** to describe and implement high-performance simulations.
3. *Algorithm and data structure design*: I enjoy discovering elegant, efficient techniques for algorithm and data structure implementation.
4. *Quantum programming languages*: I am interested in the development of quantum programming languages around quantum lambda calculi that simplify the task of programming quantum computers.

Outside of programming languages, I have interests at the intersection of medicine and computation:

1. *Algorithmic therapeutics*: I am actively engaged in advancing techniques for individualized therapeutics discovery and development, with an emphasis on moving *in vitro* and *in vivo* methods to *in silico*: discovering novel rare disorders with sequencing; finding second cases for tentative $n = 1$ diagnoses via the Internet and social media; accelerating assay and model organism development; reducing the cost of compound screening, both *in vitro* and *in silico*; accelerating medicinal chemistry with computational techniques; and innovating in policy to incentivize translational rare disease research.
2. *Medical robotics*: I am particularly interested in developing formal patient safety assurances with respect to control code for medical robotics.

Education

- Ph.D., Computer Science. Fall 2003–Summer 2007.
Georgia Institute of Technology. Atlanta, Georgia, U.S.A.
Advisor: Olin Shivers. GPA: 4.00
Dissertation: *Environment Analysis of Higher-Order Languages*.
Minor: Economics.
- Visiting scholar. Summer 2006.
Northeastern University. Boston, Massachusetts, U.S.A.
Host: Mitchell Wand.

- Visiting researcher.
BRICS, University of Århus.
Host: Olivier Danvy.

Fall 2004.
Århus, Denmark.
- M.S., Computer Science.
Georgia Institute of Technology.
Specialization: Information security.
(Note: M.S. degree not officially awarded until 2005.)

Fall 2002–Spring 2003.
Atlanta, Georgia, U.S.A.
GPA: 4.00
- B.S., Computer Science.
Georgia Institute of Technology.
Specialization: Systems. Minor: Economics.

Fall 1999–Fall 2001.
Atlanta, Georgia, U.S.A.
GPA: 3.94
- High school diploma.
Brophy College Preparatory, A Jesuit Institution.

1995–1999
Phoenix, AZ

Publications

Peer-reviewed conference papers.

- C1. Lisa Zhang, Gregory Rosenblatt, Ethan Fetaya, Renjie Liao, William E. Byrd, Matthew Might, Raquel Urtasun and Richard Zemel. “Neural Guided Constraint Logic Programming for Program Synthesis.” *Proceedings of the 32nd Conference on Neural Information Processing Systems (NIPS 2018)*. Montreal, Canada. December, 2018.
- C2. Michael D. Adams and Matthew Might. “Restricting grammars with tree automata.” *Proceedings of the Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA 2017)*. Vancouver, Canada. October 2017.
- C3. William E. Byrd, Michael Ballantyne, Greg Rosenblatt and Matthew Might. “Functional Pearl: A Unified Approach to Solving Seven Programming Problems.” *Proceedings of the 22nd ACM SIGPLAN International Conference on Functional Programming. (ICFP 2017)*. Oxford, United Kingdom. September 2017.
- C4. Kimball Germane and Matthew Might. “A Posteriori Environment Analysis with Pushdown Delta-CFA.” *Proceedings of the Symposium on Principles of Programming Languages 2017 (POPL 2017)*. Paris, France. January 2017.
- C5. Jason Hemann, William Byrd, Daniel Friedman and Matthew Might. “A Small Embedding of Logic Programming with a Simple Complete Search.” *Dynamic Languages Symposium 2016. (DLS 2016)*. Vancouver, Canada. October 2016.
- C6. Thomas Gilray, Michael Adams and Matthew Might. “Allocation Characterizes Polyvariance.” *Proceedings of the International Conference on Functional Programming (ICFP 2016)*. Nara, Japan. September 2016.
- C7. Michael Adams, Celeste Hollenbeck and Matthew Might. “On the Complexity and Performance of Parsing with Derivatives.” *Proceedings of the 37th Annual Conference of Programming Language Design and Implementation (PLDI 2016)*. Santa Barbara, California. June 2016.
[16% acceptance rate. 48 accepted. 304 submitted. Celeste is my student.]

- C8. James King, Thomas Gilray, Robert M. Kirby, and Matthew Might “Dynamic Sparse-Matrix Allocation on GPUs.” *International Supercomputing Conference (ISC 2016)*. Istanbul, Turkey. June 2016. [42% acceptance rate. 25 accepted. 60 submitted. **Winner of PRACE ISC Best Paper Award.**]
- C9. Thomas Gilray, Steven Lyde, Michael D. Adams, Matthew Might and David Van Horn. “Pushdown Control-Flow Analysis for Free.” *Symposium on Principles of Programming Languages (POPL 2016)*. St. Petersburg, Florida. January 2016. pages 691 – 703. [23% acceptance rate. 59 accepted. 253 submitted. Thomas and Steven are my students.]
- C10. David Darais, Matthew Might and David Van Horn. “Galois Transformers and Modular Abstract Interpreters: Reusable Metatheory for Program Analysis.” *Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA 2015)*. Pittsburgh, Pennsylvania. October, 2015. pages 552 – 571. [25% acceptance rate. 53 accepted. 210 submitted.]
- C11. Steven Lyde, William E. Byrd and Matthew Might. “Control-Flow Analysis of Dynamic Languages via Pointer Analysis.” *Dynamic Languages Symposium (DLS 2015)*. Pittsburgh, Pennsylvania. October, 2015. pages 54 – 62. [35% acceptance rate. 14 accepted. 40 submitted. Steven is my student.]
- C12. Peter Aldous and Matthew Might. “Static Analysis of Non-interference in Expressive Low-Level Languages.” 22nd International Static Analysis Symposium (**SAS 2015**). Saint-Malo, France. 9 September 2015. [41% acceptance rate. 18 accepted. 44 submitted. Peter is my student.]
- C13. Shuying Liang, Weibin Sun and Matthew Might. “Fast Flow Analysis with Gödel Hashes.” 14th IEEE International Working Conference on Source Code Analysis and Manipulation (**SCAM 2014**). Victoria, BC, Canada. 29 September 2014. [32% acceptance rate. 26 accepted. 82 submitted. **Best Paper Award**. Shuying is my Ph.D. student.]
- C14. Shuying Liang, Weibin Sun, Matthew Might, Andrew Keep and David Van Horn. “Pruning, Pushdown Exception-Flow Analysis.” 14th IEEE International Working Conference on Source Code Analysis and Manipulation (**SCAM 2014**). Victoria, BC, Canada. 29 September 2014. [32% acceptance rate. 26 accepted. 82 submitted. Shuying is my Ph.D. student.]
- C15. J. Ian Johnson, Nicholas Labich, Matthew Might, David Van Horn. “Optimizing Abstract Abstract Machines.” *Proceedings of the International Conference on Functional Programming 2013 (ICFP 2013)*. Boston, Massachusetts. September, 2013. [30% acceptance rate. 40 accepted. 133 submitted.]
- C16. Steven Lyde, Matthew Might. “Extracting Hybrid Automata from Control Code.” *Proceedings of the 5th Annual NASA Formal Methods Symposium (NFM 2013)*. Short paper category. Moffet Field, CA. May, 2013. [37% (37% short, 37% long) acceptance rate. 37 (9 short, 28 long) accepted. 99 (24 short, 75 long) submitted. Steven Lyde is my Ph.D. student.]
- C17. Ilya Sergey, Dominique Devriese, Matthew Might, Jan Midtgaard, David Darais, Dave Clark, Frank Piessens. “Monadic Abstract Interpreters.” *Proceedings of the 34th Annual Conference of Programming Language Design and Implementation (PLDI 2013)*. Seattle, Washington. June, 2013. [17% acceptance rate. 46 accepted. 267 submitted.]

- C18. Christopher Earl, Ilya Sergey, Matthew Might and David Van Horn. “Introspective Pushdown Analysis of Higher-Order Programs.” *Proceedings of the International Conference on Functional Programming 2012 (ICFP 2012)*. Copenhagen, Denmark. September, 2012. pages 177–188. [36% acceptance rate. 32 accepted. 88 submitted. Christopher Earl is my Ph.D. student. Invited for submission to special issue of *Journal of Functional Programming: Best Papers of ICFP 2012*.]
- C19. Jan Midtgaard, Michael D. Adams and Matthew Might. “A Structural Soundness Proof for Shivers’s Escape Technique: A Case for Galois Connections.” *Static Analysis Symposium 2012 (SAS 2012)*. Deauville, France. September, 2012. pages 352–369. [40% acceptance rate. 25 accepted. 62 submitted.]
- C20. Michael D. Adams, Andrew W. Keep, Jan Midtgaard, Matthew Might, Arun Chauhan and R. Kent Dybvig. “Flow-Sensitive Type Recovery in Linear-Log Time.” *Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA 2011)*. Portland, Oregon. October, 2011. page 483–498. [37% acceptance rate. 61 accepted. 165 submitted.]
- C21. Matthew Might, David Darais and Daniel Spiewak. “Parsing with Derivatives: A Functional Pearl.” *Proceedings of the 16th ACM International Conference on Functional Programming (ICFP 2011)*. Tokyo, Japan. September, 2011. pages 189–195. [34% acceptance rate. 38 accepted. 112 submissions. David Darais was a B.S. student. Note: The reported acceptance rate for the submission category “Functional Pearl” was 25%.]
- C22. Matthew Might and David Van Horn. “A family of abstract interpretations for static analysis of concurrent higher-order programs.” *Proceedings of the 2011 Static Analysis Symposium (SAS 2011)*. Venice, Italy. September, 2011. pages 180–197. [32% acceptance rate. 22 accepted. 67 submitted.]
- C23. Tarun Prabhu, Shreyas Ramalingam, Matthew Might and Mary Hall. “EigenCFA: Accelerating flow analysis with GPUs.” *Proceedings of the 38th Annual ACM Symposium on the Principles of Programming Languages (POPL 2011)*. Austin, Texas. January, 2011. pages 511–512. [23% acceptance rate. 49 accepted. 209 submitted. Tarun Prabhu was my M.S. student.]
- C24. David Van Horn and Matthew Might. “Abstracting abstract machines.” *Proceedings of the 15th ACM International Conference on Functional Programming (ICFP 2010)*. Baltimore, Maryland. September, 2010. pages 51–62. [33% acceptance rate. 33 accepted. 99 submitted. Invited for submission to special issue of *Journal of Functional Programming: Best Papers of ICFP 2010*.]
- C25. Matthew Might. “Abstract interpreters for free.” *Proceedings of the 2010 Static Analysis Symposium (SAS 2010)*. Perpignan, France. September, 2010. pages 407–421. [30% acceptance rate. 25 accepted. 82 submitted.]
- C26. Matthew Might, Yannis Smaragdakis and David Van Horn. “Resolving and exploiting the k -CFA paradox: Illuminating functional v. object-oriented program analysis.” *Proceedings of the 31st Annual Conference on Programming Language Design and Implementation (PLDI 2010)*. Toronto, Canada. June, 2010. pages 305–315. [20% acceptance rate. 41 accepted. 204 submitted.]

- C27. Matthew Might. "Shape analysis in the absence of pointers and structure." *Proceedings of the 11th Annual Conference on Verification, Model-Checking and Abstract Interpretation (VMCAI 2010)*. Madrid, Spain. January, 2010. pages 263–278.
[37% acceptance rate. 21 accepted. 57 submitted.]
- C28. Matthew Might and Panagiotis Manolios. "A posteriori soundness for non-deterministic abstract interpretations." *Proceedings of the 10th Annual Conference on Verification, Model-Checking and Abstract Interpretation (VMCAI 2009)*. Savannah, Georgia. January, 2009. pages 1–15.
[33% acceptance rate. 24 accepted. 72 submitted.]
- C29. Matthew Might. "Logic-flow analysis of higher-order programs." *Proceedings of the 34th Annual ACM Symposium on the Principles of Programming Languages (POPL 2007)*. Long paper category. Nice, France. January, 2007. pages 185–198.
[18% acceptance rate. 36 accepted. 200 submitted.]
- C30. Matthew Might, Benjamin Chambers and Olin Shivers. "Model Checking via Γ CFA." *Proceedings of the 8th International Conference on Verification, Model Checking and Abstract Interpretation (VMCAI 2007)*. Nice, France. January, 2007. pages 59–73.
[24% acceptance rate. 21 accepted. 85 submitted. Benjamin Chambers was an undergrad RA working for me.]
- C31. Matthew Might and Olin Shivers. "Improving flow analyses via Γ CFA: Abstract garbage collection and counting." *Proceedings of the 11th ACM International Conference on Functional Programming (ICFP 2006)*. Portland, Oregon. September, 2006. pages 13–25.
[31% acceptance rate. 24 accepted. 76 submitted. Invited for submission to special issue of *Journal of Functional Programming: Best Papers of ICFP 2006*. 7 "best" papers were selected by the PC.]
- C32. Olin Shivers and Matthew Might. "Continuations and transducer composition." *Proceedings of the 27th Conference on Programming Language Design and Implementation (PLDI 2006)*. Ottawa, Canada. pages 295–307. June, 2006.
[21% acceptance rate. 36 accepted. 169 submitted.]
- C33. Matthew Might and Olin Shivers. "Environment analysis via Δ CFA." *Proceedings of the 33rd Annual ACM Symposium on the Principles of Programming Languages (POPL 2006)*. Charleston, South Carolina. January, 2006. pages 127–140.
[19% acceptance rate. 33 accepted. 167 submitted.]

Peer-reviewed workshop papers.

- W1. Dakota Fisher, Matthew Hammer, William E. Byrd and Matthew Might. "miniAdapton: A Minimal Implementation of Incremental Computation in Scheme" *Proceedings of the 2016 Workshop on Scheme and Functional Programming*. Nara, Japan. September 2016.
- W2. Steven Lyde and Matthew Might. "State Exploration Choices in a Small-Step Abstract Interpreter." *Proceedings of the 2015 Workshop on Scheme and Functional Programming*. Washington, D.C. September 2015.
- W3. Maria Jenkins, Leif Andersen, Thomas Gilray and Matthew Might. "Concrete and Abstract Interpretation: Better Together." *Proceedings of the 2014 Workshop on Scheme and Functional Programming*. Washington, D.C. 19 November 2014.

- W4. Steven Lyde, Thomas Gilray and Matthew Might. "A Linear Encoding of Pushdown Control-Flow Analysis." *Proceedings of the 2014 Workshop on Scheme and Functional Programming*. Washington, D.C. 19 November 2014.
- W5. Michael Ballantyne, Christopher Earl and Matthew Might. "Meta-Meta-Programming: Generating C++ Template Metaprograms with Racket Macros." *Proceedings of the 2014 Workshop on Scheme and Functional Programming*. Washington, D.C. 19 November 2014.
- W6. Thomas Gilray, James King, and Matthew Might. "Partitioning 0-CFA for the GPU." *Workshop on Functional and (constraint) Logic Programming*. Wittenberg, Germany. 15 September 2014.
[Not submitted for inclusion in subsequent proceedings.]
- W7. Steven Lyde and Matthew Might. "Environment Unrolling." *Workshop on Higher-Order Program Analysis 2014 (HOPA 2014)*. Vienna, Austria. 18 July 2014.
- W8. Steven Lyde and Matthew Might. "Strong Function Call." *Workshop on Higher-Order Program Analysis 2014 (HOPA 2014)*. Vienna, Austria. 18 July 2014.
- W9. Thomas Gilray and Matthew Might. "A Unified Approach to Polyvariance in Abstract Interpretations." *Proceedings of the 2013 Workshop on Scheme and Functional Programming*. 13 November 2013.
[Thomas Gilray is my Ph.D. student.]
- W10. Leif Andersen and Matthew Might. "Multi-core Parallelization of Abstract Abstract Machines." *Proceedings of the 2013 Workshop on Scheme and Functional Programming*. 13 November 2013.
[Leif Andersen was a B.S. student.]
- W11. Shuying Liang and Matthew Might. "Entangled Abstract Domains for Higher-order Programs." *Proceedings of the 2013 Workshop on Scheme and Functional Programming*. 13 November 2013.
[Shuying Liang is my Ph.D. student.]
- W12. Shuying Liang and Andrew W. Keep and Matthew Might and David Van Horn and Steven Lyde and Thomas Gilray and Petey Aldous. "Sound and Precise Malware Analysis for Android via Pushdown Reachability and Entry-Point Saturation." *Proceedings of the 3rd Annual ACM CCS Workshop on Security and Privacy in Smartphones and Mobile Devices (SPSM 2013)*. Long paper category. Berlin, Germany. November 2013.
[24% acceptance rate. 13 accepted. 54 submitted. Shuying, Steven, Thomas and Petey are my students.]
- W13. Steven Lyde and Matthew Might. "Control Flow Analysis with SAT Solvers." *Proceedings of Trends in Functional Programming (TFP 2013)*. Provo, Utah. May 2013.
[Acceptance data not yet known. This paper was accepted after review in post-workshop proceedings. Steven Lyde is my Ph.D. student.]
- W14. Thomas Gilray and Matthew Might. "A Survey of Polyvariance in Control-Flow Analyses." *Proceedings of Trends in Functional Programming (TFP 2013)*. Provo, Utah. May 2013.
[Acceptance data not yet known. This paper was accepted after review in post-workshop proceedings. Thomas Gilray is my Ph.D. student.]

- W15. Shuying Liang and Matthew Might and David Van Horn. "Human-in-the-loop Analysis of Android Malware." *Tools for Automatic Program Analysis (TAPAS 2013)*. Seattle, Washington June, 2013. [Acceptance data not known. Shuying Liang is my Ph.D. student.]
- W16. Shuying Liang and Matthew Might. "Hash-Flow Taint Analysis of Higher-Order Programs." *Programming Languages and Security (PLAS 2012)*. Beijing, China. June, 2012. pages 8:1–8:12. [75% acceptance rate. 9 accepted. 12 submitted. Shuying Liang is my Ph.D. student.]
- W17. Christopher Earl, Matthew Might and David Van Horn. "Pushdown control-flow analysis of higher-order programs." *Scheme and Functional Programming*. 2010. Montreal, Quebec. [Acceptance rate unknown. Christopher Earl is my Ph.D. student.]
- W18. Matthew Might and Tarun Prabhu. "Interprocedural dependence analysis of higher-order programs via stack reachability." *Scheme and Functional Programming*. 2009. Boston, MA. [83% acceptance rate. 15 accepted. 18 submitted. Tarun Prabhu was my M.S. student.]

Peer-reviewed journal papers.

- J1. Matthew Might and Cristina Might. "What happens when $n = 1$ and you want plus 1?" *Journal of Prenatal Diagnosis*. Volume 37. Issue 1. pages 70–72. January 2017.
- J2. Christopher Earl, Matthew Might, Abhishek Bagusetty and James Sutherland. "An efficient, parallel, and portable domain-specific language for numerically solving partial differential equations." *Journal of Systems and Software*. pages 1–12. January 2016.
- J3. Katherine F. Lambertson, Stephen A. Damiani, Matthew Might, Robert Shelton and Sharon F. Terry. "Participant-Driven Matchmaking in the Genomic Era." *Journal of Human Mutation*. Volume 36. Issue 10. pages 965–973. October 2015.
- J4. Kimball Germane and Matthew Might (2014). "Deletion: The curse of the red-black tree." *Journal of Functional Programming*, 24(4), pp 423-433. July 2014.
- J5. J. Ian Johnson, Ilya Sergey, Christopher Earl, Matthew Might and David Van Horn. "Pushdown flow analysis with abstract garbage collection." *Journal of Functional Programming*. 24, pp 218-283. May 2014. [Extended report invited as a Best Paper of ICFP 2012.]
- J6. Matthew Might and Matt Wilsey. "The shifting model in clinical diagnostics: how next-generation sequencing and families are altering the way rare diseases are discovered, studied, and treated." *Genetics in Medicine*. Peer-reviewed commentary. 20 March 2014.
- J7. David Van Horn and Matthew Might. "Systematic Abstraction of Abstract Machines." *Journal of Functional Programming*. September 2012. Volume 22. Special Issue 4-5. pages 705–746. [Extended report invited as a Best Paper of ICFP 2010.]
- J8. David Van Horn and Matthew Might. "Abstracting Abstract Machines: A Systematic Approach to Higher-Order Program Analysis." *Communications of the ACM*. 2011. September, 2011. pages 101–109. [Nominated and selected by CACM to appear as a Research Highlight. Only two research highlights per month are selected across computer science.]

J9. Matthew Might and Olin Shivers. "Analyzing environment structure of higher-order languages using frame strings." *Journal of Theoretical Computer Science*. 2007.

[Invited for special *Festschrift* issue in honor of John Reynolds.]

J10. Matthew Might and Olin Shivers. "Exploiting reachability and cardinality in higher-order flow analysis." *Journal of Functional Programming*. 2008.

[Extended report invited as a Best Paper of ICFP 2006.]

Edited proceedings.

E1. Jan Midtgaard and Matthew Might, Editors. *2012 Proceedings of the Workshop on Numeric and Symbolic Abstract Domains (NSAD 2012)*. Electronic Notes in Theoretical Computer Science. Elsevier. Volume 287, pages 1-100. Deauville, France. 10 September 2012.

[77% acceptance rate. 7 papers accepted. 9 papers submitted.]

E2. Matthew Might, Editor. *2011 Proceedings of the Workshop on Scheme and Functional Programming*. Electronic Proceedings. Portland, Oregon. 23 October 2011.

[77% acceptance rate. 7 papers accepted. 9 papers submitted.]

Government whitepapers.

GW1. Dixie Baker, Matthew Might, Pearl O'Rourke, Laura Lyman Rodriguez, Tania Simoncelli, John Wilbanks. "Participant Engagement, Data Privacy, and Novel Ways of Returning Information to Participants." Working Group Report for NIH Large Cohort Precision Medicine Workshop. 11 February 2015. Bethesda, Maryland.

[Presented by Pearl O'Rourke at the kick-off NIH Precision Medicine Workshop.]

Patents

L1. Matthew B. Might, Mark A. Ferderer, Gary F. Bowser. "Cryptographic container security system." Applied October 24, 2005. Granted October 28, 2008. US Pat. No. 7,443,293.

[Primary inventorship.]

L2. Matthew B. Might, Mark A. Ferderer, Gary F. Bowser. "Angled-beam detection system for container inspection." Applied October 24, 2005. Granted April 8, 2008. US Pat. No. 7,356,118.

[Primary inventorship.]

Grants

G1. \$300,000. NIH.

August 2016.

Duration: 2 years.

My status: Co-PI.

Co-PIs: Kimberly Splinter (Harvard Medical School), Rachel Ramoni (Harvard Medical School).

This award focuses on routing rare disease patients toward next scientific steps for treatment with an emphasis on personalized drug development, including genomics-guided drug screens.

Notes: I don't know my portion of the award yet.

- G2. \$200,000. DARPA: Supplement to G9. September 2015
PI: Matthew Might.
Duration: 9 months.
“Scalable and precise abstraction interpretation of user interfaces.”
- G3. ≈ \$3 million. DARPA. April 2015.
Duration: 4 years.
My status: Lead PI.
“A4V: Automated Analysis for Algorithmic Attack Vectors.”
Co-PIs: Suresh Venkatasubramanian (Utah), Michael Goodrich (UCI).
- G4. ≈ \$450,000. National Science Foundation. **CAREER Award.** January 2014.
Duration: 5 years.
My status: Sole PI.
“Static-Analysis-Driven Engineering of Modern Software Systems.”
Notes: Largely focused on analysis of scripting languages.
- G5. ≈ \$16 million. Department of Energy. April 2014.
PI: Phil Smith.
Duration: 5 years.
My status: Co-PI.
“Carbon Capture Multidisciplinary Simulation Center (CCMSC).”
Notes: My portion of the award is approximately \$500,000.
- G6. \$700,000. National Science Foundation. September 2013.
PI: Martin Berzins (33%).
Co-PIs: James Sutherland (33%), Matthew Might (33%).
Duration: 36 months.
“XPS:CLCCA (XPS:DSD) Future Extreme Scale Frameworks Using DSL and ERTS”
- G7. ≈\$350,000. DARPA: Supplement to G9. July 2013.
PI: Matthew Might.
Duration: 18 months.
“Scalable and precise abstraction interpretation of client-side programs.”
Notes: This supplement is split roughly 50%/50% by Northeastern and Utah.
- G8. \$200,000. National Science Foundation. September 2012.
PI: Matthew Might (33%).
Co-PIs: James Sutherland (33%), Martin Berzins (33%).
Duration: 24 months.
“EAGER: Platform-Agnostic Supercomputing from Scientific Metaprogramming.”
Notes: This grant has been awarded an REU supplement.
- G9. ≈\$1.7 million. DARPA: APAC. February 2012.
PI: Matthew Might.
Duration: 4 years.
“Scalable and precise abstractions of software for trustworthy programs.”
Notes: Total award is about \$1.7 million. My (Utah’s) portion is about \$1.18 million. Northeastern is the sub with about \$500k.
- G10. ≈\$1.6 million. (Estimated final amount.) DARPA: CRASH. October 2010.

PI: Matthew Might (67%).
 Co-PIs: Matthew Flatt (33%).
 Duration: 4 years.
 “GnoSys: Raising the level of discourse in systems programming.”

- G11. \$500,000. National Science Foundation. September 2010.
 PI: Matthew Might (70%).
 Co-PIs: Ganesh Gopalakrishnan (10%), John Hollerbach (10%), Dennis Parker (10%).
 Duration: 24 months. (Extended to 36 months.)
 “Safety-Oriented Hybrid Verification for Medical Robotics.”
 Notes: This grant has been awarded three REU supplements.
- G12. $\approx 3 \times \$92,050$. DoE: National Nuclear Security Administration. July 2010.
 PI: Phil Smith.
 My status: Co-PI.
 Duration: 36 months.
 Notes: I’m reporting what I’ve received from a larger \$6 million DoE grant. My percentage is approximately 4.6% of the total award.
- G13. \$50,000. Georgia Research Alliance, Phase I. August 2006.
 PI: Matthew Might.
- G14. \$99,969. National Science Foundation, Phase I SBIR. January 2007.
 PI: Matthew Might.
 Duration: 6 months.
 “Advanced environment analysis for secure, scalable software development.”

Invited talks

1. “The algorithm for precision medicine.” Rare disease day. University of Alabama at Birmingham. Birmingham, Alabama. March 3, 2017.
2. “The algorithm for precision medicine.” IRDiRC 2017. Paris, France. February 12, 2017.
3. “The algorithm for precision medicine.” **DARPA** Leadership Seminar. Arlington, VA. January 27, 2017.
4. “The algorithm for precision medicine.” University of Alabama at Birmingham. Birmingham, Alabama. January 10, 2017.
5. “The war on rare disease.” Symposium on Precision Therapeutics for Rare Disease. **White House** Secretary of War Suite. Washington, D.C. December 16, 2016.
6. “Why precision therapeutics matters.” **White House** Office of Science and Technology Policy Retreat. NASA Goddard Space Center. December 12, 2016.
7. “The Promise of Precision Medicine.” Understand Your Genome. Illumina. San Diego, California. December 5, 2016.
8. “The algorithm for precision medicine.” **Columbia University** Medical Center. New York, New York. November 30, 2016.

9. "Winning the War on Error: Solving the Halting Problem and Curing Cancer." **University of Maryland, College Park**. Computer Science Colloquium. College Park Maryland. October 21, 2016.
10. "Data-driven drug development." NORD Summit. Arlington, VA. October 17, 2016.
11. "Algorithmic medicine & why translation matters." NCATS, NIH. Bethesda, Maryland. October 12, 2016.
12. "Gene to community; community to action. NGLY1: A case study in tackling rare disease." KCNQ2 Community Conference. Silver Spring, Maryland. October 8, 2016.
13. "Winning the War on Error: Solving the Halting Problem and Curing Cancer." **Harvard University**. Computer Science Colloquium. Cambridge, Massachusetts. September 29, 2016.
14. "Gene to Community; Community to Action: The Power of Social Media in Genomics." National Society for Genetic Counselors. **Keynote**. Seattle, Washington. September 28, 2016.
15. "Pioneering Precision Medicine: The Million Veterans Program." **Stanford Medical School: Medicine X**. Stanford, California. September 18, 2016.
16. "Why security is hard, and what everyone needs to know." **White House** Office of Science and Technology Policy. Washington, D.C. September 8, 2016.
17. "What happens when patients take over?" Precision Medicine 2016: Rogue Therapeutics. **Harvard Medical School**. Boston, Massachusetts. June 22, 2016.
18. "The NIH and the FDA: Vital Agencies in the Fight Against Rare Diseases." Rare Disease Congressional Caucus. **Senate, Capitol Hill**. May 18, 2016.
19. "Patient-driven precision medicine when n=1." **Broad Institute**. Cambridge, Massachusetts. May 5, 2016.
20. "An Algorithm for Precision Medicine: What do you do when you're the first and only?" ARCS Foundation. **Keynote**. Salt Lake City, Utah. April 5, 2016.
21. "Cybersecurity fundamentals." VA Hospital Seminar. Jamaica Plain, Massachusetts. April 21, 2016.
22. "The Promise of Precision Medicine." Understand Your Genome. Illumina. San Diego, California. March 2, 2016.
23. "NGLY1: A success story?" Retrophin Pharmaceuticals. San Diego, California. February 29, 2016.
24. "Treatment strategies for congenital disorders of glycosylation." CDG Conference. San Diego, California. February 28, 2016.
25. "Natural allies: Precision medicine and rare disease." Sanford-Burnham-Prebys Rare Disease Day Summit. San Diego, California. February 27, 2016.
26. "Hunting down my son's killer and the future of precision medicine." **Opened for the President of the United States. The White House: Precision Medicine Summit**. Washington, D.C. February 25, 2016.
27. "An algorithm for precision medicine." Applied genomics. University of Utah, College of Pharmacy. Salt Lake City, Utah. February 22, 2016.

28. "An algorithm for precision medicine." Executive leadership education program. **Harvard Medical School**. Boston, MA. February 3, 2016.
29. "Applying precision medicine when n=1." Grand Rounds. Tufts Medical School. February 27, 2016.
30. "Grad School: A Survival Guide." Programming languages mentoring workshop (PLMW). **Keynote**. St. Petersburg, FL. January 19, 2016.
31. "Patient-driven precision medicine." University of Utah School of Medicine. Precision medicine symposium. Salt Lake City, Utah. December 3, 2015.
32. "Beyond the Diagnosis." Art exhibit opening. **Harvard Medical School**. Boston, MA. November 12, 2015.
33. "The War on Undecidability." **Harvard University**, Department of Computer Science. November 11, 2015.
34. "Precision Medicine: Unifying Rare and Common." Congressional Rare Disease Caucus. **House of Representatives, Capitol Hill**. November 5, 2015.
35. "Public Policy: Expanded Access." EveryLife Community Congress. Washington, D.C. November 4, 2015.
36. "A Precision Medicine Algorithm." Microsoft Research New England. Cambridge, MA. September 30, 2015.
37. "Patient-centered outcomes." **NIH** Workshop on Clinical Sequencing Exploratory Research. Bethesda, Maryland. September 28, 2015.
38. "Saving black swans: What do you do when you're the first?" Stanford Medicine X. **Stanford University**. September 26, 2015.
39. "Unlocking treatments for rare disease." **Main stage talk**. Stanford Medicine X. **Stanford University**. September 25, 2015.
40. "The Promise of Precision Medicine and a Plan." **Mayo Clinic** Leadership Retreat on Genomic Medicine. **Keynote**. Rochester, Minnesota. September 20, 2015.
41. "Treating the rarest of diseases." Cambridge Rare Disease Conference. **Cambridge University, UK**. **Keynote**. September 15, 2015.
42. "NGLY1-CDG: Actions." World Conference on Congenital Disorders of Glycosylation. Lyon, France. August 29, 2015.
43. "A post-evaluation plan." NIH-Undiagnosed Disease Network PI Meeting. Washington, D.C. July 28, 2015.
44. "A Precision Medicine Algorithm." Retrophin Pharmaceuticals. Cambridge, Massachusetts. July 13, 2015.
45. "A Precision Medicine Algorithm." Seven Bridges Genomics. Cambridge, Massachusetts. July 8, 2015.
46. "A Precision Medicine Algorithm." **Office of Science and Technology Policy at The White House**. Washington, D.C. July 2, 2015.

47. "The Algorithm: What do you do when $n=1$?" **Harvard Medical School. Keynote.** Precision Medicine 2015. Boston, MA. June 24, 2015.
48. "One of a kind: What do you do when you're the first?" GeneDX Symposium. Gaithersburg, Maryland. June 10, 2015.
49. "Domain-specific languages: Embedded versus standalone." NSF Workshop on Exploiting Parallelism and Scalability. Washington, D.C. June 2, 2015.
50. "Patient-driven discovery." ClinGen/DECIPHER. Washington, D.C. May 28, 2015.
51. "Harnessing the net." Stanford Big Data in Medicine. **Stanford University.** May 21, 2015.
52. "One of a kind: What do you do when you're the first?" Gold Lab Symposium. Boulder, Colorado. **Keynote.** May 16, 2015.
53. "When the Rx is science." World Orphan Drug Congress - Rare Disease Advocacy. Washington, D.C. April 22, 2015.
54. "P2G2P: Patient to Gene to Patient." NIH-Undiagnosed Disease Network PI Meeting. Washington, D.C. April 13, 2015.
55. "Gene to community; community to action." Ultragenyx Pharmaceuticals. Novato, California. April 11, 2015.
56. "One of a kind: What do you do when you're the first?" University of Utah Medical School Session on Neurometabolic Disorders. Salt Lake City, Utah. March 18, 2015.
57. "Cybersecurity: Why are we still losing?" URTA Annual Conference. **Keynote.** St. George, Utah. March 18, 2015.
58. "Community: What do you do when you're the first?" Utah Rare Disease Day Symposium. Salt Lake City, Utah. February 28, 2015.
59. "Community: What do you do when you're the first?" NIH Rare Disease Day Symposium. Bethesda, Maryland. February 27, 2015.
60. "Wikipedia for undiagnosed disease discovery: $n++$ made easy." NIH-Undiagnosed Disease Network PI Meeting. Stanford University. January 26, 2015.
61. "An End to Silly Vulnerabilities." NSF SaTC PI meeting. Washington, D.C. July 6, 2015.
62. "Lambda." Hacker School. New York, New York. December 1, 2014.
63. "NGLY1: Bench to Bedside." Society for Glycobiology Annual Meeting. Waikiki, Hawaii. November 18, 2014.
64. "Ultra-rare drug development." EveryLife Foundation Community Congress. Washington, D.C. November 12, 2014.
65. "Analyzing Android." Java PathFinder Workshop. **Keynote.** Salt Lake City, Utah. November 7, 2014.
66. "Patient Engagement; Patient Experience." NIH-Undiagnosed Disease Network PI Meeting. Washington, D.C. November 6, 2014.

67. "One of a kind: Making the impossible possible." Sanford Burnham Gala. San Diego, California. November 1, 2014.
68. "Research and Education: The Utah Advantage." University of Utah National Advisory Council Meeting. Salt Lake City, Utah. October 24, 2014.
69. "Partners in Research: Parents Accelerating Rare Disease Discoveries." Sanford Burnham Board of Trustees Meeting. San Diego, California. September 18, 2014.
70. "Deletion from Okasaki's Red-Black Trees: A Functional Pearl." IFIP WG 2.8 Meeting on Functional Programming. Estes Park, Colorado. August 11, 2014.
71. "What is static analysis?" Lambda Lounge Utah. Salt Lake City, Utah. July 8, 2014.
72. Rare Disease Symposium. 28 February 2014.
"Accelerating rare disease." San Diego, California.
73. IFIP WG 2.4 Meeting on Functional Programming. 15 October 2013.
"Gödel Hashing: Accelerating Static Analyzers." Pacific Grove, California.
74. 2013 Broadband Tech Summit. 24 October 2013.
"Why there's no such thing as cybersecurity." Provo, Utah.
75. IFIP WG 2.8 Meeting on Functional Programming. 15 October 2013.
"Gödel Hashing." Aussois, France.
76. Security Essentials and Threat Awareness Seminar. 20 September 2013.
"Why there's no such thing as cybersecurity (yet)." Park City, Utah.
Seminar Sponsored by Society of Industrial Security Professionals.
77. Dagstuhl Seminar on Pointer Analysis (13162). 17 April 2013.
"Control-flow Analysis for Scheme." Dagstuhl, Germany.
78. Utah Governor's Economic Summit. 11 April 2013.
"Why there's no such thing as cybersecurity." Grand America, Salt Lake City, Utah.
79. UC Riverside. 8 February 2013.
Engineering Colloquium Series. Riverside, California.
"Reasoning About Software."
80. PLMW 2013. 22 January 2013.
Programming Languages Mentoring Workshop. Rome, Italy.
"What is a Ph.D.? What is research? And, tips for success."
81. SRI International. 7 June 2012.
DHS Information Security Technology Transfer Council. Menlo Park, California.
"Securing Software with Static Analysis."
82. Pennsylvania State University. 5 April 2012.
Engineering Research Symposium. Keynote. State College, Pennsylvania.
"Failing Upward: How to Succeed in Modern Science."
83. University of Aarhus. 5 Dec 2011.
Computer Science Seminar. Aarhus, Denmark.
"Deriving abstract interpreters."

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84. University of Aarhus. 5 Dec 2011.
Computer Science Seminar. Aarhus, Denmark.
“Parsing with Derivatives.”
85. POPL PC Workshop. 2 Oct 2011.
University of Maryland, College Park. College Park, Maryland.
“Parsing with Derivatives.”
86. NII Shonan Meeting. 26 Sep 2011.
Meeting on Higher-Order Program Analysis. Shonan Village, Japan.
“Abstract interpretation of concurrent, higher-order programs.”
87. NII Shonan Meeting. 23 Sep 2011.
Meeting on Higher-Order Program Analysis. Shonan Village, Japan.
“Tutorial: Small-step CFA.”
88. University of Iowa. 18 Feb 2011.
Distinguished Junior Faculty Lecture Series. Iowa City, Iowa.
“Developing reasonable programs.”
89. **Stanford University.** 9 February 2011.
Computer Systems Colloquium Series. Stanford, California.
“Parsing with Derivatives (Yacc is Dead).”
[This talk was invited based on an unpublished (now published) draft.]
90. The Leonardo. 7 December 2010.
Leonardo After Hours. Salt Lake City, Utah.
“An Illustrated Guide to Hacking.”
91. Purdue University. 5 October 2010.
Computer Science Colloquium Series. Lafayette, Indiana, U.S.A.
“Static analysis in small steps.”
92. Brigham Young University. 10 September 2009.
Computer Science Colloquium Series. Provo, Utah, U.S.A.
“Static analysis of modern software systems: Taming control-flow.”
93. NSF/ACM Summer School on Programming Languages. 27 July 2009.
Eugene, Oregon, U.S.A.
“Efficient control-flow analysis and beyond.”
94. NSF/ACM Summer School on Programming Languages. 24 July 2009.
Eugene, Oregon, U.S.A.
“Control-flow analysis of order k (k -CFA).”
95. NSF/ACM Summer School on Programming Languages. 23 July 2009.
Eugene, Oregon, U.S.A.
“Control-flow analysis of higher-order programs.”
96. ICFP PC Functional Programming Workshop. 30 April 2009.
Portland, Oregon, U.S.A.
“Push-down control-flow analysis of higher-order programs.”

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| 97. University of Utah.
Salt Lake City, Utah, U.S.A.
“Static analysis of higher-order programs.” | 27 March 2008. |
| 98. Brandeis University.
Boston, Massachusetts, U.S.A.
“Static analysis of higher-order programs.” | 22 March 2008. |
| 99. Northwestern University.
Evanston, Illinois, U.S.A.
“Static analysis of higher-order programs.” | 12 March 2008. |
| 100. Max Planck Institute for Software Systems.
Saarbrücken, Germany.
“Static analysis of higher-order programs.” | 5 March 2008. |
| 101. University of Chicago.
Chicago, Illinois, U.S.A.
“Beyond Higher-Order Control-Flow Analysis.” | 13 April 2007. |
| 102. Sandia National Laboratory.
Albuquerque, New Mexico, U.S.A.
“Efficient and Precise Analysis of Higher-Order Systems.” | 13 September 2006. |

Panels

- “What happens when patients take over?” Precision Medicine 2016: Rogue Therapeutics. **Harvard Medical School**. Boston, Massachusetts. June 22, 2016.
- Boston Children’s Hospital Innovation Summit. “Pediatric Precision Medicine.” November 10, 2015.
- **The White House. Moderator.** “Champions of Change: Precision Medicine.” July 8, 2015.
- The Leonardo. 19 July 2013.
Leonardo After Hours. Salt Lake City, Utah.
“The InventriXXes: Women Scientists Who’ve Changed the World.”
- Utah Cyber Defense Challenge – Cyber Threats & Environment. 1 June 2012.

Conference talks

Only talks given since joining the Utah faculty are listed.

- IEEE Source Code Analysis and Manipulation. 29 September 2014.
Victoria, BC, Canada.
“Accelerating static analysis with Gödel hashing.”
- International Conference on Functional Programming. 22 September 2012.
Copenhagen, Denmark.
“Introspective Pushdown Analysis of Higher-Order Programs.”

- International Conference on Functional Programming. 20 September 2011.
Tokyo, Japan.
“Parsing with derivatives: A functional pearl.”
- Static Analysis Symposium. 15 September 2011.
Venice, Italy.
“A family of abstract interpretations for static analysis of concurrent higher-order programs.”
- Static Analysis Symposium. 15 September 2010.
Perpignan, France.
“Abstract interpreters for free.”
- Verification, Model-Checking and Abstract Interpretation. 17 January 2010.
Madrid, Spain.
“Shape analysis of higher-order programs: A colorless green idea?”
- Scheme and Functional Programming. 20 August 2009.
Boston, Massachusetts, U.S.A.
“Interprocedural dependence analysis of higher-order programs via stack-reachability.”
- Verification, Model-Checking and Abstract Interpretation. 18 January 2009.
Savannah, Georgia, U.S.A.
“*A posteriori* soundness for nondeterministic abstract interpretation.”

Internal talks and panels

- University of Utah Engineering Day. 9 November 2013.
“Cybersecurity.”
- Korean Diplomatic Delegation. 13 December 2013.
“Cybersecurity.”
- Undergraduate Research Forum. 4 September 2013.
“What is research?”
- Chemical engineering research seminar. Fall 2012, Fall 2013, Fall 2014.
“Surviving grad school.”
- English as a second language class. 25 February 2013 and 28 February 2013.
“Writing letters; asking for recommendations and success in grad school.”
- Grad school orientation. Fall 2011, Fall 2012, Fall 2013.
“Welcome to Grad School.”
- Explorations in computer science. Fall 2010.
“Engineering software.”
- Freshman engineering scholars. October 2010.
“Engineering software.”
- Freshman engineering scholars. 3 November 2009.
“Perfect software.”

- Agilent university exchange. 27 October 2009.
“Tools for fast, safe and correct multi-core parallelism.”
- Undergraduate research seminar. 19 October 2009.
“The lambda calculus.”
- Graduate colloquium. 11 September 2009.
“Static analysis of modern software systems: Taming control-flow.”
- Graduate orientation. 19 August 2009.
“How to do research.”
- Cross-cutting systems panel. 30 April 2009.
“Static analysis of modern software systems: Taming control-flow.”
- Explorations in computer science. Fall 2008.
“A brief history of the freedom of expressions.”

Software

- S1. AnaDroid. Malware-focused static analyzer for android.
For DARPA. No public usage.
- S2. DERP. Derivative-based parsing tool.
In beta. No usage data.
- S3. MLCPS. Modified MLton compiler for Standard ML with a CPS phase inserted for Γ CFA.
No longer maintained.
- S4. HOFÆ. Static analysis middle end for functional languages.
No longer maintained.
- S5. Diagnox. Security analyzer for C/C++ via LLVM.
No longer maintained.

Teaching

For C7 and I7, the max in each category is 6.

- Instructor, CS5470: “Compilers.” 60 students. Spring 2015.
- Instructor, CS6475: “Advanced topics in compilation.” 21 students. Fall 2013.

	1	2	3	4	5	6	7	avg	dept avg
C7	5.4	5.13	5.29	5.47	5.6	5.33	5.27	5.36	5.15
I7	5.6	5.73	5.73	5.87	5.87	5.73	5.6	5.73	5.33

- Instructor, CS5470: “Compilers.” 53 students. Spring 2013.
Top 15% of College for Undergraduate Teaching.

	1	2	3	4	5	6	7	avg	dept avg
C7	5.85	5.8	5.8	5.7	5.8	5.8	5.85	5.8	5.29
I7	5.88	5.92	5.92	5.95	5.92	5.88	5.9	5.91	5.41

- Instructor, CS5959: "Scripting language design and implementation." 14 students. Spring 2012.
Top 15% of College for Undergraduate Teaching.

	1	2	3	4	5	6	7	avg	dept avg
C7	5.73	5.36	5.45	5.73	5.82	5.91	5.82	5.69	5.19
I7	5.82	5.82	5.91	5.91	5.91	5.91	5.91	5.88	5.36

- Instructor, CS7938: "Static analysis seminar." 7 students. Spring 2012.
- Instructor, CS5470: "Compilers." 35 students. Spring 2011.

	1	2	3	4	5	6	7	avg	dept avg
C7	5.12	4.54	4.62	4.64	5.04	4.92	4.77	4.80	5.16
I7	5.42	5.88	5.04	5.69	5.65	5.88	5.46	5.57	5.21

- Instructor, CS7938: "Static analysis seminar." 7 students. Spring 2011.
- Instructor, CS7938: "Static analysis seminar." 3 students. Spring 2010.
- Instructor, CS6470: "Advanced topics in compilation." 15 students. Fall 2009.

	1	2	3	4	5	6	7	avg	dept avg
C7	5.11	5.11	4.78	4.67	5.33	5.33	5.11	5.06	5.17
I7	5.33	6.00	5.88	5.00	5.56	5.89	5.44	5.58	5.22

- Instructor, CS6969: "Programming language analysis." 15 students. Spring 2009.

	1	2	3	4	5	6	7	avg	dept avg
C7	4.58	4.42	4.33	4.25	4.83	4.75	4.58	4.53	5.25
I7	4.58	5.25	5.50	3.58	5.00	4.92	4.58	4.77	5.32

- Instructor, CS7938: "Static analysis seminar." 4 students. Spring 2009.

Awards

- A1. Quora Top Writer 2016. Quora. January 2016.
- A2. Presidential Scholar. University of Utah. July 2014.
- A3. Top 15% of College Teaching (Undergraduate Lecturing). AY 2012-2013.
- A4. Outstanding Instructor Award, School of Computing. AY 2012-2013.
- A5. Top 15% of College Teaching (Undergraduate Lecturing). AY 2011-2012.

A6. Nominee for ACM SIGPLAN Dissertation Award.	2007.
A7. Nominee for ACM Doctoral Dissertation Award.	2007.
A8. Outstanding Doctoral Dissertation, Computing, Georgia Tech.	2007.
A9. Presidential Fellowship. \$20,000.	August 2003.
A10. Dean's Fellowship. \$10,000.	August 2003.
A11. Marshall D. Williamson Graduate Fellowship. \$1,000.	April 2002.

Advisees

Research professors

- William Byrd. Spring 2017–Present.
- Michael Adams. Fall 2015–Present.

Postdocs, former

- William Byrd. Fall 2012–Spring 2017.
- Christopher Earl. Fall 2013–Fall 2014.
- Doaa Hassan. Spring 2013–Fall 2014.
- Andrew Keep. Spring 2013–Fall 2013.
- Michael Adams. Summer 2014–Fall 2015.

Ph.D. students, defended

- Peter Aldous. Fall 2010–Spring 2017.
Publications: C12, W12.
Defended 24 February 2017.
- Thomas Gilray. Fall 2012–Summer 2016.
Publications: C6, C8, C9, W3, W4, W6, W9, W14, W12.
- Steven Lyde. Fall 2012–Fall 2015.
Publications: C16, W12, C9, C11, W4, W7, W8.
Defended 9 October 2015.
- Shuying Liang. Fall 2010–Present.
Publications: W16, W15, W12, C13, C14, W11.
Defended: 1 April 2014.
- Christopher Earl. Fall 2008–Fall 2013.
Publications: W17, C18, J2.
Defended: 29 July 2013.

Masters, graduated

- Hao Hou Spring 2014–Spring 2015.
- Cambell Christensen Fall 2012–Fall 2014.
Project-based.
- Mayur Maheshwari Fall 2012–Fall 2013.
- Steven Lyde. Summer 2011–Spring 2012.
Became my Ph.D. student at University of Utah.
Project-based.
- Balaji Soundrajan. Spring 2011–Spring 2012.
Project-based.
- Shayan Chandrashekar. Spring 2010–Spring 2011.
Project-based.
- Shreyas Subramanian. Spring 2010–Spring 2011.
Project-based.
- J.T. Olds. Fall 2008–Spring 2010.
Now a Ph.D. student at University of Utah.
Project-based.
- Tarun Prabhu. Fall 2008–Summer 2010.
Project-based.
Publications: W18, C23
Now a Ph.D. student at UIUC.

Ph.D. students

- Kimball Germane. Fall 2013–Present.
- Michael Ballantyne. Fall 2013–Present.
- J.T. Olds. *Currently on leave.* Fall 2010–Present.
- Trang Tran. Fall 2016–Present.

Masters students

- Guannan Wei. Fall 2015–Present.

Undergraduate independent study

- Maria Jenkins. Summer 2014–Summer 2015.
- Celeste Hollenbeck. Summer 2014–Fall 2016.
Now becoming my Ph.D. student.
- Anthony Litchfield. Spring 2013.

- Michael Bradshaw. Spring 2013–Spring 2014.
- Michael Brown. Spring 2013–Present.
- Andrew Kuhnhausen. Thesis advisor. Spring 2012–Spring 2013.
- Alex Clemmer. Fall 2012–Spring 2013.
- Colton Myers. Fall 2012–Spring 2013.
- Landon Gilbert-Bland. Fall 2012.
- Philip Mates. Honors thesis advisor. Fall 2011–Summer 2012.
Accepted to Ph.D. program at Harvard and Northeastern.
Now a Ph.D. student at Northeastern.
- David Darais. Fall 2010–Spring 2011.
Now a Ph.D. student at Harvard.
- Kirill Rashkeev. Undergraduate engineering scholar. Spring 2011.
- Kevin Avery. Undergraduate engineering scholar. Spring 2011.
- Sandra Lang. Undergraduate engineering scholar. Spring 2010.
- Daniel Blakemore. Undergraduate engineering scholar. Spring 2010–Fall 2011.
- Adam Durant. Undergraduate engineering scholar. Spring 2010.
At Georgia Tech:
- Benjamin Chambers. Fall 2006–Spring 2007.
Publications: C30.
Software: S3, S5.
Went for a Ph.D. at Northeastern University.
- Daniel Harvey. Fall 2006–Summer 2006.
Software: S3.
Now at Microsoft Corporation.

Internal Ph.D. committees

- Huihui Zhang.
- Mohammed Al-Mahfoudh.
- Anh Vo.
- Matthew Probst.
- Sarvani Vakkalanka.
- Subodh Sharma.
- Robert Ricci.

- Jon Rafkind.
- Kevin Tew.
- Lu Zhao.
- Peng Li.

Internal M.S. committees

- Gabriel Rudy.
- Rohit Pagariya.
- Michael Clark.

Professional activities

Conference organization

- New England Journal of Medicine Summit on Aligning Incentives in Sharing Clinical Trial Data. April 2017. Co-chair.
- Precision Medicine Advisory Committee, Stanford Medicine X 2016.
- Travel chair for *ASPLOS 2014*.
- Publicity chair for *PLDI 2013*.
- Co-chair for *NSAD 2012*.
- Workshops co-chair for *POPL 2013*.
- Industrial relations committee for *ICFP 2012*.
- Workshops chair for *POPL 2012*.
- Publicity chair for *PLDI 2012*.
- Chair for *Scheme 2011*.
- Steering committee member for *NSAD 2011*.
- Web chair for *PLDI 2011*.
- Workshops chair for *POPL 2011*.

Program committees

- External review committee member for *ICFP 2016*.
- Program committee member for *Scala 2015*.
- Program committee member for *SAS 2015*.
- External review committee member for *POPL 2015*.
- Program committee member for *ICFP 2014*.
- Program committee member for *CUFP 2014*.
- Program committee member for *ILC 2014*.
- Program committee member for *OBT 2014*.
- Program committee member for *VMCAI 2014*.
- Program committee member for *Scala 2013*.
- Program committee member for *HOPE 2013*.
- Program committee member for *HOPA 2013*.
- Program committee member for *ICNC-CPS 2013*.
- Program committee member for *CC 2013*.
- Program committee member for *SAS 2012*.
- Program committee member for *PPDP 2012*.
- Program committee member for *OOPSLA 2012*.
- External review committee member for *PLDI 2012*.
- Program committee member for *POPL 2012*.
- Program committee member for *ESOP 2012*.
- Program committee member for *PADTAD 2011*.
- Program committee member for *PADTAD 2010*.
- Program committee member for *SAS 2010*.
- Program committee member for *Scheme 2009*.
- Program committee member for *ICFP 2009*.
- Program committee member for *PADTAD 2009*.

Reviewing

- External reviewer for *POPL 2014*.
- External reviewer for *TOPLAS* in 2013.
- Reviewer for NCWIT Aspirations Awards - Utah 2013.
- External reviewer for *Science of Computer Programming*. Spring 2012.
- External reviewer for *CAV 2011*.
- External reviewer for *PPoPP 2010*.
- External reviewer for *ESOP 2009*.
- External reviewer for *PEPM 2009*.
- External reviewer for *POPL 2009*.
- External reviewer for *ICFP 2008*.
- External reviewer for *POPL 2008*.
- Reviewer for *ACM Computing Surveys*. Fall 2007.
- External reviewer for *APLAS 2007*.
- External reviewer for *POPL 2007*.

Panels

- NSF Panelist. 2015.
- NSF Panelist. 2012.
- NSF Panelist. 2011.
- NSF Panelist. 2010.

Workshops

- Workshop on Precision Medicine: Large Cohorts. A Presidential Initiative. National Institutes of Health. 11-12 February 2015. Bethesda, MD.
- Workshop on High-Level Programming Models for Parallelism. National Science Foundation. 15-16 July 2013. Arlington, VA.

Lecture series

- Lecturer for *ACM/NSF Programming Languages Summer School 2009*.

Internal service

- Gem faculty search committee. Oct 2014–Present.
- Coordinator, Industrial adjunct program. Jan 2015–Present.
- Assistant Director for Outreach. January 2014–Present.
- Security faculty search committee. Oct 2013–May 2014.
- Admissions committee member. Winter 2012–2013.
- HCI faculty search committee member. Oct 2012–March 2013.
- Security faculty search committee member. Oct 2012–March 2013.
- Admissions committee member. Winter 2011–2012.
- Member, University IT council. April 2011–Spring 2013.
- Member, CPU faculty search committee. Oct 2010–March 2011.
- CS graduate track director, graduate studies committee. Summer 2010–Summer 2012.
- EAE track member. Summer 2010–Present.
- Chair, web site committee. Oct 2009–Summer 2014.
- Chair, industrial advisory board. 29 April 2009–Summer 2014.
- Curriculum committee member. Spring 2009–Present.
- Grad recruiting visit coordinator. 3-4 March 2009.
- Admissions committee member. Winter 2008-2009.
- External relations committee member. Fall 2008–Present.
- Jay Lepreau Professorship search committee member. Fall 2008-Summer 2010.
- Grad orientation talks coordinator. August 2008.

Press

Television

- “Utah startup offers new hope for treating orphan diseases.” 9 February 2015. Reported by Ed Yeates. KSL. Salt Lake City, Utah. 6:00 PM. 10:00 PM.
- “Vague Facebook content standards frustrates users.” 4 Feb 2015. Reported by Debbie Dujanovic. KSL. Salt Lake City, Utah. 10:00 PM.
- “Mother shocked to find her face on revenge porn site.” 12 March 2014. KSL. Salt Lake City, Utah. 10:00 PM.

- “How safe is your mobile banking app?” 5 March 2014. Reported by Dick Gephardt. KSL. Salt Lake City, Utah. 6:45 AM.
- “Proposed law would give teens clean slate on social media.” 14 November 2013. Reported by Annie Cutler. KSTU. Salt Lake City, Utah. 10:00 PM.
- “New technology to track shopping habits from grocery store shelves.” 22 October 2013. Reported by Caroline Connolly. KSTU. Salt Lake City, Utah. 9:45 PM.
- “U of U professor discusses looming danger of car hacking.” 31 July 2013. Reported by Nineveh Dinha. KSTU. Salt Lake City, Utah. 9:00 PM.
- “Christmas hope for 5-year-old with rare mutation.” 24 December 2012. Reported by Ed Yeates. KSL. Salt Lake City, Utah. 10:00 PM.
- “‘Revolution:’ What would it take to bring down Utah’s lights? Reported by Andrew Wittenberg.” 26 November 2012. KSL. Salt Lake City, Utah. 10:00 PM.
- “Herbert calls for audit following data breach that could cost millions.” 11 April 2012. Reported by John Daley. KSL. Salt Lake City, Utah. 5:00 PM, 6:30 PM.
- “Anonymous attacks Salt Lake City Police Department.” 2 Feb 2012. Reported by Chris Jones. KUTV. Salt Lake City, Utah. 10:00 PM.
- “Couple accuses rental company of spying via webcam.” 5 May 2011. Reported by John Daley. KSL. Salt Lake City, Utah. 6:30 PM.
- “Couple Sues Rental Company Over Alleged Spying.” 4 May 2011. Reported by Fields Moseley. KUTV. Salt Lake City, Utah. 10:00 PM.
- “Hackers steal millions of email addresses.” 4 April 2011. Reported by John Daley. KSL. Salt Lake City, Utah. 5:00 PM.
- “Twitter plans major move to Salt Lake City.” 21 July 2010. Reported by Arrika Von. KSTU. Salt Lake City, Utah. 9:00 PM.
- “Is child porn lurking on your computer?” 10 November 2009. Reported by Rod Decker. KUTV. Salt Lake City, Utah. 6:00 PM.
- “Technology influencing uprising in Iran.” 22 June 2009. Reported by John Daley. KSL. Salt Lake City, Utah. 5:00 PM, 6:00 PM.

Newspapers

- “A brotherhood of mutants.” *Calcalist*. By Tali Shamir. 7 Feb 2015. Israel.
- “Hacker Valley.” 22 May 2013. Reported by Eric S. Peterson. City Weekly. Salt Lake City, Utah. Cover story.
- “Saving Buddy: Utah couple races to help son with unique genetic disorder.” 25 November 2012. Reported by Kirsten Stewart. Salt Lake Tribune. Salt Lake City, Utah. Full-page cover story for Thanksgiving Sunday edition. Two full-page interior spread.
- “Victims of Medicaid breach may have little recourse if personal info is compromised.” 14 April 2012. Reported by Wendy Leonard. Deseret News. Salt Lake City, Utah.

- “Matt Might v. Cyber Criminals.” 1 Dec 2010. Reported by Rachel Piper. City Weekly. Salt Lake City, Utah.

Radio

- Car Hacking. *This Morning with Alex Jensen*. 5 September 2013. eFM 101.3 MHz. Seoul, South Korea. 9 minutes.
- An interview on the technical issues behind the Playstation Network Attack. *Science questions*. 2 May 2011, 8:00pm. Produced by Sheri Quinn and Constance Crompton. UPR 91.5. KRCL 90.9. Salt Lake City, Utah.
- “Cybersecurity with Matt Might.” *Science questions*. 4 March 2011, 9:30 AM. Produced by Sheri Quinn and Suzi Montgomery. UPR 91.5. KRCL 90.9. Salt Lake City, Utah.
- “Panel to Highlight Cyber Crime Awareness.” 2 Dec 2010. Reported by Jennifer Napier-Pearce. KUER (NPR). Salt Lake City, Utah.

Magazines

- Julia Koch. “Die Kinder ohne Tränen.” *Der Spiegel*. August 4th, 2014.
- Seth Mnookin. “One of a kind: What do you do if your child has a condition that is new to science?” *The New Yorker*. 21 July 2014.
- Kaitlin Felsted. “Unhackable Dream.” Business.Utah.Gov News Room. 29 July 2014.
- Matthew Might. “Hacking strength.” *Hacker Monthly*. May 2013
Cover story.
- Matthew Might. “Relational shell programming.” *Hacker Monthly*. August 2012.
- Matthew Might. “SSH: More than secure shell.” *Hacker Monthly*. April 2012.
- Matthew Might. “Translating mathematics into code.” *Hacker Monthly*. January 2012.
Cover story.
- Matthew Might. “Advanced Programming Languages.” *Hacker Monthly*. August 2010.

Online media

- Matthew Might. “Hunting down my son’s killer.” *Gizmodo*. June 2012.
Reprinted from: <http://matt.might.net/articles/my-sons-killer/>
- Matthew Might. “The Illustrated Guide to a Ph.D.” *Gizmodo*. August 2010.
Reprinted from: <http://matt.might.net/articles/phd-school-in-pictures/>

Podcasts

- “Patients’ families aid in discovery of new genetic disorder.” *Journal of Genetics in Medicine* Podcast. Interviewed by Cynthia Graber. 20 March 2014.
- “RSI and Keyboards.” *Macdrifter* Podcast. Interviewed by Gabe Weatherhead. 5 February 2014.

Online video

- “Experts worry about foreign, domestic implications of Utah Data Center.” Salt Lake Tribune. Moderated by Jennifer Napier-Pearce. 2 July 2013.

Interviews

- “The Setup.” matt.might.usesthis.com. 6 January 2012.

Social media

- Twitter followers: 7,241
- Google+ followers: 2,085

Blog

All statistics and figures are as of 14 May 2013.

Based on <http://blog.might.net/>:

- Page views since inception (April 2008): 8,371,586
- Page views since January 2012: 3,776,907
- External links to domain `matt.might.net`: 64,884
- 2nd-highest ranked site on Hacker News for 2012
<http://blog.rjmetrics.com/surprising-hacker-news-data-analysis/>