

Kathryn T. Stolee

Associate Professor
Department of Computer Science
North Carolina State University

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Employment History

NORTH CAROLINA STATE UNIVERSITY (NCSU) Raleigh, NC, USA
8/2020 – present Associate Professor in the Department of Computer Science
1/2016 – 8/2020 Assistant Professor in the Department of Computer Science

GOOGLE Munich, Germany
7/2022 – 3/2023 Visiting Research Scientist with the Code Search team

IOWA STATE UNIVERSITY (ISU) Ames, IA, USA
1/2016 – present Affiliate Assistant Professor in the Department of Computer Science
8/2013 – 12/2015 Harpole-Pentair Assistant Professor in Software Engineering

UNIVERSITY OF NEBRASKA-LINCOLN (UNL) Lincoln, NE, USA
8/2008 – 8/2013 Graduate Research Assistant
2/2007 – 8/2008 Undergraduate Research Assistant and BugHunt Administrator

MICROSOFT CORPORATION Redmond, WA, USA
5/2010 – 8/2010 Research Intern: FUSE Laboratory, Kodu Team

Education

UNIVERSITY OF NEBRASKA-LINCOLN Lincoln, NE, USA
8/2013 **Doctor of Philosophy in Computer Science**
Dissertation: *Solving the Search for Source Code*
Advisor: Dr. Sebastian Elbaum

8/2010 **Master of Science in Computer Science**
Thesis: *Analysis and Transformation of Pipe-like Web Mashups for End-User Programmers*
Advisor: Dr. Sebastian Elbaum

5/2008 **Bachelor of Science in Computer Science with distinction**
Jeffery S. Raikes School of Computer Science & Management
Minors: Mathematics, Business Administration

Honors, Awards, Fellowships

2021 ICSE Distinguished Reviewer Award
2018 National Science Foundation CAREER Award
2018 IEEE Software Practitioners' Digest recognition for [C11]
2017 Invited to and attended Dagstuhl seminar on *Automated Program Repair*
2014 Invited to and attended Dagstuhl seminar on *The Future of Refactoring*
2013-15 Harpole-Pentair Assistant Professor of Software Engineering
2013 UNL CSE Outstanding Graduate Research Award
2012 UNL CSE Outstanding Graduate Research Award
2012 SAT/SMT Summer School Travel Grant
2011 ESEM Distinguished Paper Award for [C6]
2010 UNL CSE Outstanding Graduate Research Assistant Award
2010-13 NSF Graduate Research Fellowship Award

Authorship order: students, post-docs, industry, faculty. Within each group, individuals are listed in order of contribution, except for faculty, who are listed last in reverse-order of contribution. Italicized names are students directly supervised by me. ^u indicates the work was conducted predominantly as undergraduate research.; ⁱ indicates an industry collaborator

Refereed Journal Publications

- [J9] Suvodeep Majumder, Joymallya Chakraborty, *Gina R. Bai*, Kathryn T. Stolee, Tim Menzies. *Fair Enough: Searching for Sufficient Measures of Fairness*. ACM Transactions on Software Engineering and Methodology (TOSEM). 2023. doi.org/10.1145/3585006
- [J8] *Peipei Wang*, Jamie Jennings and Kathryn T. Stolee. *Demystifying Regular Expression Bugs: A comprehensive study on regular expression bug causes, fixes, and testing*. Empirical Software Engineering (EMSE). 2022. doi.org/10.1007/s10664-021-10033-1
- [J7] Afsoon Afzal, Manish Motwani, Kathryn T. Stolee, Yuriy Brun and Claire Le Goues. *SOSRepair: Expressive Semantic Search for Real-World Program Repair*. IEEE Transactions on Software Engineering (TSE). 2021. dx.doi.org/10.1109/TSE.2019.2944914
- [J6] *Justin Middleton*, Kathryn T. Stolee, and Emerson Murphy-Hill. *Data Analysts and Their Software Practices: A Profile of the Sabermetrics Community and Beyond*. Proceedings of the ACM on Human-Computer Interaction (CSCW). 052:1-052:27 (2020) doi.org/10.1145/3392859
- [J5] Claire Le Goues, Ciera Jaspan, Ipek Ozkaya, Mary Shaw, and Kathryn T. Stolee. *Bridging the Gap: From Research to Practical Advice*. IEEE Software. *accepted June 2018. published September 2018*. [doi:10.1109/MS.2018.3571235](https://doi.org/10.1109/MS.2018.3571235)
- [J4] Kathryn T. Stolee, Sebastian Elbaum, and Matthew B. Dwyer. *Code Search with Input/Output Queries: Generalizing, Ranking, and Assessment*. Journal of Systems and Software (JSS). *submitted August 2014. revised February 2015. accepted April 2015. published June 2016*. [doi:10.1016/j.jss.2015.04.081](https://doi.org/10.1016/j.jss.2015.04.081)
- [J3] Kathryn T. Stolee, Sebastian Elbaum, and Daniel Dobos. *Solving the Search for Source Code*. ACM Transactions on Software Engineering and Methodology (TOSEM). *submitted December 2013. accepted February 2014. appeared May 2014*. [doi:10.1145/2581377](https://doi.org/10.1145/2581377)
- [J2] Kathryn T. Stolee and Sebastian Elbaum. *Identification, Impact, and Refactoring of Smells in Pipe-like Web Mashups*. IEEE Transactions on Software Engineering (TSE). Extended version of [C6]. *submitted October 2012. revision June 2013. accepted August 2013. appeared December 2013*. [doi:10.1109/TSE.2013.42](https://doi.org/10.1109/TSE.2013.42)
- [J1] Kathryn T. Stolee, Sebastian Elbaum, and Anita Sarma. *Discovering how End-User Programmers and their Communities Use Public Repositories: a Study on Yahoo! Pipes*. Information and Software Technology (IST). Extended version of [C7]. *accepted October 16, 2012. appeared July 2013*. [doi:10.1016/j.infsof.2012.10.004](https://doi.org/10.1016/j.infsof.2012.10.004)

Refereed Conference Publications

- [C46] *Hannah Estes*, *Katie Holloway*^u, *John Cheek*^u, *Shiv Patel*^u, *Hanna Reese*^u, and Kathryn T. Stolee. *Advancing Software Product Management Education: Insights from an Industry Survey*. Foundations of Software Engineering Education Track (FSE-SEET). 2025.
- [C45] *Nick Case*^u, John-Paul Ore, and Kathryn T. Stolee. *Using Simplification to Understand Issues in Comparative Comprehension*. Foundations of Software Engineering Education Track (FSE-SEET). 2025.

- [C44] Kathryn T. Stolee, Sebastian Elbaum, Caitlin Sadowskiⁱ, and Tobias Welpⁱ. *10 years later: revisiting how developers search for code*. Foundations of Software Engineering (FSE). 2025.
- [C43] Justin Middleton, Neha Patil and Kathryn T. Stolee. *Co-Designing Web Interfaces for Code Comparison*. IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC). 2024.
- [C42] Gina R. Bai, Zuoxuan Jiang, Thomas W. Price, and Kathryn T. Stolee. *Evaluating the Effectiveness of a Testing Checklist Intervention in CS2: An Quasi-experimental Replication Study* . Conference on International Computing Education Research (ICER). 2024.
- [C41] Justin Middleton, John-Paul Ore, Kathryn T. Stolee. *Barriers for Students During Code Change Comprehension*. International Conference on Software Engineering (ICSE). 2024.
- [C40] Kai Presler-Marshall, Sarah Heckman, Kathryn T. Stolee. *Improving Grading Outcomes in Software Engineering Projects Through Automated Contributions Summaries*. International Conference on Software Engineering: Software Engineering Education and Training (ICSE-SEET). 2023.
- [C39] Gina R. Bai, Sandeep Sthapit, Sarah Heckman, Thomas W. Price and Kathryn T. Stolee. *An Experience Report on Introducing Explicit Strategies into Testing Checklists for Advanced Beginners* . Conference on Innovation and Technology in Computer Science Education (ITiCSE). 2023. (acceptance rate 27%)
- [C38] Justin Middleton and Kathryn T. Stolee. *Understanding Similar Code through Comparative Comprehension*. IEEE Symposium on Visual Languages and Human- Centric Computing (VL/HCC). 2022. (acceptance rate 29%) doi.ieeecomputersociety.org/10.1109/VL/HCC53370.2022.9833117
- [C37] Gina R. Bai, Kai Presler-Marshall, Susan R. Fisk and Kathryn T. Stolee. *Does Assertion Roulette Smell Bad? An Experiment from the Perspective of Testing Education*. IEEE Symposium on Visual Languages and Human- Centric Computing (VL/HCC). 2022. doi.ieeecomputersociety.org/10.1109/VL/HCC53370.2022.9833107 (short). (acceptance rate 28%)
- [C36] Kai Presler-Marshall, Sarah Heckman, and Kathryn T. Stolee. *What Makes Team[s] Work? A Study of Team Characteristics in Software Engineering Projects*. Conference on International Computing Education Research (ICER). 2022. (acceptance rate 24%) <https://doi.org/10.1145/3501385.3543980>
- [C35] Gina R. Bai, Kai Presler-Marshall, Thomas W. Price, and Kathryn T. Stolee. *Check It Off: Exploring the Impact of a Checklist Intervention on the Quality of Student-authored Unit Tests*. Conference on Innovation and Technology in Computing Education (ITiCSE). 2022. (acceptance rate 29%) <https://doi.org/10.1145/3502718.3524799>
- [C34] Kai Presler-Marshall, Sarah Heckman, and Kathryn T. Stolee. *Identifying Struggling Teams in Software Engineering Courses Through Weekly Surveys*. Technical Symposium on Computer Science Education (SIGCSE). 2022. (acceptance rate 34%) <https://doi.org/10.1145/3478431.3499367>
- [C33] George Mathew and Kathryn T. Stolee. *Cross-language code search using static and dynamic analyses*. Foundations of Software Engineering (FSE). 2021. (acceptance rate 24%) <https://doi.org/10.1145/3468264.3468538>

- [C32] Susan Fisk, Kathryn T. Stolee, Lina Battestilli and Tiah Wingate. *Increasing Women's Persistence in Computer Science by Decreasing Gendered Self-Assessments of Computing Ability*. Conference on Innovation and Technology in Computer Science Education (ITiCSE). 2021. (acceptance rate 31%) <https://doi.org/10.1145/3430665.3456374>.
- [C31] *Gina R. Bai*, Justin Smith and Kathryn T. Stolee. *How Students Test: Perceptions, Practices, and Pitfalls*. Conference on Innovation and Technology in Computer Science Education (ITiCSE). 2021. (acceptance rate 31%) <https://doi.org/10.1145/3430665.3456368>.
- [C30] *Kai Presler-Marshall*, Sarah Heckman, Kathryn T. Stolee. *SQLRepair: Identifying and Repairing Mistakes in Student-Authored SQL Queries*. ICSE 2021 JSEET - Joint Track on Software Engineering Education and Training (ICSE JSEET). 2021. (acceptance rate: 33%) doi.org/10.1109/ICSE-SEET52601.2021.00030
- [C29] Susan Fisk, Kathryn T. Stolee, and Lina Battestilli. *A Lightweight Intervention to Decrease Gender Bias in Student Evaluations of Teaching*. Research on Equity and Sustained Participation in Engineering, Computing and Technology (RESPECT), 2020. doi.org/10.1109/RESPECT49803.2020.9272454
- [C28] *Gina R. Bai*, *Joshua Kayani*, and Kathryn T. Stolee *How Graduate Computing Students Search When Using an Unfamiliar Programming Language*. International Conference on Program Comprehension (ICPC). 2020. (acceptance rate 38%) doi.org/10.1145/3387904.3389274
- [C27] *Peipei Wang*, *Chris Brown*, Jamie Jennings, and Kathryn T. Stolee. *An Empirical Study on Regular Expression Bugs*. Mining Software Repositories (MSR). 2020. (acceptance rate 25%) doi.org/10.1145/3379597.3387464
- [C26] *George Mathew*, Christopher Parnin, and Kathryn T. Stolee. *SLACC: Simion-based Language Agnostic Code Clones*. International Conference on Software Engineering (ICSE). 2020. doi.org/10.1145/3377811.3380407
- [C25] Di Chen, Kathryn T. Stolee, and Tim Menzies. *Replication can improve prior results: a GitHub study of pull request acceptance*. International Conference on Program Comprehension (ICPC, Replications Track). 2019. doi.org/10.1109/ICPC.2019.00037
- [C24] *Gina R. Bai*, *Brian Clee*, *Nischal Shrestha*, *Carl Chapman*, *Cimone Wright-Hamor* and Kathryn T. Stolee. *Exploring Tools and Strategies Used During Regular Expression Composition Tasks*. International Conference on Program Comprehension (ICPC, Technical Track). 2019. (acceptance rate 26%) doi.org/10.1109/ICPC.2019.00039
- [C23] *Peipei Wang*, *Gina R. Bai* and Kathryn T. Stolee. *Exploring Regular Expression Evolution*. International Conference on Software Analysis, Evolution and Reengineering (SANER). 2019. (acceptance rate 27%) [doi:10.1109/SANER.2019.8667972](https://doi.org/10.1109/SANER.2019.8667972)
- [C22] *Peng Sun*, *Chris Brown*, Kathryn T. Stolee, and Ivan Beschastnikh. *Back to the future: specification mining using crowd intelligence*. International Conference on Software Analysis, Evolution and Reengineering (SANER). 2019. (acceptance rate 27%) [doi:10.1109/SANER.2019.8668025](https://doi.org/10.1109/SANER.2019.8668025)
- [C21] *Peipei Wang* and Kathryn T. Stolee. *How well are regular expressions tested in the wild?* ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (FSE). 2018. (acceptance rate 21%) [doi:10.1145/3236024.3236072](https://doi.org/10.1145/3236024.3236072)

- [C20] Sarah Heckman, Kathryn T. Stolee, and Christopher Parnin. *10+ Years of Teaching Software Engineering with iTrust: the Good, the Bad, and the Ugly*. Proceedings of the 40th International Conference on Software Engineering: Software Engineering Education and Training (ICSE-SEET). 2018. doi:10.1145/3183377.3183393
- [C19] Md Masudur Rahman, Jed Barson, *Sydney Paul*, *Joshua Kayani*, Federico Andrés Lois, Sebastián Fernandez Quezada, Christopher Parnin, Kathryn T. Stolee, Baishakhi Ray, *Evaluating How Developers Use General-Purpose Web-Search for Code Retrieval*. Mining Software Repositories (MSR). 2018. (acceptance rate: 33%) doi:10.1145/3196398.3196425
- [C18] *Carl Chapman*, *Peipei Wang*, and Kathryn T. Stolee. *Exploring regular expression comprehension*. International Conference on Automated Software Engineering (ASE). 2017. (acceptance rate: 21%) doi:10.1109/ASE.2017.8115653
- [C17] David Shriver, Sebastian Elbaum, and Kathryn T. Stolee. *At the End of Synthesis: Narrowing Program Candidates*. International Conference on Software Engineering - New Ideas and Emerging Results (ICSE NIER), 2017. doi:10.1109/ICSE-NIER.2017.7
- [C16] *Devarshi Singh*, *Varun Sekar*, *Brittany Johnson* and Kathryn T. Stolee. *Evaluating How Static Analysis Tools Can Reduce Code Reviewer Effort*. IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), 2017. doi:10.1109/VLHCC.2017.8103456
- [C15] *Carl Chapman* and Kathryn T. Stolee. *Exploring Regular Expression Usage and Context in Python*. International Symposium on Software Testing and Analysis (ISSTA). 2016. (acceptance rate: 25%) doi:10.1145/2931037.2931073
- [C14] Felienne Hermans, Kathryn T. Stolee, and David Hoepelman. *Smells in Block-Based Programming Languages*. IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), 2016. doi:10.1109/VLHCC.2016.7739666
- [C13] Rafael Maiani de Mello, Kathryn T. Stolee, and Guilherme Travassos. *Investigating Samples Representativeness for Online Experiments in Java Code Search*. International Symposium on Empirical Software Engineering and Measurement (ESEM), 2015. (acceptance rate: 25%) doi:10.1109/ESEM.2015.7321205
- [C12] *Yalin Ke*, Kathryn T. Stolee, *Claire Le Goues*, and *Yuriy Brun*. *Repairing Programs with Semantic Code Search*. International Conference on Automated Software Engineering (ASE), 2015. (acceptance rate: 19%) doi:10.1109/ASE.2015.60
- [C11] Caitlin Sadowski, Kathryn T. Stolee and Sebastian Elbaum. *How Developers Search for Code: A Case Study*. European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE), 2015. (acceptance rate 19%) doi:10.1145/2786805.2786855
- [C10] Kathryn T. Stolee and Sebastian Elbaum. *On the Use of Input/Output Queries for Code Search*. International Symposium on Empirical Software Engineering and Measurement (ESEM), pages 251-254, 2013. doi:10.1109/ESEM.2013.35
- [C9] Kathryn T. Stolee and Sebastian Elbaum. *Toward Semantic Search via SMT Solver*. Symposium on Foundations of Software Engineering (FSE NIER), pages 25:1–25:4, 2012. (acceptance rate: 20%) doi:10.1145/2393596.2393625

- [C8] Kathryn T. Stolee. *Finding Suitable Programs: Semantic Search with Incomplete and Lightweight Specifications*. Doctoral Symposium at the International Conference on Software Engineering (ICSE Doctoral Symposium), pages 1571-1574, 2012. [doi:10.1109/ICSE.2012.6227034](https://doi.org/10.1109/ICSE.2012.6227034)
- [C7] Kathryn T. Stolee, Sebastian Elbaum, and Anita Sarma. *End-User Programmers and their Communities: An Artifact-based Analysis*. International Symposium on Empirical Software Engineering and Measurement (ESEM), pages 147-156, 2011. (acceptance rate: 32%) [doi:10.1109/ESEM.2011.23](https://doi.org/10.1109/ESEM.2011.23) **[Distinguished Paper]**
- [C6] Kathryn T. Stolee and Sebastian Elbaum. *Refactoring Pipe-like Mashups for End-User Programmers*. International Conference on Software Engineering (ICSE), pages 81-90, 2011. (acceptance rate: 14%) [doi:10.1145/1985793.1985805](https://doi.org/10.1145/1985793.1985805)
- [C5] Jarrod Jackson, Christopher Scaffidi, and Kathryn T. Stolee. *Digging for diamonds: Identifying valuable end-user code in repositories*. International Conference on Information Science and Applications (ICISA), pages 1-10, 2011. (acceptance rate: 30%) [doi:10.1109/ICISA.2011.5772326](https://doi.org/10.1109/ICISA.2011.5772326)
- [C4] Kathryn T. Stolee and Teale Fristoe. *Expressing Computer Science Concepts Through Kodu Game Lab*. Technical Symposium on Computer Science Education (SIGCSE), pages 99-104, 2011. (acceptance rate: 34%) [doi:10.1145/1953163.1953197](https://doi.org/10.1145/1953163.1953197)
- [C3] Kathryn T. Stolee and Sebastian Elbaum. *Exploring the Use of Crowdsourcing to Support Empirical Studies in Software Engineering*. International Symposium on Empirical Software Engineering and Measurement (ESEM), pages 35:1–35:4, 2010. (acceptance rate: 29%) [doi:10.1145/1852786.1852832](https://doi.org/10.1145/1852786.1852832)
- [C2] Kathryn T. Stolee, Sebastian Elbaum, and Gregg Rothermel. *Revealing the Copy and Paste Habits of End Users*. IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), pages 59-66, 2009. (acceptance rate: 25%) [doi:10.1109/VLHCC.2009.5295296](https://doi.org/10.1109/VLHCC.2009.5295296)
- [C1] Andhy Koesnandar, Sebastian Elbaum, Gregg Rothermel, Lorin Hochstein, Christopher Scaffidi, and Kathryn T. Stolee. *Using Assertions to Help End-User Programmers Create Dependable Web Macros*. Symposium on Foundations of Software Engineering (FSE), pages 124-134, 2008. (acceptance rate: 20%) [doi:10.1145/1453101.1453119](https://doi.org/10.1145/1453101.1453119)

Refereed Workshop Publications

- [W3] Kai Presler-Marshall, Eric Horton, Sarah Heckman, and Kathryn T. Stolee. *Wait Wait. No, Tell Me. Analyzing Selenium Configuration Effect on Test Flakiness*. International Workshop on Automation of Software Test (AST), Collocated with ICSE 2019. doi.org/10.1109/AST.2019.000-1
- [W2] Peng Sun and Kathryn T. Stolee. *Exploring Crowd Consistency in a Mechanical Turk Survey*. Third International Workshop on Crowdsourcing in Software Engineering (CSI-SE), 2016. [doi:10.1145/2897659.2897662](https://doi.org/10.1145/2897659.2897662)
- [W1] Kathryn T. Stolee, James Saylor, and Trevor Lund. *Exploring the Benefits of Using Redundant Responses in Crowdsourced Evaluations*. Second International Workshop on Crowdsourcing in Software Engineering (CSI-SE), 2015. [doi:10.1109/CSI-SE.2015.15](https://doi.org/10.1109/CSI-SE.2015.15)

Refereed Poster Publications

- [U1] *Andrew Hill*, Corina Pasareanu, and Kathryn T. Stolee. Automated Program Repair with Canonical Constraints. International Conference on Software Engineering Poster Track (ICSE Posters), 2018. [doi:10.1145/3183440.3194999](https://doi.org/10.1145/3183440.3194999)

Patents

- [T1] Sebastian Elbaum and Kathryn Stolee. Searching Code by Specifying Behavior. US Patent [#8972372 B2](#), March 3, 2015.

Research Grants – \$2 million as PI (totaling \$3.5 million as PI or Co-PI)

- [F14] CSC 495 Course Design - Product Management
NCSU DELTA: Course Design Grant
August 15, 2023 - June 30, 2024.
PI: Kathryn Stolee
\$8,000 (PI)
- [F13] IUUSE: EHR: Improving Software Testing Education through Lightweight Explicit Testing Strategies & Feedback
National Science Foundation Award #2141923
July 01, 2022 - June 30, 2025.
PI: Kathryn Stolee
co-PI: Thomas Price
\$299,998, My Portion: **\$149,999**
- [F12] SHF: SMALL: Automated Discovery of Cross-Language Program Behavior Inconsistency
National Science Foundation Award #2006947
August 01, 2020 - July 31, 2023.
PI: Kathryn Stolee
co-PI: John-Paul Ore
\$499,994; My Portion: **\$249,997** (PI)
- [F9] Starter Grant with Adelaide, **Office of Global Engagement, NCSU**
January 1, 2019 - December 31, 2019
PI: Kathryn Stolee
co-PI: Dr. Cristoph Treude at University of Adelaide
\$10,000 (PI)
- [F8] Collaborative Computing
Laboratory for Analytic Sciences
January 1, 2019 - December 31, 2019
PI: Kathryn Stolee
co-PI: Emerson Murphy-Hill
\$87,653 (PI)

- [F7] CAREER: On the Foundations of Semantic Code Search.
National Science Foundation Award #1749936.
August 1, 2018 - July 31, 2023.
PI: Kathryn Stolee
\$500,000 (PI)
- [F6] Finding Software Errors, before they find you
AC21 Funding for small international research collaboration projects
January 1, 2018 - December 31, 2018
PI: Kathryn Stolee
co-PI: Willem Visser (Stellenbosch University)
co-PI: Michael Wahlen (University of Minnesota)
co-PI: Andreas Podelki (University of Freiburg)
\$9,800 (Co-PI)
- [F5] SHF: Small: Supporting Regular Expression Testing, Search, Repair, Comprehension, and Maintenance
National Science Foundation Award #1714699.
August 15, 2017 - July 31, 2020.
PI: Kathryn Stolee
\$499,996 (PI)
- [F4] CSC 326 Course Redesign - Creating an Agile Course to Support Software Engineering Process
NCSU DELTA: Critical Path Course Redesign Grant
August 15, 2017 - June 30, 2019.
PI: Sarah Heckman
co-PI: Chris Parnin
co-PI: Kathryn Stolee
\$36,400 (Co-PI)
- [F3] SHF: Medium: Collaborative Research: Semi and Fully Automated Program Repair and Synthesis via Semantic Code Search.
National Science Foundation Award #1645136.
July 1, 2016 - June 30, 2020.
PI: Kathryn Stolee
co-PI: Claire Le Goues (Carnegie Mellon University)
co-PI: Yuriy Brun (University of Massachusetts-Amherst)
\$1,200,000; My Portion: **\$387,661** (PI)
- [F2] SHF: EAGER: Collaborative Research: Demonstrating the Feasibility of Automatic Program Repair Guided by Semantic Code Search.
National Science Foundation Award #1446932.
July 1, 2014 - December 31, 2016.
PI: Kathryn Stolee
co-PI: Claire Le Goues (Carnegie Mellon University)
co-PI: Yuriy Brun (University of Massachusetts-Amherst)
\$287,843; My Portion: **\$87,539** (PI)
- [F1] Solving the Search for Relevant Code in Large Repositories with Lightweight Specifications.

University of Nebraska-Lincoln subcontract 25-0511-0102-002.
January 1, 2014 - June 30, 2015.
PI: Kathryn Stolee
\$98,075 (PI)

Invited Talks

- [I14] *Code Search and Comprehension*. University of Stuttgart. February 2024.
- [I13] *How Code Search Drives Software Development*. Colorado School of Mines, Computer Science Department. July 2023.
- [I12] *To Search or Not To Search, Depends on the Question*. It'll Never Work in Theory (industry conference). April 2022.
- [I11] *Nevertheless, She Persisted*. SFU School of Computing Science Diversity Committee's Student Experiences Initiative webinars. August 2021.
- [I10] *Program Analysis Fueled Search*. University of Virginia, Leading Engineering for Safe Software (LESS) laboratory. February 2020.
- [I9] *How Software Engineering Became My Career*. University of Nebraska-Lincoln in Lincoln, NE. September 2018. **[Distinguished Speaker]**
- [I8] *Repairing Programs using Semantic Code Search*. BBN Technologies in Cambridge, MA. June 2018.
- [I7] *Making software development easier, one search at a time*. Davidson College in Davidson, NC. May 2018.
- [I6] *I get by with a little help from my friends: crowdsourced program repair*. Dagstuhl Seminar in Wadern, Germany. January 2017.
- [I5] *Code Search and Empirical Software Engineering*. Security and Software Engineering (S2ERC) Research Center Industrial Outreach Workshop at Iowa State University. July 2014.
- [I4] *Searching for Source Code with Constrained Semantic Search*. University of Massachusetts-Amherst Computer Science Seminar. November 2013.
- [I3] *Let me Do Your Homework For You*. Computer Science Colloquium Series at Iowa State University. September 5, 2013.
- [I2] *Refactoring for End-User Programmers*. Workshop on Refactoring Tools (WRT11), collocated with the International Conference on Software Engineering (ICSE). May 2011. **[Plenary]**
- [I1] *Making Software Testing Engaging and Affordable in Early Programming Classes*. Co-presented with Sebastian Elbaum at SEES (Software Engineering Educators Symposium), collocated with the Symposium on Foundations of Software Engineering (FSE). November 2010.

Invited Panels

- [IP7] *Mental Health in Academia*. ICSE 2021.
- [IP6] *JSS Happy Hour Emcee*. May 2020.

- [IP5] *Lessons from the trenches: Young faculty answer your questions and share their experiences in getting established in their own careers.* ICSE 2018 New Faculty Symposium. May 2018.
- [IP4] *What I Wish I Had Known Before Starting Graduate School.* SPLASH PL Mentoring Workshop. October 2017.
- [IP3] *Women in Computer Engineering.* NCSU middle school girls video game camp. July 2016.
- [IP2] *Advice from Junior Faculty and Researchers.* ICSE 2016 New Faculty Symposium. May 2016.
- [IP1] *What I Wish I had Known When I Started.* ICSE 2015 New Faculty Symposium. May 2015.

Teaching Activities

*** a new course I developed*

** a course I significantly redesigned*

North Carolina State University

Spring 2024 CSC 326: Software Engineering
 Fall 2023 CSC 495: Software Product Management**
 Spring 2022 CSC 492: Senior Design
 Fall 2021 CSC 326: Software Engineering
 Fall 2020 CSC 591/712: Software Testing and Reliability
 Spring 2020 CSC 326: Software Engineering
 Fall 2019 CSC 591/791: Automated Program Repair
 Spring 2018 CSC 495: Software Testing**
 Spring 2018 CSC 712: Software Testing and Reliability*
 Spring 2017 CSC 326: Software Engineering
 Fall 2016 CSC 591/791: Automated Program Repair**

Iowa State University

Spring 2015 SE/COM S 417: Software Testing*
 Spring 2014 SE/COM S 417: Software Testing*
 Summer 2014 Undergraduate Independent Study
 Fall 2013 COM S 610: Advanced Topics in Repository Analysis and Code Search**

University of Nebraska-Lincoln

03/2012 – 05/2012 CSCE 361: Software Engineering (co-taught with Dr. Gregg Rothermel)

Guest Lecturer (University of Nebraska-Lincoln)

Kodu language and analysis (Fall 2010, Fall 2011)
Testing and Analysis with BugHunt (Spring 2010, Fall 2010, Fall 2007)
Software Design Patterns (Spring 2009)

Service

Conference Organization

New Faculty Symposium Co-Chair, Foundations of Software Engineering (**FSE**) 2024
 Newcomers Co-Chair, International Conference on Software Engineering (**ICSE**) 2022
 Artifacts Co-Chair, Foundations of Software Engineering (**FSE**) 2020
 PC Co-Chair, International Symposium on Software Testing and Analysis Tool Demo Track (ISSTA Demo) 2018

Mentorship Chair, Foundations of Software Engineering (**FSE**) 2016
Publications Chair, International Conference on Requirements Engineering (RE) 2014

Program Committee Member (conference)

International Conference on Software Engineering (**ICSE**) 2015, 2017, 2019, 2021, 2023, 2024
Automated Software Engineering: Expert Review Panel (**ASE**) 2017
International Symposium on Software Testing and Analysis (**ISSTA**) 2018, 2020
International Conference on Software Maintenance and Evolution (**ICSME**) 2014, 2015
SPLASH, Education (SPLASH-E) 2020
Posters Committee (ECOOP and ISSTA) 2018
Visual Languages and Human Centric Computing Doctoral Symposium (VL/HCC DS) 2017
International Symposium on Software Testing and Analysis, Demo Track (ISSTA Demo) 2017
Foundations of Software Engineering, Visions and Reflections Paper Track (FSE-VaR) 2016
International Conference on Software Engineering, Tools Track (ICSE Tools) 2015

Program Committee Member (workshop)

Workshop on Crowdsourcing in Software Engineering (CSI-SE), Collocated with ICSE 2015, 2016, 2017
International Code Hunt Workshop on Educational Software Engineering (CHESE) 2016
Workshop on Refactoring Tools (WRT), Collocated with SPLASH 2013
Workshop on User evaluations for Software Engineering Researchers (USER), Collocated with ICSE 2013

Referee - Journals

IEEE TSC (2016), IEEE TSE (2016, 2013, 2012), IEEE Software (2016, 2015, 2013), EMSE (2017, 2016, 2015)

Sub-Reviewing - Conferences

ASE 2015, FSE 2012, PLDI 2012, ASE 2011, ISSTA 2011, FSE 2010, FASE 2010, ESEM 2009

Reviewing Proposals (NSF): 2014, 2016, 2020

Other Service

Student Research Competition (SRC) poster judge at ICSE 2016
External reviewer on PhD thesis at Indian Institute of Science, Bangalore, 2016

Students

PhD Chair or Co-Chair (graduated):

- Kai Presler-Marshall, advisor, 2022 (Now Assistant Teaching Professor at Johns Hopkins University)
- Gina R. Bai, advisor, 2022 (Now Assistant Teaching Professor at Vanderbilt University)
- George Mathews, advisor, 2022 (Now Software Engineer at Meta)
- Peipei Wang, advisor, 2021 (Now Research Engineer at TikTok)
- Justin Smith, co-advisor, 2019 (Now Assistant Professor of Computer Science at Lafayette College)

PhD Chair or Co-Chair (current students):

- Justin Middleton, advisor, 08/2018 - present, PhD in CS, expected 2024
- Hannah Estes (2028 expected)

PhD Committee Member

- Azeeza Eagal (2026 expected)
- Zahra Sadri-Moshkenani (2024 expected)
- Ting Dai (2019)
- Denae Ford Robinson (2019)
- Vivek Nair (2018)

MS Thesis Chair:

- Carl Chapman, advisor, 05/2014 - 05/2016, MS in CS (ISU)
- Yalin Ke, advisor, 08/2014 - 12/2015, MS in CS (ISU)

Undergrad Research:

- Michelle Lemons, 08/2018-12/2018, Undergraduate Research in CS (NCSU)
- Joshua Kayani, 01/2016-12/2018, Undergraduate Research in CS (NCSU)
- Trevor Lund, 05/2014-08/2014, Undergraduate Research in CS (ISU)
- Arik Coats, ugrad, 05/2015 - 08/2015, Undergraduate Research in CS (ISU)
- James Saylor, 05/2014 - 09/2014, Undergraduate Research in CS (ISU)
- Kristin Clemens, 09/2013 - 12/2013, Undergraduate Research in CS (ISU)