Eliane Stampfer Wiese

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University of Utah
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Salt Lake City, Utah 84112

ACADEMIC POSITIONS – University of Utah, School of Computing

Assistant Professor from July 2020.
Research Assistant Professor 2018 – 2020.

EDUCATION

Postdoctoral Scholar 2015 – 2018
Graduate School of Education, University of California, Berkeley. CA.
Advisor: Marcia Linn

Ph.D. Human-Computer Interaction 2015
Carnegie Mellon University, Pittsburgh, PA
Advisor: Ken Koedinger

Fellow, Program in Interdisciplinary Education Research 2010-2015
Competitive fellowship funded by the Institute of Education Sciences.

B.A. Computer Science Cum Laude May 2009
Barnard Education Program May 2009
Columbia University, New York, NY

GRANTS AWARDED

2020 **EAGER: SaTC-EDU: Teaching Security in Undergraduate AI with Transparency and Contextualization**
NSF (2041960), $300,000. PI, with Co-PIs Suresh Venkatasubramanian and Mu Zhang.

2020 **CRII: CHS: Improving Code Readability with Scalable Feedback on Students' Code Structure**
NSF (1948519), $175,000. PI. (REU supplement: $24,000)

2019 **IUSE: CUE: Ethics: A Curricular Design Community for Broadening Participation through Computing in the Arts**
NSF (521373-UT), $68,836 (sub-award from College of Charleston). SP, with PI Erin Parker, and SPs David Johnson and Wendy Wischer.

JOURNAL PAPERS

To Appear **Wiese, E.S.** & Linn, M.C. (Accepted). "It Must Include Rules": Middle School Students' Computational Thinking with Computer Models in Science. To appear in *ACM Transactions on Computer-Human Interaction* (TOCHI), Vol 28, No. 4. April 2021. ACM.

2017 **Wiese, E.S.** & Koedinger, K.R. (2017). Designing grounded feedback: Criteria for using linked representations to support learning of abstract symbols. *International Journal of Artificial Intelligence in Education* (IJAIED), Vol. 27, No. 3, 448-474. January 2017. Springer.

2016 Yannier, N., Hudson, S.E., **Wiese, E.S.**, & Koedinger, K.R. (2016). Adding physical objects to an interactive game improves learning and enjoyment: Evidence from EarthShake. *ACM Transactions on Computer-Human Interaction* (TOCHI), Vol. 23, No. 4, Article 26. September 2016. ACM.

PEER-REVIEWED PAPERS IN CONFERENCE PROCEEDINGS

<u>Student mentee</u>

2021 **Wiese, E.S.**, Rafferty, A.N., & <u>Moseke, G.</u> (2021, May) Students' Misunderstanding of the Order of Evaluation in Conjoined Conditions. To appear in the *Proceedings of the 31st International Conference on Program Comprehension (ACM/IEEE).*

2019 **Wiese, E.S.**, Rafferty, A.N., & Fox, A. (2019, May) Linking Code Readability, Structure, and Comprehension among Novices: It's Complicated. *Proceedings of the 41st International Conference on Software Engineering (ACM/IEEE)* (84-94). Full paper presented at ICSE '19, Montréal, Canada. (24% acceptance for the Software Engineering Education and Training track)

Wiese, E.S., Rafferty, A.N., Kopta, D.M., & <u>Anderson, J.M.</u> (2019, May) Replicating Novices' Struggles with Coding Style. *Proceedings of the 29th International Conference on Program Comprehension (ACM/IEEE)* (13-18). Short paper presented at ICPC '19, Montréal, Canada. (35% acceptance)

2017 **Wiese, E.S.**, Rafferty, A.N., & Linn, M.C. (2017, July) Eliciting Middle School Students' Ideas about Graphs Supports Their Learning from a Computer Model. In Gunzelmann, G., Howes, A., Tenbrink, T., & Davelaar, E. (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society* (3522-3527). Poster presented at CogSci, London, UK.

Wiese, E.S., Yen, M., <u>Chen, A.</u>, dos Santos, L.A., & Fox, A. (2017, April) Teaching Students to Recognize and Implement Good Coding Style. In Reich, J., Thille, C., & Urrea, C. (Eds.), *Proceedings of the Fourth Annual ACM Conference on Learning at Scale* (41-50). New York, NY: ACM. Full Paper presented at L@S, Cambridge, MA. (14% acceptance)

2016   **Wiese, E.S.**, Patel, R., & Koedinger, K.R. (2016, August) Why sense making through magnitude may be harder for fractions than for whole numbers. In Papafragou, A., Grodner, D., Mirman, D., & Trueswell, J.C. (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (1229-1234). Poster presented at CogSci, Philadelphia, PA.

Wiese, E.S., Patel, R., & Koedinger, K.R. (2016, August) Benefits for grounded feedback over correctness in a fraction addition tutor. In Papafragou, A., Grodner, D., Mirman, D., & Trueswell, J.C. (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (954-959). Poster presented at CogSci, Philadelphia, PA.

2015   **Wiese, E.S.**, Patel, R., Olsen, J., & Koedinger, K.R. (2015, July) Transitivity is not obvious: Probing prerequisites for learning. In D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, T. Matlock, C.D. Jennings, & P. P. Maglio, (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society* (2655-2660). Poster presented at CogSci, Pasadena, CA.

2014   **Wiese, E.S.** & Koedinger, K.R. (2014, July) Investigating scaffolds for sense making in fraction addition and comparison. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36th Annual Conference of the Cognitive Science Society* (1515-1520). Paper presented at CogSci, Quebec City, Canada (42% acceptance).

Roll, I., **Wiese, E.S.**, Long, Y., Aleven, V., & Koedinger, K.R. (2014, June) Supporting self- and co-regulation in intelligent tutoring systems to help students acquire better learning skills. In J. Polman, E. Kyza, D. O'Neill, I. Tabak, W. Penuel, A. Jurow, K. O'Conner, T. Lee & L. D'Amico (Eds.), *Proceedings of the 11th International Conference of the Learning Sciences* (1356-1357). Paper presented as part of symposium Enhancing Self-Regulated Learning through Metacognitively-Aware Intelligent Tutoring Systems at ICLS, Boulder, CO.

Wiese, E.S. & Koedinger, K.R. (2014, June) Toward sense making with grounded feedback. In S. Trausan-Matu, K. Boyer, M. Crosby, & K. Panourgia (Eds.), *Proceedings of the 12th International Conference on Intelligent Tutoring Systems* (695-697). Young Researcher Paper presented at ITS, Honolulu, Hawaii.

2013   **Stampfer, E.** & Koedinger, K.R. (2013, August) When seeing isn't believing: Influences of prior conceptions and misconceptions. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35th Annual Conference of the Cognitive Science Society* (1384-1389). Paper presented at CogSci, Berlin, Germany (28% acceptance).

Li, N., **Stampfer, E.**, Cohen, W.W., & Koedinger, K.R. (2013, August) General and efficient cognitive model discovery using a simulated student. M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35th Annual Conference of the Cognitive Science Society* (894-899). Paper presented at CogSci, Berlin, Germany (28% acceptance).

Stampfer, E., & Koedinger, K.R. (2013, July) Conceptual scaffolding to check one's procedures. In H.C. Lane, K. Yacef, J. Mostow, & P. Pavlik (Eds.), *Proceedings of the 16th International Conference on Artificial Intelligence in Education* (916-919). Young Researcher Paper presented at AIED, Memphis TN.

2011 **Stampfer, E.**, Long, Y., Aleven, V., & Koedinger, K.R. (2011, July) Eliciting intelligent novice behavior with grounded feedback in a fraction addition tutor. In G. Biswas, S. Bull, J. Kay, & A. Mitrovic (Eds.), *Proceedings of the 15th International Conference on Artificial Intelligence in Education* (560-562). Poster presented at AIED, Auckland, New Zealand.

BOOK CHAPTERS

2015 Koedinger, K.R. & **Wiese, E.S.** (2015) Accounting for socializing intelligence with the knowledge-learning-instruction framework. In L.B. Resnick, C. Asterhan, and S.N. Clarke, (Eds.), *Socializing Intelligence through Academic Talk and Dialogue.* Washington, DC: American Educational Research Association

2014 Roll, I., **Wiese, E.S.**, Long, Y., Aleven, V., & Koedinger, K.R. (2014) Tutoring self- and co- regulation with intelligent tutoring systems to help students acquire better learning skills. In R. Sottilare, A. Graesser, X. Hu, & B. Goldberg (Eds.) *Design Recommendations for Intelligent Tutoring Systems - Volume 2: Instructional Management*

REFEREED WORKSHOP PAPERS

<u>Student mentee</u>

2021 **Wiese, E.S.**, <u>South, K.</u>, & <u>Martin, K.</u> (2021, May) Using Group Norms as a Teamwork Technique in an HCI Class. To be presented at the *3rd Annual ACM SIGCHI Workshop on HCI Education (EduCHI2021) in conjunction with the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI).*

2015 MacLellan, C., Harpstead, E., **Wiese, E.S.**, Zou, M., Matsuda, N., Aleven, V. & Koedinger, K.R. (2015, June) Authoring tutors with complex solutions: A comparative analysis of example tracing and SimStudent. Presented at the *2nd Workshop on Simulated Learners in conjunction with the 17th International Conference on Artificial Intelligence in Education* (AIED). Madrid, Spain.

2014 MacLellan, C., **Wiese, E.S.**, Matsuda, N. & Koedinger, K.R. (2014, June) SimStudent: authoring expert models by tutoring. Presented at the *Second Annual GIFT User Symposium (GIFTSym2).* Pittsburgh, PA.

MacLellan, C., **Wiese, E.S.**, Matsuda, N. & Koedinger, K.R. (2014, June) SimStudent: improving tutor quality and reducing authoring costs. Presented at the *Workshop on Intelligent Tutoring System Authoring Tools at the 12th International Conference on Intelligent Tutoring Systems* (ITS). Honolulu, HI.

PEER-REVIEWED CONFERENCE PRESENTATIONS
These conferences do not have proceedings.
Student mentee

2018 Wiley, K., **Wiese, E.S.**, & Linn, M. (2018, April) Teaching Energy Transformation in Photosynthesis to Middle School Students. Paper presented as part of roundtable session Learner, Instructor, and Designer Roles at the *2018 Annual Meeting of the American Educational Research Association* (AERA). New York City, NY.

McBride, E., **Wiese, E.S.**, & Linn, M. (2018, April) "The Aluminum Foil Attracts Heat": Student Non-Normative Ideas About Energy Transformation. Poster presented at the *2018 Annual Meeting of the American Educational Research Association* (AERA). New York City, NY.

Weinman, N., **Wiese, E.S.**, Yen, M., Chen, A., Santos, L.A., & Fox, A. (2018, February) Scale-Driven Intelligent Tutoring to Improve Coding Style. Presented at *The Bay Area Learning Analytics Conference (BayLAN 2018).* Berkeley, CA.

2017 **Wiese, E.S.**, Gogel, H., Gerard, E., Vitale, J.M. & Linn, M. (2017, April) Probing middle-school students' understanding of computer models. Poster presented at the *2017 Annual Meeting of the American Educational Research Association (AERA).* San Antonio, TX.

2016 Chen, A., **Wiese, E.S.**, Yin, H., Choudhury, R., & Fox, A. (2016, October) Preliminary evidence for learning good coding style with AutoStyle. Presented at *Learning with MOOCS III (LWMOOCS'16).* Philadelphia, PA.

2015 **Wiese, E.S.**, & Koedinger, K.R. (2015, April) Grounded feedback in a fraction addition tutor. Paper presented as part of the symposium *Multiple Representations and Multimedia: Student Learning and Instruction at the 2015 Annual Meeting of the American Educational Research Association* (AERA). Chicago, IL.

Wiese, E.S., McLaughlin, E.A., Booth, J., & Koedinger, K.R. (2015, April) When and how do worked examples work? Use of worked examples in textbook homework assignments. Paper presented as part of the symposium *Scaling Up Cognitive Learning Principles to Redesign A Mathematics Curriculum for Improved Learning at the 2015 Annual Meeting of the American Educational Research Association* (AERA). Chicago, IL.

2014   **Wiese, E.S.** & Koedinger, K.R. (2014, March) How useful are fraction bars for understanding fraction equivalence and addition? Paper presented at the *Spring 2014 conference of the Society for Research on Educational Effectiveness* (SREE). Washington, D.C.

2012   **Stampfer, E.** & Koedinger, K.R. (2012, September) Tradeoffs between immediate and future learning. Paper presented at the *European Association for Research on Learning and Instruction Conference (EARLI, Special interest groups 6 & 7, Learning and Instruction with Computers and Instructional Design).* Bari, Italy.

Lomas, D., Ching, D., **Stampfer, E.**, & Koedinger, K.R. (2012, April) Battleship Numberline: a digital game for improving estimation accuracy on fraction number lines. Paper presented at the *2012 meeting of the American Educational Research Association* (AERA). Vancouver, Canada.

2011   Lomas, D., Ching, D., **Stampfer, E.**, Sandoval, M., & Koedinger, K.R. (2011, September) Battleship Numberline: a digital game for improving estimation accuracy on fraction number lines. Poster presented at the Fall 2011 conference of the *Society for Research on Educational Effectiveness* (SREE). Washington, D.C.

HONORS AND AWARDS

2019   **Workshop Travel Award, Narratives and Evaluation: How to Write Competitive NSF CS Education Proposals**
National Science Foundation, through Clemson University

2014   **Conference Travel Grant, Cognitive Science Society**
Robert J. Glushko & Pamela Samuelson Foundation

Conference Travel Grant, Intelligent Tutoring Systems
National Science Foundation

Nomination, University-Wide Graduate Student Teaching Award
Carnegie Mellon University

2013   **Conference Travel Grant, Cognitive Science Society**
Robert J. Glushko & Pamela Samuelson Foundation

Conference Travel Grant, Artificial Intelligence in Education
National Science Foundation

Inaugural Excellence in Teaching Award
Human-Computer Interaction Institute, Carnegie Mellon University

Nomination, University-Wide Graduate Student Teaching Award
Carnegie Mellon University

2010 **Five-Year Competitive Graduate Research Fellowship**
Program in Interdisciplinary Education Research

TEACHING

2021 **Creator and Instructor,** CS Education: Research and Practice, Spring 2021 (16 students)

2020 **Instructor,** Human-Computer Interaction, Fall 2020 (67 students)

2016 **Co-Instructor,** Instructional Design for Educational Technologies in Science and Mathematics Education Spring 2016
With Professor Marcia Linn

2013 **Co-Creator and Teaching Assistant,** Tools for Online Learning Fall 2013
With Professor Vincent Aleven

2012 **Teaching Assistant,** User-Centered Research and Evaluation Fall 2012
With Professor Jennifer Mankoff and Dr. Jennifer Cowley

INVITED TALKS

2020 **Department of Computer Science, Rochester University** Rochester, NY
December 2020. Computer Science Education Research in Classroom Contexts: Undergrad CS and Middle School Science.

2019 **Centre for Design Informatics, University of Edinburgh** Edinburgh, Scotland
May 2019. Programming with Style: Code that Works vs. Code that's Nice to Work With.

TELS and ACE labs, UC Berkeley Berkeley, CA
March 2019. Programming with Style: Moving Beyond Code that Works to Code that's Nice to Work With.

Computer Science Department, Carleton College Northfield, MN
February 2019. Programming with Style: Moving Beyond Code that Works to Code that's Nice to Work With.

2018 **School of Computing, University of Utah** Salt Lake City UT
April 2018. Learning from Our Mistakes: Technology that Encourages Mistakes as Learning Opportunities.

School of Interactive Computing, Georgia Tech Atlanta GA
March 2018. Learning from Our Mistakes: Technology that Encourages Mistakes as Learning Opportunities.

2015 **MIND Lab, University of Utah** Salt Lake City UT
May 2015. Defining Grounded Feedback and Implementing it in a Fraction Addition Tutor.

Technology Enhanced Learning in Science Lab, UC Berkeley Berkeley CA
May 2015. Defining Grounded Feedback and Implementing it in a Fraction Addition Tutor.

2014 **Guest Lecture, Harvard School of Public Health** Boston MA
October 2014. Effective PowerPoint: Leveraging Principles of Human Memory and Attention for Slide Design.

Cognitive Development Lab, The Ohio State University Columbus OH
October 2014. Toward Sense Making with Grounded Feedback

Curry School of Education, University of Virginia Charlottesville VA
August 2014. Effective PowerPoint: Leveraging Principles of Human Memory and Attention for Slide Design.

2012 **The Earth Institute, Columbia University** New York City NY
October 2012. An Introduction to Contextual Design.

SEMINAR TALKS

2020 **School of Computing, U of Utah** Salt Lake City UT
April 2020. Computer Science Education Research in Classroom Contexts: Undergrad CS and Middle School Science

2018 **Association of Women in Mathematics, U of Utah** Salt Lake City UT
December 2018. An HCI Perspective on Math Education.

2017 **Ed Psych Learning and Cognition Seminar, U of Utah** Salt Lake City UT
March 2017. Eliciting Middle School Students' Ideas About Graphs Supports Their Learning from a Computer Model.

2016 **Graduate School of Education Colloquium, UC Berkeley** Berkeley CA
March 2016. Effective PowerPoint: Leveraging Principles of Human Memory and Attention for Slide Design.

2013 **Pittsburgh Science of Learning Center Summer School** Pittsburgh PA
Seminar Series, July 2013. Creating Effective Posters and Presentations.

Inter-Science of Learning Center Conference Philadelphia PA
Workshop Presenter, February 2013. How to Apply Principles of Learning to
Scientific Communication.

PRESS

2018, March 23. Guzdial, Computing Education Research Blog. "When more
information leads to worse performance" (https://computinged.wordpress.com
/2018/03/23/when-more-information-leads-to-worse-performance/)

2015, Oct 5. Remake Learning. "If You Give a Student (a Fraction of) a Cookie…"
(https://remakelearning.org/blog/2015/10/15/if-you-give-a-student-a-fraction-of-
a-cookie/)

2015, May 5. Sparks, Education Week. "Research Project Aims to Build Better Math
Texts" (https://www.edweek.org/ew/articles/2015/05/06/research-project-aims-
to-build-better-math.html)

Ph.D. COMMITTEES

Current   Kazi Sinthia Kabir, Tamanna Motahar

UNDERGRADUATE MENTORSHIP

*Co-author on peer-reviewed conference or workshop paper
Undergraduate Theses

Current Matthew Hooper.

2020   *Jacqulyn MacHardy Anderson. *Addressing Novice Coding Patterns: Evaluating and Improving a Tool for Code Analysis and Feedback*

Non-Thesis Student Researchers

2020-2021 *Koriann South, Trevor Richard (co-mentored)

2021   Emily Burke, *Kaylee Martin

2020   Adriana Salazar, *Garrett Moseke (Honorable Mention, CRA Outstanding Undergraduate Researcher Award)

2019   Hannah Potter, Gemma Grover, Aaron Carlisle

UC Berkeley *Antares Chen, Ross Teixeira

PROFESSIONAL ACTIVITIES

2021 NSF Panelist

2017 Conference Organizing Committee, Cognitive Science Society

Internal Service, School of Computing, University of Utah

2020-2021	Hiring Committee, Curriculum Committee, Outreach Committee
2019	Presenter, Women in Computing Workshop on Imposter Syndrome
2019	Mentor, Northern Utah's Aspirations in Computing Award event, through the National Center for Women & Information Technology
2018	Admissions Committee

Journal Reviews

2020	The Journal of Systems and Software
2019	Journal of Science Education and Technology
2016	Mathematical Thinking and Learning
2016	Journal of the Learning Sciences
2014 - 2015	Journal of Learning Analytics

Conference Reviews

2020 2017 - 2018	**SIGCSE**: Association of Computing Machinery Special Interest Group on Computer Science Education
2019 2014 - 2017	**CogSci**: Cognitive Science Society
2019 2014 - 2015 2011	**CHI**: Association of Computing Machinery Conference on Human Factors in Computing Systems
2017	**ESERA**: European Science Education Research Association
2014 - 2015	**EDM**: Educational Data Mining
2013 - 2015	**AIED**: Artificial Intelligence in Education