

# Erin Walker

CV

School of Computing and Information  
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## Research Interests

Intelligent tutoring systems, computer-supported collaboration, tangible and embodied learning environments, human-robot interaction, technology for the developing world, personalized learning environments, learning technologies, human-computer interaction

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## Professional Experience

**Assistant Professor.** School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. 2013-2018.

**Research Consultant.** Worcester Polytechnic University. 2010-2011.

**Research Intern,** Institute for Creative Technologies, Summer 2007.

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## Professional Preparation

**Computing Innovations Postdoctoral Fellow.** School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. 2011-2012.

Mentor: Winslow Burleson.

**Ph.D. Human-Computer Interaction.** Carnegie Mellon University. 2010.  
Committee: Kenneth R. Koedinger (co-chair), Nikol Rummel (co-chair), Carolyn Rosé, Robert Kraut.

**M.Sc. Human-Computer Interaction.** Carnegie Mellon University. 2008.

**B.Sc. (Honours). Computer Science & Psychology.** University of Manitoba. 2004.

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## Honors and Awards

**40 under 40.** Phoenix Magazine. 2018.

**Best Junior Faculty Researcher Award.** School of Computing, Informatics, and Decision Systems Engineering. 2018.

**Ira A. Fulton Top 5% Teaching Award.** Arizona State University. 2016. 2017. 2018.

**Best Student Poster Nominee.** 19<sup>th</sup> International Conference on Artificial Intelligence in Education (AIED 2018).

**Best Paper Nominee.** 18<sup>th</sup> International Conference on Artificial Intelligence in Education (AIED 2017).

**Best Technology Design Nominee.** 10<sup>th</sup> International Conference on Computer-Supported Collaborative Learning (CSCL 2011).

**Best Paper Nominee.** 9<sup>th</sup> International Conference on Intelligent Tutoring Systems (ITS 2009).

**Best Young Researcher Track Paper.** 12<sup>th</sup> International Conference on Artificial Intelligence in Education (AIED 2005).

**Certificate of Academic Excellence.** Laureates of the Canadian Psychological Association. 2004.

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## Research Grants

### **A Social Programmable Robot: Fostering Rapport to Improve Computer Science Skills and Attitudes**

National Science Foundation. 2018-2022.

Erin Walker (PI), Amy Ogan, Kimberly Scott.

\$1,559,382.00

### **Integrating Non-Invasive Neuroimaging and Educational Data Mining to Improve Understanding of Robust Learning Processes.**

National Science Foundation. 2018-2021.

Erin Solovey (PI), Erin Walker, Kate Arrington.

\$999,616.00

### **Improving Student Help-Giving with Ubiquitous Collaboration Support Technology.**

National Science Foundation. 2017-2020.

Erin Walker (PI)

\$575,223.00

### **CISE-IIS-1736103 Improving Student Help-Giving with Ubiquitous Collaboration Support Technology.** National Science Foundation. 2017-2020.

Erin Walker (PI)

\$575,223.00

### **CISE-IIS-1637809 Understanding the Influence of a Teachable Robot on STEM Skills and Attitudes.** National Science Foundation. 2016-2018.

Heather Pon-Barry (PI), Erin Walker, Amy Ogan.

\$249,243.00

### **CISE-IIS-1451431 EAGER: Towards Knowledge Curation and Community Building within a Postdigital Textbook.** National Science Foundation. 2014-2016.

Erin Walker (PI), Ruth Wylie, Ed Finn.  
\$299,034.00

**CISE-IIS-1324807 DIP: EMBRACEing English Language Learning with Technology.** National Science Foundation. 2013-2017.

Arthur Glenberg (PI), Erin Walker, M. Adelaida Restrepo.  
\$1,349,915.00

**CISE-IIS-1249406 EAGER: A Teachable Robot for Mathematics Learning in Middle School Classrooms.** National Science Foundation. 2012-2014.

Winslow Burleson (PI), Erin Walker.  
\$265,998.00

**Future of the Book.** Intel Corporation. 2013-2014.

Edward Finn (PI), Erin Walker.  
\$102,500.00

**Computing Innovation Fellowship.** Computing Research Association. 2011-2012.

Erin Walker.  
\$200,000

**Collaborative Extensions to the Cognitive Tutor Algebra: Adaptive Assistance for Peer Tutoring.** Pittsburgh Science of Learning Center. 2007-2009.

Erin Walker, Nikol Rummel, Kenneth R. Koedinger.  
\$150,000

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## Publications

### Refereed Journal Articles

- [J.10] **Walker, E.**, Adams, A., Restrepo, M. A., Fialko, S., & Glenberg, A. (2017). When (and how) interacting with technology-enhanced storybooks helps dual language learners. *Translational Issues in Psychological Science*, 3(1), 66-79.
- [J.9] **Walker, E.**, & Ogan, A. (2016). We're in this Together: Intentional Design of Social Relationships with AIED Systems. *International Journal of Artificial Intelligence in Education*, 26(2), 713-729.
- [J.8] Rummel, N., **Walker, E.**, & Alevan, V. (2016). Different futures of adaptive collaborative learning support. *International Journal of Artificial Intelligence in Education*, 26(2), 784-795.
- [J.7] Ogan, A., **Walker, E.**, Baker, R., Rodrigo, M. M. T., Soriano, J. C., & Castro, M. J. (2014). Towards understanding how to assess help-seeking behavior across cultures. *International Journal of Artificial Intelligence in Education*, 25(2), 229-248.
- [J.6] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2014). Adaptive Intelligent Support to Improve Peer Tutoring in Algebra. *International Journal of Artificial Intelligence in*

*Education*, 24(1), 33-61.

- [J.5] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2011). Designing automated adaptive support to improve student helping behaviors in a peer tutoring activity. *International Journal of Computer-Supported Collaborative Learning*, 6(2), 279-306. IF: 1.841
- [J.4] Diziol, D., **Walker, E.**, Rummel, N., & Koedinger, K. R. (2010). Using Intelligent Tutor Technology to Implement Adaptive Support for Student Collaboration. *Educational Psychology Review*, 22(1), 89-102. IF: 2.565
- [J.3] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2009). Integrating collaboration and intelligent tutoring data in the evaluation of a reciprocal peer tutoring environment. *Research and Practice in Technology Enhanced Learning*, 4(3), 221-251.
- [J.2] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2009). CTRL: A research framework for providing adaptive collaborative learning support. *User Modeling and User-Adapted Interaction*, 19(5), 387-431. IF: 3.037
- [J.1] Harrer, A., McLaren, B. M., **Walker, E.**, Bollen, L., and Sewall, J. (2006). Creating Cognitive Tutors for Collaborative Learning: Steps Toward Realization. *User Modeling and User-Adapted Interaction*, 16(3-4), 175-209. IF: 3.037

### **Refereed Conference Full Papers**

- [C.26] Lubold, N., **Walker, E.**, Pon-Barry, H., Flores, Y., & Ogan, A. (2018). Using iterative design to create efficacy-building social experiences with a teachable robot. In *Proceedings of the International Conference for the Learning Sciences (ICLS 2018)*. AR: 32%
- [C.25] Frens, J., **Walker, E.**, & Hsieh, G. (2018). Supporting answerers with feedback in social Q&A. In *Proceedings of the Fifth Annual ACM Conference on Learning at Scale* (p. 10). ACM.
- [C.24] Lubold, N., **Walker, E.**, Pon-Barry, H., & Ogan, A. (2018). Automated Pitch Convergence Improves Learning in a Social, Teachable Robot for Middle School Mathematics. In *International Conference on Artificial Intelligence in Education* (pp. 282-296). Springer, Cham. AR: 25%
- [C.23] Wang, S., **Walker, E.**, & Wylie, R. (2017). What Matters in Concept Mapping? Maps Learners Create or How They Create Them. In *International Conference on Artificial Intelligence in Education* (pp. 406-417). Springer, Cham. AR: 30%. **Nominated for Best Paper.**
- [C.22] Giroto, V., **Walker, E.**, & Burleson, W. (2017). The Effect of Peripheral Micro-tasks on Crowd Ideation. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (pp. 1843-1854). ACM. AR: 25%
- [C.21] Lee, J., **Walker, E.**, Burleson, W., Kay, M., Buman, M., & Hekler, E. B. (2017). Self-

- experimentation for behavior change: Design and formative evaluation of two approaches. In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (pp. 6837-6849). ACM. AR: 25%
- [C.20] **Walker, E.**, Giroto, V., Kim, Y., & Muldner, K. (2016). The Effects of Physical Form and Embodied Action in a Teachable Robot for Geometry Learning. In *Advanced Learning Technologies (ICALT), 2016 IEEE 16th International Conference on* (pp. 381-385). IEEE. AR: 28.4%
- [C.19] Giroto, V., Lozano, C., Muldner, K., Burleson, W., & **Walker, E.** (2016). Lessons Learned from In-School Use of rTAG: A Robo-Tangible Learning Environment. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (pp. 919-930). ACM. AR: 23%
- [C.18] Lubold, N., **Walker, E.**, & Pon-Barry, H. (2016). Effects of voice-adaptation and social dialogue on perceptions of a robotic learning companion. In the 11<sup>th</sup> ACM/IEEE International Conference on Human Robot Interaction (pp. 255-262). IEEE Press. AR: 24.8%
- [C.17] Lubold, N., Pon-Barry, H., & **Walker, E.** (2015). Naturalness and rapport in a pitch adaptive learning companion. In *2015 IEEE Workshop on Automatic Speech Recognition and Understanding (ASRU)* (pp. 103-110). IEEE. AR: 47.8%
- [C.16] Giroto, V., Thomas, E., Lozano, C., Muldner, K., Burleson, W., & **Walker, E.** (2014). A Tool for Integrating Log and Video Data for Exploratory Analysis and Model Generation. In *Intelligent Tutoring Systems* (pp. 69-74). Springer International Publishing. AR: 43%
- [C.15] Muldner, K., Lozano, C., Giroto, V., Burleson, W., & **Walker, E.** (2014). The impact of a social robot's attributions for success or failure in a teachable agent framework. In *ICLS* (pp. 278-285). ISLS. AR: 30%
- [C.14] Lee, J., Garduño, L., **Walker, E.**, & Burleson, W. (2013). A tangible programming tool for creation of context-aware applications. In *Proceedings of the 2013 ACM International Joint Conference on Pervasive and Ubiquitous Computing* (pp. 391-400). ACM. AR: 23.4%
- [C.13] Muldner, K., Lozano, C., Giroto, V., Burleson, W., & **Walker, E.** (2013, January). Designing a Tangible Learning Environment with a Teachable Agent. In *Artificial Intelligence in Education* (pp. 299-308). Springer Berlin Heidelberg. AR: 32%
- [C.12] **Walker, E.**, Rummel, N., Walker, S., & Koedinger, K. R. (2012). Noticing Relevant Feedback Improves Learning in an Intelligent Tutoring System for Peer Tutoring. In S. Cerri, W. Clancey, G. Papadourakis, & K. Panourgia (Eds.), *Proceedings of the 11<sup>th</sup> International Conference on Intelligent Tutoring Systems* (pp. 222-232). Berlin: Springer. AR: 17.5%
- [C.11] **Walker, E.**, & Burleson, W. (2012). User-Centered Design of a Teachable Robot. In *Intelligent Tutoring Systems* (pp. 243-249). Springer Berlin: Heidelberg. AR: 44%

- [C.10] Ogan, A., Finkelstein, S., **Walker, E.**, Carlson, R., & Cassell, J. (2012). Rudeness and Rapport: Insults and Learning Gains in Peer Tutoring. In *Intelligent Tutoring Systems* (pp. 11-21). Springer Berlin: Heidelberg. AR: 17.5%
- [C.9] Ogan, A., **Walker, E.**, Baker, R.S.J.d., Robelleto-Mendez, G., Castro, M. J., Laurentino, T., de Carvalho, A. (2012). Collaboration in Cognitive Tutor Use in Latin America: Field Study and Design Recommendations. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1381-1390). ACM. AR: 23%
- [C.8] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2011). Using Automated Dialog Analysis to Assess Peer Tutoring and Trigger Effective Support. In G. Biswas, S. Bull, J. Kay, A. Mitrovic (Eds.), *Proceedings of the 10<sup>th</sup> International Conference on Artificial Intelligence in Education* (pp. 385-393). Berlin: Springer. AR: 25%
- [C.7] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2011). Adaptive support for CSCL: Is it feedback relevance or increased accountability that matters? In N. Law (Ed.), *Proceedings of the 10<sup>th</sup> International Conference on Computer-Supported Collaborative Learning* (pp. 334-342). AR: 38%. **Nominated for Best Technology Design.**
- [C.6] **Walker, E.**, Walker, S., Rummel, N., & Koedinger, K. (2010). Using problem-solving context to assess help quality in computer-mediated peer tutoring. In V. Aleven, J. Kay & J. Mostow (Eds.), *Proceedings of the International Conference on Intelligent Tutoring Systems* (pp. 145-155). Berlin: Springer. AR: 38%
- [C.5] **Walker, E.**, Rummel, N. & Koedinger, K. (2009). Modeling helping behavior in an intelligent tutor for peer tutoring. In V. Dimitrova, R. Mizoguchi, B. du Boulay, & A. Graessar (Eds.), *Proceedings of the 14<sup>th</sup> International Conference on Artificial Intelligence in Education* (pp. 341-349). Amsterdam: IOS Press.
- [C.4] **Walker, E.**, Rummel, N., and Koedinger, K. R. To Tutor the Tutor: Adaptive Domain Support for Peer Tutoring (2008). In Woolf, B., Aimeur, E., Nkambou, R., & Lajoie, S., *Proceedings of the 9<sup>th</sup> International Conference on Intelligent Tutoring Systems* (pp. 626-635). Berlin: Springer. **Nominated for Best Paper.** AR: 30%
- [C.3] **Walker, E.**, McLaren, B. M., Rummel, N., and Koedinger, K. R. Who Says Three's a Crowd? Using a Cognitive Tutor to Support Peer Tutoring (2007). In Luckin, R., Koedinger, K.R., & Greer, J., *Proceedings of the 13<sup>th</sup> International Conference on Artificial Intelligence and Education* (pp. 399-406). Amsterdam: IOS Press. AR: 31%
- [C.2] **Walker, E.**, Koedinger, K. R., McLaren, B. M. and Rummel, N. Cognitive Tutors as Research Platforms: Extending an Established Tutoring System for Collaborative and Metacognitive Experimentation (2006). In Ikeda, M., Ashely, K. D., & Chan, T.-W. (Eds.), *Proceedings of the 8<sup>th</sup> International Conference on Intelligent Tutoring Systems* (pp. 207-216). Berlin: Springer. AR: 33%
- [C.1] Harrer, A., McLaren, B. M., **Walker, E.**, Bollen, L., and Sewall, J. (2005). Collaboration and Cognitive Tutoring: Integration, Empirical Results, and Future

Directions. In Looi, C.-K., McCalla, G., Bredeweg, B., & Breuker, J. (Eds.), *Proceedings of the 12<sup>th</sup> International Conference on Artificial Intelligence In Education* (pp. 266-273). Amsterdam: IOS Press. AR: 31%

### Refereed Conference Short Papers and Symposium Papers

- [S.12] Ahmed, I., Lubold, N., & **Walker, E.** (2018). ROBIN: Using a Programmable Robot to Provide Feedback and Encouragement on Programming Tasks. In *International Conference on Artificial Intelligence in Education* (pp. 9-13). Springer, Cham. **Nominated for Best Student Poster.**
- [S.11] **Walker, E.**, Wong, A., Fialko, S., Restrepo, M. A., & Glenberg, A. M. (2017). EMBRACE: Applying Cognitive Tutor Principles to Reading Comprehension. In *International Conference on Artificial Intelligence in Education* (pp. 578-581). Springer.
- [S.10] **Walker, E.**, Chakravarthi, R., Rodriguez, J., & Wylie, R. (2015). Promoting Interaction by Integrating a Question and Answer Forum with a Digital Textbook. In Proc. of the *12<sup>th</sup> International Conference on Computer-Supported Collaborative Learning*.
- [S.9] Wang, S., **Walker, E.**, Chaudhry, R., & Wylie, R. (2015). Personalized Expert Skeleton Scaffolding in Concept Map Construction. In *Artificial Intelligence in Education* (pp. 808-811). Springer International Publishing.
- [S.8] **Walker, E.**, & Bursleson, W. (2012). Using need validation to design an intelligent tangible learning environment. In *CHI'12 Extended Abstracts on Human Factors in Computing Systems* (pp. 2123-2128). ACM.
- [S.7] **Walker, E.**, Ogan, A., Baker, R.S.J.d., de Carvalho, A., Laurentino, T., Robelledo-Mendez, G., & Castro, M. J. (2011). Observations of Collaboration in Cognitive Tutor Use in Latin America. In G. Biswas, S. Bull, J. Kay, & A. Mitrovic (Eds.), *Proceedings of the 10<sup>th</sup> International Conference on Artificial Intelligence in Education* (pp. 575-577). Berlin: Springer.
- [S.6] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2010). Automated Adaptive Support for Peer Tutoring in High-School Mathematics. In K. Gomez, L. Lyons, & J. Radinsky (Eds.), *Proceedings of the 9<sup>th</sup> International Conference of the Learning Sciences* (pp. 151-153).
- [S.5] **Walker, E.**, Rummel, N., & Koedinger, K. R. (2009). Beyond Explicit Feedback: New Directions in Adaptive Collaborative Learning Support. In O'Malley, C., Suthers, D., Reimann, P., & Dimitracopoulou, A. (Eds.), *Proceedings of the 9<sup>th</sup> International Conference on Computer Supported Collaborative Learning* (pp. 552-556). Mahwah, NJ: Lawrence Erlbaum Associates.
- [S.4] **Walker, E.**, Rummel, N., and Koedinger, K.R. (2008) Adaptive Domain Support for Computer-Mediated Peer Tutoring. In Kanselaar, G., Jonker, V., Kirschner, P.A., & Prins, F., *Proceedings of the 8<sup>th</sup> International Conference of the Learning Sciences* (pp. 341-343). Mahwah, NJ: Lawrence Erlbaum Associates.

- [S.3] Ogan, A., **Walker, E.**, Aleven, V., Jones, C. Towards Supporting Collaborative Discussion in an Ill-Defined Domain. In Woolf, B., Aimeur, E., Nkambou, R., & Lajoie, S., *Proceedings of the 9th International Conference on Intelligent Tutoring Systems* (pp. 825-827). Berlin: Springer.
- [S.2] **Walker, E.**, Rummel, N., McLaren, B. M. & Koedinger, K. R. (2007) The Student Becomes the Master: Integrating Peer Tutoring with Cognitive Tutoring. In Chinn, C., Erkins, G., Puntambekar, S. (Eds.), *Proceedings of the 8th International Conference on Computer Supported Collaborative Learning* (pp. 751-753). Mahwah, NJ: Lawrence Erlbaum Associates.
- [S.1] McLaren, B. M., Bollen, L., **Walker, E.**, Harrer, A., and Sewall, J. (2005). Cognitive Tutoring of Collaboration: Developmental and Empirical Steps Toward Realization. In Chan, T.-W., *Proceedings of the 7th International Conference on Computer Supported Collaborative Learning* (pp. 418-422). Mahwah, NJ: Lawrence Erlbaum Associates.

### Refereed Workshop Papers, Posters, and Conference Abstracts

- [W.24] Friedman, L., Liu, R., Kim, A., **Walker, E.**, & Solovey, E. (2018). Towards Neuroadaptive Personal Learning Environments: Using fNIRS to Detect Changes in Attentional State, *Proc. 2nd International Conference on Neuroergonomics*, Frontiers.
- [W.23] Giroto, V., **Walker, E.**, & Burleson, W. (2017). Scalable crowd ideation support through data visualization, mining, and structured workflows. In *2017 ACM Conference on Computer Supported Cooperative Work and Social Computing, CSCW 2017*. Association for Computing Machinery, Inc.
- [W.22] Liu, R., **Walker, E.**, & Solovey, E. (2017). TOWARD NEUROADAPTIVE PERSONAL LEARNING ENVIRONMENTS. In *The First Biannual Neuroadaptive Technology Conference* (p. 59).
- [W.21] Keating, S., **Walker, E.**, Motupali, A., & Solovey, E. (2016). Toward Real-time Brain Sensing for Learning Assessment: Building a Rich Dataset. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (pp. 1698-1705). ACM.
- [W.20] Wang, S., **Walker, E.**, & Wylie, R. (2016). Analyzing Frequent Sequential Patterns of Learning Behavior in Concept Mapping. *Presented at the EDM 2016 Workshop on Educational Data Analysis Using LearnSphere*. Raleigh, USA.
- [W.19] Lubold, N., **Walker, E.**, & Pon-Barry, H. (2015). Relating Entrainment, Grounding, and Topic of Discussion in Collaborative Learning Dialogues. *12th International Conference on Computer-Supported Collaborative Learning*.
- [W.18] Lee, J., **Walker, E.**, Burleson, W., & Hekler, E. B. (2015). Understanding Users' Creation of Behavior Change Plans with Theory-Based Support. In *Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in*



*Computing Systems* (pp. 2301-2306). ACM.

- [W.17] Lee, J., **Walker, E.**, Burleson, W., & Hekler, E. B. (2014). Programming tool of context-aware applications for behavior change. In *Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct Publication* (pp. 91-94). ACM.
- [W.16] Lee, J., **Walker, E.**, Burleson, W., & Hekler, E. B. (2014). Exploring users' creation of personalized behavioral plans. In *Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct Publication* (pp. 703-706). ACM.
- [W.15] **Walker, E.**, Giroto, V., Zhang, C., Fernandez, A., Chen, G., Hsieh, G. (2014). Understanding Peer Help in an Online Learning Community. *Presented at the CHI 2014 Workshop on Learning Innovations at Scale*. Toronto, Canada.
- [W.14] Adams, A., Restrepo, M. A., & Glenberg, A.M., **Walker, E.**, & Danielescu, L. (2014). An English-Only & Bilingual Version of the Moved by Reading Intervention in an ELL Population. Poster presented at the meeting of the *American Speech-Language-Hearing Association*, Chicago, IL.
- [W.13] Danielescu, L., **Walker, E.**, Glenberg, A., Restrepo, M. A., & Adams, A. (2014). Using Embodied Cognition to Teach Reading Comprehension to DLLs. *Presented at the CHI 2014 Workshop on Gesture-based Interaction Design: Communication and Cognition*. Toronto, Canada.
- [W.12] **Walker, E.**, Rummel, N., Koedinger, K. R. (2013) Using Intelligent Tutoring Technologies to Adaptively Support Collaborative Learning. Invited SIG: Trends in Support for and Analysis of Collaborative Learning, *EARLI 2013*.
- [W.11] Thomas, E., Giroto, V., Abreu, A., Lozano, C., Muldner, K., Burleson, W. & **Walker, E.** (2013). Exploring Adaptive Scaffolding in a Multifaceted Tangible Learning Environment. Workshop on Scaffolding in Open-Ended Learning Environments, *AIED 2013*.
- [W.10] Soriano, J. C. A., Rodrigo, M. M. T., Baker, R. S., Ogan, A., **Walker, E.**, Castro, M. J., & Belmontez, R. (2012). A cross-cultural comparison of effective help-seeking behavior among students using an ITS for math. In *Intelligent Tutoring Systems* (pp. 636-637). Springer Berlin Heidelberg.
- [W.9] Hallinen, N., **Walker, E.**, Wylie, R., Ogan, A., & Jones, C. (2009). I was playing when I learned: A narrative game for French aspectual distinctions. Workshop on Intelligent Educational Games, *AIED 2009*.
- [W.8] **Walker, E.**, Rummel, N., & Koedinger, K. R. The influence of correct and erroneous worked examples on learning from peer tutoring. In Vivo experimentation on worked examples across domains. *EARLI 2009*.
- [W.7] **Walker, E.**, Ogan, A., Jones, C., Aleven, V. Two Techniques for Providing Adaptive Support in an Ill-Defined Domain. Workshop on Ill-Defined Domains. *ITS 2008*.

- [W.6] Ogan, A., **Walker, E.**, Alevan, V., Jones, C. (2008), Using a Peer Moderator to Support Collaborative Cultural Discussion. Workshop on Culturally Aware Tutoring Systems Workshop. *ITS 2008*.
- [W.5] **Walker, E.**, and Ogan, A (2007). Peer Moderation in Cultural Discussion Forums. Presentation at *EUROCALL 2007*.
- [W.4] **Walker, E.**, Ogan, A., and Wylie, R (2006). A Tense Situation: Applying Cognitive Tutor Methodology to Ill-Defined Domains. Presentation at *EUROCALL 2006*.
- [W.3] Ogan, A., Wylie, R., and **Walker, E** (2006). Defining the ill-defined: Modeling student behavior in making aspectual distinctions. Accepted as a Student Track Paper at the 8th International Conference on *Intelligent Tutoring Systems*.
- [W.2] Ogan, A., Wylie, R., and **Walker, E.** (2006). The challenges in adapting traditional techniques for modeling student behaviors in ill-defined domains. In V. Alevan, K. Ashley, C. Lynch, & N. Pinkwart (Eds.), *Proceedings of the Workshop on Intelligent Tutoring Systems for Ill-Defined Domains at the 8th International Conference on Intelligent Tutoring Systems* (pp. 92-100). Jhongli (Taiwan), National Central University.
- [W.1] **Walker, E.** Mutual Peer Tutoring: A Collaborative Addition to the Cognitive Tutor Algebra-1 (2005). Accepted as a Young Researcher's Track paper at the *International Conference on Artificial Intelligence and Education (AIED-05)*. **Best Young Researcher Track Paper Award.**

## Book Chapters

- [B.1] **Walker, E.**, Wylie, R., Danieleescu, A., Rodriguez III, J. P., & Finn, E. (2018). Balancing Student Needs and Learning Theory in a Social Interactive Postdigital Textbook. In *End-User Considerations in Educational Technology Design* (pp. 141-159). IGI Global.
- [B.2] Bergner, Y., **Walker, E.**, & Ogan, A. (2017). Dynamic Bayesian Network models for peer tutoring interactions. In *Innovative Assessment of Collaboration* (pp. 249-268). Springer, Cham.

## Invited Talks

**Expanding the reach of AIED systems: Adapting to novel learning processes and outcomes.** March 2018. Learning, Research, and Development Center. University of Pittsburgh. Pittsburgh, USA.

**Expanding the reach of personalized learning technologies: Adapting to novel paradigms, activities, and outcomes.** April 2017. Department of Human-Centered Design and Engineering. University of Washington, Seattle, USA.

**Designing Social Interactions in Personalized Learning Environments.** November 2016.

School of Nutrition and Health Promotion Seminar. Arizona State University, Tempe, USA.

**Designing Social Interactions in Teachable Agents.** September 2016. IBM Cognitive Systems Speaker Series.

**Designing Social Interactions in Learning by Teaching.** November 2015. Program in Interdisciplinary Education Research (PIER) Speaker Series, Carnegie Mellon University, Pittsburgh, USA.

**Learning by Teaching: Opportunities for Intelligent Tutoring Technology.** March 2012. School of Computing, Informatics, and Decision Systems Engineering, Arizona State University, Tempe, USA.

**Adaptive Support for Peer Tutoring in Mathematics.** July 2009. Competence Center for E-Learning DFKI, Saarbrücken, Germany.

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## Student Mentoring

### Academic Committee Chair (PhD)

**Ishrat Ahmed.** 2017-present. School of Computing, Informatics, and Decision Systems Engineering, Arizona State University.

**Victor Girotto.** 2015-present. School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. *Expected graduation date:* Nov. 2018

**Nichola Lubold.** 2014-present. School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. *Defended dissertation:* Aug. 2018

**Shang Wang.** 2013-present. School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. *Expected graduation date:* June 2019.

### Academic Committee Member (PhD)

**Sree Aurovindh Viswanathan.** School of Computing, Informatics, and Decision Systems Engineering. Arizona State University.

**Andreea Danieleescu.** School of Computing, Informatics, and Decision Systems Engineering. Arizona State University.

**Maria Elena Chavez-Echeagaray.** School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. Graduated.

**Jisoo Lee.** School of Arts, Media, and Engineering. Arizona State University. Graduated.

**Archana Paladugu.** School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. Graduated.

**Vijay Ravishankar.** School of Computing, Informatics, and Decision Systems Engineering. Arizona State University. Graduated.

### Academic Committee Chair (Masters)

**Matthew Dexheimer.** 2016-2017. Arizona State University.

**Audrey Wong.** 2015-2016. Arizona State University.

**Nicolette Furtado.** 2015-2016. Arizona State University.

**Abha Upadhyay.** 2014-2016. Arizona State University.

**Ritesh Reddy Samala.** 2014-2015. Arizona State University.

**Rishabh Chaudhry.** 2014-2015. Arizona State University.

## **Undergraduate Research Advisor**

**Jennifer Breunig.** 2018. NSF REU.

**Delany Krantz.** 2018. NSF REU.

**Billy Llamas.** 2018. NSF REU.

**Samantha Baker.** 2017-2018. Fulton Undergraduate Research Initiative. NSF REU.

**Michaela Foote.** 2016-2017. Honors Creative Project. NSF REU.

**Anisha Gupta.** 2016-2017. Fulton Undergraduate Research Initiative & Honors Creative Project. NSF REU.

**Baani Khurana.** 2016-2017. NSF REU.

**Nicholas Martinez.** 2016. Fulton Undergraduate Research Initiative.

**Lizsandra Zuniga.** 2016. NSF DREU.

**Rachana Rao.** 2015-2016. NSF REU.

**Tyler Robbins.** 2015-2017. NSF REU.

**Jonathan Yocky.** 2015-2016. Fulton Undergraduate Research Initiative & Honors Thesis.

**Audrey Wong.** 2014-2015. Fulton Undergraduate Research Initiative.

**Christine Lam.** 2014-2015. Honors Thesis.

**Sarah Van Horn.** 2014-2015. Honors Thesis.

**James Rodriguez.** 2013-2014. Honors Thesis.

**Nicholas Berk.** 2011-2013. Fulton Undergraduate Research Initiative.

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## **Teaching Experience**

**CPI350 Evaluation of Informatics Systems.** Instructor. Spring 2017, Spring 2018. School of Computing, Informatics, and Decision Systems Engineering. Arizona State University.

**CSE463 Introduction to Human Computer Interaction.** Instructor. Spring 2013, Spring 2014, Fall 2016. School of Computing, Informatics, and Decision Systems Engineering. Arizona State University.

**CSE591 Technologies for Online Learning Communities.** Instructor. Fall 2013, Fall 2014, Spring 2016, Fall 2017. School of Computing, Informatics, and Decision Systems Engineering. Arizona State University.

**CPI220 Applied Data Structures and Algorithms**, Instructor. Fall 2015. School of Computing, Informatics, and Decision Systems Engineering. Arizona State University.

**Research Methods for the Learning Sciences**, Teaching Assistant, Spring 2008. Human-Computer Interaction Institute. Carnegie Mellon University.

**Software Architecture for User Interfaces**. Teaching Assistant. Fall 2006. Human-Computer Interaction Institute. Carnegie Mellon University.

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## University and Department Service

**New Faculty Advisory Council**. Welcoming Subcommittee Co-Chair. Arizona State University. 2014-2016.

**Informatics Undergraduate Program Committee**. Arizona State University. 2013-2018.

**Faculty Search Committee**. Arizona State University. 2013-2016.

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## Scientific Community Service

### Executive and Organizing Committees

**Publicity Chair**. International Society of Artificial Intelligence in Education. 2017-present.

**Executive Committee Member**. International Society of Artificial Intelligence in Education. 2013-present.

**Editorial Board Member**. International Journal of Artificial Intelligence in Education. 2017-present.

**Interactive Events Co-Chair**. 19<sup>th</sup> International Conference on Artificial Intelligence in Education. 2017-2018.

**Doctoral Consortium Co-Chair**. 18<sup>th</sup> International Conference on Artificial Intelligence in Education. 2016-2017.

**Workshop and Tutorials Co-Chair**. 16<sup>th</sup> International Conference on Artificial Intelligence in Education. 2013.

### Program Committees

**ICLS**. International Conference of the Learning Sciences. 2017-present.

**L@S**. Learning at Scale. 2017-present.

**CHI**. International Conference on Human Factors in Computing. 2017-present.

**AIED**. International Conference of Artificial Intelligence in Education. 2013-present.

**ITS**. International Conference on Intelligent Tutoring Systems. 2015-2017.

**FLAIRS**. Special Track: Intelligent Tutoring Systems. 2013-present.

**ICEduTech**. Educational Technologies. 2014-2015.

**Re-new**. Digital Arts Festival. 2013.

**ACM SAC**. Track on Intelligent, Interactive, and Innovative Learning Environments. 2013.

2016.

**AIED.** Doctoral Consortium. 2013.

**ITS.** Workshop on Intelligent Support for Exploratory Learning Environments. 2012.

**C5-12.** Conference on Creating, Connecting, and Collaborating Through Computing, 2012

**ITS.** Young Researcher's Track. 2010.

### **Workshop Organizer**

**Rethinking Intelligent Support for Learning in Groups.** 13<sup>th</sup> International Conference of the Learning Sciences, 2018.

**3<sup>rd</sup> Workshop on Intelligent Support for Learning in Groups.** 12<sup>th</sup> International Conference on Intelligent Tutoring Systems, 2014

**Opportunities for Intelligent and Adaptive Behavior in Collaborative Learning Systems.** 10<sup>th</sup> International Conference on Intelligent Tutoring Systems, 2010.

### **Advisory Boards**

**AI XPRIZE Judge.** 2017-present.

**Learning Objects Inc.** 2013-2014.

### **Reviewer**

**Journal submissions.** Behavior Research Methods, Computers & Education, Educational Psychology Review, Future Generation Computing Systems, International Journal of Artificial Intelligence in Education, International Journal of Computer-Supported Collaborative Learning, International Journal of Learning Technologies, Journal of Educational Psychology, Transactions on Learning Technologies, Transactions on Computing Education.

**Conference submissions.** Human Factors in Computing Systems (CHI), Artificial Intelligence in Education, Computer-Supported Collaborative Learning, Cognitive Science, Intelligent Tutoring Systems, International Conference of the Learning Sciences, Learning@Scale, Human-Robot Interaction, ACM Symposium on Applied Computing. Pervasive Health.

**Grant proposals.** National Science Foundation. 2012. 2015. 2018.