RUTH WYLIE

ruth.wylie@asu.edu
480.727.5175

EDUCATION

PH.D., HUMAN-COMPUTER INTERACTION, AUGUST 2011

Human-Computer Interaction Institute, School of Computer Science
Carnegie Mellon University
Thesis: Examining the Generality of Self-Explanation
Advisors: Kenneth Koedinger, Teruko Mitamura

M.S., HUMAN-COMPUTER INTERACTION, DECEMBER 2007

Human-Computer Interaction Institute, School of Computer Science
Carnegie Mellon University

B.A. (HIGHEST HONORS) COGNITIVE SCIENCE, SPRING 2003

University of California, Berkeley
Cognitive Psychology Concentration
Minors: Computer Science, Education

EXPERIENCE

ASSISTANT DIRECTOR, CENTER FOR SCIENCE AND THE IMAGINATION, ARIZONA STATE UNIVERSITY
July 2014 – Present

ASSISTANT RESEARCH PROFESSOR, MARY LOU FULTON TEACHERS COLLEGE
July 2014 – Present

POSTDOCTORAL FELLOW, CHI LEARNING & COGNITION LAB, ARIZONA STATE UNIVERSITY
December 2011 – June 2014

GRADUATE RESEARCH ASSISTANT, CARNEGIE MELLON UNIVERSITY
August 2005 – August 2011

TEACHING ASSISTANT, CARNEGIE MELLON UNIVERSITY
Fall 2007, 2008

HIGH SCHOOL TEACHER, SHIMA HIGH SCHOOL, ISOBE, JAPAN
August 2003 – August 2005

FUNDING

THE LIVING FRANKENSTEIN
Sloan Foundation
June 2017-November 2019
Total Award: $248,648 (Co-PI)

INCREASING LEARNING AND EFFICACY ABOUT EMERGING TECHNOLOGIES THROUGH TRANSMEDIA ENGAGMENT BY THE PUBLIC IN SCIENCE-IN-SOCIETY
National Science Foundation
July 2015 – June 2019
Total Award: $2,981,155 (Co-PI)

NARRATIVE PROJECTIONS FOR COMMERCIAL SPACE FUTURES
National Aeronautics and Space Administration
July 2015 – June 2016
Total Award: $140,000 (Co-PI)

EAGER: TOWARDS KNOWLEDGE CREATION AND COMMUNITY BUILDING WITHIN A POSTDIGITAL TEXTBOOK
National Science Foundation
August 2014 – July 2016
Total Award: $299,034 (Co-PI)

SERVICE

PROGRAM COMMITTEE, INTERNATIONAL CONFERENCE OF THE LEARNING SCIENCES
Summer 2018

CO-DIRECTOR, EMERGE 2015, 2016, 2017
Emerge is an art and science festival that invites artists, designers, scientists, engineers and audiences to imagine optimistic, thoughtful futures.

MEMBER OF WOMEN IN SCHOOL OF COMPUTER SCIENCE, CARNEGIE MELLON UNIVERSITY
Fall 2005 – Fall 2010
Participated in several outreach activities to local middle school, high school, and community groups designed to increase the number of women and underrepresented minorities in computer science.

REVIEWER
Journals. Educational Psychologist, Transactions on Learning Technologies, AI Magazine Special Issue on Intelligent Learning Technologies, International Journal of Artificial Intelligence in Education

Conferences. ACM CHI Conference on Human Factors in Computing Systems, American Education Research Association, Annual Meeting of the Cognitive Science Society, Florida Artificial Intelligence Research Society, International Conference on Artificial Intelligence in Education, International Conference on Intelligent Tutoring Systems

Grants. National Science Foundation, 2014.

PUBLICATIONS

JOURNAL PAPERS

[J.1] Talbot, R.M., III, **Wylie, R.**, Dutilly, E., & Nielsen, R. (in press). The relationship between format and cognitive depth of science teacher-generated questions. *Research in Schools*, in press (accepted for publication).

[J.2] Nagy, P., **Wylie, R.**, Eschrich, J., and Finn, E. (in press). The enduring influence of a dangerous narrative: How scientists can mitigate the Frankenstein myth. *Journal of Bioethical Inquiry*, in press (accepted for publication).

[J.3] Chi, M.T.H., Adams, J.A., Bogusch, E.B., Bruchok, C., Kang, S., Lancaster, M., Levy R., Li, N., McEldoon, K., Stump, G.S., **Wylie, R.**, Xu, D., & Yaghmourian, D.L. (submitted). Teachers translating a theory of cognitive engagement into practice.

[J.4] Nagy, P., **Wylie, R.**, Eschrich, J., & Finn, E. (2017). Why Frankenstein is a stigma among scientists. *Science and engineering ethics*, 1-17.

[J.5] Roll, I., and **Wylie, R.** (2016). Evolution and revolution in artificial intelligence in education. Manuscript submitted for publication. *International Journal of Artificial Intelligence in Education*. (Invited submission)

[J.6] Chi, M.T.H. and **Wylie, R.** (2014). The ICAP framework: Linking cognitive engagement to active learning outcomes. *Educational Psychologist*, *49*(4), 219-243.

CHAPTERS

[B.1] Walker, E., **Wylie, R**., Danielescu, A., Rodriguez, J., and Finn, E. (2017). Balancing Student Needs and Learning Theory in a Social Interactive Postdigital Textbook. *End-User Considerations in Educational Technology Design*, 141-159.

[B.2] **Wylie, R.** and Chi, M.T.H. (2014). Self-explanation in multimedia learning. In R. Mayer (Ed.) *The Cambridge Handbook of Multimedia Learning, 2nd Edition.* Cambridge University Press.

REFEREED CONFERENCE PAPERS

[C.1] 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. **Nominated for Best Paper.**

[C2.] Dalal, M., **Wylie, R.**, & Walker, E. (2016). Using a Systematic Review for Cross-Theory Comparisons. In P*International Conference of the Learning Sciences.* Singapore.

[C.3] Walker, E., Chakravarthi, R., Rodriguez, J., and **Wylie, R.** (2015). Promoting interaction by integrating a question and answer forum with a digital textbook. In Proceedings of the 12th International Conference on Computer-Supported Collaborative Learning.

[C.4] Wang, S., Walker, E., Chaudhry, R., and **Wylie, R.** (2015). Personalized expert skeleton scaffolding in concept map construction. Artificial Intelligence in Education. Madrid, Spain. June 22-26, 2015.

[C.5] Paiva, F., Glenn, J., Mazidi, K., Talbot, R., **Wylie, R.,** Chi, M.T.H., Dutilly, E., Helding, B., Lin, M., Trickett, S., and Nielsen, R.D. (2014). Comprehension SEEDING: Comprehension through self-explanation, enhanced discussion, and inquiry generation. Twelfth International Conference on Intelligent Tutoring Systems. Honolulu, Hawaii. June 4-9, 2014.

[C.6] Roscoe, R.D., Gutierrez, P.J., **Wylie, R.**, and Chi, M.T.H. (2014). Evaluating lesson design and implementation within the ICAP framework. International Conference of the Learning Sciences. Boulder, Colorado. June 23-27, 2014.

[C.7] **Wylie, R.**, Koedinger, K., and Mitamura, T. (2010). Extending the self-explanation effect to second language grammar learning. International Conference of the Learning Sciences. Chicago, Illinois. June 29-July 2, 2010.

[C.8] **Wylie, R.**, Koedinger, K., and Mitamura, T. (2010). Analogies, explanation, and practice: Examining how task types affect second language grammar learning. Tenth International Conference on Intelligent Tutoring Systems. Pittsburgh, Pennsylvania. June 14-18, 2010.

[C.9] **Wylie, R.**, Koedinger, K., and Mitamura, T. (2009). Is self-explanation always better? The effects of adding self-explanation prompts to an English grammar tutor. Cognitive Science. Amsterdam, The Netherlands. July 29 – August 1, 2009.

[C.10] **Wylie, R.**, and Shih, B. (2009). Active vs passive training for educational software. Cognitive Science. Amsterdam, The Netherlands. July 29 – August 1, 2009.

SELECTED REFEREED WORKSHOP PAPERS

[W.1] Hallinen, N., Walker, E., **Wylie, R.,** Ogan, A., and Jones, C. (2009). I was playing when I learned: A narrative game for French aspectual distinctions. *Workshop Proceedings on Intelligent Educational Games at the 14th International Conference on Artificial Intelligence in Education*. Brighton, England. July 6-10, 2009.

[W.2] **Wylie, R**., Koedinger, K., and Mitamura, T. (2008) Putting a/the stake in the ground: Making a priori predictions of student learning. Accepted to Intelligent Tutoring Systems, Young Researchers Track. Montreal, Canada. June 23 – 27, 2008.

[W.3] **Wylie, R.** (2007) Are we asking the right questions? Understanding which tasks lead to the robust learning of English grammar. Accepted as a Young Researchers Track paper at the *13th International Conference on Artificial Intelligence in Education*. Marina del Rey, California. July 9 – 13, 2007.

SELECTED CONFERENCE PRESENTATIONS

[P.1] **Wylie, R.**, Xu, D., Kang, S. and Chi, M.T.H. (2013). ICAP in action: Translating a theory of cognitive engagement to increased classroom learning. European Association for Learning and Instruction (EARLI 2013). Munich, Germany. August 27-31, 2013.

[P.2] **Wylie, R.**, Chi, M.T.H., Talbot, R., and Nielsen, R. (2013) Comprehension SEEDING: Using technology to enhance self-explanation, classroom discussion, and question generation. In R. Wylie & E. Walker (chairs), Beyond problem solving: Applying lessons from intelligent tutoring to new contexts, domains, and platforms. Symposium conducted at the annual meeting of the American Education Research Association (AERA 2013). San Francisco, CA.

[P.3] **Wylie, R.**, Koedinger, K., and Mitamura, T. (2009) Self-explaining language: Effects of adding self-explanation prompts to an ESL grammar tutor. European Association for Research on Learning and Instruction (EARLI). August 25 – 29, 2009.

[P.4] **Wylie, R.** (2008) The Assistance Dilemma and the English Article System: Developing Intelligent Tutoring Systems for English as a Second Language. Google Scholars Retreat. Mountain View, CA. April 3 – 5, 2008.

THESES

[T.1] **Wylie R.** (2011) Examining the generality of self-explanation. PhD Thesis, Carnegie Mellon University. Committee: Ken Koedinger (co-chair), Teruko Mitamura (co-chair), Sharon Carver, Albert Corbett, Carolyn Rosé.

[T.2] **Wylie, R.** (2003) The effects of computers on cognitive assessment. Undergraduate Honors Thesis, University of California, Berkeley. Advisors: Mark D'Esposito, Jennifer Mankoff (Awarded Highest Honors).