AMY ELISE ADAIR

NSF Graduate Research Fellow, Graduate School of Education, Rutgers University

amy.adair@gse.rutgers.edu

EDUCATION

Doctor of Philosophy in Education *September 2019 – present*
Rutgers University, New Brunswick, NJ
Concentration: Learning, Cognition, Instruction, & Development, Specialization: Learning Sciences

Master of Arts in Education *September 2019 – October 2022*
Rutgers University, New Brunswick, NJ

Bachelor of Science in Mathematics *August 2014 – May 2018*
Louisiana State University, Baton Rouge, LA
Concentration: Secondary Education, Minor: French

GRADUATE RESEARCH EXPERIENCE

NSF Graduate Research Fellow *September 2021 – present*
STEM Education and Learning Research - Artificial Intelligence
Advisor: Dr. Janice Gobert, Rutgers University
Previously worked as a Graduate Research Assistant from August 2019 to September 2021;
Involved with on-going research projects for the Inquiry Intelligent Tutoring System (Inq-ITS), including:
- Using natural language processing (NLP) techniques to develop automated scoring algorithms for students' written science and math explanations in Claim, Evidence, Reasoning (CER) framework
- Designing NGSS-aligned virtual science labs that assess students' competencies with NGSS practices, particularly with using mathematics within science inquiry
- Creating alerts for a teacher dashboard that support teachers in helping struggling students

Educational Testing Service (ETS) AI Research Labs Intern *June 2021 – August 2021*
Mentor: Dr. Kristen Herrick, ETS
Contributed to a cross-functional research & development team in the AI Research Labs with learning scientists, instructional designers, user-experience designers, data scientists, and software developers to design evidence-based, technological solutions for middle school English Language Arts classrooms

PUBLICATIONS

Adair, A., Dickler, R., & Gobert, J. (2020). Supporting teachers supporting students: Iterative development of TIPS in a teacher dashboard. In M. Gresalfi & I. S. Horn (Eds.), *14th International Conference of the Learning Sciences, Volume 3* (pp. 1769-1770). International Society of the Learning Sciences.

Dickler, R., **Adair, A.**, Gobert, J., Hussian-Abidi, H., Olsen, J., O'Brien, M., & Sao Pedro, M. (2021). Examining the use of a teacher alerting dashboard during remote learning. In I. Roll, D. McNamara, S. Sosnovsky, R. Luckin, & V. Dimitrova (Eds.), *International Conference on Artificial Intelligence in Education* (pp. 134-138). Springer, Cham.

Dickler, R., Sao Pedro, M., **Adair, A.**, Gobert, J., Olsen, J., Kleban, J., Betts, C., Staudenraus, C., & Roughan, P. (2021). Supporting students remotely: Integrating mathematics and sciences in virtual labs. In E. de Vries, Y. Hod, & J. Ahn (Eds.), *15th International Conference of the Learning Sciences* (pp. 1013-1014). International Society of the Learning Sciences.

Adair, A., Owens, J. A., & Gobert, J. (2022). Using epistemic network analysis to explore discourse patterns across design iterations of a teacher dashboard. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.), *16th International Conference of the Learning Sciences* (pp. 297-304). International Society of

the Learning Sciences.

Olsen, J., **Adair, A.**, Gobert, J., Sao Pedro, M., & O'Brien, M. (2022). Using log data to validate performance assessments of mathematical modeling practices. In M. M. Rodrigo, N. Matsuda, A. I. Cristea, & V. Dimitrova (Eds.), *International Conference on Artificial Intelligence in Education* (pp. 488-491). Springer, Cham.

Herrick, K. S., Nachman, L., Montilus, K. D., Runyon, K. R. M, **Adair, A.**, Ferrara, L. (2022). An integrated approach to learning solutions: UCD + LS&D + AIEd. In M. M. Rodrigo, N. Matsuda, A. I. Cristea, & V. Dimitrova (Eds.), *International Conference on Artificial Intelligence in Education* (pp. 94-98). Springer, Cham.

Adair, A. (2023). Teaching and learning with AI: How artificial intelligence is transforming the future of education. *XRDS: Crossroads, The ACM Magazine for Students, 29*(3), 7-9.

Adair, A., & Koh, J. J. (2023). Making speech recognition work for children: An interview with Amelia Kelly. *XRDS: Crossroads, The ACM Magazine for Students, 29*(3), 26-29.

Adair, A., Sao Pedro, M., Gobert, J., & Owens, J. A. (2023). Assessing students' competencies with mathematical models in virtual science inquiry investigations. In, *17th International Conference of the Learning Sciences.* International Society of the Learning Sciences.

Adair, A., Sao Pedro, M., Gobert, J., & Segan, E. (2023). Real-time AI-driven assessment and scaffolding that improves students' mathematical modeling during science investigations. In N. Wang, G. Rebolledo-Mendez, N. Matsuda, O. C. Santos, & V. Dimitrova (Eds.), *International Conference on Artificial Intelligence in Education* (pp. 202-216). Springer, Cham.

PRESENTATIONS

Adair, A., Dickler, R., & Gobert, J. (2021, March). *Developing and implementing teacher inquiry practice supports for remote and in-person instruction* [Poster presentation]. Rutgers Graduate School of Education Annual Poster Session.

Adair, A., Dickler, R., Gobert, J. & Lee, J. (2021, April). *Inq-ITS supports students maintaining their science inquiry competencies during remote learning due to COVID-19* [Poster presentation]. American Educational Research Association (AERA) Annual Meeting.

Dickler, R., O'Brien, M., Gobert, J., Olsen, J., **Adair, A.**, & Hussain-Abidi, H. (2021, April). *Analyzing student-teacher discourse prompted by a real-time alerting dashboard for science inquiry practices* [Roundtable paper presentation]. American Educational Research Association (AERA) Annual Meeting.

Dickler, R. & **Adair, A.** (2021, April). *Using the Inq-Blotter dashboard to support teachers and students on science practices* [Invited talk]. Rutgers Graduate School of Education Brown Bag Lecture Series.

Lee, J., **Adair, A.**, Gobert, J., & Dickler, R. (2021, August). *Can text features of investigative questions in science predict students' inquiry competencies?* [Conference presentation]. Annual Meeting of the Society for Text and Discourse.

Dickler, R., Gobert, J., **Adair, A.**, & Olsen, J. (2021, August). *Using a teacher dashboard to support students remotely on science inquiry* [Conference presentation]. Annual Meeting of the Society for Text and Discourse.

Sao Pedro, M., Gobert, J., & **Adair, A.** (2021, November). *Strengthening students' inquiry competencies via progress monitoring* [Conference presentation]. Science Teachers Association of New York State (STANYS) Conference, Rochester, NY, United States.

Sao Pedro, M., Gobert, J., **Adair, A.**, Olsen, J., Dickler, R., & Betts, C. (2022, March). *Using mathematics to deepen understanding of scientific phenomena* [Conference presentation]. National Science

Teaching Association's National Conference on Science Education, Houston, TX, United States.

Sao Pedro, M., Gobert, J., **Adair, A.**, Dickler, R., & Betts, C. (2022, November). *Using mathematics to deepen understanding of scientific phenomena* [Conference presentation]. Kentucky Science Teachers Association Annual Conference, Richmond, KY, United States.

Adair, A., Dickler, R. F., Gobert, J., Sao Pedro, M., Olsen, J., Owens, J., & Lott, C. (2023, April). *Examining students' mathematical evidence in CER explanations during science inquiry contexts* [Symposium poster]. American Educational Research Association (AERA) Annual Meeting.

Li, H., **Adair, A.**, Li, G., Dickler, R. F., & Gobert, J. (2023, April). *Evaluation of automated scoring methods for students' claim, evidence, reasoning responses in science* [Symposium poster]. American Educational Research Association (AERA) Annual Meeting.

Owens, J. A., **Adair, A.**, Segan, E., & Gobert, J. (2023, June). *Automated analyses of students' difficulties with explanations in science inquiry* [Conference presentation]. Annual Meeting of the Society for Text and Discourse, Olso, Norway.

GRADUATE ACADEMIC HONORS AND AWARDS

National Science Foundation Graduate Research Fellowship *2021–present*
Five-year fellowship that provides three years of funding for doctoral students

Clarence E. Partch Memorial Fellowship *2020-2021*
Awarded by the Rutgers GSE to a full-time student based on merit

AERA Annual Meeting Graduate Student Assistance Fund Award *2023*
Awarded by the American Educational Research Association for participation at the 2023 Annual Meeting

Rutgers SGS Research & Travel Award *2023*
Awarded by the Rutgers School of Graduate Studies to assist with conference travel

AIED Conference Scholarship *2023*
Awarded by the International AI in Education (AIED) Society to assist with AIED 2023 conference travel

GRADUATE LEADERSHIP AND SERVICE

Coordinator, Rutgers GSE Lunch & Learn (Brown Bag) Series *2021 – 2023*
Helped plan weekly seminars with guest speakers on cutting-edge learning sciences research with an emphasis on advancing equity in education. See recordings at: https://www.youtube.com/@rutgersgse6132

President, Rutgers GSE Student Affairs Committee (GSAC) *2020 – 2022*
Collaborated with executive board members and GSE faculty to coordinate monthly meetings, develop a new GSAC website, and plan and disseminate information on GSAC initiatives, such as offering funding support for conference-related expenses to graduate students in the Graduate School of Education (GSE).

Student Representative, Career Community Advisory Board *2020 – 2022*
Provided a doctoral student perspective at monthly meetings to help the Rutgers Career Exploration & Success (CES) staff in developing programs and workshops for doctoral students.

PROFESSIONAL SERVICE

International Conference of the Learning Sciences
Peer Reviewer *2022, 2023*
American Educational Research Association Annual Meeting
Peer Reviewer *2023*
XRDS (Crossroads): The ACM Magazine for Students
Guest Editor *2023*

TEACHING EXPERIENCE

Mathematics Teacher, West Feliciana High School   *August 2018 – May 2019*
Taught Advanced Math, AP Calculus BC, and Introduction to Robotics for grades 10 to 12.

Pre-Service Teacher, LSU Geaux Teach Program   *January 2014 – May 2018*
Observed and taught standards-aligned, problem-based lessons for grades 5 to 12, including Geometry Honors, Advanced Math Dual Enrollment, AP Calculus AB, and AP Computer Science Principles.

Instructor/Coach, LSU Math Circle Summer Program & Competition Team   *June 2015 – July 2018*
Designed and implemented hands-on activities for advanced mathematical concepts, mentored students' mathematical research projects, and coached students for national math competitions.

Tutoring Lab Coordinator, LSU Cain Center for STEM Literacy   *August 2015 – May 2017*
Tutored at McKinley High School, coordinated tutoring lab at Lee High School and LSU Science Residential College, and conducted group study sessions for *Praxis* Mathematics Content Knowledge exam.

Math Tutor, LSU Veteran and Military Student Services   *August 2016 – May 2018*
Held daily office hours to provide individual tutoring to student veterans in college-level math courses.