Last updated 8/26

Rebecca Adler

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EDUCATION

Vanderbilt University | Nashville, TN
Ph.D. in Psychology, Minor in Quantitative Methods & Certificate in College Teaching (May 2025)
Dissertation committee: Drs. Bethany Rittle-Johnson (Chair), Lisa Fazio, Gordon Logan, and Cristina Zepeda
Dissertation title: An Examination of Self-regulated Learning in Mathematics: Students' Beliefs, Monitoring, and Control

Vanderbilt University | Nashville, TN
M.S. Psychology and Human Development, 2022
Primary advisor: Dr. Bethany Rittle-Johnson
Second reader: Dr. Lisa Fazio
Thesis: "A Longitudinal Examination of the Relations between Motivation, Math Achievement, and STEM Career Interests Among Black High School Students"

Northwestern University | Evanston, IL
B.A. in Psychology & Cognitive Science (Learning and Instruction focus), 2018
GPA: 3.94/4.0
Advisor: Dr. David Rapp

PROFESSIONAL EXPERIENCE

Postdoctoral Scholar July 2025—June 2026
Los Angeles Education Research Institute at the University of California, Los Angeles

- Collaborate with research team members to assemble, merge, clean, and validate longitudinal student-level administrative and digital learning datasets
- Conduct statistical analyses to examine student engagement, motivation, and achievement within district-partnered research projects.
- Develop summaries and visualizations to support internal reporting and partner-facing materials
- Contribute to research design and analytic planning through synthesis of relevant literature

Research Scientist July 2026—present
Wild Zebra

- Shape the research and learning-science strategy for an AI-powered tutoring platform, bringing developmental psychology, cognitive science, and educational measurement into product decisions

- Lead research and evaluation of how students interact with AI tutoring, using behavioral and conversational data to assess learning, reasoning, engagement, and instructional effectiveness
- Partner across product, engineering, and content teams to translate evidence about how children learn into scalable instructional, assessment, and personalization systems
- Help define the long-term vision for developmentally appropriate, evidence-based AI in education

HONORS, AWARDS, TRAVEL AWARDS, AND FELLOWSHIPS

2026	Best Publicly Available Educational Data Set Prize ($2,000), International Educational Data Mining Society, Co-recipient for the *Misconceptions in Mathematics Education Dataset*
2025	Hardy Culver-Wilcoxon Award, Psychology and Human Development Department, Vanderbilt University [Most distinguished psychology dissertation]
2025	Graduate Student Research Award for AERA SIG Studying and Self-Regulated Learning (First author: Xinran Wang)
2025	Conference travel grant from Vanderbilt Graduate School ($1000)
2024—2025	Abby and Jon Winkelried Fellowship – Peabody College, Vanderbilt University
2024	Susan Gray Award, Psychology and Human Development Department, Vanderbilt University [award for best first-author/sole author paper]
2024	Conference travel grant from Vanderbilt Graduate School ($1000)
2023	Conference travel grant from Vanderbilt Kennedy Center ($250)
2023	Conference travel grant from Vanderbilt Graduate School ($500)
2022	Abby and Jon Winkelried Fellowship – Peabody College, Vanderbilt University
2018	*summa cum laude* –Northwestern University
2018	*Phi Beta Kappa* – Northwestern University
2018	Departmental honors in Psychology – Northwestern University
2018	Conference travel grants from Northwestern University ($1500)

2017	Conference travel grants from Northwestern University ($1500)
2014—2018	Dean's list – Northwestern University

GRANTS

- Vanderbilt Dissertation Enhancement Award ($2000) from Russell G. Hamilton Graduate Leadership Institute (2024)
- Investigator (PI: Kelley Durkin) "Understanding How MNPS's 5 Tiered Intervention Platforms Are Working to Improve Students' Literacy and Numeracy" ($10,000). Nashville Partnership for Educational Equity Research (PEER) (2023)
- Vanderbilt Award for Doctoral Discovery ($1000) from Vanderbilt Graduate School (2023)
- Undergraduate research grant ($1000) from Northwestern University for independent research project "The Effects of Political Affiliation on the Processing of Inaccurate Ideas" (2017)

RESEARCH INTERESTS

Mathematical problem-solving; Self-regulated learning; Evidence-based STEM pedagogy; Technology-enhanced learning

PUBLICATIONS

** Indicates mentored student*

JOURNAL PUBLICATIONS (PEER REVIEWED)

Imundo, M.N., Teo, R. L., Gonzales, B. G., **Adler, R.M**, & Bjork, E. (2025). Notetaking in the Time of COVID-19: Shifts in Students' Notetaking Practices between In-Person and Online Instruction. *Journal of Applied Cognition*

Rittle-Johnson, B., **Adler, R.M.**, & Durkin, K. (2024). Predicting marginalized students' mathematics achievement in high school. *Journal of Cognition and Development*, 1–22. https://doi.org/10.1080/15248372.2024.2384547

Douglas, A., Rittle-Johnson, B., **Adler, R.M.**, *Méndez-Fernández, A., Haymond, C., *Brandon, J., & Durkin, K. (2024). "He's probably the only teacher I've actually learned from": Marginalized students' experiences and views of school mathematics in high school. *American Educational Research Journal*. https://doi.org/10.3102/00028312241266242

Adler, R.M., Rittle-Johnson, B., Hickendorff, M., Durkin, K. (2024). A longitudinal examination of the relations between motivation, math achievement, and STEM career aspirations among Black students. *Contemporary Educational Psychology, 76, 102240.* https://doi.org/10.1016/j.cedpsych.2023.102240

Adler, R.M., *Xu, D., Rittle-Johnson, B. (2024). What counts as STEM, and does it matter? *British Journal of Educational Psychology, 94(1), 165-180.* https://doi.org/10.1111/bjep.12639

Lewis, K.E., Sweeney, G., Thompson, G.M., **Adler, R.M.**, & Alhamad, K. (2022). Dyscalculia in algebra: A case study. *Insights into Learning Disabilities*, *19(*1), 3-36.

Hallinen, N., Sprague, L., Blair, K., **Adler, R.M.**, & Newcombe, N. (2021). Finding formulas: Does active search facilitate appropriate generalization? *Cognitive Research: Principles and Implications*, *6*(1), 1-18. https://doi.org/10.1186/s41235-021-00316-y

Lewis, K. E., Sweeney, G., Thompson, G. M., & **Adler, R.M**. (2020). Integer number sense and notation: A case study of a student with a mathematics learning disability. *The Journal of Mathematical Behavior*, *59*, 100797. https://doi.org/10.1016/j.jmathb.2020.100797

BOOK CHAPTERS

Rapp, D. N., Imundo, M. N., & **Adler, R. M.** (2019). Do individual differences in conspiratorial and political leanings influence the use of inaccurate information? In P. Kendeou, D. H. Robinson, & M.T. McCrudden (Eds.), *Misinformation and Fake News in Education* (pp.103-122). Charlotte, NC: Information Age Publishing.

MANUSCRIPTS UNDER REVIEW OR INVITED RESUBMISSION

Adler, R.M., *Wang, X., *Burghardt, I., Zepeda, C., & Rittle-Johnson, B. (Under review). College students' decision-making while studying mathematics

Rittle-Johnson, B., **Adler, R.M.,** Burleigh, L., King, J., Durkin, K., Crossley, S. (Under review). AI Benchmark Dataset and Models for Detecting Mathematics Misunderstandings

*Wang, X., **Adler, R.M**., Zepeda, C., & Rittle-Johnson, B. (Under review). Testing the Agenda-Based Regulation Model with Worked Examples and Problem Solving

MANUSCRIPTS IN PREPARATION

Adler, R.M., Zepeda, C., & Rittle-Johnson, B. (In preparation). College students' use and beliefs for study strategies in mathematics and social sciences.

CONFERENCE PROCEEDINGS (PEER REVIEWED)

Rittle-Johnson, B., **Adler, R.M,** Durkin, K., Burleigh, L., King, J., & Crossley, S. (2025, October). Detecting Math Misconceptions: An AI Benchmark Dataset. In Proceedings of the Artificial Intelligence in Measurement and Education Conference (AIME-Con): Works in Progress (pp. 20-24).

Lewis, K.E., Sweeney, G., Thompson, G.M., **Adler, R.M**., & Alhamad, K. (2022, November). *Identifying Persistent Unconventional Understandings of Algebra: A Case Study Of An Adult With Dyscalculia.* Paper presented at the 44th annual conference of PMENA (the North American Chapter of the International Group for the Psychology of Mathematics Education), Nashville, TN. pp. 1645-1654.

Other Scientific Writing: CogBites

Adler, R.M. (November, 2021). Computers in the classroom.

Adler, R.M. (March, 2022). Can we learn to be better learners through digital training?

Adler, R.M. (August, 2023). Worked examples: An effective tool for math learning.

PRESENTATIONS

PEER-REVIEWED CONFERENCE TALKS

Wang, X., Nelluvelil, J., Kingan, M., **Adler, R.M**, Cao, L., Zepeda, C., Durkin, K., Star, J., & Rittle-Johnson, B. (April, 2027). Enhancing exit tickets with metacognitive evaluation to foster self-regulated learning in high school mathematics. Paper submitted to the American Educational Research Association Annual Meeting, Toronto, Canada.

Wang, X., Nelluvelil, J., Kingan, M., **Adler, R.M**, Cao, L., Zepeda, C., Durkin, K., Star, J., & Rittle-Johnson, B. (April, 2027). Two dimensions of error attitudes: Associations with motivation and metacognition in learning. Paper submitted to the American Educational Research Association Annual Meeting, Toronto, Canada.

Crossley, S., Rittle-Johnson, B., **Adler, R.M.,** Burleigh, L., Durkin, K., King, J., & Benner, M. (October, 2026). Automated Approaches for Scoring Math Misunderstandings in Student Self-Explanations. Paper accepted for presentation at Artificial Intelligence in Measurement and Education Conference, Pittsburgh, PA.

Wang, X., Nelluvelil, J., Kingan, M., **Adler, R.M**, Cao, L., Zepeda, C., Star, J., Rittle-Johnson, B., & Durkin, K. (2026, April). Do metacognitive-supportive exit tickets in middle school math classrooms improve students' self-regulated learning? Paper presented at the 2026 Annual Meeting of the American Educational Research Association, Los Angeles, CA.

Adler, R.M., Durkin, K., & Rittle-Johnson, B. (April, 2025). Solving linear equations: Identifying common errors in a digital learning platform. Paper presented to the annual meeting of the American Educational Research Association, Denver, CO.

Wang, X., **Adler, R.M.**, Zepeda, C., & Rittle-Johnson, B. (April, 2025).Testing the agenda-based regulation model with worked examples and problem solving. Paper presented to the annual meeting of the American Educational Research Association, Denver, CO.

Adler, R.M., Wang, X.*, & Rittle-Johnson, B. (June, 2024). College students' self-regulated studying of worked examples. Lightning talk presented at the Math Cognition and Learning Society, Washington, D.C.

Adler, R.M., Wang, X.*, & Rittle-Johnson, B. (June, 2024). College students' use and belief of math study strategies. Paper presented at the Math Cognition and Learning Society, Washington, D.C.

Adler, R.M., Douglas, A., Durkin, K., & Rittle-Johnson, B. (April, 2024). "You need to know basic math": Marginalized students question the usefulness of advanced mathematics. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

Adler, R.M., *Xu., M., & Rittle-Johnson, B. (2023, April). What counts as STEM careers matters: Gender and motivational predictors vary by definition. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Adler, R.M., Rittle-Johnson, B., Hickendorff, M., & Durkin, K. (2023, April). Profiles of math and science motivation among marginalized students and relation to STEM outcomes. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Rittle-Johnson, B., **Adler, R.M.,** & Durkin, K. (2023, April). Readiness for College Mathematics: Longitudinal Predictors Among Marginalized Students. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL

Douglas, A., **Adler, R.M.,** & Rittle-Johnson, B. (2022, April). ″We are going to be stranded": Marginalized high school students' beliefs about math. Paper presented at Cognitive Development Society, Madison, WI.

Adler, R.M. & Rittle-Johnson, B. (2022, April). Predicting math achievement and STEM career interest among Black students: Limitations of expectancy-value theory. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Lewis, K., Sweeney, G., **Adler, R**., & Thompson, G. (2019, April). Atypical algebraic understandings: A case study of a mathematical learning disability. Paper presented at the annual meeting of the American Educational Research Association, Toronto, CA.

PEER-REVIEWED CONFERENCE POSTERS

Adler, R.M., Wang, X., Zepeda, C., & Rittle-Johnson, B. (2026, June). Do students learn less when self-regulating their math learning? Poster presented to the Math Cognition and Learning Society, Padua, Italy.

Rittle-Johnson, B., **Adler, R.M**., Burleigh, L., & Durkin, K. (2026, June). Exploring students' misconceptions about fractions and decimals. Poster presented to the Math Cognition and

Learning Society, Padua, Italy.

Wang, X.*, Nelluvelil, J., Kingan, M., Garner, E., **Adler, R.M**, Zepeda, C., Star, J., Rittle-Johnson, B., & Durkin, K. (2026, June). Do metacognitive-supportive exit tickets in high school math classrooms improve students' self-regulated learning? Poster presented to the Math Cognition and Learning Society, Padua, Italy.

Cao, L*, Wang, X*, **Adler, R.M**., Starr, J., Zepeda, C., Rittle-Johnson, B., & Durkin, K. (2025, June). Enhancing exit tickets to improve students' monitoring ability. Poster presented at the Math Cognition and Learning Society, Hong Kong.

Wang, X.*, **Adler, R.M.**, Zepeda, C., & Rittle-Johnson, B. (2024, November). Students' self-regulated use of worked examples and problem solving. Poster presented at Psychonomic Society's Annual Meeting, New York City, NY.

Adler, R.M., Rittle-Johnson, B., Hickendorff, M., & Durkin, K. (2023, June). A person-centered analysis of the relations between motivation, math achievement, and STEM career interests among Black high school students. Poster presented to the Math Cognition and Learning Society, Loughborough, UK.

Woo, C., Imundo, M., **Adler, R.M.,** Bjork, E. (2023, April). Are There Cognitive Load Benefits While Studying Worked Examples Collaboratively? Poster presented to the Western Psychological Association, Riverside, CA.

*Méndez-Fernández, A., **Adler, R**., Douglas, A., & Rittle-Johnson, B. (2022, May). Marginalized Students' Exposure to Inclusive Pedagogy. Poster presented at the Society for Research in Child Development Special Topics meeting, Rio Grande, Puerto Rico.

*Rohila, A., **Adler, R.M** & Rittle-Johnson, B. (2022, April). "Me, Myself, and I:" An analysis of underrepresented students' perspectives on their postsecondary trajectories. Poster presented at Cognitive Development Society, Madison, WI.

Adler, R.M., Salomon, M.N., & Rapp, D.N. (2018, July). Misinformation across the aisle: The effects of political affiliation on the reproduction of inaccurate ideas. Poster presented at the 28th Annual Meeting of the Society for Text & Discourse, Brighton, UK.

Adler, R.M., Salomon, M.N., & Rapp, D.N. (2017, July). What happens when someone of a different political affiliation provides inaccurate information? Poster presented at the 27th Annual Meeting of the Society for Text & Discourse, Philadelphia, PA.

OTHER PRESENTATIONS

Adler, R.M. (2024, November). Situating studying: Use and beliefs of study strategies in college mathematics courses. Talk presented to Cognitive Science of Learning and Development Research Forum, Vanderbilt University, Nashville, TN.

Crossley, S., Rittle-Johnson, B., Durkin, K., & **Adler, R.M.** (2024, November). Math Misconceptions Data Science Competition. Invited talk to Vanderbilt's Learning Innovation Incubator (LIVE), Nashville, TN.

Durkin, K., Rainey, L., Barnes, M., Rittle-Johnson, B., & **Adler, R.M**. (2024, May). Understanding How MNPS's 5 Tiered Intervention Platforms Are Working to Improve Students' Literacy and Numeracy. Poster presented at Nashville PEER (Partnership for Educational Equity Research) Symposium, Nashville, TN.

Durkin, K., Holmes, L., & **Adler, R.M.** (2024, February). AI in Education. Invited talk to Tennessee Senator Blackburn's staff, Vanderbilt University, Nashville, TN.

Adler, R.M. (2024, January). Students' self-regulated studying in mathematics. Talk presented to Cognitive Science of Learning and Development Research Forum, Vanderbilt University, Nashville, TN.

Durkin, K., Barnes, M., Rittle-Johnson, B., Rainey, L., & **Adler, R.** (December, 2023). Understanding how MNPS's 5 tiered intervention platforms are working to improve students' literacy and numeracy. Talk presented to Nashville PEER (Partnership for Educational Equity Research), Nashville, TN.

Adler, R.M. (2023, February). What counts as STEM careers matters: Gender and motivational predictors vary by definition. Talk presented to Cognitive Science of Learning and Development Research Forum, Vanderbilt University, Nashville, TN.

Adler, R.M, *Xu, M., & Rittle-Johnson, B. (2022, November). What counts as STEM, and does it matter? Poster presented at the 2022 Vanderbilt Kennedy Center Science Day. Nashville, TN.

*Diggs-Brown, C., **Adler, R.M**., & Rittle-Johnson, B. (2022, September). Predictors of postsecondary success. Poster presented at the Vanderbilt Undergraduate Research Fair, Nashville, TN.

Adler, R.M. (2022, April). Motivation, math achievement, and STEM career interest among Black high school students. Talk presented to Cognitive Science of Learning and Development Research Forum, Vanderbilt University, Nashville, TN.

*Xu, M., **Adler, R.M**., & Rittle-Johnson, B. (2021, September). How STEM career aspiration, gender disparities, and students' math and science motivations vary by the definition of STEM. Poster presented at the Vanderbilt Undergraduate Research Fair, Nashville, TN.

*Rohila, A., *Garcia, Y., *Gibson, J., **Adler, R.,** & Rittle-Johnson, B. (2021, September). "Me, Myself, and I:" An analysis of underrepresented students' perspectives on their postsecondary trajectories. Poster presented at the Vanderbilt Undergraduate Research Fair, Nashville, TN.

*Garcia, Y., Rittle-Johnson, B., *Rohila, A., *Gibson, J., & **Adler, R.M.** (2021, July). An analysis of underrepresented students' sources of support for postsecondary plans. Talk presented at the 2021 Leadership Alliance National Symposium.

Adler, R.M., & Rittle-Johnson, B. (2021, April). Applicability of expectancy-value theory for predicting math achievement and STEM career interest of Black students. 8th Annual Mechanisms of Learning Forum (Virtual).

*Brandon, J., **Adler, R**., & Rittle-Johnson, B. (2021, April). Underrepresented students' conceptualizations of mathematical capabilities. Poster presented at the 13th Annual Midwest Undergraduate Cognitive Science Conference (Virtual).

Adler, R.M. (2018, May). The effects of political affiliation on the processing of inaccurate ideas. Oral presentation at Northwestern's Undergraduate Research and Arts Exposition, Evanston, IL.

TEACHING EXPERIENCE

- **Teaching Assistant** **Fall 2021, 2022**
  - Quantitative Methods Department, Vanderbilt University, Nashville, TN
  - TA for PSY-PC 2110, Introduction to Statistical Analyses (35 undergraduate students; Instructor: Dr. Shane Hutton)
  - TA for PSY-GS 8870, Correlation and Regression (Graduate-level; 30 students; Instructor: Dr. Shane Hutton)
- **Guest lecturer** **Spring 2023**
  - PSY-GS 8470 Cognitive Science to the Classroom (Graduate-level; Instructor: Dr. Bethany Rittle-Johnson

MENTORED UNDERGRADUATES & MASTERS STUDENTS

*indicates undergraduate who went onto a PhD or master's program

- Jamila Brandon (Fisk University) 2020—2021
- Yanira Garcia (Emory University) 2021
- JaNiya Gibson (Fisk University) 2021
- Adriana Méndez-Fernández* (University of Puerto Rico) 2020—2022
- Aarushi Rohila* (Vanderbilt University; $5000 for Vanderbilt Undergraduate Summer Research Program) 2021—2023
- Danny Xu* (Vanderbilt University; $5000 for Vanderbilt Undergraduate Summer Research Program) 2021—2023
- Amanda Shelton (Hillsboro High School; winner of Tennessee Junior Academy of Science for project "Learning from mistakes: The benefit of incorrect worked examples") 2023
- Cree Diggs-Brown (Vanderbilt University) 2022

- Amelia Murray (Vanderbilt University) 2022—2023
- Xinran (Wendy) Wang* (Master's student, later PhD student at Vanderbilt University) 2022—present
    - Winner of 2025 Graduate Student Research Award for AERA SIG Studying and Self-Regulated Learning for "Testing the agenda-based regulation model with worked examples and problem solving"
- Emma Shelton 2023—2024
- Izabella Burghardt (Vanderbilt University) 2023—2025
- Lingfei (Fay) Cao (Master's student at Vanderbilt University) 2023—2025
- Chunxu (Teddy) Zhong (Quantitative Methods Master's student at Vanderbilt University) 2024—2025
- Yedina Solomon (High school student participating in School for Science and Mathematics at Vanderbilt) 2024

RELEVANT TUTORING AND MENTORING EXPERIENCE

2021—2023 **Vanderbilt Undergraduate Research Journal**, Graduate Mentor

2016—2018 **Eye to Eye, Northwestern** Volunteer Mentor

- Work one-on-one and in small groups with children with learning disabilities and ADHD on topics of self-advocacy and self-esteem

2014-2015 **NU Heights, Northwestern** Volunteer Tutor

- One-on-one in-school tutoring for middle school math and science students

PROFESSIONAL SERVICES

- Ad-hoc Reviewer at:
    - British Journal of Educational Psychology
    - Contemporary Educational Psychology
    - AERA-Open
- Ad-hoc Co-Reviewer at:
    - Current Directions in Psychological Science
    - Cognitive Science
    - Educational Psychology Review
    - Review of Education Research
    - Child Development
    - Journal of Experimental Psychology: General
    - Contemporary Educational Psychology
    - Learning and Instruction
    - Journal of Educational Psychology
- Department Representative for Psychology and Human Development department in Vanderbilt's Graduate Student Council 2023—2025

SKILLS

Certifications: Internal Review Board certified for Human Subjects Research
Computer Skills: Microsoft Office Programs; Eye-Gaze coding;

Programming: SPSS; Stata; SAS; R; Jamovi; MPlus; some experience with Lisrel, C, Java, and Python
Advanced Statistics: Multilevel modeling; Structural equation modeling; Item Response Theory; Latent profile analysis
Languages: conversational French