

Veena Paliwal, Ph.D.

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EDUCATION

University of Illinois at Urbana-Champaign (UIUC)
Doctor of Philosophy, Mathematics Education, 2013
Dissertation: Fostering Fluency with Basic Addition and Subtraction Facts
Advisor: Professor Arthur J. Baroody

UIUC
Master of Science, Applied Mathematics, 2008
Major: Probability theory and stochastic analysis
Advisor: Professor R. Sowers

Southern Illinois University at Carbondale (SIUC)
Master of Science, Mathematics, 2004
Thesis: Weak approximation of stochastic differential delay equation
Advisor: Professor Salah-Eldin A. Mohammed

TEACHING AND RESEARCH INTERESTS

Early numeracy development
Learning of basic number and arithmetic skills and concepts by young children
Teacher education
Stochastic analysis

PROFESSIONAL EXPERIENCE

Department of Computing and Mathematics, University of West Georgia (UWG)
Associate Professor August 2019-Present

Department of Mathematics, UWG
Assistant Professor August 2013-July 2019

Department of Mathematics and Statistics, Murray State University (MSU)
Assistant Professor August 2012-May 2013

GRANTS

Funded

- Faculty Research Grant (UWG), (Paliwal, PI), \$4,500.00, “Building Preservice Teachers’ Understanding of Fractions.” 2018-19

- U^Wise (Uⁿiversity of W^est G^eorgia Iⁿstitutional S^TEM E^xcellence), (Paliwal, PI), \$1,600.00, “Preservice teachers’ understanding of the basic properties to solve problems in mathematics.” 2016
- Spencer Grant—Spencer Foundation, (Paliwal, PI), \$40,827.00, “How can intervention best promote the learning of the cardinality principle?” 2015-17
- U^Wise, (Paliwal, PI), \$4,000.00, “Fostering Pre-Service Teachers' Conceptual Understanding of Probability via Manipulations.” 2015-16
- U^Wise, (Paliwal, PI), \$3,300.00, “Understanding Probability and Statistics Using Manipulatives” 2014-15

Unfunded

- Spencer Foundation Large Grants (Paliwal, CO-PI; Dr. A. J. Baroody, PI), \$497,252.00, “How Can Parents and Teachers Better Foster Preschoolers’ Understanding of a Key Foundation of Numeracy?” 2022-27
- NSF (Paliwal, CO-PI; Dr. Jonathan Corley, PI), \$277,587, “Working with Teachers to Design and Test CT-integrated Middle Grades Earth Science through a Small RPP Project.” 2021-24
- NSF (Paliwal, CO-PI; Dr. Shea Rose, PI), \$1,456,611.00, “Science Pedagogy Enhanced with CT Reinforced through Exploration (SPECTRE).” 2020-23
- NSF (Paliwal, CO-PI; Dr. Douglas Clements, PI), \$4,593,069.00, “Evaluating the Efficacy of Early Numeracy Instruction.” 2017-22
- NSF (Paliwal, CO-PI; Dr. Satyanarayana Swamy-Mruthinti, PI), \$982,631.00, “S-STEM at UWG.” 2017-22

AWARDS

- UWG’s inaugural Chancellor’s Learning Scholar selected by the University System of Georgia 2018-20
- College of Science and Mathematics Excellence in Research award, UWG 2016
- College of Science and Mathematics Excellence in Teaching award, UWG 2015
- James Machin Award for outstanding performance, College of Education, UIUC 2011
- Doctoral Fellowship, SIUC 2004
- Gold medal for first position in Bachelor of Science, Barkatullah University, India

ACADEMIC PUBLICATIONS

Journal Articles

- **Paliwal, V., & Baroody, A.J.** (2020). Cardinality principle understanding: the role of focusing on the subitizing ability. *ZDM Mathematics Education*, 52 (4), 649-661. <https://doi.org/10.1007/s11858-020-01150-0>
- **Paliwal, V., & Baroody, A. J.** (2020). Fostering the learning of subtraction concepts and the subtraction-as-addition reasoning strategy. *Early Childhood Research Quarterly*, 51, 403-415. <https://doi.org/10.1016/j.ecresq.2019.05.008>
- **Paliwal, V.** (2018). Do manipulatives foster pre-service teachers' understanding of probability? *Current Issues in Middle Level Education*, 23(1).
- **Paliwal, V. & Baroody, A. J.** (2018). How best to teach the cardinality principle? *Early Childhood Research Quarterly*, 44, 152-160. <https://doi.org/10.1016/j.ecresq.2018.03.012>
- **Paliwal, V.** (2017). Considering curriculum, standards, and assessments in mathematics instruction. *US-China Education Review A*, 7(3), 144-154.
- Baroody, A. J., Purpura, D. J., Eiland, M. D., Reid, E., & **Paliwal, V.** (2015). Does Fostering Reasoning Strategies for Relatively Difficult Basic Combinations Promote Transfer by K-3 Students? *Journal of Educational Psychology*, 108(4), 576-591. <https://doi.org/10.1037/edu0000067>
- **Paliwal, V.** (2013). Fostering Fluency with Basic Addition and Subtraction Facts. Doctoral dissertation. University of Illinois at Urbana-Champaign.
- **Paliwal, V., & Sharma, V.** (2011). The impact of the digital divide on education and health. *International Journal of Computer Science and Emerging Technologies*, 2 (1).

Book Chapters

- **Paliwal, V.** (2023). How focusing on learning from mistakes facilitated students' learning in Calculus Class? In J. W. Galle & D. P. Domizi (Eds.), *Putting it All Together: Creating and Scaling Exceptional Learning Within the Disciplines*. Rowman & Littlefield Publishers.
- **Paliwal, V., & Dycus, A.** (2021). Incorporating Brain Based Learning and Growth Mindset in Mathematics and English Instruction to Improve Students' Learning. In J. W. Galle & D. P. Domizi (Eds.), *Campus Conversations: Student Success Pedagogies in Practice*. Rowman & Littlefield Publishers.

- **Paliwal, V., & Fain, A. C.** (2020). The How, What, Why, and When of Teaching Mathematics in the K-12 Inclusive Classroom. In A. Singh, M. Viner, & C. Yeh (Eds.), *Special Education Design and Development Tools for School Rehabilitation Professionals* (pp. 1-20). Hershey, PA: IGI Global. doi:10.4018/978-1-7998-1431-3.ch001
- **Paliwal, V.** (2018). Keeping your head held high. In A. T. Kemp (Ed.), *The dignity of the calling: Educators share the beginnings of their journeys, 173-177*. Charlotte, NC: Information Age Publishing.
- Baroody, A. J., Purpura, D. J., Reid, E., **Paliwal, V.**, & Bajwa, N. P. (2012). Early childhood mathematics education. In P. Schuermann (Ed.), *Oxford Bibliographies Online*. New York: Oxford University Press.

Conference Proceedings

- **Paliwal, V.** (2023). Using exit tickets to learn from mistakes and developing growth mindset in an algebra class. *Proceedings of the forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. University of Nevada, Reno.
- **Paliwal, V.** (2023). Using Mistakes as Learning Tools to Facilitate Students' Learning in Calculus Class. *Paper presented at the 2023 annual meeting of the American Educational Research Association*. AERA Online Paper Repository.
- **Paliwal, V.**, Huett, K., Buzon, M. & Corley, J. (2022). Exploring Perceptions of In-service Middle School Science Teachers in integrating Mathematics. *Paper presented at the 2022 annual meeting of the American Educational Research Association*. AERA Online Paper Repository.
- **Paliwal, V.**, Huett, K., Buzon, M. & Corley, J. (2021). Integrating Mathematics in Science Instruction: Perceptions of In-service Middle School Science Teachers. In E. Langran & L. Archambault (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1447-1457). Online, United States: Association for the Advancement of Computing in Education (AACE). Retrieved September 3, 2021 from <https://www.learntechlib.org/primary/p/219303/>.
- **Paliwal, V.**, Baroody, A. J., & Das. A. (2020). Role of Reasoning Strategies in Promoting Students' Understanding With Basic Combinations. *Paper presented at the 2020 annual meeting of the American Educational Research Association*. AERA Online Paper Repository.
- **Paliwal, V.**, Baroody, A. J., & Das. A. (2019). Meaningfully Learning the Subtraction-as-

Addition Reasoning Strategy. *Paper presented at the 2019 annual meeting of the American Educational Research Association*. Retrieved 4/8/19, from the AERA Online Paper Repository.

- **Paliwal, V.**, Baroody, A. J., & Das. A. (2018). Teaching preschoolers cardinality principle by building on their subitizing ability. *Paper presented at the 2018 annual meeting of the American Educational Research Association*. Retrieved 4/14/18, from the AERA Online Paper Repository.
- **Paliwal, V.** & Baroody, A. J. (2017). How best to teach the cardinality principle? *Paper presented at the 2017 annual meeting of the American Educational Research Association*. Retrieved 5/1/17, from the AERA Online Paper Repository.
- Das, A., Epler-Brooks, P., & **Paliwal, V.** (2014). Teacher Candidates' Perceived Competence in Implementing Evidence Based Practices with Students with Learning and Behavior Disabilities. In M. Searson & M. Ochoa (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2014* (pp. 2402-2404). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
- **Paliwal, V.**, Baroody, A. J., & Purpura, D. J. (2012). Young children's use of a shortcut. *Proceedings of Society for Research on Educational Effectiveness*. Washington, D.C.
- Baroody, A. J., Eiland, M., **Paliwal, V.**, Bajwa, N., & Baroody, S. (2010). Fostering at-risk primary-grade children's fluency with basic addition combinations. *Proceedings of Society for Research on Educational Effectiveness*. Washington, D.C.

TEACHING EXPERIENCE

Department of Mathematics, UWG

2013-Present

- MATH-0997 (Support for Quantitative Reasoning)
- MATH-1001 (Quantitative Skills & Reasoning)
- MATH-1111 (College Algebra)
- MATH-1113 (Precalculus)
- MATH-1401 (Elementary Statistics)
- MATH-1413 (Survey of Calculus)
- MATH-1634 (Calculus I)

- MATH-2008 (Found of Numbers & Operations)
- MATH-3703 (Geometry for P-8 Teachers)
- MATH-3803 (Algebra for P-8 Teachers I)
- MATH-4713 (Probab/Statistic for P-8 Tchrs)
- MATH-4983 (Senior Project)

Department of Mathematics and Statistics, MSU 2012-2013

Instructor, MAT 115, Mathematics for Middle and Elementary Teachers I

Instructor, MAT 145, Trigonometry

Instructor, MAT 215, Mathematics for Middle and Elementary Teachers II

Department of Curriculum and Instruction, UIUC 2009-2012

Instructor, CI 432, Investigative Approach to Teaching Mathematics

Department of Mathematics, UIUC 2006-2008

Teaching Assistant, MATH 461, Probability Theory

Instructor, MATH 115, Pre-Calculus

Instructor, MATH 234, Calculus for Business

Instructor, Calculus, Upward Bound Program at Minority Affairs Department

Department of Mathematics, SIUC 2002-2004

Instructor, MATH 101, Trigonometry and Analytical Geometry

Instructor, MATH 109, Trigonometry and Analytical Geometry

Instructor, MATH 150, Calculus-I

Instructor, MATH 140, Short course in Calculus

Mathematics Teacher at R. L. S. School, India

Taught mathematics to K-12 students in Urban Setting

2000-2002

INVITED TALKS AND PRESENTATIONS

- **Paliwal, V.** (2023). *Facilitating students' understanding in an algebra class by developing growth mindset about mistakes*. The forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. University of Nevada.
- **Paliwal, V.** (2023). *Using exit tickets to learn from mistakes and developing growth mindset in an algebra class*. American Educational Research Association, Chicago, IL.
- **Paliwal, V.** (2023). *The Power of Focusing on Learning from the Mistakes in Algebra and Calculus classrooms*. USG Teaching and Learning Conference, Athens, GA.
- **Paliwal, V.,** Gordon, S., Moon, K., Sykes, S., Bellon, J, & Carter, K. (2023). *Small Teaching Strategies in Math Courses to Improve Student Success as Part of the STEM IV*

Grant. Panel discussion at Innovations in Pedagogy Conference, UWG.

- **Paliwal, V.**, Huett, K., Buzon, M. & Corley, J. (2022). *Exploring Perceptions of In-service Middle School Science Teachers in integrating Mathematics*. American Educational Research Association, San Diego, CA.
- Huett, K., **Paliwal, V.**, Buzon, M., Simon, M.E., & Corley, J. (2021). *Understanding teachers' perspectives related to the feasibility and need for CT-integrated middle grades earth science*. Presentation delivered at the Association for Educational Communications and Technology (AECT) International Convention, Online and in Chicago, Illinois.
- **Paliwal, V.**, Huett, K., Buzon, M. & Corley, J. (2021). *Integrating Mathematics in Science Instruction: Perceptions of In-service Middle School Science Teachers*. Society for Information Technology & Teacher Education International Conference.
- **Paliwal, V.** & Dycus, A. (2021). *Incorporating Brain-Based Learning and Growth mindset to Enhance Instruction and Engage Students*. Innovations in Pedagogy Conference, UWG.
- **Paliwal, V.**, Baroody, A. J., & Das. A. (2020). *Role of Reasoning Strategies in Promoting Students' Understanding With Basic Combinations*. American Educational Research Association, presented online due to covid.
- **Paliwal, V.**, Baroody, A. J., & Das. A. (2019). *Meaningfully Learning the Subtraction-as-Addition Reasoning Strategy*. American Educational Research Association, Toronto, ON.
- **Paliwal, V.**, Gaquere, A., Schroer, T., & Fain, A. (2019). *Improving Student Success Using Growth Mindset*. Innovations in Pedagogy Conference, UWG.
- **Paliwal, V.** (2018). *Effectiveness of Manipulatives in a Probability Instruction*. Innovations in Pedagogy Conference, UWG.
- **Paliwal, V.**, Baroody, A. J., & Das. A. (2018). *Teaching Preschoolers Cardinality Principle by Building on their Subitizing Ability*. American Educational Research Association, New York, NY.
- London, S. Das, A. & **Paliwal, V.** (2018). *Self-Efficacy and Motivation in Graduate College Students*. American Educational Research Association, New York, NY.
- **Paliwal, V.** (2018). *Fostering Pre-service Teachers' Understanding of Basic Arithmetic Principles*. Paper presented at Georgia STEM Conference, Savannah, GA.
- **Paliwal, V.** (2017). *A comparison of American and Indian education system*. Invited lecture series, Birla College, Kalyan, India.

- **Paliwal, V.** (2017). *Pre-service teachers' understanding of arithmetic principles*. Innovations in Pedagogy Conference, UWG.
- **Paliwal, V. & Baroody, A. J.** (2017). *How best to teach the cardinality principle?* American Educational Research Association, San Antonio, TX.
- **Paliwal, V.** (2016). *Do manipulatives help pre-service teachers in understanding Probability?* Paper presented at Georgia STEM Conference, Statesboro, GA.
- **Paliwal, V.** (2015). *Mathematics instruction for students across the world*. Global Education Conference.
- **Paliwal, V.** (2014). *My professional journey*. American Association for Teaching & Curriculum, 21st conference, Tampa, FL.
- Das, A., Epler-Brooks, P., & **Paliwal, V.** (2014). *Teacher Candidates' Perceived Competence in Implementing Evidence Based Practices with Students with Learning and Behavior Disabilities*. Association for the Advancement of Computing in Education.
- **Paliwal, V.** (2012). *Young children's use of strategies to solve addition problems*. Mathematics Colloquium, North Dakota State University.
- **Paliwal, V.** (2012). *Young children's understanding of make-ten and near doubles*. GS Conference, UIUC
- **Paliwal, V.** (2011). *Young children's use of shortcut*. GS Conference, UIUC.
- **Paliwal, V.** (2008). *Random perturbation of canards*. GS Conference, University of Wisconsin-Madison.

REVIEWER

Academic Journals

- *Early Childhood Research Quarterly*
- *Frontiers in Psychology*
- *Georgia Journal of Science*
- *Journal of Early Years Education*
- *Journal of Research in Childhood Education*

Book

- *Teaching Children Mathematics*

Conference Proposals

- American Education Research Association
- National Council of Teachers of Mathematics
- Psychology of Mathematics Education-North American Chapter

Grant Proposal

- Improving Teacher Quality State Grants

PROFESSIONAL ORGANIZATIONS

- American Educational Research Association (AERA)
- National Council of Teachers of Mathematics (NCTM)
- American Mathematical Society (AMS)