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EDUCATION

- Ph.D. May 1998
Curriculum and Instruction, The University of North Carolina at Chapel Hill.
Moyer, P. S. (1998). *Using Mathematics Manipulatives: Control- Versus Autonomy-Oriented Middle Grades Teachers*. Dissertation Abstracts International, 59-07A, 2406.
- M.Ed. August 1988
Master of Education, Millersville University of Pennsylvania.
- B.S. May 1983
Elementary Education, The Pennsylvania State University, State College.
Pennsylvania Instructional II Certificate, K-8 (1987).

EMPLOYMENT HISTORY

UTAH STATE UNIVERSITY

Director, Mathematics Education and Leadership Programs (2011-present).

Professor, Mathematics Education (2008-present).

School of Teacher Education and Leadership.

College of Education and Human Services, Utah State University.

Responsibilities include directing the graduate Mathematics Education and Leadership Programs, teaching mathematics education courses in the School of Teacher Education and Leadership, program development in graduate and undergraduate mathematics education, and pursuing a professional agenda of research and service in the field of STEM education supported by external funding.

GEORGE MASON UNIVERSITY

Project Investigator, Math and Science Partnership Program Evaluation (2004-11).

\$14.7 million dollar project, Funded by the National Science Foundation.

Responsibilities include directing and managing a \$3.5 million dollar subcontract budget housed at George Mason University; collaborating with partner universities and research organizations, including COSMOS Corp., Brown and Vanderbilt Universities; hiring and supervising project staff, including two fulltime Research Faculty, one Administrative Assistant, and seven Graduate Research Assistants; collaborating with eight tenure line faculty in the College of Education and the Mathematics Dept. to design research studies within the evaluation project; and publishing and presenting evaluation findings (with Lead PI, R. Yin, and Co-PIs, K. Wong and J. Scherer).

Coordinator, Mathematics Education Leadership Program (2004-2008).

College of Education and Human Development, Graduate School of Education, George Mason University, Fairfax, Virginia.

Program Webpage: <http://gse.gmu.edu/programs/math/>

Responsibilities included coordinating all program activities in the Mathematics Education Leadership Program; developing new program offerings and designing new courses within the program; recruiting, selecting, and training adjunct faculty to staff program courses; creating program brochures and webpages; and developing and disseminating newsletters and program information to prospective and current students and alumni.

Director & Founder, *Mathematics Education Center* (2003-2008).

College of Education and Human Development, Graduate School of Education, George Mason University, Fairfax, Virginia.

Center Webpage: <http://gse.gmu.edu/cscvm/main/>

Responsibilities included direction for the university's Mathematics Education Center, and its missions which address contemporary issues in mathematics education, focusing on the study of representations including physical and virtual manipulatives. The Center has strong research and public service components supported and sustained by external funding. Between 2003 and 2008, the Center's funding totaled over \$15 million dollars.

Professor, Mathematics Education (2008). Associate Professor (2003-2008). Assistant Professor (2000-2003). College of Education and Human Development, Graduate School of Education, George Mason University, Fairfax, Virginia.

Responsibilities included teaching Ph.D. and Master's-level graduate courses in the Mathematics Education Leadership, Elementary Education, and ASTL programs; designing, revising and implementing academic programs for students; advising students within the programs; and developing and implementing a professional agenda of teaching, citizenship, and scholarship within the university community.

THE UNIVERSITY OF ALABAMA

Assistant Professor, Mathematics Education (1997-2000).

College of Education, The University of Alabama, Tuscaloosa, Alabama.

Responsibilities included teaching graduate and undergraduate courses in the elementary education program, assisting in the development and implementation of programs for students, advising students, and supervising graduate students.

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Assistant Coordinator, The Mathematics and Science Education Network Pre-College Program (1994-1997).

Center for Mathematics and Science Education, The University of North Carolina at Chapel Hill, NC.

Coordinated enrichment programs in mathematics and science for females and underrepresented minority students in 21 middle schools and high schools, wrote grants, and provided professional development in K-8 mathematics for teachers.

Summer Enrichment Teacher (1994).

Center for Mathematics and Science Education, School of Education, The University of North Carolina at Chapel Hill, NC.

Taught Grade 8 mathematics in a summer enrichment program targeting underrepresented students.

University Supervisor & Teaching Assistant, Middle Grades Program (1993-1994).

School of Education, The University of North Carolina at Chapel Hill, NC.

Supervised preservice middle grades teachers during their student teaching internships.

Planned and provided instruction for preservice middle grades teachers enrolled in the EDUC 66 course.

PUBLIC SCHOOL TEACHING EXPERIENCE - 10 YEARS

Cooperating Teacher (1990-1993).

Kutztown University, Kutztown, Pennsylvania.

Supervised preservice elementary teachers during their student teaching internship in public school classroom placements.

Elementary School Teacher, Grade 5, All subjects (1988-1993).

Wilson School District, West Lawn, Pennsylvania.

Middle School Teacher, Grades 6 & 8, Mathematics and Language Arts (1983-1988).
Cocalico School District, Denver, Pennsylvania.

AWARDS & PROFESSIONAL RECOGNITION

- **Outstanding Paper Award** (2019). Society for Information Technology and Teacher Education (SITE). Paper: Litster, K., & Moyer-Packenham, P. S. (2019). How the balance of gaming and mathematics elements effects student learning in digital math games. In K. Graziano (Ed.), *Proceedings of the Society for Information Technology and Teacher Education (SITE) International Conference* (pp. 2163-2172). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE).
- **Top Downloaded Article in 2017-2018 Award** (2019). Recognized as a top 20 most read paper in the *School Science and Mathematics* journal for 2017-2018. Paper: MacDonald, B. L., Westenskow, A., Moyer-Packenham, P. S., & Child, B. (2018). Components of place value understanding: Targeting mathematical difficulties when providing interventions. *School Science and Mathematics*, 118(1-2), 17-29. <https://doi.org/10.1111/ssm.12258>
- **Graduate Mentor of the Year Award for Utah State University** (2018). Competitive university-level award.
- **Outstanding Paper Award** (2018). Society for Information Technology and Teacher Education (SITE). Paper: Moyer-Packenham, P. S., Lommatsch, C., Litster, K., Ashby, M. J., & Roxburgh, A. (2018). The role of design features in the affordances of digital math games. In E. Langran & J. Borup (Eds.), *Proceedings of the Society for Information Technology and Teacher Education (SITE) International Conference* (pp. 465-473). Waynesville, NC: Association for the Advancement of Computing in Education (AACE).
- **Graduate Mentor of the Year Award for the EEJ College of Education and Human Services** (2017). Utah State University. Competitive college-level award.
- **Presidential Doctoral Research Fellow Award** (2016). Office of Research and Graduate Studies, Utah State University. Competitive university award that provides the faculty member with funding for a 20-hour Graduate Research Assistant for 4 years.
- **National Council of Teachers of Mathematics (NCTM) Travel Grant Award** (\$2,500). Selected from among over 700 applicants to receive funding to participate in the International Congress of Mathematics Education (ICME) Conference in Hamburg, Germany (2016); funding provided by the National Science Foundation.
- **Outstanding Faculty Supporter of the Library Award**. Awarded by Dean Richard Clement, Utah State University Library, for my consistent support for the library and engagement with the library instruction program (2013).
- **Best Paper Award**. American Educational Research Association (AERA), Applied Research in Virtual Environments for Learning (ARVEL). Paper: *Effects of Virtual Manipulatives on Student Achievement and Mathematics Learning*. Vancouver, British Columbia, Canada (2012).
- **2012 Teacher of the Year Award**, EEJ College of Education and Human Services (one faculty member selected per year in a college of over 100 faculty), Utah State University (2012).
- **Graduate Mentor of the Year Award Nominee**. School of Teacher Education and Leadership, EEJ College of Education and Human Services, Utah State University (2010-11, 2011-12).
- **Researcher/Scholar of the Year Award**, School of Teacher Education and Leadership, EEJ College of Education and Human Services, Utah State University (2010-11).
- **Cited in AMTE Connections as the Featured Mathematics Education Article** for the manuscript: *Virtual manipulatives used by K-8 teachers for mathematics instruction: Considering mathematical, cognitive, and pedagogical fidelity* (2008).

- **Teaching Excellence Award Finalist**, George Mason University (2006; 2007).
- **Outstanding Supervisor Award Nominee**, George Mason University (2006).
- **National Council of Teachers of Mathematics Board of Director's Nominee** (2003).
- **AcademicKeys Who's Who in Education** (2003). (<http://Education.AcademicKeys.com>)
- **Cited by the Provost** publication on Research, Scholarly, and Creative Activities for the publication of the book – *What Principals Need to Know About Teaching Mathematics* – George Mason University (2003).
- **Excellence in Education Award Nominee** – Penn State University Alumni Society (2002).
- **Cited by the Provost** publication on Research, Scholarly, and Creative Activities for an International Presentation in Australia on Virtual Manipulatives – George Mason University (2002).
- **Quoted** on the use of Virtual Manipulatives in *Virginia Parent News* (2002).
- **Quoted** on the use of Manipulatives and Children's Math Books in the nationally syndicated column, *Dear Teacher* (2001).
- **Mathematics and Science Education Network Pre-College Program Service Award** (1997).
- **Outstanding Service** in the Mathematics and Science Education Network Summer Academy (1994-1996).
- **Pennsylvania Teacher of the Year Nominee** (1989).
- **NEA A+ Awards for Excellence in Education Nominee** (1988).
- **90th Percentile Rank**, National Teachers Exam (1987).

RESEARCH

Research Interests:

- mathematics representations (physical, pictorial, symbolic & virtual)
- mathematics teacher development

PUBLICATIONS

Books

1. Moyer-Packenham, P. S. (2016). *International perspectives on teaching and learning mathematics with virtual manipulatives*. Switzerland: Springer.
2. Moyer-Packenham, P. S. (2010). *Teaching mathematics with virtual manipulatives*. Rowley, MA: Didax.
3. Shellard, Elizabeth, & Moyer, Patricia S. (2002). *What principals need to know about teaching mathematics*. Alexandria, VA: National Association of Elementary School Principals/Educational Research Services.

Journal Articles (Refereed)

1. Glaze, A., Moyer-Packenham, P. S., & Longhurst, M. (2021). Teachers' conceptions of mathematics and the use of intelligent tutoring systems, calculators, dynamic geometry software and Desmos in the classroom. *Journal of Computers in Mathematics and Science Teaching*, 40(3), 201-227.
2. Mgonja, T. A., Marx, S., & Moyer-Packenham, P. (2021). A review of culturally relevant pedagogy for students of color in mathematics. *Multicultural Education*, 7(6), 422-432.
3. Moyer-Packenham, P. S., Roxburgh, A. L., Litster, K., & Kozlowski, J. (2021). Relationships between semiotic representational transformations and performance outcomes in digital math games. *Technology, Knowledge and Learning*. DOI:10.1007/s10758-021-09506-5
4. Bullock, E. P., Roxburgh, A. L., Moyer-Packenham, P. S., Bektas, E., Webster, J. S., & Bullock, K. A. (2021). Connecting the dots: Understanding the interrelated impacts of type, quality and children's awareness of design features and the mathematics content learning goals in digital math games and related learning outcomes. *Journal of Computer Assisted Learning*, 37(2), 557-586. DOI:10.1111/jcal.12508
5. Litster, K., Lommatsch, C. W., Novak, J. R., Moyer-Packenham, P. S., Harmon, M. J., Roxburgh, A. L., & Bullock, E. P. (2020). The role of gender on the associations among children's attitudes, mathematics knowledge, digital game use, perceptions of affordances, and achievement. *International Journal of Science and Mathematics Education*. doi: 10.1007/s10763-020-10111-8
6. Tucker, S. I., & Moyer-Packenham, P. S. (2020). Exploring the phenomenon of distance in children's interactions with touchscreen digital mathematics games. *International Journal of Mathematical Education in Science and Technology*, 1464-5211. doi: 10.1080/0020739X.2020.1766140
7. Moyer-Packenham, P. S., Ashby, M. J., Litster, K., Roxburgh, A. L., & Kozlowski, J. S. (2020). Examining how design features promote children's awareness of affordances in digital math games. *Journal of Computers in Mathematics and Science Teaching*, 39(2), 169-180.
8. Gulkilik, H., Moyer-Packenham, P. S., Ugurlu, H. H., & Yuruk, N. (2020). Characterizing the growth of one student's mathematical understanding in a multi-representational learning environment. *The Journal of Mathematical Behavior*, 58, 1-17.

9. Litster, K., & Moyer-Packenham, P. S. (2020). How the balance of gaming and mathematics elements effects student learning in digital math games. *Journal of Computers in Mathematics and Science Teaching*, 39(1), 33-48.
10. Throndsen, J., Shumway, J. F., & Moyer-Packenham, P. S. (2020). The relationship between mathematical literacy at kindergarten entry and preschool attendance, type and quality. *Early Childhood Education Journal*, 48, 473-483. doi: 10.1007/s10643-019-01014-7 (<https://rdcu.be/b4pqT>)
11. Lommatsch, C. W., & Moyer-Packenham, P. S. (2019). Learning logic: Examining the effects of context ordering on reasoning about conditionals. *International Journal of Mathematical Education in Science and Technology*. doi: 10.1080/0020739X.2019.1626502
12. Litster, K., Moyer-Packenham, P. S., & Reeder, R. (2019). Base-10 blocks: A study of iPad virtual manipulative affordances across primary grade levels. *Mathematics Education Research Journal*, 31(3), 349-365. doi: 10.1007/s13394-019-00257-2
13. Shumway, J. F. & Moyer-Packenham, P. S. (2019). A counting-focused instructional treatment to improve number sense: An exploratory classroom-based intervention study. *The Mathematics Enthusiast*, 16(1), Article 14.
14. Moyer-Packenham, P. S., Lommatsch, C. W., Litster, K., Ashby, J., Bullock, E. K., Roxburgh, A. L., Shumway, J. F., Speed, E., Covington, B., Hartmann, C., Clarke-Midura, J., Skaria, J., Westenskow, A., MacDonald, B., Symanzik, J., & Jordan, K. (2019). How design features in digital math games support learning and mathematics connections. *Computers in Human Behavior*, 91, 316-332. doi: 10.1016/j.chb.2018.09.036
15. Baker, J. M., Moyer-Packenham, P. S., Tucker, S. I., Shumway, J. F., Jordan, K. E., & Gillam, R. B. (2018). The brain's response to digital math apps: A pilot study examining children's cortical responses during touch-screen interactions. *Journal of Computers in Mathematics and Science Teaching*, 37(1), 69-86.
16. MacDonald, B. L., Westenskow, A., Moyer-Packenham, P. S., & Child, B. (2018). Components of place value understanding: Targeting mathematical difficulties when providing interventions. *School Science and Mathematics*, 118(1-2), 17-29. <https://doi.org/10.1111/ssm.12258>
17. Tucker, S. I., Lommatsch, C. W., Moyer-Packenham, P. S., Anderson-Pence, K. L., & Symanzik, J. (2017). Kindergarten children's interactions with touchscreen mathematics virtual manipulatives: An innovative mixed methods analysis. *International Journal of Research in Education and Science*, 3(2), 646-665.
18. Bullock, E., Shumway, J. F., Watts, C., & Moyer-Packenham, P. S. (2017). Affordance access matters: PreSchool children's learning progressions while interacting with touch-screen mathematics apps. *Technology, Knowledge and Learning*, 1-27. doi: 10.1007/s10758-017-9312-5
19. Hunt, J., Westenskow, A., & Moyer-Packenham, P. S. (2017). Variations of reasoning in equal sharing of children who experience low achievement in mathematics: Competence in context. *Education Sciences*, 7(37), 1-13. doi: 10.3390/educsci7010037
20. Westenskow, A., Moyer-Packenham, P. S., & Child, B. (2017). An iceberg model for improving mathematical understanding and mindset or disposition: An individualized summer intervention program. *Journal of Education*, 197(1), 1-9.
21. Suh, J. M., & Moyer-Packenham, P. S. (2016). How affordances and constraints of physical and virtual manipulatives support the development of procedural fluency and algorithmic thinking in mathematics. *International Journal for Research in Mathematics Education*, 6(2), 245-265.
22. Shumway, J. F., Westenskow, A., & Moyer-Packenham, P. S. (2016). An exploratory study of a story problem assessment: Understanding children's number sense. *International Journal for Mathematics Teaching and Learning*, 17(3), 1-40.

23. Watts, C., Moyer-Packenham, P. S., Tucker, S. I., Bullock, E., Shumway, J. F., Westenskow, A., Boyer-Thurgood, J., Anderson-Pence, K., Mahamane, S., & Jordan, K. (2016). An examination of children's learning progression shifts while using touch-screen virtual manipulative mathematics apps. *Computers in Human Behavior*, 64, 814-828.
24. Westenskow, A., & Moyer-Packenham, P. (2016). Using an iceberg intervention model to understand equivalent fraction learning when students with mathematical learning difficulties use different manipulatives. *International Journal for Technology in Mathematics Education*, 23(2), 45-62.
25. Shumway, J. F., Moyer-Packenham, P. S., Baker, J. M., Westenskow, A., Anderson-Pence, K. L., Tucker, S. I., Boyer-Thurgood, J., & Jordan, K. E. (2016). Using open-response fraction items to explore the relationship between instructional modalities and students' solution strategies. *International Journal of Education in Mathematics, Science and Technology*, 4(2), 112-132. doi:10.18404/ijemst.20845
26. Tucker, S. I., Moyer-Packenham, P. S., Shumway, J. F., & Jordan, K. E. (2016). Zooming in on student's thinking: How a number line app revealed, concealed, and developed students' number understanding. *Australian Primary Mathematics Classroom*, 21(1), 23-28.
27. Anderson-Pence, K., & Moyer-Packenham, P. (2016). The influence of different virtual manipulative types on student-led techno-mathematical discourse. *Journal of Computers in Mathematics and Science Teaching*, 35(1), 5-31.
28. Moyer-Packenham, P. S., Bullock, E. P., Shumway, J. F., Tucker, S. I., Watts, C., Westenskow, A., Anderson-Pence, K. L., Maahs-Fladung, C., Boyer-Thurgood, J., Gulkilik, H., & Jordan, K. (2016). The role of affordances in children's learning performance and efficiency when using virtual manipulative mathematics touch-screen apps. *Mathematics Education Research Journal*, 28(1), 79-105. doi: 10.1007/s13394-015-0161-z
29. Tucker, S. I., Moyer-Packenham, P. S., Westenskow, A., & Jordan, K. E. (2016). The complexity of the affordance-ability relationship when second-grade children interact with mathematics virtual manipulative apps. *Technology, Knowledge and Learning*, 21, 341-360. <http://doi.org/10.1007/s10758-016-9276-x>
30. Moyer-Packenham, P. S., Shumway, J. F., Bullock, E., Tucker, S. I., Anderson-Pence, K. L., Westenskow, A., Boyer-Thurgood, J., Maahs-Fladung, C., Symanzik, J., Mahamane, S., MacDonald, B., & Jordan, K. (2015). Young children's learning performance and efficiency when using virtual manipulative mathematics iPad apps. *Journal of Computers in Mathematics and Science Teaching*, 34(1), 41-69.
31. Moyer-Packenham, P. S., Tucker, S. I., Westenskow, A., & Symanzik, J. (2015). Examining patterns in second graders' use of virtual manipulative mathematics apps through heatmap analysis. *International Journal of Educational Studies in Mathematics*, 2(2), 1-16.
32. Westenskow, A., Boyer-Thurgood, J., & Moyer-Packenham, P. S. (2015). A window into mathematical support: How parents' perceptions change following observations of mathematics tutoring. *Journal of Research in Childhood Education*, 29(4), 458-475. doi: 10.1080/02568543.2015.1073816
33. Anderson-Pence, K. L., Moyer-Packenham, P. S., Westenskow, A., Shumway, J., & Jordan, K. (2014). Relationships between visual static models and students' written solutions to fraction tasks. *International Journal for Mathematics Teaching and Learning*, 15, 1-18. <http://www.cimt.plymouth.ac.uk/journal/default.htm>
34. Moyer-Packenham, P. S., Baker, J., Westenskow, A., Anderson-Pence, K., Shumway, J. F., & Jordan, K. E. (2014). Predictors of achievement when virtual manipulatives are used for mathematics instruction. *Journal of Research in Mathematics Education (REDIMAT)*, 3(2), 121-150. doi:10.4471/redimat.2014.46 <http://dx.doi.org/10.4471/redimat.2014.46>
35. Moyer-Packenham, P. S., Bolyard, J. J., & Tucker, S. (2014). Second graders' mathematical practices for solving fraction tasks. *Investigations in Mathematics Learning*, 7(1), 54-81.

36. Murray, G. V., & Moyer-Packenham, P. S. (2014). Relationships between mathematics instructional schedule types and performance on the Algebra I criterion-referenced test. *Journal of Education*, 194(2), 35-43.
37. Westenskow, A., Moyer-Packenham, P. S., Anderson-Pence, K. L., Shumway, J. F., & Jordan, K. (2014). Cute Drawings? The disconnect between students' pictorial representations and their mathematics responses to fraction questions. *International Journal for Research in Mathematics Education*, 1(1), 81-105.
38. Moyer-Packenham, P. S., & Westenskow, A. (2013). Effects of virtual manipulatives on student achievement and mathematics learning. *International Journal of Virtual and Personal Learning Environments*, 4(3), 35-50. *Best Paper Award: American Educational Research Association (AERA), Vancouver, Canada (2012). Featured on mathematics education podcast: http://mathed.podomatic.com/entry/2014-02-04T16_34_01-08_00 Podcast stats: downloads = 419; streaming video plays = 54 (01.23.2015)*
39. Moyer-Packenham, P., Baker, J., Westenskow, A., Anderson, K., Shumway, J., Rodzon, K., & Jordan, K., The Virtual Manipulatives Research Group at Utah State University. (2013). A study comparing virtual manipulatives with other instructional treatments in third- and fourth-grade classrooms. *Journal of Education*, 193(2), 25-39. *Featured Article: Special Issue on Technology in Education.*
40. Moyer-Packenham, P. S., Salkind, G. W., Bolyard, J., & Suh, J. M. (2013). Effective choices and practices: Knowledgeable and experienced teachers' uses of manipulatives to teach mathematics. *Online Journal of Education Research*, 2(2), 18-33. (Online: <http://www.onlineresearchjournals.org/IJER/cont/2013/apr.htm>)
41. Brown, A., Westenskow, A., & Moyer-Packenham, P. (2012). Teaching anxieties revealed: Pre-service elementary teachers' reflections on their mathematics teaching experiences. *Teaching Education*, 23(4), 365-385.
42. Bolyard, J., & Moyer-Packenham, P. S. (2012). Making sense of integer arithmetic: The effect of using virtual manipulatives on students' representational fluency. *Journal of Computers in Mathematics and Science Teaching*, 31(2), 93-113.
43. Moyer-Packenham, P. S., & Suh, J. M. (2012). Learning mathematics with technology: The influence of virtual manipulatives on different achievement groups. *Journal of Computers in Mathematics and Science Teaching*, 31(1), 39-59.
44. Moyer-Packenham, P. S., Ulmer, L. A., & Anderson, K. L. (2012). Examining pictorial models and virtual manipulatives for third-grade fraction instruction. *Journal of Interactive Online Learning*, 11(3), 103-120.
45. Moyer-Packenham, P. S., & Westenskow, A. (2012). Processes and pathways: How do mathematics and science partnerships measure and promote growth in teacher content knowledge? *School Science and Mathematics*, 112(3), 133-146.
46. Brown, A. B., Westenskow, A., & Moyer-Packenham, P. S. (2011). Elementary pre-service teachers: Can they experience mathematics teaching anxiety without having mathematics anxiety? *Issues in the Undergraduate Mathematics Preparation of School Teachers: The Journal*, 5, 1-14. (Online: www.k-12prep.math.ttu.edu)
47. Moyer-Packenham, P. S., Bolyard, J. J., Oh, H., & Cerar, N. I. (2011). Common features of professional development activities for mathematics and science teachers. *Professional Development in Education*, 37(4), 571-589.
48. Westenskow, A., & Moyer-Packenham, P. S. (2011). Canine conjectures: Using data for proportional reasoning. *Mathematics Teaching in the Middle School*, 17(1), 26-32.
49. Alligood, K. T., Moyer-Packenham, P. S., & Granfield, P. G. (2009). Research mathematicians' participation in the MSP program. *Journal of Educational Research & Policy Studies*. 9(2), 23-42.

50. Moyer-Packenham, P. S., Kitsantas, A., Bolyard, J. J., Huie, F., & Irby, N. (2009). Participation by STEM faculty in mathematics and science partnership activities for teachers. *Journal of STEM Education*, 10(2), 17-36.
51. Moyer-Packenham, P. S., Parker, J. L., Kitsantas, A., Bolyard, J. J., & Huie, F. (2009). Increasing the diversity of teachers in mathematics and science partnerships. *Journal of Educational Research & Policy Studies*, 9(2), 43-72.
52. Bolyard, J. J., & Moyer-Packenham, P. S. (2008). A review of the literature on mathematics and science teacher quality. *Peabody Journal of Education*, 83(4), 509-535.
53. Kridler, P. G., & Moyer-Packenham, P. S. (2008). Mathematics circles: A structured approach to problem solving. *Mathematics Teaching in the Middle School*, 14(4), 214-221.
54. Moyer-Packenham, P. S., Bolyard, J. J., Kitsantas, A., & Oh, H. (2008). The assessment of mathematics and science teacher quality. *Peabody Journal of Education*, 83(4), 562-591.
55. Moyer-Packenham, P.S., Salkind, G., & Bolyard, J.J. (2008). Virtual manipulatives used by K-8 teachers for mathematics instruction: Considering mathematical, cognitive, and pedagogical fidelity. *Contemporary Issues in Technology and Teacher Education*, 8(3). (Online: <http://www.citejournal.org/vol8/iss3/mathematics/article1.cfm>)
56. Suh, J., & Moyer, P. S. (2007). Developing students' representational fluency using virtual and physical algebra balances. *Journal of Computers in Mathematics and Science Teaching*, 26(2), 155-173.
57. Moyer, P. S., Dockery, K., Jamieson, S., & Ross, J. (2006). Code RED (remediation and enrichment days): The complex journey of a school and university partnership's process to increase mathematics achievement. *Action in Teacher Education*, 28(4), 75-91.
58. Moyer, P. S., & Husman, J. (2006). Integrating coursework and field placements: The impact on preservice elementary mathematics teachers' connections to teaching. *Teacher Education Quarterly*, 33(1), 37-56.
59. Moyer-Packenham, P. S., Bolyard, J. J., Oh, H., Kridler, P., & Salkind, G. (2006). Representations of teacher quality, quantity, and diversity in a national mathematics and science program. *Journal of Educational Research & Policy Studies*, 6(2), 1-40.
60. Smith, L., Sterling, D. R., & Moyer-Packenham, P. S. (2006). Activities that really measure up. *Science and Children*, 44(2), 30-33.
61. Staley, J. W., Moyer, P. S., & Sterling, D. R. (2006). A penny's worth of principles and standards using scientific notation. *Centroid*, 32(2), 8-16.
62. Moyer-Packenham, P. S. (2005). Using virtual manipulatives to investigate patterns and generate rules in algebra. *Teaching Children Mathematics*, 11(8), 437-444.
63. Niezgoda, D. A., & Moyer, P. S. (2005). Hickory dickory dock: Navigating through data analysis. *Teaching Children Mathematics*, 11(6), 292-300.
64. Reimer, K., & Moyer, P. S. (2005). Third graders learn about fractions using virtual manipulatives: A classroom study. *Journal of Computers in Mathematics and Science Teaching*, 24(1), 5-25.
65. Staley, J., Moyer-Packenham, P., Lynch, M. C. (2005). Technology supported mathematics Environments: Telecollaboration in a secondary statistics classroom. *The Australian Mathematics Teacher*, 61(4), 28-32.
66. Suh, J., Moyer, P. S., & Heo, H. J. (2005). Examining technology uses in the classroom: Developing fraction sense using virtual manipulative concept tutorials. *The Journal of Interactive Online Learning*, 3(4), 1-22.

67. Heo, H. J., Suh, J., & Moyer, P. S. (2004). Impacting student confidence: The effects of using virtual manipulatives and increasing fraction understanding. *The Journal of Educational Research in Mathematics*, 14(2), 207-219.
68. Kosbob, S., & Moyer, P. S. (2004). Picnicking with fractions. *Teaching Children Mathematics*, 10(7), 375-381.
69. Mailley, E., & Moyer, P. S. (2004). The mathematical candy store: Weight matters. *Teaching Children Mathematics*, 10(8), 388-393.
70. Moyer, P. S., & Jones, M. G. (2004). Controlling choice: Teachers, students, and manipulatives in mathematics classrooms. *School Science and Mathematics*, 104(1), 16-31.
71. Moyer, P. S., & Mailley, E. (2004). Inchworm and a half: Developing fraction and measurement concepts using mathematical representations. *Teaching Children Mathematics*, 10(5), 244-252.
72. Sweda, J. R., Knotts, L. A., & Moyer, P. S. (2004). Mr. Greenthumb's garden. *Teaching Children Mathematics*, 11(4), 217-225.
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Journal Articles (Invited)

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Book Chapters & Monographs (Refereed)

1. Bullock, E., & Moyer-Packenham, P. S. (2020). The importance of shared vision and stakeholder influence on K-12 school leaders' efforts to improve student mathematics achievement. In H. Tran, D. A. Smith, & D. G. Buckman (Eds.), *Stakeholder engagement: Improving education through multi-level community relations* (pp. 33-58). Rowman & Littlefield.
2. Moyer-Packenham, P. S., Litster, K., Roxburgh, A. L., Kozlowski, J. S., & Ashby, M. J. (2019). Relationships between mathematical language, representation connections, and learning outcomes in digital games. In D. C. Gibson & M. N. Ochoa (Eds.), *Research highlights in technology and teacher education 2019* (pp. 55-64). Association for the Advancement of Computing in Education (AACE).
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Online Publications (Invited)

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Media (Invited)

Moyer-Packenham, P. S. (2016). *Strategies teachers can use for different types of virtual manipulative environments to promote mathematics learning*. Online Teacher Talk developed and recorded for the University of Wyoming. https://drive.google.com/file/d/0B_ipyXydQ81DZjlsY0szRXd4MDQ/view?usp=sharing

Mathematics Methods Textbook Publications

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Conference Proceedings (Refereed)

1. Roxburgh, A. L., Moyer-Packenham, P. S., & Bullock, E. K. (2021). Children's use of systemic functional linguistic metafunctions during digital math gameplay. In E. Langran & L. Archambault (Eds.), *Proceedings of Society for Information Technology and Teacher Education (SITE) International Conference* (pp. 1164-1170). Online, United States: Association for the Advancement of Computing in Education (AACE).
2. Moyer-Packenham, P. S. (2019). Engagement and convergence: Leadership for a world-class education in mathematics and technology. *Program book of the 1st International Conference on Innovation in Education and Pedagogy* (ICIEP 2019). Tangerang, Indonesia: Universitas Terbuka Indonesia & Research Synergy Foundation.
3. Litster, K., & Moyer-Packenham, P. S. (2019). How the balance of gaming and mathematics elements effects student learning in digital math games. In K. Graziano (Ed.), *Proceedings of the Society for Information Technology and Teacher Education (SITE) International Conference* (pp. 2163-2172). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE). **OUTSTANDING PAPER AWARD**
4. Litster, K., Moyer-Packenham, P. S., Ashby, M. J., Roxburgh, A. L., & Kozlowski, J. S. (2019). Digital math games: Importance of strategy and perseverance on elementary children's learning opportunities. In K. Graziano (Ed.), *Proceedings of the Society for Information Technology and Teacher Education (SITE) International Conference* (pp. 2157-2162). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE).
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8. Moyer-Packenham, P. S., Litster, K., Lommatsch, C., Ashby, M. J., & Roxburgh, A. (2018). Mediators of learning in game-based mathematics apps. In E. Langran & J. Borup (Eds.), *Proceedings of the Society for Information Technology and Teacher Education (SITE) International Conference* (pp. 458-464). Waynesville, NC: Association for the Advancement of Computing in Education (AACE).
9. Litster, K., Moyer-Packenham, P. S., & Reeder, R. (2018). Affordances of simultaneous linking features in a base-10 blocks mathematics app for young children. In E. Langran & J. Borup (Eds.), *Proceedings of the Society for Information Technology and Teacher Education (SITE) International Conference* (pp. 761-767). Waynesville, NC: Association for the Advancement of Computing in Education (AACE).
10. Bullock, E. P., Moyer-Packenham, P. S., Shumway, J. F., Watts, C., MacDonald, B. (2015, March). Effective teaching with technology: Managing affordances in iPad apps to promote young children's mathematics learning. In D. Rutledge & D. Slykhuis (Eds.), *Proceedings of the Society for Information Technology and Teacher Education International Conference* (pp. 2357-2364), Las Vegas, Nevada.

11. Moyer-Packenham, P. S., Westenskow, A., Shumway, J. F., Bullock, E., Tucker, S. I., Anderson-Pence, K. L., Boyer-Thurgood, J., Maahs-Fladung, C., Symanzik, J., Mahamane, S., MacDonald, B., & Jordan, K., The Virtual Manipulatives Research Group at Utah State University. (2014, September). The effects of different virtual manipulatives for second graders' mathematics learning in the touch-screen environment. *Proceedings of the 12th International Conference of the Mathematics Education into the 21st Century Project*, (Vol. 1, p. 331-336). Herceg Novi, Montenegro.
12. Westenskow, A., Moyer-Packenham, P. S., Anderson-Pence, K. L., Shumway, J. F., & Jordan, K., The Virtual Manipulatives Research Group at Utah State University. (2014, September). Cute drawings? What students' fractional representations reveal about their whole number bias. *Proceedings of the 12th International Conference of the Mathematics Education into the 21st Century Project*, (Vol. 1, p. 511-516). Herceg Novi, Montenegro.
13. Moyer-Packenham, P. S., & Suh, J. M. (2014, July). A working session on virtual manipulatives. In P. Liljedahl, C. Nicol, S. Oesterle, & D. Allan (Eds.), *Proceedings of the Joint Meeting of PME 38 and PME-NA 36* (Vol. 1, p. 1-257). Vancouver, Canada: PME.
14. Moyer-Packenham, P. S., & Westenskow, A. (2014, July). Effects and affordances of virtual manipulatives. In P. Liljedahl, C. Nicol, S. Oesterle, & D. Allan (Eds.), *Proceedings of the Joint Meeting of PME 38 and PME-NA 36* (Vol. 6, p. 6-179). Vancouver, Canada: PME.
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16. Moyer-Packenham, P., Boyer-Thurgood, J., Legler, N., & Larsen, K. (2014, March). The elementary mathematics teachers academy: An individualized online CCSS mathematics professional development. In M. Searson & M. N. Ochoa (Eds.), *Proceedings of the Society for Information Technology and Teacher Education* (pp. 2057-2062), Jacksonville, Florida.
17. Anderson-Pence, K. L., & Moyer-Packenham, P. S. (2014, January). Techno-mathematical discourse. *Proceedings of the 12th Annual Hawaii International Conference on Education (HICE)*, (pp. 1466-1483), Honolulu, Hawaii, ISSN# 1541-5880.
18. Boyer-Thurgood, J., Moyer-Packenham, P., Tucker, S., Anderson, K., Shumway, J., Westenskow, A., & Bullock, E. (2014, January). Kindergartener's strategy development during combining tasks on the iPad. *Proceedings of the 12th Annual Hawaii International Conference on Education (HICE)*, (pp. 1113-1114), Honolulu, Hawaii, ISSN# 1541-5880.
19. Moyer-Packenham, P. S., Anderson, K. L., Shumway, J. F., Tucker, S., Westenskow, A., Boyer-Thurgood, J., Bullock, E., Mahamane, S., Baker, J., Gulkilik, H., Maahs-Fladung, C., Symanzik, J., & Jordan, K., The Virtual Manipulatives Research Group at Utah State University. (2014, January). Developing research tools for young children's interactions with mathematics apps on the iPad. *Proceedings of the 12th Annual Hawaii International Conference on Education (HICE)*, (pp. 1685-1694), Honolulu, Hawaii, ISSN# 1541-5880.
20. Tucker, S. I., Moyer-Packenham, P. S., Boyer-Thurgood, J. M., Anderson, K. L., Shumway, J. F., Westenskow, A., & Bullock, E., The Virtual Manipulatives Research Group at Utah State University. (2014, January). Literature supporting investigations of the nexus of mathematics, strategy, and technology in children's interactions with iPad-based virtual manipulatives. *Proceedings of the 12th Annual Hawaii International Conference on Education (HICE)*, (pp. 2338-2346), Honolulu, Hawaii, ISSN# 1541-5880.
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23. Moyer-Packenham, P. S., & Westenskow, A. (2011, September). An initial examination of effect sizes for virtual manipulatives and other instructional treatments. In L. Paditz & A. Rogerson (Eds.), *Proceedings of the 11th International Conference of the Mathematics Education into the 21st Century Project – MEC 21: On Turning Dreams into Reality. Transformations and Paradigm Shifts in Mathematics Education*, (Vol. 1, pp. 236-241), Rhodes University, Grahamstown, South Africa. Oxford University Press (ISBN 83-919465-0-9/pbk).
24. Johnston, C. J., & Moyer-Packenham, P. S. (2011, September). A comprehensive model for examining pre-service teachers' knowledge of technology tools for mathematical learning: The T-MATH framework. In L. Paditz & A. Rogerson (Eds.), *Proceedings of the 11th International Conference of the Mathematics Education into the 21st Century Project – MEC 21: On Turning Dreams into Reality. Transformations and Paradigm Shifts in Mathematics Education*, (Vol. 1, pp. 169-174), Rhodes University, Grahamstown, South Africa. Oxford University Press (ISBN 83-919465-0-9/pbk).
25. Suh, J. M., & Moyer-Packenham, P. S. (2008, July). Scaffolding special needs students' learning of fraction equivalence using virtual manipulatives. In O. Figueras, J. L. Cortina, S. Alatorre, T. Rojano, & A. Sepulveda (Eds.), *Proceedings of the 32nd annual conference of the International Group for the Psychology of Mathematics Education (PME)* (Vol. 4, pp. 297-304), Morelia, Mexico.
26. Moyer, P. S., Salkind, G., Bolyard, J. J. (2007, October). Teachers' uses of virtual manipulatives in K-8 mathematics lessons. In T. Lamberg, & L. R. Wiest (Eds.), *Proceedings of the 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA)* (pp. 1188-1190), Lake Tahoe, Nevada.
27. Suh, J. M., & Moyer-Packenham, P. S. (2007, July). The application of dual coding theory in multi-representational virtual mathematics environments. In J. H. Woo, H. C. Lew, K. S. Park, & D. Y. Seo (Eds.), *Proceedings of the 31st annual conference of the International Group for the Psychology of Mathematics Education (PME)* (Vol. 4, pp. 209-216), Seoul, South Korea.
28. Bolyard, J., & Moyer-Packenham, P. (2006, November). The impact of virtual manipulatives on student achievement in integer addition and subtraction. In S. Alatorre, J. L. Cortina, M. Saiz, & A. Mendez (Eds.), *Proceedings of the 28th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 879-881), Merida, Mexico.
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29. Moyer-Packenham, P. S., Bolyard, J., Oh, H., Kridler, P., & Salkind, G. (2006, November). Representations of mathematics teacher quality in a national program. In S. Alatorre, J. L. Cortina, M. Saiz, & A. Mendez (Eds.), *Proceedings of the 28th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 608-615), Merida, Mexico.
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31. Ambrose, R., Nicol, C., Crespo, S., Jacobs, V., Moyer, P., & Haydar, H. (2004, October). Exploring the use of clinical interviews in teacher development [abstract]. In D. E. McDougall & J. A. Ross (Eds.), *Proceedings of the Twenty-Sixth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 89-91), Toronto, Canada. Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

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33. Lynch, M. C., Moyer, P. S., Frye, D., & Suh, J. M. (2002, September). Web-based learning: Telecollaboration models to enhance mathematics instruction. In A. Rogerson (Ed.). *Proceedings of the International Conference on the Humanistic Renaissance in Mathematics Education* (pp. 279-282), Palermo, Italy. Casio & Autograph. (Paper available at <http://math.unipa.it/~grim/palermo2002.htm>)
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35. Moyer, P. S., Bolyard, J., & Spikell, M. A. (2001, August). Virtual manipulatives in the K-12 classroom. In A. Rogerson (Ed.). *Proceedings of the International Conference New Ideas in Mathematics Education* (pp. 184-187), Queensland, Australia. Autograph.
36. Moyer, P. S., & Husman, J. (2000, October). The impact of site-based elementary mathematics methods coursework [abstract]. In M. L. Fernandez (Ed.). *Proceedings of the Twenty-Second Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, p. 626), Tucson, Arizona. Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.
37. Moyer, P. S. (1999, October). Instructional devices in middle grades mathematics: The effects of free access on teacher control and student motivation. In F. Hitt & M. Santos (Eds.). *Proceedings of the Twenty-First Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 764-770), Cuernavaca, Mexico. Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.
38. Moody, V. R., & Moyer, P. S. (1998, October). Using the metaphor of voice to investigate the mathematical experiences of African American students. In S. B. Berenson & K. R. Dawkins (Eds.), *Proceedings of the Twentieth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 575-580), Raleigh, North Carolina. Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.
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Other Publications

1. Moyer-Packenham, P. S., Shumway, J. F., Bullock, E., Anderson-Pence, K., Tucker, S. I., Westenskow, A., Boyer-Thurgood, J., Gulikilik, H., Watts, C., & Jordan, K., (2016, July). *Using virtual manipulatives on iPads: How app alignment promotes young children's mathematics learning*. Paper presented at the 13th International Congress on Mathematical Education (ICME), Hamburg, Germany.
2. Anderson-Pence, K., & Moyer-Packenham, P. S. (2015, April). *Using virtual manipulatives to generalize and justify through discourse*. Paper presented at the National Council of Teachers of Mathematics Research Conference (NCTM-R), Boston, Massachusetts.
3. Anderson-Pence, K., & Moyer-Packenham, P. S. (2015, April). *Using virtual manipulatives to enhance collaborative discourse in mathematics instruction*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Chicago, Illinois.

4. Moyer-Packenham, P. S., Shumway, J. F., Bullock, E., Tucker, S. I., Anderson-Pence, K., Westenskow, A., Boyer-Thurgood, J., Maahs-Fladung, C., Symanzik, J., Mahamane, S., MacDonald, B., & Jordan, K., The Virtual Manipulatives Research Group at Utah State University. (2014, April). *Young children's learning performance and efficiency when using virtual manipulative mathematics iPad apps*. Paper presented at the annual National Council of Teachers of Mathematics Research Conference (NCTM-R), New Orleans, Louisiana.
5. Moyer-Packenham, P. S., Jordan, K., Baker, J., Westenskow, A., Rodzon, K., Anderson, K., & Shumway, J. (2013, April). *Hidden Predictors of Achievement: The Equalizing Effect of Virtual Manipulatives for Mathematics Instruction*. Paper presented at the annual meeting of the American Educational Research Association (AERA), San Francisco, California.
6. Moyer, P. S., Bolyard, J., & Spikell, M. A. (2003). Virtual manipulatives in the K-12 classroom. In *Proceedings of the International Conference New Ideas in Mathematics Education* (Palm Cove, Queensland, Australia, August 19-24, 2001). (ERIC Document Reproduction Service No. ED 468 203)
7. Moyer, P. S., & Jones, M. G. (1998). *Tools for cognition: Student free access to manipulative materials in control- versus autonomy-oriented middle grades teachers' classrooms*. Columbus, OH: Clearinghouse for Science, Mathematics, and Environmental Education. (ERIC Document Reproduction Service No. ED 420 524)

Newsletter Editor

1. Moyer-Packenham, P. S. (2020, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
2. Moyer-Packenham, P. S. (2019, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
3. Moyer-Packenham, P. S. (2019, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
4. Moyer-Packenham, P. S. (2018, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
5. Moyer-Packenham, P. S. (2018, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
6. Moyer-Packenham, P. S. (2017, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
7. Moyer-Packenham, P. S. (2017, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
8. Moyer-Packenham, P. S. (2016, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
9. Moyer-Packenham, P. S. (2016, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>

10. Moyer-Packenham, P. S. (2015, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
11. Moyer-Packenham, P. S. (2015, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
12. Moyer-Packenham, P. S. (2014, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
13. Moyer-Packenham, P. S. (2014, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
14. Moyer-Packenham, P. S. (2013, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
15. Moyer-Packenham, P. S. (2013, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
16. Moyer-Packenham, P. S. (2012, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
17. Moyer-Packenham, P. S. (2012, Spring). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
18. Moyer-Packenham, P. S. (2011, Fall). *Mathematics education and leadership newsletter*. Archived online publication of the Mathematics Education and Leadership Program in the College of Education and Human Services at Utah State University. <http://teal.usu.edu/graduate/math/newsletters>
19. Moyer-Packenham, P. S. (2008, Spring). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University. <http://gse.gmu.edu/cscvm/news/>
20. Moyer-Packenham, P. S. (2007, Fall). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University. <http://gse.gmu.edu/cscvm/news/>
21. Moyer-Packenham, P. S. (2007, Spring). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University. <http://gse.gmu.edu/cscvm/news/>
22. Moyer-Packenham, P. S. (2006, Fall). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University. <http://gse.gmu.edu/cscvm/news/>
23. Moyer-Packenham, P. S. (2006, Spring). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University. <http://gse.gmu.edu/cscvm/news/>

24. Moyer-Packenham, P. S. (2005, Fall). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University.
<http://gse.gmu.edu/cscvm/news/>
25. Moyer-Packenham, P. S. (2005, Spring). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University.
<http://gse.gmu.edu/cscvm/news/>
26. Moyer-Packenham, P. S. (2004, Fall). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University.
<http://gse.gmu.edu/cscvm/news/>
27. Moyer-Packenham, P. S. (2003, Fall). *Center news*. Archived online publication of the Mathematics Education Center in the College of Education and Human Development at George Mason University.
<http://gse.gmu.edu/cscvm/news/>

Unpublished Manuscripts

1. Dupree, K., & Moyer-Packenham, P. S. (under review, 2020). *Classifying pivotal teaching moments and secondary mathematics teachers' responses*. Unpublished manuscript.
2. Litster, K., Moyer-Packenham, P. S., Lommatsch, C. W., Ashby, J., Roxburgh, A. L., Bullock, E. K., Shumway, J. F., Speed, E., Covington, B., Hartmann, C., Clarke-Midura, J., Skaria, J., Westenskow, A., MacDonald, B., Symanzik, J., & Jordan, K. (under review, 2020). *Relationships between children's responses to digital math games and their mathematics performance*. Unpublished manuscript.
3. Litster, K., & Moyer-Packenham, P. S. (under review, 2020). *The relationship between mathematical discourse type and students-enacted levels of cognitive demand*. Unpublished manuscript.

GRANTS, CONTRACTS, & PRIVATE FUNDING

(Over \$18.5 Million Dollars in Total Grant and Contract Funding)

External Evaluator (\$2,000,000). *Collaborative Research: Advancing Equity and Strengthening Teaching with Elementary Mathematical Modeling (EQ-STEMM)*. (2020-2024). National Science Foundation (NSF) DR K-12. Project goal: Strengthen culturally responsive mathematical modeling instruction that leverages students lived experiences by developing an online STEM Modeling Toolkit for K-5 teachers (Lead PIs – Jennifer Suh, George Mason University; Erin Turner, University of Arizona; Mary Alice Carlson, Montana State University; and Julia Aguirre, University of Washington Tacoma).

Co-Principal Investigator (\$145,981). *K-6 Mathematics Professional Development Partnership*. (2016-2018). Utah State Office of Education. Project goal: Provide online mathematics education coursework and professional development for K-6 teachers in the Weber School District leading to the completion of the Utah Elementary Mathematics Endorsement (with Lead PI – Sheri Heiter, Weber School District).

Co-Principal Investigator (\$128,298). *Intervention Training Academy*. (2015-2018). Utah State Office of Education. Project goal: Provide mathematics intervention training and tutoring experiences for Grades 2-5 teachers in Logan City and Rich County School Districts (with Lead PI – Barbara Child, Logan City School District).

Co-Principal Investigator (\$50,000). *Improving Mathematics Preparation of Elementary School & Special Education Teachers*. (2016-2017). Utah State University Office of the Provost, Curriculum and Innovation Grant. Project goal: Improve the mathematical preparation of Elementary and Special Education majors by developing an undergraduate course that targets their specific mathematics content needs (with Lead PI – Jim Cangelosi, Utah State University).

Co-Principal Investigator (\$69,798). *Preparing Utah Teachers for the Elementary Mathematics Endorsement*. (2012-15). United States Department of Agriculture. Project goal: Provide mathematics endorsement courses through a distance learning project designed to equip two sites and four rural communities with distance delivery broadcast technology. (with Lead PI – Robert Wagner, Utah State University, RCDE).

Principal Investigator. (\$20,000). *Captivated! Young Children's Learning Interactions with iPad Mathematics Apps*. (2013-2014). Utah State University, Vice President for Research RC Funding. Project goal: build theory and knowledge about the nature of young children's ways of thinking and interacting with virtual manipulatives using touch-screen mathematics apps on the iPad.

Contract. (\$14,400). TIME Clinic contract to pilot and develop math intervention materials for Grades 3-5 under Director, Dr. Arla Westenskow. (2013-2014). Funded by Logan City Schools, Logan UT.

Private Funding. (\$10,000). TIME Clinic donor funding to conduct clinical math research in three areas: word problem solving, place value learning difficulties, and early number sense intervention under Director, Dr. Arla Westenskow. (2013-14). Funded by donor David Weeshoff.

Contract. (\$6,000). TIME Clinic contract to provide summer math tutoring intervention for rising sixth grade students under Director, Dr. Arla Westenskow. (2013). Funded by Logan City Schools, Logan UT.

Private Funding. (\$5,000). TIME Clinic donor funding to support tutoring services for students with mathematical learning difficulties under Director, Dr. Arla Westenskow. (2013). Funded by Marriner Eccles Foundation.

Co-Principal Investigator (\$222,639). *Elementary Math Endorsement MSP*. (2011-13). Utah State Office of Education. Project goal: Enhance the mathematics content knowledge of elementary teachers through a 6-course sequenced Elementary Mathematics Endorsement program (with Lead PI – Barbara Child, Logan City Schools).

Private Funding. (\$10,900). TIME Clinic donor funding to establish the Tutoring Intervention and Mathematics Enrichment (TIME) Clinic, specializing in mathematics support for elementary-aged children under Director, Dr. Arla Westenskow. (2011-12). Funded by donor David Weeshoff.

Principal Investigator (\$35,000). *Virtual Manipulatives Research Group: Effects of Multiple Visual Modalities of Representation on Rational Number Competence.* (2011-12). Utah State University, Vice President for Research SPARC Funding. My role: Lead a team of faculty and doctoral students conducting research in 3rd and 4th grade classrooms in local schools focusing on using virtual manipulatives to teach rational number concepts (with Kerry Jordan, Dicky Ng, and Kady Schneider).

Co-Principal Investigator (\$14.7 million). *Program Evaluation of the Math and Science Partnership Program.* (2004-11). National Science Foundation. Project goal: Evaluate the NSF-funded \$600 million dollar Math and Science Partnership Program (with Lead PI – Robert Yin, COSMOS Corporation, Co-PI – Kenneth Wong, Brown University, and Co-PI – Darnella Davis, COSMOS Corporation).

External Evaluator. (\$700,000). *COMPLETE Math: Center for Outreach in Mathematics Professional Learning and Educational Technology.* (2010-11). Virginia Department of Education Math Science Partnership. Lead PIs – Jennifer Suh & Padumanabhan Seshaiyer. My role: Conduct the project evaluation using formative and summative evaluation strategies.

External Evaluator. (\$150,027). *MASON IMPACT: Mentoring Approach to Sustaining Outreach Networks in Improving Mathematical Practices through Algebraic Connection and Technology.* (2010-11). State Council of Higher Education for Virginia. Lead PIs – Jennifer Suh & Padumanabhan Seshaiyer. My role: Conduct the project evaluation using formative and summative evaluation strategies.

Principal Investigator (\$95,203). *MATH BRIDGES II Project.* (2003-2004). Federal Grant – No Child Left Behind Act; Administered through the State Council on Higher Education for Virginia Improving Teacher Quality State Grants Program. Project goal: Provide professional development in the use of concrete and virtual manipulatives for 80 K-8 teachers in the Loudoun County Public School System (with Johnna Bolyard and Robert Sachs).

Principal Investigator (\$65,347). *MATH BRIDGES Project: Concepts and Connections in the K-8 Standards.* (2002-2003). Dwight D. Eisenhower Professional Development Program, Virginia. Project goal: Provide professional development in the use of concrete and virtual manipulatives for 60 K-8 teachers in the Loudoun County Public School System.

Principal Investigator (\$40,675). *M²ATH FACTS Project: Mathematics Manipulatives and Technology for Fairfax County Middle School Special Education Teachers.* (2001-2002). Dwight D. Eisenhower Professional Development Program, Virginia. Project goal: Provide professional development in rigorous mathematics content using research-based instructional practices and a variety of mathematics tools to support middle grades special education teachers in the implementation of high quality mathematics instruction in their classrooms.

Principal Investigator (\$30,000). *Teachers and Students Using Mathematics Representations: Middle Grades Tools and Technology Project.* (2001-2002). Dwight D. Eisenhower Professional Development Program, North Carolina. Project goal: Provide mathematics manipulatives, professional development, and classroom support necessary for middle grades mathematics teachers and students to develop and use effective representations (concrete, pictorial, and symbolic) and tools (calculators and computer technologies) in the teaching and learning of mathematics. (with Russ Rowlett)

Principal Investigator (\$5,000). *Children's Uses of Representations to Explain Fractions.* (2001-2002). Faculty Summer Research Funding, George Mason University. Project goal: Provide support for a 10-week period of sustained writing to develop two scholarly manuscripts and one research presentation proposal.

Principal Investigator (\$5,000). *Mathematics Manipulatives: What's Really Going on in Classrooms?* (1999-2000). Research Advisory Committee (RAC), The University of Alabama. Project goal: Provide support for a 10-week period of sustained writing to develop two scholarly manuscripts.

Principal Investigator (\$1,000). *Children's Voices: Exploring Informal Representations of Rational Numbers.* (1999-2000). University of Alabama College of Education Research Grant. Project goal: Examine the informal representations and notions young children have about rational numbers.

Principal Investigator (\$30,000). *Mathematics Tools and Technology for Middle Grades Teachers Project.* (1998-2000). Dwight D. Eisenhower Professional Development Program, North Carolina. Project goal: Provide mathematics manipulatives, professional development, and classroom support necessary for middle grades mathematics teachers to use student-centered cognitively-oriented approaches to the teaching of mathematics using mathematics manipulatives and technology. (with Russ Rowlett)

Principal Investigator (\$1,000). *Alabama K-12 Mathematics Needs Assessment Project.* (1998-1999). University of Alabama College of Education Research Grant. Project goal: Gather data on the professional development needs of K-12 Alabama teachers in the area of mathematics education and develop partnerships with school systems in Western Alabama. (with Vivian R. Moody)

Co-Principal Investigator (\$1,000). *RAAME--Research on African American Students' Mathematical Experiences.* (1998-1999). University of Alabama College of Education Research Grant. Project goal: Examine successful African American mathematics students' perceptions of their mathematical experiences to determine what aspects of their personal and schooling experiences have contributed to their success with school mathematics. (with Lead PI, Vivian R. Moody)

Principal Investigator (\$30,000). *Middle Grades Math Manipulatives: Tools and Technology Project.* (1997-1999). Dwight D. Eisenhower Professional Development Program, North Carolina. Project goal: Provide material resources, professional development, and support during implementation necessary for middle grades mathematics teachers to enhance the teaching of mathematics using mathematics manipulatives and technology. (with Russ Rowlett)

Principal Investigator (\$1,000). *Beginning Teachers, Mathematics Manipulatives, and Diverse Learners in Elementary Mathematics: Pedagogical Knowledge and Practice.* (1997-1998). University of Alabama College of Education Research Grant. Project goal: Compile a database of College of Education graduates and examine their beginning teaching experiences in mathematics to provide specific information to university faculty about the needs of beginning teachers in the area of mathematics instruction. (with Madeleine Gregg)

Principal Investigator (\$1,000). *Preservice Teachers' Reflections on Student Assessment Interviews.* (1997-1998). University of Alabama College of Education Research Grant. Project goal: Examine the effectiveness of using student assessment interviews as a way of encouraging preservice teachers to examine their views about how students learn mathematics and how they, as beginning teachers, will assess students' mathematical thinking. (with Vivian R. Moody)

Principal Investigator (\$30,000). *Middle Grades Mathematics: Tools and Technology Project.* (1996-1998). Dwight D. Eisenhower Professional Development Program, North Carolina. Project goal: Provide material resources, professional development, and support during implementation necessary for middle grades mathematics teachers to enhance the teaching of mathematics using mathematics manipulatives and technology. (with Russ Rowlett)

Principal Investigator (\$35,000). *Tools for Cognition: Middle Grades Math Manipulatives Project.* (1995-1997). Dwight D. Eisenhower Professional Development Program, North Carolina. Project goal: Provide material resources, professional development, and support during implementation necessary for middle grades mathematics teachers to enhance the teaching of mathematics using mathematics manipulatives. (with Gail Jones)

Principal Investigator (\$24,500). *Research Apprenticeship for Minority Students.* (1995-1996). North Carolina BioTechnology Center. Project goal: Provide an eight-week summer research internship experience in biotechnology for minority high school students.

GRANT LEADERSHIP FUNDED

National Advisory Board Member (\$978,023). *The Measurement and Influence of Motivation in a Digital Context.* (2019-2024). National Science Foundation (NSF) Career Grant (#1845584). Project goal: To leverage the unique affordances of digital mathematics curricula to understand and influence student motivation for mathematics as students engage with content and make choices directly relevant to their learning. My role: Meet annually and provide input as a member of the Advisory Board. (Lead PI – Teomara Rutherford, North Carolina State University)

National Advisory Board Member (\$2,997,037). *Visual Access to Mathematics (VAM): Professional Development for Teachers of English Learners.* (2015-2019). National Science Foundation (DRL-1503057). Project goal: Develop and study a blended online and face-to-face professional development program that develops understanding of visual representations for rational number tasks and supports for mathematical communication for middle grades mathematics teachers of English learners. My role: Meet once each year to provide input and reflections on the VAM PD materials and on project research protocols and analyses. (Lead PI – Mark Driscoll, Education Development Center and Co-PIs Pam Buffington and Johannah Nikula, Education Development Center)

National Advisory Board Member (\$399,999). *Technical Evaluation Assistance in Mathematics and Science (TEAMS).* (2013-16). National Science Foundation (DRL-1238120). Project goal: Provide technical assistance to improve models for the evaluation of Mathematics and Science Partnerships. My role: Meet twice each year for 3-hour conference calls to provide feedback and advice to the PIs of the project. (Lead PI – John Sutton & Co-PI – David Weaver, RMC Research Corporation)

GEM Mentor (\$4,463). *Assessment Based on Learning Trajectories in Rational Number Concepts for Students with Learning Disabilities.* (2013-14). Grant Writing Experience through Mentorship (GEM) Program, Office of Research and Graduate Studies, Utah State University. Lead PI – Jessica Hunt. My role: Serve as a mentor for a tenure-track faculty member in the process of conceptualizing, developing, and submitting a grant proposal to an external funding agency.

Outcome: Jessica Hunt received funding from the National Science Foundation in 2013 as a **Principal Investigator. (\$147,356).** *CAREER Grant: Fraction Activities and Assessments for Conceptual Teaching (FAACT) for Students with Learning Disabilities.* National Science Foundation. Project Goal: The goal of this project is to study and support the development of conceptual understanding of fractions by students with learning disabilities (LD).

GEM Mentor (\$3,900). *Submitting a Successful Application to a Federal Funding Agency through Mentorship Support.* (2009-11). Grant Writing Experience through Mentorship (GEM) Program, Office of Research Services, Utah State University. Lead PI – Amy Bingham Brown. My role: Serve as a mentor for a tenure-track faculty member in the process of conceptualizing, developing, and submitting a grant proposal to an external funding agency.

Outcome: Amy Brown received funding from the National Science Foundation in 2012 as a **Co-Principal Investigator. (\$179,841).** *Collaborative Research: Online Collaboration to Understand Preservice Teachers' Developing MKT.* (2012-14). National Science Foundation. Project Goal: To study and create new online resources for mathematics educators and preservice teachers' developing MKT. (Lead PI- Stephen Wiemar, Drexel University and Co-PI- K. Ann Renninger, Swarthmore College)

Graduate Student Supervisor (\$350,000 over a five-year period). *Health Professions Partnership Initiative.* (1995-1996). Robert Wood Johnson Foundation. PI – UNC-CH Pre-College Program. My role: Supervise graduate students and program operations during an intensive educational experience in the university's health professions schools for students in grades nine and ten.

GRANTS SUBMITTED – AS PRINCIPAL INVESTIGATOR (Not Funded)

Principal Investigator (\$1.4 million). *The GAME Project: Exploring Digital Games for Mathematics Learning.* (2017). U.S. Department of Education, Institute of Education Sciences (US DOE IES). Project Goal: investigate game-based math apps and their relation to student math learning outcomes for students in Grades 3-5.

Principal Investigator (\$257,578). *Targeted Mathematics Intervention (TMI) Project.* (2013). U.S. Department of Education, Institute of Education Sciences (US DOE IES). Project Goal: Form a research partnership between the Logan City School District and Utah State University that investigates the issues which are limiting individualized targeted mathematics intervention instruction for the teachers and students in the school district. (with Co-PIs – Arla Westenskow, Utah State University; Robin Williams and Barbara Child, Logan City School District).

Principal Investigator. (\$3 million). *VM BRAIN Patterns Project: Virtual Manipulatives: Brain Research on Activation and Investigation of Neural Patterns.* (2012). National Science Foundation. Project goal: Identify how elementary children use mathematics applets and describe patterns of neural activation associated with applet use by third- through fifth-grade low- and high-SES students. (with Co-PIs – Kerry Jordan, Taylor Martin, Dicky Ng, and Cathy Maahs-Fladung, Utah State University).

Principal Investigator (\$10 million). *THINK STAT: Statistical Teaching and Learning.* (2010). National Science Foundation. Project goal: Improve student mathematics achievement using problem-based statistical thinking approaches to teaching (Grades 3-8) (with Co-PIs – R. Cutler, Dept. Head, Mathematics and Statistics, Utah State University; P. Norman, Davis School District; and, E. Rowley, Assoc. Dept. Head, Regional Campuses and Distance Education, Mathematics and Statistics, Utah State University).

UNIVERSITY TEACHING

Utah State University, Logan, Utah (2008-present) **College of Education and Human Services**

Courses Taught – Utah State University

TEAL 7556 – Mathematics Education Research Design & Assessment

Doctoral Course. Examines a variety of research designs applicable to mathematics education, including teaching experiments, classroom research, clinical studies, and mathematical modeling. Evaluates mathematics assessments and instrumentation and considers the role of assessments nationally and internationally. Experience in conceptualizing a research project.

TEAL 7555 – Mathematics Education Current Issues & Policy Offered Summer

Doctoral Course. Reviews and critiques current issues and policy documents in mathematics education nationally and internationally, including research trends, emerging theories, and political policies influencing mathematics education. Synthesizes cutting edge research to develop a theoretical framework and original research questions and inquiries.

TEAL 7554 – Mathematics Education Teacher Preparation & Pedagogy

Doctoral Course. Emphasizes the application of theory, research, and pedagogical strategies to the preparation of mathematics teachers and teacher leaders. Applies principals of effective professional development, develops expertise in designing and teaching mathematics methods courses, and creates mathematics experiences for teachers.

TEAL 7553 – Mathematics Education Curriculum Content & Evaluation

Doctoral Course. Reviews and evaluates the content of the school mathematics curriculum at the state, national, and international levels, including research on specific mathematics curriculum topics. Emphasizes research findings and recommended practices on the development and evaluation of mathematics curriculum.

TEAL 7552 – Mathematics Education Learning Theory

Doctoral Course. Critical examination of the historical development of cognitive theories of mathematical learning, including the influence of selected theorists on mathematical thinking, teaching and assessment. Explores mathematical learning models, including research literature on numeracy, brain research, learning trajectories, differentiation, and equity.

TEAL 7551 – Mathematics Education Research Foundations

Doctoral Course. Critical examination of research impacting mathematics education, including historical, social, political, and economic contexts and foundations of mathematics. Reviews literature and theoretical perspectives, including topics on mathematics teaching, learning, culture, policy, trends, technology, and student outcomes.

ELED 4060 – Teaching Mathematics & Practicum Level III

Undergraduate Course. Relevant mathematics instruction in the elementary and middle-level curriculum; methods of instruction, evaluation, remediation, and enrichment. A field experience practicum is required.

George Mason University, Fairfax, Virginia (2000-2008) **College of Education and Human Development, Graduate School of Education**

Courses Taught – George Mason University

EDCI 858 – Mathematics Education Research Design and Evaluation

Yearlong seminar for Ph.D. students in the Mathematics Education Leadership cohort program. Students review methods of research appropriate for mathematics education settings and develop a theoretical framework and action plan for conducting a research project.

EDCI 856 – Mathematics Education Curriculum Design and Evaluation

Yearlong seminar for Ph.D. students in the Mathematics Education Leadership cohort program. Students engage in research, analysis, design, and evaluation of school mathematics curricula.

EDCI 855 – Mathematics Education Research on Teaching and Learning

Yearlong seminar for Ph.D. students in the Mathematics Education Leadership cohort program. Students survey the most current research literature in mathematics education and engage in research, study, and discussion of mathematics education research on teaching and learning in school settings.

EDCI 895 – Emerging Issues in Curriculum/Instruction – Math Education III

Yearlong seminar for Ph.D. mathematics education students in the Education Leadership Metamedia cohort. Students engage in research, study, discussion, and writing about international mathematics studies, concrete and virtual manipulatives, and mathematics curricula including NSF funded projects, textbooks, and other appropriate materials and topics.

EDCI 895 – Emerging Issues in Curriculum/Instruction – Math Education IV

Yearlong seminar for Ph.D. mathematics education students in the Education Leadership Metamedia cohort. Students engage in research, study, discussion, and projects about designing professional development for teachers of mathematics.

EDCI 725 – National & International Leadership Issues in Mathematics Education

Yearlong seminar for Ph.D. students in the Mathematics Education Leadership cohort program. Students study research on mathematics teaching and learning, including current issues and trends in mathematics education leadership at the national and international levels.

EDCI 797 – Research and Conceptions in the Content Fields (Mathematics)

This three credit hour course is a yearlong online seminar for advanced level students. The course is designed to assist students in understanding state-of-the-art conceptions that guide curriculum development in their own content field. Students divide into small groups by content area and work with methods faculty who research student learning in their own content field. These concepts are used to frame activities that promote the design of virtual high school courses.

EDCI 790 – Internship in Education

Graduate interns are supervised in a Professional Development School placement setting that includes observations and seminar experiences.

EDCI 666 – Research in Mathematics Teaching

Research seminar for Master's level students in the Mathematics/Science Education Leadership cohort program. Students survey the most current research literature in mathematics education and engage in research, study, and discussion of teaching and learning in school settings.

EDCI 633 – Advanced Mathematics Methods for the Elementary Classroom

Focuses on teaching all children problem solving and higher order thinking skills based on state and national mathematics standards. A variety of techniques and materials are used to promote better understanding of various mathematical concepts. Students read, interpret, and critique mathematics education research and examine its applications in classrooms.

EDCI 597 – Special Topics in Education

Advanced study in selected topics and emerging educational issues in mathematics. Independent study work with secondary mathematics teachers in the ASTL program.

EDCI 552 – Math Methods for the Elementary Classroom

An introduction to methods for teaching all children developmentally appropriate topics in number and operations, geometry, algebra, and data analysis. Students work with manipulatives and technologies to explore mathematics, solve problems, and learn ways to teach mathematics content to children.

EDUC 500 – Mathematics Manipulatives & Technology for Middle School Special Education Teachers

Methods for teaching children from non-mainstreamed populations developmentally appropriate mathematics topics for the middle grades including number theory, geometry, measurement, algebra, probability and statistics. Students work with manipulatives and technology appropriate for children with special needs in grades 6, 7, & 8.

The University of Alabama, Tuscaloosa, Alabama (1997-2000)
College of Education

Courses Taught – The University of Alabama

CEE 580 - Concepts of Elementary School Mathematics (Taught in Lima, Peru and Mexico City, Mexico)

Methods and materials in the teaching of mathematics. Current research is emphasized, as is theory concerning facilitation of the development of mathematical skills and concepts.

CEE 380 - Teaching Elementary Mathematics (UH 400 - Teaching Elementary Mathematics with Honors)

Teaching experiences related to children's developmental learning of elementary mathematics, with emphasis on teaching strategies, manipulatives, and other materials useful in teaching content.

CEE 697 - Educational Specialist Degree Research (Chaired 18 Ed.S. Thesis Research Papers)

This course is designed to facilitate the completion of a student's Educational Specialist Degree research. Students develop, implement, and assess classroom and/or school-wide action research projects and write an educational paper of publishable quality in the course.

GRADUATE STUDENT RESEARCH SUPERVISION

PHD GRADUATES/DISSERTATIONS COMPLETED (35)

CHAIR/MAJOR PROFESSOR

Jenny Nehring. (PhD, 2021). *Relationships between high school students' performance in ALEKS placement, preparation and learning (PPL) modules and performance on the ALEKS college mathematics placement exam.* (Doctoral Dissertation, Utah State University, 2021).

Thomas Mgonja. (PhD, 2021). *Examining the use of culturally relevant pedagogy in undergraduate mathematics learning modules with students of color.* (Doctoral Dissertation, Utah State University, 2021).

Awards: CEHS Dissertation Research Award (2020); Martin Luther King Fellowship (2018).

Current Position: Associate Professor, Mathematics, Utah Valley University.

Samuel Gedeberg (PhD, 2020). *How student perceptions of the online learning environment and student motivation predict persistence, completion, and retention in developmental mathematics courses.* (Doctoral Dissertation, Utah State University, 2020).

Awards: CEHS Dissertation Research Award (2018).

Current Position: Director, Office of Teaching and Learning Technology Lab, Utah Valley University.

Kristy Litster (PhD, 2019). *The relationship between small group discourse and student-enacted levels of cognitive demand when engaging with mathematics tasks at different depth of knowledge levels.* (Doctoral Dissertation, Utah State University, 2019).

Awards: Outstanding Dissertation of the Year Award (2021); Outstanding Service Commendation, Research in Mathematics Education Special Interest Group (SIG-RME) of AERA (2019); Outstanding Paper Award: SITE (2019); CEHS Dissertation Research Award (2019); TEAL Graduate Student Researcher of the Year (2019); Science Fair Chair & Volunteer of the Year, Logan City Schools, Logan, Utah (2019); Graduate Enhancement Award (2018); Outstanding Paper Award: SITE (2018)

Current Position: Assistant Professor, Valdosta State University, Georgia.

Kami Dupree (PhD, 2019). *Secondary mathematics teachers' responses to pivotal teaching moments.* (Doctoral Dissertation, Utah State University, 2019).

Awards: TEAL Dissertation of the Year Award (2020); CEHS Dissertation Research Award (2018).

Current Position: Mathematics Faculty, Utah State University.

Andrew Glaze (PhD, 2019). *Teachers' conceptions of mathematics and intelligent tutoring system use.* (Doctoral Dissertation, Utah State University, 2019).

Awards: CEHS Dissertation Research Award (2018).

Current Position: Mathematics Teacher, Davis School District

Christina Lommatsch (PhD, 2018). *Learning logic: A mixed methods study to examine the effects of context ordering on reasoning about conditionals.* (Doctoral Dissertation, Utah State University, 2018).

Awards: Graduate Student Senate Enhancement Award (2016-2017); Graduate Student Researcher of the Year, School of Teacher Education and Leadership (2017); Graduate Research and Creative Opportunities Grant (2017).

Current Position: Assistant Professor, University of Canberra, Australia

Jennifer Throndsen (PhD, 2018). *Relationships among preschool attendance, type, and quality and early mathematical literacy.* Co-Chair with Jessica Shumway. (Doctoral Dissertation, Utah State University, 2018).

Current Position: Director of Teaching and Learning, Utah State Board of Education

Emma Bullock (PhD, 2017). *An explanatory sequential mixed methods study of the school leaders' role in students' mathematics achievement through the lens of complexity theory.* (Doctoral Dissertation, Utah State University, 2017).

Awards: Graduate Student Researcher of the Year, School of Teacher Education and Leadership (2016); Graduate Research and Creative Opportunities Grant (2016); Lawson Fellowship Award (2016-2017); Graduate Student Senate Enhancement Award (2016-2017); Dissertation Fellowship Award (2016-2017); USU Student Research Symposium Poster Winner (2017); AERA SIG Chaos and Complexity Theory Sherrie Reynolds Paper Award (2017); TEAL Outstanding Dissertation Award (2018); Outstanding Dissertation Award (2018) for the Mixed Methods International Research Association (MMIRA) presented in Vienna, Austria with a \$1000 honorarium prize; Outstanding Dissertation Award for the American Educational Research Association Mixed Methods Special Interest Group (2019).

Current Position: Assistant Professor, Mathematics Education, Sam Houston State University

Scott Smith (PhD, 2016). *Fifth-grade students' construction of knowledge of the decimals-fractions relationships using number line based virtual manipulatives*. Co-Chair with Yanghee Kim, Instructional Technology and Learning Sciences (Doctoral Dissertation, Utah State University, 2016).

Current Position: Assistant Professor, Mathematics Education, Western New Mexico University

Jennifer Boyer-Thurgood (PhD, 2016). *The anatomy of virtual manipulative apps: Using grounded theory to conceptualize and evaluate educational mathematics apps*. (Doctoral Dissertation, Utah State University, 2016).

Awards: College of Education and Human Services Graduate Teaching Assistant of the Year (2014); School of Teacher Education and Leadership Graduate Teaching Assistant of the Year (2014); Graduate Student Senate Enhancement Award (2014); Lawson Fellowship Award (2014-15)

Current Position: Director, Elementary Mathematics, Weber School District

Jessica Shumway (PhD, 2016). *A counting-focused instructional treatment for developing number system knowledge in second grade: A mixed methods study on children's number sense*. (Doctoral Dissertation, Utah State University, 2016).

Awards: School of Teacher Education and Leadership Graduate Research Assistant of the Year (2012); Lawson Fellowship Award (2013-14); Graduate Student Senate Enhancement Award (2014); Lawson Fellowship Award (2015-16).

Current Position: Assistant Professor, Mathematics Education, Utah State University

Stephen Tucker (PhD, 2015). *An exploratory study of attributes, affordances, abilities, and distance in students' use of virtual manipulatives mathematics iPad apps*. (Doctoral Dissertation, Utah State University, 2015).

Awards: Vice President for Research Fellowship Award (2011-12); Graduate Student Senate Enhancement Award (2014); College of Education and Human Services Graduate Research Assistant of the Year (2015); School of Teacher Education and Leadership Graduate Research Assistant of the Year (2015).

Current Position: Assistant Professor, Mathematics Education, University of Louisville

Katie Anderson-Pence (PhD, 2014). *Examining the impact of different virtual manipulative types on the nature of students' small-group discussions: An exploratory mixed-methods case study of techno-mathematical discourse*. (Doctoral Dissertation, Utah State University, 2014). ProQuest Dissertations and Theses database. (UMI No. 3683422).

Awards: TEAL Graduate Research Assistant of the Year (2013)

Current Position: Assistant Professor, Mathematics Education, University of Colorado at Colorado Springs

Gregory V. Murray (PhD, 2012). *Relationships between classroom schedule types and performance on the Algebra I criterion referenced test* (Doctoral Dissertation, Utah State University, 2012).

Current Position: Assistant Professor, Secondary Math Education, Dixie State University, Utah

Arla Westenskow (PhD, 2012). *Equivalent fraction learning trajectories for students with mathematical learning difficulties when using manipulatives* (Doctoral dissertation, Utah State University, 2012).

Awards: TEAL Graduate Teaching Assistant of the Year (2010); TEAL Graduate Research Assistant of the Year (2011); AERA ARVEL SIG Best Paper Award (2012).

Current Position: Director, Tutoring Intervention and Mathematics Enrichment (TIME) Clinic, Utah State University

- Johnna J. Bolyard (PhD, 2006). *A comparison of the impact of two virtual manipulatives on student achievement and conceptual understanding of integer addition and subtraction* (Doctoral dissertation, George Mason University, 2006). Dissertation Abstracts International, 66 (11), 3960A
Current Position: Associate Professor, Mathematics Education, West Virginia University
- Lynn Salvo (PhD, 2006). *Effects of an experimental curriculum on third graders' knowledge of multiplication facts* (Doctoral dissertation, George Mason University, 2006).
Current Position: Owner, Math Tree Tutoring and Math Camps
- John Staley (PhD, 2006). *Examining electronic learning communities as a means for sustaining and supporting mathematics professional development* (Doctoral dissertation, George Mason University, 2006).
Current Position: Director of Mathematics PreK-12, Baltimore County Public Schools, Maryland
- Jennifer M. Suh (PhD, 2005). *Third graders' mathematics achievement and representation preference using virtual and physical manipulatives for adding fractions and balancing equations* (Doctoral dissertation, George Mason University, 2005).
Current Position: Professor, Mathematics Education, George Mason University, Virginia

COMMITTEE MEMBER

- Hannah Lewis (PhD, 2019). *Implementation and effects of university college algebra growth mindset structured assessments in large lectures*. (Doctoral Dissertation, Utah State University).
Current Position: Assistant Professor, Department of Mathematics and Statistics, Utah State University
- Melanie Durfee (PhD, 2018). *A qualitative case analysis of how high performance team training develops sociomathematical norms and differing levels of math talk*. (Doctoral Dissertation, Utah State University).
Current Position: Digital Teaching and Learning Achievement Specialist, Utah State Board of Education
- Lauren Burton (PhD, 2018). *A case study on how meeting the academic needs of students substantially below grade level in mathematics affects their self-efficacy beliefs and engagement*. (Doctoral Dissertation, Utah State University).
Awards: CEHS Dissertation Research Award (2017).
- Shawnee Hendershot (PhD, 2016). *Family and center child care providers: Correlates between math anxiety/attitudes toward mathematics, teacher self-efficacy, and other factors*. (Doctoral Dissertation, Utah State University, 2016).
- Kathryn Van Wagoner (PhD, 2015). *College student perceptions of secondary teacher influence on the development of mathematical identity*. (Doctoral Dissertation, Utah State University, 2015).
Current Position: Director of Developmental Mathematics, Weber State University, UT
- Jodi Mantilla (PhD, 2015). *Identifying factors common among students who do not fit the typical mathematics self-efficacy and achievement correlation*. (Doctoral Dissertation, Utah State University, 2015).
Current Position: Assistant Professor, Mathematics Education, Brigham Young University, Provo, Utah
- Ron Twitchell (PhD, 2014). *Phenomena associated with teachers' changes in attitude about mathematics instruction attributable to participation in mathematics professional development*. (Doctoral Dissertation, Utah State University, 2014).
Current Position: Director of Assessment, Data, and Research, Provo City School District, Provo, UT
- Jennifer Loveland (PhD, 2014). *Traditional lecture versus an activity approach for teaching statistics: A comparison of outcomes*. (Doctoral Dissertation, Utah State University, 2014).
Current Position: Adjunct Lecturer, Department of Mathematics and Statistics, Utah State University

Joseph M. Baker (PhD, 2013). *Concurrent neurological and behavioral assessment of number line estimation performance in children and adults*. (Doctoral Dissertation, Utah State University, 2013).

Current Position: Post-Doctoral Researcher, Stanford University

Cathy Callow-Heuser (PhD, 2011). *The effects of early identification and intervention on language outcomes of children born with hearing loss*. (Doctoral Dissertation, Utah State University, 2011).

Current Position: Lead Researcher, National Center for Hearing Assessment and Management, Utah State University

Gwenanne Salkind (PhD, 2010). *Coaches' and principals' conceptualizations of the roles of elementary mathematics coaches*. (Doctoral dissertation, George Mason University, 2010).

Current Position: Director of Elementary Mathematics, Fairfax County Public Schools, Virginia

Linda Ann Galofaro Gantz (PhD, 2010). *Handheld computer algebra systems in the pre-Algebra classroom*. (Doctoral dissertation, George Mason University, 2010).

Current Position: Chair, Mathematics Department, Falls Church City Schools, Virginia

Christopher Johnston (PhD, 2009). *Pre-service elementary teachers planning for mathematics instruction: The role and evaluation of technology tools and their influence on lesson design*. (Doctoral dissertation, George Mason University, 2009).

Current Position: Math Test Development Specialist, American Institutes for Research, Washington DC

CHAIR – SUPERVISORY/PROGRAM COMMITTEES

Sheryl Rushton (PhD, 2014). *The impact of computer-adaptive benchmark data and assessment literacy on student achievement and motivation in mathematics*. (Doctoral Dissertation, Utah State University, 2014).

Current Position: Assistant Professor, Weber State University, Ogden, Utah

Catherine Scott (PhD, 2009). *STEM focused high schools*. (Doctoral dissertation, George Mason University, 2009).

Current Position: Clinical Assistant Professor, UNC-BEST Program Coordinator, University of North Carolina at Chapel Hill

PHD CANDIDATES/PROPOSALS DEFENDED

CHAIR

M. Jill Harmon. *Relationships between school, teacher, and feature characteristics and teachers' access to features within digital curriculum resources for mathematics instruction*. (Dissertation Proposal defended, May 2021; Utah State University).

Joseph Kozlowski. *Kindergarten-aged children's engagement in mathematics through awareness of design features: A comparison across different coding robots*. (Dissertation Proposal defended, April 2021; Utah State University).

Awards: Doctoral Researcher of the Year (2021)

Allison Roxburgh. *How preservice teachers' awareness of design features and academic language features relates to choosing and evaluating digital math games for English language learners*. (Dissertation Proposal defended, February 2021; Utah State University).

Awards: Presidential Doctoral Research Fellowship (2018-2022); Graduate Teacher of the Year (2021)

COMMITTEE MEMBER

Lise Welch. *Connections between computational thinking: Kindergarten students' demonstration of mathematics knowledge in a computational thinking assessment*. (Dissertation Proposal defended, August 2021; Utah State University).

Vicki Lyons. *The essential nature of psychological safety in advanced placement students' mathematics discourse*. (Dissertation Proposal defended, May 2021; Utah State University).

Danielle Divis. *The role of music context in high-school students' translations among representations in algebra*. (Dissertation Proposal defended, April 2021; Utah State University).

Michael Leitch. *Teacher learning of fractions division with area models*. (Dissertation Proposal defended, February 2021; Utah State University).

Angela Frabasilio. *Relationships between adaptive reasoning and learner-generated drawings when middle school students talk with partners during mathematical tasks*. (Dissertation Proposal defended, January, 2020; Utah State University).

Awards: Graduate Enhancement Award (2018)

Rachel Reeder. *Investigating K-1 Spanish dual language immersion teachers' conceptions of mathematics-focused content-based language teaching*. (Dissertation Proposal defended, January, 2020; Utah State University).

Jana L. Parker. *The role of co-teachers' professional learning communities in supporting implementation of reform mathematics*. (Dissertation Proposal defended, June 2010; George Mason University).

PHD COMPREHENSIVE EXAM COMMITTEES

CHAIR – COMPREHENSIVE EXAM COMMITTEE

Kent Hoffman (2020, April – Comprehensive Exam passed); School of Teacher Education and Leadership, Utah State University; Awards: Seely-Hinckley Scholarship

Trent Fawcett (2019, October – Comprehensive Exam passed); School of Teacher Education and Leadership, Utah State University

Vicki Lyons (2017, June – Comprehensive Exam passed); School of Teacher Education and Leadership, Utah State University

Sonnet Gravina (2013, June – Comprehensive Exam passed); School of Teacher Education and Leadership, Utah State University; Current Position: Mathematics Faculty, Fulton-Montgomery Community College, New York

PHD SUPERVISORY & PROGRAM COMMITTEES

CHAIR – DOCTORAL PROGRAM ADVISORY COMMITTEES

Jason Hardy (2020-present); School of Teacher Education and Leadership, Utah State University

Kimberly Beck (2020-2021); School of Teacher Education and Leadership, Utah State University

KimberLeigh Hadfield (2018-2020); School of Teacher Education and Leadership, Utah State University

Rachel Reeder (2016-2018); School of Teacher Education and Leadership, Utah State University

Jet Warr (2016-2018); School of Teacher Education and Leadership, Utah State University. Awards: Graduate Enhancement Award (2018)

Melanie Arp (2014-2018); School of Teacher Education and Leadership, Utah State University

Lauren Burton (2014-2016); School of Teacher Education and Leadership, Utah State University

Melanie Durfee (2014-2016); School of Teacher Education and Leadership, Utah State University

Janiece Edgington (2012-16); School of Teacher Education and Leadership, Utah State University; Awards: TEAL Opportunity Scholarship

Patricia Kridler (2004-08); Mathematics Education and Leadership, George Mason University

Faye Obenschain (2004-08); Mathematics Education and Leadership, George Mason University

Hana Oh (2005-08); Mathematics Education and Leadership, George Mason University

Wendy Schudmak (2005-08); Mathematics Education and Leadership, George Mason University

David VanVleet (2004-07); Mathematics Education and Leadership, George Mason University

COMMITTEE MEMBER – DOCTORAL PROGRAM ADVISORY COMMITTEES

Sandra Miles (2021-present); School of Teacher Education and Leadership, Utah State University

KimberLeigh Hadfield (2020-present); School of Teacher Education and Leadership, Utah State University

Carrie Bala (2018-present); School of Teacher Education and Leadership, Utah State University

Lise Welch (2018-present); School of Teacher Education and Leadership, Utah State University

Darrell Robinson (2016-present); Instructional Technology and Learning Sciences, Utah State University

Ian Sorensen (2012-15); School of Teacher Education and Leadership, Utah State University
Emma Smith (2008-13); School of Teacher Education and Leadership, Utah State University

EDUCATIONAL SPECIALIST DEGREES COMPLETED

CHAIR

Don Busenbark (Ed.S. Degree, completed 2018); School of Teacher Education and Leadership, Utah State University; Current Position: Mathematics Faculty, Utah State University.

Janet Nunez (Ed.S. Degree, completed 2009); School of Teacher Education and Leadership, Utah State University

COMMITTEE MEMBER

Omar Guthoff (Ed.S. Degree, completed 2012); School of Teacher Education and Leadership, Utah State University

MASTERS DEGREES COMPLETED

COMMITTEE MEMBER

Allison Roxburgh (Master's Degree, 2016); School of Teacher Education and Leadership, College of Education and Human Services, Utah State University

Cheryl Juliana (Master's Degree, 2010); Department of Mathematics & Statistics, College of Science, Utah State University

RESEARCH SUPERVISION OF FUNDED GRADUATE RESEARCH ASSISTANTS

Allison Roxburgh (2017-22); Utah State University

Joey Kozlowski (2018-19); Utah State University

Kristy Litster (2015-19); Utah State University

Melissa Jill Ashby (2016-18); Utah State University

Christina Lommatsch (2014-18); Utah State University

Emma Bullock (2013-17); Utah State University

Jessica Shumway (2010-16); Utah State University

Stephen Tucker (2011-15); Utah State University

Jennifer Boyer-Thurgood (2012-14); Utah State University

Salif Mahamane (2012-14); Utah State University

Katie Anderson (2009-14); Utah State University

Joseph Baker (2009-12); Utah State University

Kati Rodzon (2009-12); Utah State University

Arla Westenskow (2008-12); Utah State University

Hana Oh (2005-08); George Mason University

Gwenanne Salkind (2004-08); George Mason University

Jana Parker (2006-07); George Mason University

Faye Huie (2006-07); George Mason University

Nancy Irby (2006-07); George Mason University

Trish Kridler (2005-06); George Mason University

Ming Kuan Lin (2005-06); George Mason University

Catherine Scott (2006); George Mason University

Debora Southwell (2005-06); George Mason University

Johnna Bolyard (2000-04); George Mason University

Elizabeth Milewicz (1999-2000); University of Alabama

PRESENTATIONS

Invited Keynote Addresses

Moyer-Packenham, P. S. (2019, October). *Engagement and Convergence: Leadership for a World-Class Education in Mathematics and Technology*. Keynote Address, 1st International Conference on Innovation in Education and Pedagogy (ICIEP) 2019, Jakarta, Indonesia.

Moyer-Packenham, P. S. (2019, May). *Framing Challenging Questions and Fostering Collaboration: An Agenda for Research in Mathematics Education*. Keynote Address, Mathematics Education Research in Texas (MERiT) Conference, Houston, Texas.

Moyer-Packenham, P. S. (2015, May). *Current Research on Mathematics Learning with Virtual Manipulatives*. Keynote Address, Annual Turkish Computer and Mathematics Education Conference (BILMAT), Adiyaman, Turkey.

Moyer-Packenham, P. S. (2010, May). *Time Management Skills & Academe*. Keynote Address, Annual Curriculum and Instruction Research Colloquium, College of Education and Human Services, Utah State University, USU Granite Center, Salt Lake City, Utah.

Moyer, P. S. (2002, October). *Virtual Manipulatives in Your Classroom*. Keynote Address, Annual Meeting of the Rappahanock Region of Teachers of Mathematics, Stafford, Virginia.

Moyer, P. S. (2001, May). *Virtual Manipulatives? ...And Their Role in School Mathematics*. Keynote Address, 30th Annual Mathematics Symposium, Frostburg State University, Frostburg, Maryland.

Invited Addresses

Moyer-Packenham, P. S. (2019, October). *Concrete Manipulatives, Virtual Manipulatives, and Digital Games: Results from a Research Agenda on Mathematical Representations*. University of Canberra, Canberra, Australia.

Moyer-Packenham, P. S. (2019, May). *Designing Research, Collaborating, and Writing Grants*. Invited University Faculty Development Workshop, Sam Houston State University, Mathematics Education Research in Texas (MERiT) Conference, Houston, Texas.

Moyer-Packenham, P. S. (2018, October). *How Teachers Can Enhance Mathematics Learning with Technology-Infused Experiences*. 3rd Sriwijaya University Learning and Education International Conference (3rd SULE-IC 2018), Sriwijaya University, Palembang, Indonesia.

Moyer-Packenham, P. S. (2018, October). *How Teachers Can Enhance Mathematics Learning with Technology-Infused Experiences*. Ganesha University, Undiksha, Indonesia.

Moyer-Packenham, P. S. (2017, September). *Research on How Virtual Manipulative Environments Provide Access and Promote Creativity for Mathematics Learning*. Korean National Assembly, Seoul, South Korea.

Moyer-Packenham, P. S. (2017, January). *Promoting Mathematics Success Using Technology: Current Technology Issues, Technology Tools, and Virtual Manipulatives*. Mathematics Symposium, Concordia University, Montreal, Canada.

Moyer-Packenham, P. S. (2016, July). *Using Virtual Manipulatives on iPads: How App Alignment Promotes Young Children's Mathematics Learning*. Paper Presentation, 13th International Congress on Mathematical Education (ICME), Hamburg, Germany.

Moyer-Packenham, P. S. (2016, May). *The Role of Technology Affordances on Touch-Screen Devices in Young Children's Mathematics Learning*. Teaching and Learning Speaker Series, University of Wyoming, Laramie, WY.

Moyer-Packenham, P. S. (2015, May). *A Summary and Synthesis of Virtual Manipulatives Research for Mathematics Learning*. Department of Mathematics Education, Gazi University, Ankara, Turkey.

Moyer-Packenham, P. S. (2015, May). *A Synthesis of Virtual Manipulatives Research for Mathematics Learning*. Department of Mathematics Education, Middle East Technical University, Ankara, Turkey.

Moyer-Packenham, P. S. (2014, November). *Affordances of Using Interactive Mobile Technology for K-3 Mathematics Learning and Teaching*. Panelist, 2014 Research & Collaboratory Inquiry Group on Interactive Technologies in Early Mathematics Classrooms. Funded by the National Science Foundation.

Moyer-Packenham, P. S. (2014, October). *Teaching in the 21st Century: Leveraging Technologies to Maximize Student Engagement in Mathematics in the Online Environment*. Department of Mathematics Colloquium, Western Michigan University, Kalamazoo, MI.

Moyer-Packenham, P. S., & Boyer-Thurgood, J. M. (2014, March). *The Elementary Mathematics Teachers Academy: An Individualized Online CCSS Mathematics Professional Development*. Utah Association of Mathematics Teacher Educators, Brigham Young University, Provo, UT.

Moyer-Packenham, P. S. (2010, April). *Research on Mathematics Representations and Virtual Manipulatives*. Mathematics Institute, Pontificia Universidad Catolica de Valparaiso, Valparaiso, Chile.

Moyer-Packenham, P. S. (2009, February). *Using Virtual Manipulatives to Support the Development of Mathematical Understanding*. Presentation Panel, Teachers College, Columbia University, New York, NY. (with colleagues from the National Library of Virtual Manipulatives – E. Robert Heal, James Dorward, & Joel Duffin).

International Presentations – Scholarship

Gulkilik, H., Yuruk, N., & Moyer-Packenham, P. S. (2016, July). *The Growth of Mathematical Understanding: Elif's Engagement with Representations in Pirie-Kieren Levels*. Paper Presentation, 13th International Congress on Mathematical Education (ICME), Hamburg, Germany.

Westenskow, A., Moyer-Packenham, P. S., & Child, B. (2016, July). *Using an Iceberg Model to Target Students' Difficulties in Place Value Understandings*. Paper Presentation, 13th International Congress on Mathematical Education (ICME), Hamburg, Germany.

Tucker, S. I., & Moyer-Packenham, P. S. (2016, July). *The Modification of Attributes, Affordances, Abilities, and Distance for Learning Framework for User-Tool Interactions*. Paper Presentation, 13th International Congress on Mathematical Education (ICME), Hamburg, Germany.

Gulkilik, H., & Moyer-Packenham, P. S. (2015, May). *Yeni Bir Araştırma Alanında Veri Toplama Sürecinin Planlanması ve Yürütülmesi: iPad Uygulamalarında Sanal Manipülatifler*. Research Presentation, Annual Turkish Computer and Mathematics Education Conference (BILMAT), Adiyaman, Turkey.

Moyer-Packenham, P. S., Bullock, E., & Gulkilik, H. (2015, April). *The Relationship between Affordances in Virtual Manipulative Mathematics Apps and Young Children's Learning Performance and Efficiency*. Research Presentation, International Conference on Education in Mathematics, Science & Technology (ICEMST), Antalya, Turkey.

Moyer-Packenham, P. S., Westenskow, A., Shumway, J. F., Bullock, E., Tucker, S. I., Anderson-Pence, K. L., Boyer-Thurgood, J., Maahs-Fladung, C., Symanzik, J., Mahamane, S., MacDonald, B., & Jordan, K., The Virtual Manipulatives Research Group at Utah State University. (2014, September). *The Effects of Different Virtual Manipulatives for Second Graders' Mathematics Learning and Efficiency in the Touch-Screen Environment*. Paper

Presentation, 12th International Conference of the Mathematics Education into the 21st Century Project, Herceg Novi, Montenegro.

Westenskow, A., Moyer-Packenham, P. S., Anderson-Pence, K. L., Shumway, J. F., & Jordan, K., The Virtual Manipulatives Research Group at Utah State University. (2014, September). *Cute Drawings? What Students' Fractional Representations Reveal About Their Whole Number Bias*. Paper Presentation, 12th International Conference of the Mathematics Education into the 21st Century Project, Herceg Novi, Montenegro.

Moyer-Packenham, P. S., & Westenskow, A. (2014, July). *Effects and Affordances of Virtual Manipulatives*. Short Oral Presentation, 38th annual meeting of the Psychology of Mathematics Education International (PME), Vancouver, Canada.

Moyer-Packenham, P. S., & Suh, J. M. (2014, July). *A Working Session on Virtual Manipulatives*. Chair, Working Session, 38th annual meeting of the Psychology of Mathematics Education International (PME), Vancouver, Canada.

Tucker, S. I., & Moyer-Packenham, P. S. (2014, July). *Virtual Manipulatives Affordances Influence Mathematical Understanding*. Short Oral Presentation, 38th annual meeting of the Psychology of Mathematics Education International (PME), Vancouver, Canada.

Anderson, K., & Moyer-Packenham, P. S. (2014, January). *Techno-Mathematical Discourse*. Research Presentation, 12th Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.

Boyer-Thurgood, J., Moyer-Packenham, P. S., Shumway, J., Westenskow, A., Tucker, S., Anderson, K., & Bullock, E. (2014, January). *Kindergartener's Strategy Development during Combining Tasks on the iPad*. Research Presentation, 12th Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.

Moyer-Packenham, P. S., Shumway, J., Westenskow, A., Tucker, S., Anderson, K., Boyer-Thurgood, J., & Bullock, E. (2014, January). *Young Children's Mathematics Interactions with Virtual Manipulatives on iPads*. Research Presentation, 12th Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.

Shumway, J. F., Westenskow, A., & Moyer-Packenham, P. S. (2014, January). *A Story Problem Assessment: Task-Based Interviews for Understanding Children's Number Sense*. Research Presentation, 12th Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.

Tucker, S. I., Moyer-Packenham, P. S., Boyer-Thurgood, J. M., Anderson, K. L., Shumway, J., Westenskow, A., & Bullock, E. (2014, January). *The Nexus of Mathematics, Strategy, and Technology in Second-Graders' Interactions with an iPad-Based Virtual Manipulative*. Paper Session, 12th Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.

Westenskow, A., Moyer-Packenham, P. S., & Child, B. (2014, January). *Developing Number Sense Flexibility: Effectiveness of a TIER II Summer Intervention Program*. Research Presentation, 12th Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.

Johnston, C. J., & Moyer-Packenham, P. S. (2011, September). *A Comprehensive Model for Examining Pre-Service Teachers' Knowledge of Technology Tools for Mathematical Learning*. Paper Presentation, 11th International Conference of the Mathematics Education into the 21st Century Project, Rhodes University, Grahamstown, South Africa. [http://www.qucosa.de/recherche/frontdoor/cache.off?tx_slubopus4frontend\[id\]=8260](http://www.qucosa.de/recherche/frontdoor/cache.off?tx_slubopus4frontend[id]=8260)

Moyer-Packenham, P. S. & Westenskow, A. (2011, September). *Virtual Manipulatives: A Meta-Analysis Comparing their Effects with Other Instructional Treatments*. Paper Presentation, 11th International Conference of the Mathematics Education into the 21st Century Project, Rhodes University, Grahamstown, South Africa. [http://www.qucosa.de/recherche/frontdoor/cache.off?tx_slubopus4frontend\[id\]=8291](http://www.qucosa.de/recherche/frontdoor/cache.off?tx_slubopus4frontend[id]=8291)

Moyer, P. S., Parker, J., & Bolyard, J. J. (2008, May). *Examining Strategies that Promote Teacher Diversity in Mathematics and Science*. Research Paper Presentation, Twelfth Consultation of the International Consortium for Research in Science and Mathematics Education (ICRSME), Quito, Ecuador.

Suh, J. M., & Moyer, P. S. (2007, July). *The Application of Dual Coding Theory in Multi-Representational Virtual Mathematics Environments*. Research Paper Presentation, 31st annual meeting of the Psychology of Mathematics Education International (PME), Seoul, South Korea.

Moyer, P. S., Bolyard, J. J., Oh, H., Kridler, P., & Salkind, G. (2006, November). *Representations of Mathematics Teacher Quality in a National Program*. Research Paper Presentation, 28th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Merida, Yucatan, Mexico.

Bolyard, J. J., & Moyer, P. S. (2006, March). *The Impact of Virtual Manipulatives on Students' Learning of Integer Concepts* Research Paper Presentation, 11th Annual Consultation of the International Consortium for Research in Science and Mathematics Education (ICRSME), Nassau, Bahamas.

Suh, J. M., & Moyer, P. S. (2006, March). *Fraction and Algebra Achievement of Third Graders Using Virtual and Physical Manipulatives* Research Paper Presentation, 11th Annual Consultation of the International Consortium for Research in Science and Mathematics Education (ICRSME), Nassau, Bahamas.

Salvo, L., & Moyer, P. S. *Effects of an Experimental Curriculum on Third Graders' Knowledge of Multiplication Facts*. (2006, March). Research Paper Presentation, 11th Annual Consultation of the International Consortium for Research in Science and Mathematics Education (ICRSME), Nassau, Bahamas.

Suh, J. M., & Moyer, P. S. (2005, January). *Technology Uses in the Mathematics Classroom: Understanding Fractions Using Virtual Manipulative Concept Tutorials*. Research Paper Presentation, 3rd Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.

Moyer, P. S., & Niezgoda, D. (2003, October). *Young Children's Use of Virtual Manipulatives to Explore Patterns*. Research Paper Presentation, 6th International Conference on Technology in Mathematics Teaching, Volos, Greece.

Moyer, P. S. & Frye, D. (2002, September). *Web-Based Learning: Using Telecollaboration Models to Enhance Mathematics Instruction*. Paper Presentation, International Conference of the Mathematics Education into the 21st Century Project, Terrasini, Palermo, Italy.

Salvo, L., & Moyer, P. S. (2002, September). *Rabbit Ears to Slope to Derivatives: Longitudinal Development of an Algebraic Concept*. Paper Presentation, International Conference of the Mathematics Education into the 21st Century Project, Terrasini, Palermo, Italy.

Moyer, P. S. (2001, August). *Virtual Manipulatives in the K-12 Classroom*. Paper Presentation, International Conference of the Mathematics Education into the 21st Century Project, Palm Cove, Queensland, Australia.

National Presentations – Scholarship

Moyer, P. S. (2007, September). *Preparing Doctoral Students for Life in Academia*. Poster Session, National Conference on Doctoral Programs in Mathematics Education, Kansas City, MO.

American Association of Colleges for Teacher Education (AACTE)

Moyer, P. S., Dockery, K., Niezgoda, D., Jamieson, S., & Knotts, L. (2005, February). *Impacting Mathematical Learning at Multiple Levels through School and University Collaboration*. Research Paper Presentation, 57th Annual Meeting of the American Association of Colleges for Teacher Education (AACTE), Washington, DC.

American Educational Research Association (AERA)

Moyer-Packenham, P. S., Roxburgh, A., Litster, K., & Kozlowski, J. (2020, April). *Students' Connections among Semiotic Representations in Digital Games and their Influence on Mathematics Learning*. Research Paper Presentation, American Educational Research Association (AERA), San Francisco, California.
<http://tinyurl.com/t6bxst7> [Conference Cancelled]

Bullock, E. P., Roxburgh, A. L., Moyer-Packenham, P. S., Bektas, E., Webster, J., & Bullock, K. (2020, April). *The Importance of Quality of Design Features in Digital Math Games*. Research Paper Presentation, American Educational Research Association (AERA), San Francisco, California. <http://tinyurl.com/wgdwqk3> [Conference Cancelled]

Moyer-Packenham, P. S., Litster, K., Bullock, E. P., Shumway, J. F., & Clarke-Midura, J. (2019, April). *Design Features that Promote Children's Awareness of the Affordances in Digital Math Games*. Research Paper Presentation, American Educational Research Association (AERA), Toronto, Canada.

Litster, K., Lommatsch, C., Novak, J. R., Moyer-Packenham, P. S., Ashby, M. J., & Roxburgh, A. L. (2019, April). *Attitude, App Use, and Affordances: Mediators of Learning from Digital Math Games*. Research Poster Presentation, American Educational Research Association (AERA), Toronto, Canada.

Litster, K., Moyer-Packenham, P. S., Lommatsch, C., Ashby, M. J., Roxburgh, A. L., Bullock, E. P., Shumway, J. F., Speed, E., Covington, B., Hartman, C., Clarke-Midura, J., Skaria, J., Westenskow, A., MacDonald, B., Symanzik, J., & Jordan, K. (2019, April). *Relationship between Children's Affect, Mathematical Connections, Strategies and Learning with Digital Math Games*. Research Poster Presentation, American Educational Research Association (AERA), Toronto, Canada.

Moyer-Packenham, P. S., Lommatsch, C., Litster, K., Ashby, M. J., Bullock, E. P., Shumway, J. F., & MacDonald, B. (2018, April). *Affordances of Digital Games for Mathematics Learning in Grades 3-6*. Research Presentation, American Educational Research Association (AERA), New York City, New York.

Litster, K., & Moyer-Packenham, P. S. (2018, April). *Elementary Mathematics Apps: Balancing Gaming and Mathematics Affordances for Student Learning*. Research Presentation, American Educational Research Association (AERA), New York City, New York.

Lommatsch, C., Moyer-Packenham, P. S., Litster, K. (2018, April). *Differences in Children's Affordance Awareness between Novice and Experienced Learners*. Symposium Panel, American Educational Research Association (AERA), New York City, New York.

Bullock, E. P., Shumway, J. F., Lommatsch, C., & Moyer-Packenham, P. S. (2018, April). *Preschool Children's Learning Progressions While Interacting with Touch Screen Mathematics Apps and How Affordance Access Matters*. Research Presentation, American Educational Research Association (AERA), New York City, New York.

Hunt, J. H., Westenskow, A., & Moyer-Packenham, P. S. (2017, April). *Progressions in Fraction Partitioning and Quantification Evidenced by Children who Experience Low Achievement in Mathematics*. Research Presentation, American Educational Research Association (AERA), San Antonio, Texas.

Moyer-Packenham, P. S., Bullock, E. P., Shumway, J. F., Tucker, S. I., Watts, C., Westenskow, A., Anderson-Pence, K. L., Boyer-Thurgood, J., & Jordan, K. (2017, April). *Affordances of Virtual Manipulative Math Apps: How They Help and Hinder Young Children's Learning*. Research Presentation, American Educational Research Association (AERA), San Antonio, Texas.

Watts, C., Moyer-Packenham, P. S., Tucker, S. I., Bullock, E. P., Shumway, J. F., Westenskow, A., Boyer-Thurgood, J., Anderson-Pence, K. L., Mahamane, S., & Jordan, K. (2017, April). *Learning Progression Shifts: How Touch-Screen Virtual Manipulative Mathematics App Design Promotes Productive Struggle*. Research Poster, American Educational Research Association (AERA), San Antonio, Texas.

Moyer-Packenham, P. S., Shumway, J. F., Bullock, E. P., Anderson-Pence, K. L., Tucker, S. I., Westenskow, A., Boyer-Thurgood, J., Gulkilik, H., Watts, C., & Jordan, K. (2016, April). *Using Virtual Manipulatives on iPads to Promote Young Children's Mathematics Learning*. Paper Presentation, Annual Meeting of the American Educational Research Association (AERA), Washington, DC.

Tucker, S. I., & Moyer-Packenham, P. S. (2016, April). *Affordance-Ability Relationships in Children's Interactions with Mathematics Virtual Manipulatives*. Paper Presentation, Annual Meeting of the American Educational Research Association (AERA), Washington, DC.

Moyer-Packenham, P. S., Shumway, J. F., Bullock, E., Tucker, S. I., Anderson-Pence, K. L., Westenskow, A., Boyer-Thurgood, J., Gulkilik, H., Watts, C., & Jordan, K. (2015, April). *Using Virtual Manipulatives on iPads to Promote Young Children's Mathematics Learning*. Paper presented at the annual meeting of the American Education Research Association (AERA), Washington, DC.

Anderson-Pence, K. L., & Moyer-Packenham, P. S. (2015, April). *Using Virtual Manipulatives to Enhance Collaborative Discourse in Mathematics Instruction*. Paper Presentation, Annual Meeting of the American Educational Research Association (AERA), Chicago, Illinois.

Moyer-Packenham, P. S., Jordan, K., Baker, J., Westenskow, A., Rodzon, K., Anderson, K., & Shumway, J. (2013, April). *Hidden Predictors of Achievement: The Equalizing Effect of Virtual Manipulatives for Mathematics Instruction*. Paper Presentation, Annual Meeting of the American Educational Research Association (AERA), San Francisco, California.

Moyer-Packenham, P. S., & Suh, J. (2012, April). *Learning Mathematics with Technology: The Influence of Virtual Manipulatives on Different Achievement Groups*. Paper Presentation, Annual Meeting of the American Educational Research Association (AERA), Vancouver, British Columbia, Canada.

Moyer-Packenham, P. S., & Westenskow, A. (2012, April). *Effects of Virtual Manipulatives on Student Achievement and Mathematics Learning*. Paper Presentation, Annual Meeting of the American Educational Research Association (AERA), Vancouver, British Columbia, Canada.

Best Paper Award. AERA: Applied Research in Virtual Environments for Learning (ARVEL).

Moyer-Packenham, P. S., & Westenskow, A. (2010, April). *Processes and Pathways: How Do Mathematics/Science Partnerships Measure and Promote Teacher Content Knowledge Growth?* Research Paper Presentation, American Educational Research Association (AERA) Annual Meeting, Denver, CO.

Moyer-Packenham, P. S., Kitsantas, A., Bolyard, J. J., Huie, F., & Irby, N. (2009, April). *Participation by STEM Faculty in Mathematics and Science Partnership (MSP) Activities for Teachers*. Research Paper Presentation, American Educational Research Association (AERA) Annual Meeting, San Diego, CA.

Moyer-Packenham, P. S. (2007, April). *Representations of teacher quality, quantity, and diversity in the MSP Program*. Research Paper Presentation/Part of a Group Symposium Titled: *Early Evaluation of NSF's Math and Science Partnership (MSP) Program: Student Achievement, Teacher Quality, and Curriculum Outcomes*, American Educational Research Association (AERA) Annual Meeting, Chicago, IL (with Dimiter Dimitrov, Margret Hjalmarson, & Kenneth Wong).

Suh, J. M., & Moyer, P. S. (2007, April). *Third Graders' Mathematics Achievement Using Virtual and Physical Manipulatives for Adding Fractions and Balancing Equations*. Research Poster Presentation, American Educational Research Association (AERA) Annual Meeting, Chicago, IL.

Wadsworth, L. A., Husman, J. E., & Moyer, P. S. (2005, April). *Me, Math, and My Future: The Relationships Between Students' Future Goals, Self-Efficacy, and Achievement*. Research Poster Presentation, American Educational Research Association (AERA) Annual Meeting, Montreal, Canada.

Reimer, K., & Moyer, P. S. (2004, April). *A Classroom Study of Third-Graders' Use of Virtual Manipulatives to Learn About Fractions*. Research Paper Presentation, American Educational Research Association (AERA) Annual Meeting, San Diego, CA.

Moyer, P. S., & Husman, J. (2002, April). *Developing Identities: Motivating and Supporting Preservice Teachers*. Research Paper Presentation, American Educational Research Association (AERA) Annual Meeting, New Orleans, Louisiana.

Moyer, P. S. (1998, April). *Middle Grades Teachers Using Mathematics Manipulatives: A Free Access Paradigm*. Research Paper Presentation, American Educational Research Association (AERA) Annual Meeting, San Diego, California.

Association of Mathematics Teacher Educators (AMTE)

Johnston, C., & Moyer-Packenham, P. S. (2013, January). *The T-Math Framework: A Comprehensive Model for Examining Pre-Service Teachers' Knowledge of Mathematical Technology Tools*. Research Paper Presentation, Association of Mathematics Teacher Educators (AMTE), Orlando, Florida.

Moyer-Packenham, P. S., & Westenskow, A. (2012, February). *Connecting Research Results on the Effects of Virtual Manipulatives with Mathematics Teacher Development*. Research Paper Presentation, 16th Annual Conference of the Association of Mathematics Teacher Educators (AMTE), Fort Worth, TX.

Brown, A. B., Westenskow, A., & Moyer-Packenham, P. S. (2011, January). *Analyzing Mathematics Teaching Anxiety: Assumptions, Findings and Implications for Mathematics Educators*. Research Paper Presentation, Annual Meeting of the Association of Mathematics Teacher Educators (AMTE), Irvine, CA.

Westenskow, A., Brown, A. B., & Moyer-Packenham, P. S. (2010, January). *Reducing Pre-Service Teacher Anxieties for Teaching Elementary Mathematics*. Research Paper Presentation, Annual Meeting of the Association of Mathematics Teacher Educators (AMTE), Irvine, CA.

Association of Teacher Educators (ATE)

Moyer, P. S., & Milewicz, E. (2001, February). *Questioning Competence: What Math Assessment Interview Strategies Reveal About Preservice Teacher Development*. Research Paper Presentation, 81st Annual Meeting of the Association of Teacher Educators (ATE), New Orleans, Louisiana.

National Association of Medical Minority Educators (NAMME)

Moyer, P. S. (1995, April). *Minority Student Success in Mathematics and Science: Pathways for Increasing Minority Presence in the Health Professions*. Research Presentation, National Association of Medical Minority Educators (NAMME) 18th Annual Southern Regional Conference, Raleigh, North Carolina.

National Council of Teachers of Mathematics (NCTM)

Moyer-Packenham, P. S., Litster, K., Ashby, M. J., Roxburgh, A. L., & Bullock, E. P. (2019, April). *Design Features of Digital Math Games through the Lens of ACAT*. Research Paper Presentation, National Council of Teachers of Mathematics Research Conference (NCTM-R), San Diego, CA.

Litster, K., & Moyer-Packenham, P. S. (2019, April). *Digital Math Games: Affect, Vocabulary and Strategy Influences on Learning*. Research Paper Presentation, National Council of Teachers of Mathematics Research Conference (NCTM-R), San Diego, CA.

Moyer-Packenham, P. S., Bullock, E. P., Shumway, J. F., Tucker, S. I., Watts, C., Westenskow, A., Anderson-Pence, K. L., Boyer-Thurgood, J. (2017, April). *The Impact of Technology Affordances in Children's Mathematical Learning*. Research Presentation, National Council of Teachers of Mathematics Research Conference (NCTM-R), San Antonio, Texas.

Child, B., Westenskow, A., & Moyer-Packenham, P. S. (2016, November). *Deepening Place Value: The Key to Successful Understanding of Operations*. Research Presentation, National Council of Teachers of Mathematics (NCTM) 2016 Innov8 Conference, St. Louis, Missouri.

Louie, J., Buffington, P., McCormick, K., & Moyer-Packenham, P. S. (2016, April). *Using Mobile Technology to Promote K-2 Mathematical Reasoning and Discourse*. Research Presentation, National Council of Teachers of Mathematics Research Conference (NCTM-R), San Francisco, CA.

Anderson-Pence, K. L., & Moyer-Packenham, P. S. (2015, April). *Using Virtual Manipulatives to Generalize and Justify through Discourse*. Paper Presentation, National Council of Teachers of Mathematics (NCTM) Annual Meeting, Boston, Massachusetts.

Moyer-Packenham, P. S., Shumway, J., Tucker, S., Boyer-Thurgood, J., Westenskow, A., Hunt, J., & Bullock, E. (2014, April). *Children's Mathematics Interactions with Virtual Manipulatives on iPads*. Paper Presentation, National Council of Teachers of Mathematics Research Conference (NCTM-R), New Orleans, Louisiana.

Westenskow, A., & Moyer-Packenham, P. S. (2014, April). *Iceberg Synthesis of Fraction Learning Related to Manipulatives Use*. Paper Presentation, National Council of Teachers of Mathematics Research Conference (NCTM-R), New Orleans, Louisiana.

Westenskow, A., & Moyer-Packenham, P. S. (2014, April). *Equivalent Fraction Misconceptions: $\frac{1}{4}$ is equal to $\frac{3}{4}$, isn't it?* Research Presentation, National Council of Teachers of Mathematics (NCTM) Annual Conference, New Orleans, Louisiana.

Moyer-Packenham, P. S., Jordan, K., Baker, J., Westenskow, A., Rodzon, K., Anderson, K., & Shumway, J. (2013, April). *Hidden Achievement Predictors: Equalizing Effects of Virtual Manipulatives*. Paper Presentation, National Council of Teachers of Mathematics Research Presession (NCTM-R), Denver, Colorado.

Westenskow, A., & Moyer-Packenham, P. S. (2013, April). *Variations in Students' Use of Representations During Fraction Intervention*. Paper Presentation, National Council of Teachers of Mathematics Research Presession (NCTM-R), Denver, Colorado.

Anderson, K., Westenskow, A., & Moyer-Packenham, P. S. (2012, April). *Teachers' Resources for Using Virtual Manipulatives to Teach Fraction Concepts*. Presentation, 90th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Philadelphia, PA.

Moyer-Packenham, P. S., & Westenskow, A. (2012, April). *Effects and Affordances of Virtual Manipulatives on Student Achievement*. Paper Presentation, 90th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Philadelphia, PA.

Bolyard, J. J., & Moyer-Packenham, P. S. (2010, April). *Virtual or Not? Selecting Virtual Manipulatives for Effective Classroom Use*. Presentation, 88th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Diego, CA.

Moyer-Packenham, P. S., & Westenskow, A. (2010, April). *Analyzing, Interpreting, and Connecting Data Relationships Using Virtual Manipulatives*. Presentation, 88th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Diego, CA.

Bolyard, J. J., & Moyer, P. S. (2007, March). *Selecting Dynamic Technology Representations for Mathematics Teaching*. Research Presentation, 85th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Atlanta, GA.

Martin, T., & Moyer, P. S. (2005, April). *Virtual Manipulatives for Elementary and Pre-Service Mathematics Teaching*. Research Presentation, 83rd Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Diego, CA.

Moyer, P. S., & Niezgoda, D. (2004, April). *Children's Patterns Using Concrete and Virtual Pattern Blocks*. Research Paper Presentation, 82nd Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Philadelphia, PA.

Moyer, P. S., & Bolyard, J. J. (2003, April). *Exploring Representation Using Virtual Manipulatives in Geometry*. Paper Presentation, 81st Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Antonio, Texas.

Moyer, P. S. (2001, April). *Kids Say the Darndest Things! What Children Tell Us About Fractions*. Research Paper Presentation, 79th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Orlando, Florida.

Moyer, P. S. (2000, April). *Teachers and Mathematics Manipulatives: Are We Having Fun Yet?* Research Paper Presentation, 78th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Chicago, Illinois.

Moody, V. R., & Moyer, P. S. (1999, April). *Effective Mathematics Teachers and Teaching Practices: What African American Students Say!* Research Presentation, 77th Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Francisco, California.

National Science Teachers Association (NSTA)

Packenham, E. D., Manley, K., Hinson, S., & Moyer, P. S. (1997, April). *The Mathematics and Science Education Network Pre-College Program: Recruiting Minorities and Females in Science, Mathematics, and Related Careers*. Research Presentation, National Science Teachers Association (NSTA) National Convention, New Orleans, Louisiana.

Packenham, E. D., & Moyer, P. S. (1997, April). *The Mathematics and Science Education Network Pre-College Program: A Recipe for Success*. Research Presentation, National Science Teachers Association (NSTA) National Convention, New Orleans, Louisiana.

North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA)

Working Group: Hjalmanson, M. A., Bolyard, J., Suh, J. M., Bailey, P., Whitenack, J., Moyer-Packenham, P. (2013, November). *Mathematics Specialists: A New Role in Schools*. Working group: Annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Chicago, Illinois.

Moyer, P. S., Salkind, G., & Bolyard, J. J. (2007, October). *Teachers' Uses of Virtual Manipulatives in K-8 Mathematics Lessons*. Research Paper Presentation, 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Lake Tahoe, Nevada.

Bolyard, J. J., & Moyer, P. S. (2006, November). *The Impact of Virtual Manipulatives on Student Achievement in Integer Addition and Subtraction*. Research Paper Presentation, 28th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Merida, Yucatan, Mexico.

Ambrose, R., Jacobs, V., Crespo, S., Moyer, P. S., & Nicol, S. (2004, October). *Exploring the Use of Clinical Interviews in Teacher Development*. Invited Discussion Group, 26th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Toronto, Ontario, Canada.

Moyer, P. S., & Husman, J. (2000, October). *Environments for Elementary Mathematics Methods Coursework: Supporting the Emerging Professional*. Research Paper Presentation, accepted for the 22nd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Tucson, Arizona.

Moyer, P. S. (1999, October). *Instructional Devices in Middle Grades Mathematics: The Effects of Free Access on Teacher Control and Student Motivation*. Research Paper Presentation, 21st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Cuernavaca, Morelos, Mexico.

Moyer, P. S., & Moody, V. R. (1998, October). *Preservice Teachers' Reflections on Assessing Students' Mathematical Ideas*. Research Paper Presentation, 20th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Raleigh, North Carolina.

Moody, V. R., & Moyer, P. S. (1998, October). *Using the Metaphor of Voice to Investigate the Mathematical Experiences of African American Students*. Research Paper Presentation, 20th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Raleigh, North Carolina.

School Science and Mathematics Association (SSMA)

Bullock, E., Roxburgh, A., Moyer-Packenham, P. S. & Bektas, E. (2019, November). *The Impact of High Quality Features in Digital Math Games on Children's Learning*. Paper Presentation, School Science and Mathematics Association (SSMA) Conference, Salt Lake City, Utah.

Moyer-Packenham, P. S., Roxburgh, A., & Kozlowski, J. (2019, November). *Students' Uses of Mathematical Representations and Their Learning Outcomes in Digital Games*. Paper Presentation, School Science and Mathematics Association (SSMA) Conference, Salt Lake City, Utah.

Moyer-Packenham, P. S., Jordan, K., Ng, D., Anderson, K., Baker, J., Rodzon, K., Shumway, J., & Westenskow, A. (2011, November). *School Mathematics Research on Virtual Manipulatives: A Collaborative Team Approach*. Research Presentation, School Science and Mathematics Association (SSMA) Conference, Colorado Springs, Colorado.

Moyer-Packenham, P. S. & Westenskow, A. (2011, November). *A Meta-Analysis of the Effects of Virtual Manipulatives on Mathematics Learning and Student Achievement*. Paper Presentation, School Science and Mathematics Association (SSMA) Conference, Colorado Springs, Colorado.

Society for Information Technology and Teacher Education (SITE)

Roxburgh, A. L., & Moyer-Packenham, P. S. (2021, March). *Children's Use of Systemic Functional Linguistic Metafunctions during Digital Math Gameplay*. Research Paper Online Presentation, Society for Information Technology and Teacher Education (SITE), Online.

Litster, K., & Moyer-Packenham, P. S. (2019, March). *How the Balance of Gaming and Mathematics Elements Effects Student Learning in Digital Math Games*. Research Paper Presentation, Society for Information Technology and Teacher Education (SITE), Las Vegas, NV. **OUTSTANDING PAPER AWARD**

Litster, K., Moyer-Packenham, P. S., Ashby, M. J., Roxburgh, A. L., & Kozlowski, J. S. (2019, March). *Digital Math Games: Importance of Strategy and Perseverance on Elementary Children's Learning Opportunities*. Research Paper Presentation, Society for Information Technology and Teacher Education (SITE), Las Vegas, NV.

Moyer-Packenham, P. S., Ashby, M. J., Litster, K., Roxburgh, A. L., & Kozlowski, J. S. (2019, March). *How Design Features Promote Children's Awareness of Affordances in Digital Math Games*. Research Paper Presentation, Society for Information Technology and Teacher Education (SITE), Las Vegas, NV.

Moyer-Packenham, P. S., Litster, K., Roxburgh, A. L., Kozlowski, J. S., & Ashby, M. J. (2019, March). *Relationships between Mathematical Language, Representation Connections, and Learning Outcomes in Digital Math Games*. Research Paper Presentation, Society for Information Technology and Teacher Education (SITE), Las Vegas, NV.

Moyer-Packenham, P. S., Lommatsch, C., Litster, K., Ashby, M. J., & Roxburgh, A. (2018, March). *The Role of Design Features in the Affordances of Digital Math Games*. Research Presentation, Society for Information Technology and Teacher Education (SITE), Washington, DC. **OUTSTANDING PAPER AWARD**

Moyer-Packenham, P. S., Litster, K., Lommatsch, C., Ashby, M. J., & Roxburgh, A. (2018, March). *Mediators of Learning in Game-Based Mathematics Apps*. Research Presentation, Society for Information Technology and Teacher Education (SITE), Washington, DC.

Litster, K., Moyer-Packenham, P. S., & Reeder, R. (2018, March). *Affordances of Simultaneous Linking Features in a Base-10 Blocks Mathematics App for Young Children*. Research Presentation, Society for Information Technology and Teacher Education (SITE), Washington, DC.

Bullock, E. P., Moyer-Packenham, P. S., Shumway, J. F., Watts, C., MacDonald, B. (2015, March). *Effective Teaching with Technology: Managing Affordances in iPad Apps to Promote Young Children's Learning*. Society for Information Technology and Teacher Education (SITE) Conference, Las Vegas, Nevada.

Moyer-Packenham, P., Boyer-Thurgood, J., Legler, N., & Larsen, K. (2014, March). *Research on the Elementary Mathematics Teachers Academy CCSSM: An Online Mathematics Course Where You Select the Content*. Paper Presentation, Society for Information Technology and Teacher Education (SITE) Conference, Jacksonville, Florida.

State & Regional Presentations

Alabama Council of Teachers of Mathematics (ACTM)

Moyer, P. S. (1998, November). *Tools for Cognition: Using Manipulatives in Elementary School Mathematics*. Workshop Presentation, Alabama Council of Teachers of Mathematics (ACTM) Annual State Conference, Montgomery, Alabama.

Moyer, P. S. (1997, November). *Tools for Cognition: Using Manipulatives in Middle School Mathematics*. Workshop Presentation, Alabama Council of Teachers of Mathematics (ACTM) Annual State Conference, Montgomery, Alabama.

National Council of Teachers of Mathematics (NCTM) Regional

Moyer, P. S. (2000, March). *Culturally Relevant Mathematics*. Workshop Presentation, National Council of Teachers of Mathematics (NCTM) Regional Conference, Mobile, Alabama.

North Carolina Council of Teachers of Mathematics (NCCTM)

Moyer, P. S., Groff, K., & Blalock, B. (1996, October). *Tools for Cognition: Using Manipulatives in Middle Grades Mathematics*. Workshop Presentation, 26th Annual North Carolina Council of Teachers of Mathematics State Conference (NCCTM), Greensboro, North Carolina.

Moyer, P. S. (1995, September). *Integrated Math and Science Activities, Grades 3-6*. Workshop Presentation, 25th Annual North Carolina Council of Teachers of Mathematics (NCCTM) State Conference, Greensboro, North Carolina.

Moyer, P. S., & Rua, M. (1995, September). *Integrating Math and Science, Grades 3-5*. Workshop Presentation, North Carolina Council of Teachers of Mathematics (NCCTM) Central Region Conference, Greensboro, North Carolina.

North Carolina Science Teachers Association (NCSTA)

Rua, M., & Moyer, P. S. (1995, November). *Science Activities Incorporating Mathematics Concepts*. Workshop Presentation, North Carolina Science Teachers Association (NCSTA) Annual State Conference, Winston-Salem, North Carolina.

Utah Council of Teachers of Mathematics (UCTM)

Moyer-Packenham, P. S. (2010, November). *Guidelines for Selecting Virtual Manipulatives for Mathematics Teaching*. Technology Session, Annual Conference of the Utah Council of Teachers of Mathematics (UCTM), Bountiful, Utah.

Moyer-Packenham, P. S. (2009, October). *Unique Features in Virtual Manipulative Tools*. Technology Session, Annual Conference of the Utah Council of Teachers of Mathematics (UCTM), Orem, Utah.

Utah State Office of Education (USOE)

Moyer-Packenham, P. S. (2011, November). *Instructional Leadership Practices and Mathematical Learning*. Elementary Principals Mathematics and Science Leadership Academy, Utah State Office of Education, Logan, Utah.

Moyer-Packenham, P. S. (2011, January). *Instructional Leadership Practices and Mathematical Learning*. Elementary Principals Mathematics and Science Leadership Academy, Utah State Office of Education, Provo, Utah.

Virginia Council of Teachers of Mathematics (VCTM)

Moyer, P. S. (2003, March). *Research Roundtable for Higher Education Faculty and Students*. Research Session, 26th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM), Richmond, Virginia.

Moyer, P. S. (2003, March). *Exploring the World of Virtual Manipulatives*. Technology Workshop Presentation, 26th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM), Richmond, Virginia.

Moyer, P. S. (2002, March). *Using Representations to Explore Patterns and Algebra in K-2*. Workshop Presentation, 25th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM), Manassas, Virginia.

Moyer, P. S. (2001, March). *Ready, Set, Go! Algebra Readiness for K-3*. Two Workshop Presentations, 24th Annual Conference of the Virginia Council of Teachers of Mathematics (VCTM), Harrisonburg, Virginia.

Presentations – Panels

Panelist, (2001, February). *Matching On-Line Communication Tools to Your Learning Goal*. Brown Bag Panel Discussion, George Mason University, Fairfax, Virginia.

INTERNATIONAL LEADERSHIP & SERVICE

Editorial Board (2015-present)	<i>International Journal of Research in Education and Science</i> (www.ijres.net)
Session Chair (2019)	International Conference on Innovation in Education and Pedagogy (ICIEP 2019), Jakarta, Indonesia.
Guest Editor (2016-2017)	Invited Guest Editor for a Special Issue of the journal, <i>Education Sciences</i> . Special Issue topic: <i>Critical Issues in Mathematics Education</i> . This issue included 11 papers.
Reviewer (2017)	<i>British Journal of Developmental Psychology</i>
Scientific Committee, Mathematics Education (2016)	International Conference on Mathematics and Mathematics Education (ICMME-2016), Elazig, Turkey.
External Promotion Reviewer (2016)	Full Professor Promotion case at Griffith University, Australia.
Reviewer (2016)	<i>International Journal for Mathematics Teaching and Learning</i>
Session Chair (2015, April)	International Conference on Education in Mathematics, Science & Technology (ICEMST), Antalya, Turkey.
International Grant Reviewer (2014, January)	Social Sciences and Humanities Research Council of Canada. Requested reviewer for grant application based on international reputation on manipulatives.
Session Chair (2014, January)	12 th Annual Hawaii International Conference on Education (HICE), Honolulu, Hawaii.
Academic Host (2012, August – 2013, July).	International Mathematics Education Scholar/ PhD Candidate, Hilal Gülkılık, Gazi University, Ankara, Turkey. My role: Serve as an academic host for a visiting PhD student who came to Utah State University to study with me while completing her dissertation on virtual manipulatives. Goal: Publish at least one manuscript on virtual manipulatives collaboratively.
Conference Presider (2007).	31 st annual meeting of the <i>Psychology of Mathematics Education</i> International Conference (PME), Seoul, South Korea. My role: Presider for a research report session.
Mathematics Education Certificate Program Coordinator (2004-2006).	<i>Pakistan Teacher Education and Professional Development Program</i> . PI – Jack Levy, Subcontract with USAID. My role: Direct and coordinate instruction in a mathematics certificate program for two cohorts of 25 Pakistani teacher educators over a two-year period.

Academic Host (2003, January – 2004, February).	International Mathematics Education Professor/Scholar, Hae-Ja Heo, Kwandong University, Kangnung City, South Korea. My role: Serve as an academic host and work on collaborative research in mathematics education with the visiting scholar. Outcomes: Published three manuscripts collaboratively (along with doctoral student Jennifer M. Suh); one published in Korean, and two published in English.
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NATIONAL LEADERSHIP & SERVICE

Editorial Board (2018-21)	<i>Contemporary Issues in Technology and Teacher Education (CITE)</i> , Association of Mathematics Teachers Educators (AMTE). Participate in quarterly editorial board meetings; Review papers for publication in the journal.
Reviewer (2020)	<i>International Journal of Human-Computer Interaction</i>
Reviewer (2020)	<i>Mathematics Education Research Journal (MERJ)</i>
Reviewer (2003-20)	<i>Journal for Research in Mathematics Education (JRME)</i> , National Council of Teachers of Mathematics.
External Promotion & Tenure Evaluation Reviewer (2007-20)	Promotion and tenure case at the University of South Florida (2020) Promotion and tenure case at Washington State University (2019). Full Professor promotion case at the University of Southern Maine (2017). Promotion and tenure case at The University of Idaho (2016). Promotion and tenure case at The University of Alabama (2013). Promotion and tenure case at Missouri State University (2012). Full Professor promotion case at George Mason University (2011). Promotion and tenure case at Baylor University (2011). Promotion and tenure case at West Virginia University (2011). Promotion and tenure case at Mississippi State University (2010). Promotion and tenure case at Texas Christian University (2007).
Research Mentor (2019)	<i>American Educational Research Association (AERA)</i> . Special Interest Group (SIG) Research in Mathematics Education (RME); Research mentoring session for a group of AERA SIG-RME participants.
Editorial Board (2008-18)	<i>Journal of Technology and Teacher Education (JTATE)</i> , Association for the Advancement of Computing in Education (AACE).
Reviewer (2016-18)	<i>Educational Psychology Review</i>
Reviewer (2017)	<i>Digital Experiences in Mathematics Education</i>
Invited Discussant (2017)	<i>Devices in the Classroom for Collaboration and Individualization</i> , Division C, Section 3b: Technology-Based Environments, American Educational Research Association (AERA), San Antonio, Texas.
Panel Member (2016)	Reviewed grant proposals for the Division of Research on Learning in Formal and Informal Settings (DRL); Panel for the Discovery Research K-12 (DRK-12) program, National Science Foundation.
Invited Lecture (2016, November)	Invited by Dr. Trena Wilkerson at Baylor University, Texas, to present Current Issues in Mathematics Education: Focus on Technology in her doctoral course on Critical Issues in Mathematics Education.

Invited Lecture (2015)	Invited by Dr. ChanMin Kim in the department of Learning, Design, and Technology at The University of Georgia to discuss one of my research papers in her course, EDIT9990 Doctoral Seminar: STEM Engagement and Learning Technologies.
Panel Member (2014)	Reviewed grant proposals for the Division of Research on Learning in Formal and Informal Settings (DRL); Panel for the Discovery Research K-12 (DRK-12) program, National Science Foundation.
Reviewer (2014)	<i>Journal of Research in Mathematics Education (RIPEM)</i>
Reviewer (2014)	<i>Journal of Experimental Education</i>
Reviewer (2014)	<i>Childhood Education</i>
Editorial Board (2008-13)	<i>Contemporary Issues in Technology and Teacher Education (CITE)</i> , Association for the Advancement of Computing in Education (AACE).
Editorial Board (2004-13)	<i>Journal of Interactive Online Learning</i> , National Center for Online Learning Research.
Reviewer (2002-13) & Editor (2003-2005)	<i>Teaching Children Mathematics, Investigations</i> Dept., <i>Teaching Children Mathematics, Volumes 10 & 11</i> , National Council of Teachers of Mathematics.
Reviewer (2009-13)	<i>Journal of Mathematics Teacher Education</i> , Association of Mathematics Teacher Educators
Reviewer (2008-12)	<i>School Science and Mathematics</i> , School Science and Mathematics Association.
Reviewer (2012)	<i>International Journal of Science and Mathematics Education</i> , National Science Council.
External Program Reviewer (2012)	<i>Graduate Programs</i> , Kent State University, Kent, Ohio. Invited by Associate Provost Mary Ann Stephens to conduct an on-site two-day review of the graduate programs at Kent State University.
Invited Reviewer (2012)	<i>How cognitive psychology can contribute to the design of effective mathematics software and learn from it: The example of MathemAntics</i> ; Invited by Lyn English to review the chapter for a Springer book on reconceptualizing early mathematics learning.
Reviewer (2011)	<i>Journal of Educational Psychology</i>
Editor (2009-10)	Special Issue of the <i>Journal of Educational Research and Policy Studies</i>
Site Coordinator (2008-09)	<i>National Teacher Education Study in Mathematics (U.S. TEDS-M)</i> . Utah State University Site Coordinator for data collection at our institution to contribute to the international research project. Lead Project Investigator – William Schmidt, Michigan State University; Institutional Contact – Jim Dorward, Utah State University.
Mathematics Advisory Board Member (2008-09)	Heinemann Publishers, under the direction of Executive Editor Emily Michie Birch. Provide feedback on educational materials in mathematics.

Editorial Review Board (2008-09)	<i>Math – Technology, Pedagogy, and Content Knowledge</i> , Association for the Advancement of Computing in Education (AACE).
Co-Editor (2008)	Special Issue of the <i>Peabody Journal of Education</i> , Volume 83, Issue 4.
Reviewer (2007)	<i>Educational Studies in Mathematics</i> , Springer.
Reviewer (2006)	<i>Advanced Learning Technologies</i> proposal. National Science Foundation.
Reviewer (2000-2004)	<i>American Educational Research Association</i> (AERA), Division C, Section 6, Cognitive, Social and Motivational Processes and Division C, Section 3, Mathematics. Reviewed proposals for the annual meeting.
National Selection Committee (2002)	<i>Presidential Awards for Excellence in Mathematics and Science Teaching</i> (PAEMST). National Science Foundation (NSF).
Reviewer (2001-2002)	Holcomb Hathaway, Publishers, Scottsdale, Arizona. Reviewed the Book Proposal and Book Prospectus for: <i>Using Children's Literature to Teach Mathematics and Science</i> by L. Columba, C. Kim, & A. Moe.
Consultant (2001-2002)	<i>USA TODAY Education and National Standards Project</i> . Identified national mathematics standards and wrote suggested activities for USA TODAY daily lesson plans.
Researcher (2001, March)	<i>Inside the Classroom Project</i> , funded by the National Science Foundation. Horizon Research, Inc., Chapel Hill, North Carolina. Data collection using qualitative methods including teacher interviews, classroom observations, and the collection of artifacts.
Researcher (1998-2001)	<i>The Teacher Materials Project (TE-MAT): Increasing the Availability of Materials for the Professional Development of Science and Mathematics Teachers</i> . Horizon Research, Inc., Chapel Hill, North Carolina; funded by the National Science Foundation. Reviewed the following materials: (1) Measuring What Counts: A Conceptual Guide for Mathematics Assessment, (2) The Kentucky Middle Grades Mathematics Teachers Network Manual, (3) Helping Children Learn Mathematics (5 th ed.), and (4) About Teaching Mathematics.
Alternate Delegate (1999, April)	NCTM Delegate Assembly. National Council of Teachers of Mathematics, Spring Meeting, San Francisco, California.
NCTM Reviewer (1998)	NCTM Educational Materials Committee, Reston, Virginia. Reviewed: <i>Mathematics Assessment: A Practical Handbook for Grades 6-8</i> ; This book is a part of NCTM's Assessment Series.
Researcher (1998)	<i>Mozaic Project for the Rand Corporation</i> . Horizon Research, Inc., Chapel Hill, North Carolina. Three-day data collection using qualitative methods including teacher interviews, classroom observations, and the collection of artifacts.
Researcher (1997)	<i>Mozaic Project for the Rand Corporation</i> . Horizon Research, Inc., Chapel Hill, North Carolina. One-week data collection using qualitative methods including teacher interviews, classroom observations, and the collection of artifacts.

STATE SERVICE – LEADERSHIP ACTIVITIES

Committee Member (2018-2019).	<i>Utah State Board of Education - Elementary Mathematics Endorsement and Elementary Mathematics Specialist Revision Committee.</i> Represent Utah State University at statewide meetings to revise the Elementary Mathematics Endorsement and develop two new Leadership courses for an Elementary Mathematics Specialist Certificate.
Judge (2018).	<i>Mathematics, Engineering, and Science Achievement (MESA) Engineering Design Competition.</i> Judged high school posters during Physics Day at Lagoon Park, UT.
Judge (2014, 2015)	<i>Mathematics, Engineering, and Science Achievement (MESA) Prosthetic Arm Competition.</i> Judged middle school and high school relocation tasks at Granite School District, UT.
Task Force Member (2014)	<i>Logan City School District.</i> 30-member task force asked to make recommendations to the Logan City School Board on the allocation of mathematics and science funding resources.
Committee Member (2008-13).	<i>Utah State Office of Education Elementary Mathematics Endorsement Committee.</i> Represent Utah State University at statewide meetings. Collaborate with mathematics faculty and school leaders from Utah IHEs and LEAs in the development and implementation of a USOE elementary mathematics endorsement. Meet annually to monitor program progress.
Judge (2011, 2012).	<i>Mathematics, Engineering, and Science Achievement (MESA) Wind Energy Challenge.</i> Judged high school oral presentation competition during Physics Day at Lagoon Park, UT.
Executive Board Member (2009-11).	<i>Utah Council of Teachers of Mathematics.</i>
Advisory Board Member (2010-11).	<i>Elementary Principals Mathematics and Science Leadership Academy, Utah State Office of Education.</i>
Committee Member (2008-09).	<i>Utah Statewide Math & Science Consortium.</i> Represent Utah State University at statewide meetings. Collaborate with faculty from several Utah IHEs in Colleges of Science and Colleges of Education in the development of statewide mathematics and science programs.
Governing Council (2006-08).	<i>Virginia Mathematics & Science Coalition Statewide Masters Programs.</i> Member of the Sub-Committee that approves programs for statewide approval in the collaborative mathematics and science master's degrees.
Member (2005-08).	<i>Virginia Mathematics & Science Coalition.</i>
Executive Board (2005-07).	<i>Virginia Council of Teachers of Mathematics.</i>
Evaluator (2004, February & March).	<i>Mathematics Program Evaluation.</i> Arlington Public Schools, Arlington, Virginia. Conducted three days of classroom observations to evaluate mathematics instruction.

Teacher Preparation Task Force (2003-04).	Division of Teacher Education and Licensure, Virginia Department of Education. Defined criteria for the design of teacher preparation curriculum models.
University Facilitator (2000-04).	Professional Development School Partnership. Spend one day each week at Westlawn Elementary School, Fairfax County Public Schools, Falls Church, Virginia.
Mathematics and Science Specialist Task Force (2002-03).	State task force commissioned by the Virginia Mathematics and Science Coalition.
Program Committee Member & Session Organizer (2002-03).	<i>Research Roundtable for Higher Education Faculty and Students</i> , Virginia Council of Teachers of Mathematics (VCTM) State Meeting. Richmond, Virginia.
Governing Board Member (1999-2000).	UA/UWA In-Service Center, University of Alabama & University of West Alabama.
District #3 Director (1999-2000).	Alabama Council of Teachers of Mathematics (ACTM) Executive Council.
NCTM Representative (1998-2000).	West Alabama Council of Teachers of Mathematics.
Evaluator (1999, March).	<i>The Alabama Quantitative Literacy Project</i> . The Culverhouse College of Commerce and Business Administration and the College of Education, The University of Alabama, Tuscaloosa, Alabama. One-day data collection and summative evaluation report on the project.
Professional Development School Partnership. (1998-99).	Stafford Global Studies Center, Tuscaloosa, Alabama. Taught mathematics methods courses and demonstration lessons at the elementary school site.
Consultant (1998, October).	<i>North Carolina Council of Teachers of Mathematics State Conference</i> . Learning Materials, Inc., Apopka, Florida. Two-day consulting at the Cuisenaire/Dale Seymore Publications mathematics manipulatives exhibit booth, Greensboro, North Carolina.
Program Committee Member (1997-98).	Alabama Council of Teachers of Mathematics (ACTM) State Meeting. Montgomery, Alabama.
Judge (1996-97).	Elementary Division, North Carolina State Science Fair. Greensboro, North Carolina.
Writing Assessment Advisory Committee (1988-93).	Pennsylvania Department of Education, Harrisburg, Pennsylvania. Designed a holistic writing assessment for use in Pennsylvania's public school system.
Curriculum Designer (1986-87).	<i>Writing Through Technology: A Computer-Assisted Writing-Process Approach</i> . Cocalico School District, Denver, Pennsylvania. Designed curriculum adopted by the Cocalico School District.

OUTREACH FOR PUBLIC SCHOOLS

South Korea

Moyer-Packenham, P. S. (2017, September). *Explorations with Digital Math Apps that Promote Access and Creativity*. Provided 3.5 hours of professional development for 60 teachers in the Gyeongsangnam-do Region, Busan, South Korea (with Jennifer Suh, Sara Birkhead, and Kathy Matson).

Moyer-Packenham, P. S. (2017, September). *Inspiring Creative Thinking in Wondrous Mathematics through Modeling and STEM Integration*. (2017, September). Provided 2 hours of professional development for 45 teacher leaders from different regions of the country, Seoul, South Korea (with Jennifer Suh, Sara Birkhead, and Kathy Matson).

Utah

Weber School District, Ogden, Utah. *Mentoring and Implementation Session – Algebraic Reasoning Course*. (2017, November). Provided 90 minutes of professional development for 23 teachers at the school (with Sheri Heiter, Kady Schneider, Kristy Litster, and Jennifer Boyer-Thurgood).

Weber School District, Ogden, Utah. *Mentoring and Implementation Session – Geometry and Measurement Course*. (2017, March). Provided 90 minutes of professional development for 23 teachers at the school (with Sheri Heiter, Kady Schneider, Emma Bullock, and Jennifer Boyer-Thurgood).

Weber School District, Ogden, Utah. *Mentoring and Implementation Session – Rational Numbers Course*. (2016, December). Provided 90 minutes of professional development for 23 teachers at the school (with Sheri Heiter, Kady Schneider, and Jennifer Boyer-Thurgood).

Weber School District, Ogden, Utah. *Mentoring and Implementation Session – Numbers & Operations Course*. (2016, May). Provided 90 minutes of professional development for 20 teachers at the school (with Sheri Heiter, Kady Schneider, Jessica Shumway, and Jennifer Boyer-Thurgood).

Greenwood Charter School, Harrisville, Utah. *Growing Greenwood Teachers' Mathematics Pedagogical Content Knowledge through Action Research in the Classroom*. (2015, November). Provided 2 hours of professional development on conducting action research to 22 teachers at the school.

Cache County Schools, Logan City Schools, Edith Bowen Lab School, Utah. *Grades 3-4 Fractions and Virtual Manipulatives Mathematics Project*. (December 2010 – February 2011). Taught 3rd and 4th grade mathematics during a fraction unit as part of a school-based research project on the uses of virtual manipulatives.

Edith Bowen Laboratory School, Logan, Utah. *Analyzing and Developing Formative and Summative Mathematics Assessment Data*. (2010, October). Worked with Grades 1, 2, 3, 4, and 5 teachers to examine school-developed mathematics benchmark assessments and state-level mathematics data on students for instructional improvement.

Logan City Schools, Logan, Utah. *Grades 3-4 Fractions and Virtual Manipulatives Mathematics Project*. (2010, January-February). Taught 3rd and 4th grade mathematics during a fraction unit as part of a school-based research project on the uses of virtual manipulatives.

Virginia

Winchester Public Schools, Winchester, Virginia. *Analyzing Assessment Data in Mathematics*. (2005, August). Worked with a team of 25 fifth-grade teachers and elementary school administrators to examine standardized test data and determine instructional strategies for student success.

Woodlawn Elementary School, Fairfax County Public Schools, Alexandria, Virginia. *Using Student Data to Change Instructional Practice*. (2005, July). Worked with 3rd-6th grade teachers to examine mathematics testing data and identify key remediation areas for instructional improvement.

Fairfax County Public Schools, Fairfax, Virginia. *School Leadership that Impacts Mathematics Achievement*. (2005, June). Met with members of the department of Elementary Instruction and Administrative Services, Director – Mary Ann Ryan, to outline leadership strategies that impact student achievement in mathematics.

Westlawn Elementary School, Fairfax County Public Schools, Falls Church, Virginia. *Using Student Data to Improve Mathematics Instruction*. (2005, February & March). Worked with grade level teams (3-6) to identify key remediation areas in mathematics and develop instructional strategies for improving student learning. Wrote and submitted four grade-level summative evaluation reports.

Arlington Public Schools, Arlington, Virginia. *Instructional Strategies Focusing on Measurement*. (2004, October). Lead Instructor, one full-day workshop for 25 K-5 Mathematics Lead Teachers.

Arlington Public Schools, Arlington, Virginia. *Instructional Strategies Focusing on Geometry*. (2004, October). Lead Instructor, two workshops for 50 grades 2-4 teachers.

Arlington Public Schools, Arlington, Virginia. *Instructional Strategies Focusing on Geometry*. (2004, September). Lead Instructor, two workshops for 50 grades K-1 teachers.

Alexandria City Public Schools, Alexandria, Virginia. *Instructional Strategies Focusing on Number Sense*. (2004, September). Lead Instructor, two workshops for 50 grades K-2 and 3-5 teachers.

Westlawn Elementary School, Fairfax County Public Schools, Falls Church, Virginia. *Redesigning Mathematics Curriculum and Instruction*. (2004, July & August). Lead Facilitator, three days of planning and design with the fourth- and fifth-grade level teacher teams.

Westlawn Elementary School, Fairfax County Public Schools, Falls Church, Virginia. *Instructional Strategies Focusing on Number Sense*. (2004, February). Lead Instructor, two workshops for 50 grades K-2 and 4-6 teachers.

Clarke County Public Schools, Berryville, Virginia. *Patterns, Functions, & Algebra Readiness, Grades K-6*. (2004, January). Lead Instructor, two workshops for 30 K-6 teachers.

Westlawn Elementary School, Fairfax County Public Schools, Falls Church, Virginia. *Professional Learning Communities Project*. (2003-2004). Worked with all grade level teams (K-6) to identify key remediation areas in mathematics and develop common assessments for each grade level. Submitted a summative evaluation report.

Westlawn Elementary School, Fairfax County Public Schools, Falls Church, Virginia. *Code RED (Remediation Enrichment Days): Collaborative Mathematics Inquiry Plan*. (2003-2004). Developed and conducted a school-based research project in mathematics at Grade 3 in collaboration with members of the school community. Impact: All 3rd grade students passed the spring 2004 Standards of Learning (SOL) state mathematics assessment test.

Arlington Public Schools, Arlington, Virginia. *Algebraic Reasoning in K-2*. (2003, September). Lead Instructor, two workshops for 50 K-2 teachers.

Alexandria City Public Schools, Alexandria, Virginia. *Patterns, Functions, & Algebra Grades 1-5*. (2003, August). Lead Instructor, two workshops for 50 Grade 1-5 teachers.

Loudoun County Public Schools, Loudoun County, Virginia. *MATH BRIDGES II Project: Connecting Mathematics and the K-8 Standards*. (2003, July/August). No Child Left Behind Teacher Quality Enhancement Grants Program,

Virginia Dept. of Education. Project Director, four one-week summer institutes for 80 K-8 Loudoun County Public School teachers, Loudoun County, VA.

Arlington Public Schools, Arlington, Virginia. *Developing Understanding in Algebra, Grades K-5*. (2002, September). Lead Instructor, two-days, four workshops for 60 K-5 teachers.

Alexandria City Public Schools, Alexandria, Virginia. *Using Representations to Develop Mathematics Concepts in Grades K-2 and Fraction Action: Making Sense of Rational Numbers Grades 3-5*. (2002, August). Lead Instructor, two workshops for 50 K-5 teachers.

Loudoun County Public Schools, Loudoun County, Virginia. *MATH BRIDGES Project: Concepts and Connections in the K-8 Standards*. (2002, July/August). Dwight D. Eisenhower Professional Development Program, Virginia Dept. of Education. Project Director, four two-week summer institutes for 60 K-8 Loudoun County Public School teachers, Loudoun County, VA.

Alexandria Public Schools, Alexandria, Virginia. *Equations and Variables: Getting a Jump Start on Algebra in Grades 3-5 and Using Children's Literature to Communicate Mathematically in Grades K-2*. (2002, April). Lead Instructor, two workshops for 45 K-5 teachers.

Arlington Public Schools, Arlington, Virginia. *Making Algebra Connections: Grades K-6*. (2001, August). Lead Instructor, two-day workshop for 30 K-6 teachers.

Fairfax County Public Schools, Fairfax, Virginia. *M²ATH FACTS Project: Mathematics Manipulatives and Technology for Fairfax County Middle School Special Education Teachers*. (2001, July). Dwight D. Eisenhower Professional Development Program, Virginia. Lead Instructor, two-week summer institute for 20 participants.

Arlington Public Schools, Arlington, Virginia. *Algebra Connections in Grades K-3*. (2001, April). Lead Instructor, one-day professional development workshop for 42 Lead and K-3 Teachers.

Prince William County, Virginia. *Kids Connecting Project*, Stonewall Middle School. (2000, November). Worked to support classroom teacher Doris Kahler's Virginia Department of Education Learn and Serve Grant.

Alabama

Problem Solving in Grades K-5. (2000, February). Stillman Heights Elementary School, Tuscaloosa City School System, Tuscaloosa, Alabama. Lead Instructor, one-day workshop for 27 participants.

Green County School System, Eutaw, Alabama. *K-8 Mathematics Professional Development Workshop*. (1999, July). Lead Instructor, two-day workshop for 15 participants.

North Carolina

Center for Mathematics and Science Education, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. *Teachers and Students Using Mathematics Representations: Middle Grades Tools and Technology Project*. (2001, June). Lead Instructor, two-week summer institute for 20 participants.

Center for Mathematics and Science Education, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. *Mathematics Tools and Technology for Middle Grades Teachers Project*. (1999, June/July). Lead Instructor, two-week summer institute for 20 participants.

Center for Mathematics and Science Education, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. *Middle Grades Math Manipulatives: Tools and Technology Project*. (1998, July). Lead Instructor, two-week summer institute for 20 participants.

Center for Mathematics and Science Education, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. *Middle Grades Mathematics: Tools and Technology Project*. (1997, June). Lead Instructor, two-week summer institute for 20 participants.

Cary Association for the Education of Young Children, Cary, North Carolina. *Explore Math! For Teachers of Pre-Schoolers*. (1997, February). Lead Instructor, one-day workshop for 175 participants.

Center for Mathematics and Science Education, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. *Tools for Cognition: Middle Grades Math Manipulatives Project*. (1996). Lead Instructor, two-week summer institute for 20 participants.

Wake County Public School System, Raleigh, North Carolina. *Math Manipulatives for the Middle Grades*. (1996). Lead Instructor, two-day workshop for 15 participants.

PROFESSIONAL SERVICE – INSTITUTIONAL

UTAH STATE UNIVERSITY Institutional Service – University Level

Search Committees

- Search Committee Member: Mathematics Education Faculty, Elementary Level, School of TEAL (2020-2021).
- Search Committee CHAIR: Department Head, School of Teacher Education and Leadership (2016-2018).
- Search Committee Member: Mathematics Education Faculty, Elementary Level, School of TEAL (2016-2018).
- Search Committee Member: Mathematics Education Faculty, Elementary Level, School of TEAL (2015-16).
- Search Committee Member: Mathematics Education Faculty, Elementary Level, School of TEAL (2014-15).
- Search Committee Member: Department Head, School of Teacher Education and Leadership (2014).
- Search Committee Member: Mathematics Education Faculty, Elementary Level, School of TEAL (2012).
- Search Committee Member: DEAN, Emma Eccles Jones College of Education and Human Services. (2009-11).
- Search Committee Member: STEM Education Faculty, School of TEAL (2009-10).
- Search Committee Member: Mathematics Education Faculty, Elementary Level, School of TEAL (2008-09).

Committee Leadership & Membership

- Research Representative and Advisory Board Member: Center for Women and Gender (2010-19).
- Student Scholarship Committee: Center for Women and Gender (2016).
- D. Wynne Thorne Review Committee to select the Outstanding Faculty Research Career Awardee (2014).
- University-wide Central Committee for Promotion and Tenure (2011-13).
- Chair: Committee to develop a White Paper proposing a STEM Center at USU (2011).
- Graduate Council Subcommittee: Charged with revising the Doctoral Residency Requirement (2009-10).
- Vice Provost Advisory Group: Met monthly to provide feedback on faculty programs to Ann M. Berghout Austin, Vice Provost for Faculty Development and Diversity (2009-10).

University-Wide Presentations

Panel Member, Training for Research Faculty, Office of Research and Graduate Studies. (2018, October). *Creating a Positive Work Environment for Graduate Students*. (with Jared Colton, Zachariah Gompert, and Alexa Sands)

Panel Member, Women's Leadership Initiative. (2017, November). *Self-presentation and Self-Branding*. (with colleagues: Peg Arnold, Donna Crow, Christy Glass, Kari Veblen, Almut Vollmer, and Marianne Waldrop)

Presenter, Orientation for New Utah State University Faculty. (2013, August). *Positioning Yourself for Success at Utah State: Faculty Perspectives*. (with colleagues: B. Studenka, Dept. of Health, Physical Education and Recreation, & R. Galliher, Dept. of Psychology)

Presenter, Orientation for New Utah State University Faculty. (2012, August). *Positioning Yourself for Success at Utah State: Faculty Perspectives*. (with colleagues: K. Bulthuis, Dept. of History, & R. Galliher, Dept. of Psychology)

Presenter, Center for Women and Gender Lecture Series. (2010, October). *Habits of Research and Scholarship*. (with colleagues: S. Hinton, Dean, College of Engineering; D. DeWald, Dept. Head of Biology; J. Broadbent, Assoc. Vice President for Research; N. Cockett, Dean, College of Agriculture; C. Huenemann, Assoc. Dean, College of Humanities and Social Sciences; and, J. Coleman, Dir. of Sponsored Programs)

Presenter, Provost's Lecture Series. (2009, September). *Getting Started: Research and Scholarship*. (with colleagues: S. Hinton, Dean of Engineering; J. Thomas, Dept. Head of English; B. L.-Kraft, Dept. Head of Special Educ.; D. DeWald, Dept. Head of Biology; J. Broadbent, Assoc. Vice President for Research; and, D. Paul, Dir. of Sponsored Programs)

Institutional Service – College/Department Level College of Education and Human Services, Utah State University

Director, Mathematics Education and Leadership (MEL) Program (2011-present)

Responsibilities include: directing the Mathematics Education and Leadership Graduate Programs, which include a six-course emphasis area in the doctoral program in Curriculum and Instruction and a six-course elementary mathematics endorsement in the Master of Education Degree in Elementary Education; marketing the programs and recruiting students to the programs; direct oversight for all ongoing mathematics education program and course development and revisions at the undergraduate and graduate level; selection and mentoring of instructors for program courses; writing grant proposals to support program activities; and oversight for the Tutoring Intervention and Mathematics Enrichment (TIME) Clinic and the Elementary Mathematics Teachers Academy (EMTA) Online Programs.

Elementary Mathematics Teachers Academy (EMTA)

- Direct oversight for the Elementary Mathematics Teachers Academy (EMTA) Online Programs (2013-present)
- Oversight in the development of the EMTA webpage, marketing, and materials (2013-present)
- Received funding for the Elementary Mathematics Teachers Academy *K-6 Mathematics Professional Development Partnership*. Project goal: Provide online mathematics education coursework and professional development for K-6 teachers in the Weber School District leading to the completion of the Utah Elementary Mathematics Endorsement for 3 years (Lead PI – Sheri Heiter, WSD). Funded by the Utah State Office of Education (\$129,310) (2016-2019).
- Set up and marketing of the EMTA program at the National Council of Teachers of Mathematics annual meeting; 3 days in the exhibit booth (approx. 18 hours) (2014).
- Set up and marketing of the EMTA program at the Utah Council of Teachers of Mathematics annual meeting; 1 day in the exhibit booth (approx. 8 hours) (2014).
- Wrote a proposal to establish the Elementary Mathematics Teachers Academy, including oversight for five module developers in the initial development of 100 online modules focused on the Common Core State Standards for Mathematics (CCSSM). (2012-13)

Tutoring Intervention and Mathematics Enrichment (TIME) Clinic

- Direct oversight for the Tutoring Intervention and Mathematics Enrichment (TIME) Clinic (2012-present)
- Received funding for the TIME Clinic *Intervention Training Academy*. Project goal: Provide mathematics intervention training and tutoring experiences for Grades 2-5 teachers in Logan City and Rich County School Districts for 3 years (Lead PI – Barbara Child, LCSD). Funded by the Utah State Office of Education (\$128,298) (2015-2018).
- Contract with Logan City Schools to pilot and develop math intervention materials for Grades 3-5 under Director, Dr. Arla Westenskow (\$14,400) (2013-2014).
- Received funding for the TIME Clinic to conduct clinical math research in three areas: word problem solving, place value learning difficulties, and early number sense intervention under Director, Dr. Arla Westenskow. Funded by donor David Weeshoff (\$10,000) (2013-14).
- Wrote a grant proposal to the U.S. Department of Education, Institute of Education Sciences to support clinic services (2013).
- Contract with Logan City Schools to provide summer math tutoring intervention for rising sixth grade students under Director, Dr. Arla Westenskow (\$6,000) (2013).
- Wrote a proposal to establish the Tutoring Intervention and Mathematics Enrichment (TIME) Clinic, specializing in mathematics support for elementary-aged children provided by Director, Dr. Arla Westenskow. Proposal was funded by donor David Weeshoff (\$10,900) (2011-12).
- Developed the Tutoring Intervention and Mathematics Enrichment (TIME) Clinic webpage (2012).
- Developed the Tutoring Intervention and Mathematics Enrichment (TIME) Clinic brochure. This brochure is distributed in a hard copy and an electronic format and linked on the Mathematics Education and Leadership Program webpage and the Early Childhood Education and Research Center webpage. (2012)

Mathematics Education and Leadership (MEL) Program Marketing and Recruiting

- Designed the Mathematics Education and Leadership Program webpage. The webpage connects mathematics education programs in Elementary education, Secondary education, and the Department of Mathematics and Statistics. The webpage includes information on the programs, course descriptions, course scheduling, and application information. The webpage is updated annually.

- Developed the Elementary Mathematics Endorsement marketing brochure. This brochure is distributed in a hard copy and an electronic format and available on the Mathematics Education and Leadership Program webpage.
- Create the Mathematics Education and Leadership Newsletter. This newsletter is produced in a hard copy and an electronic format and available in an archive on the Mathematics Education and Leadership Program webpage. The newsletter is produced once each spring and fall semester for distribution in hard copy and through electronic mailing lists.
- Create and maintain a database of current and interested students for the doctoral and master's degree programs in mathematics education. Students receive information about the programs and mathematics education opportunities through the database mailing lists.

Mathematics Education and Leadership (MEL) Program & Curriculum Development

- Developed an R401 proposing a new Post-Baccalaureate Certificate Program for Elementary Mathematics Specialists (2018-2021). Implementation of the program including: registering the EMS in degree works, developing application and admissions materials for the Graduate School, creating webpage content, creating program of study materials, targeted recruiting of eligible students, reviewing applications and advising students, tracking student program progress, and issuing certification.
- Directed a systematic revision of the readings across the seven PhD in Mathematics Education program courses to integrate the 38 chapters from the *Compendium for Research in Mathematics Education* into the courses (2018-2019).
- Developed 5 online modules for the Elementary Mathematics Teachers Academy (EMTA) (2013-14).
 - L.L.1: Leading Data Driven Decision Making
 - L.L.2: Selecting and Evaluating High Quality Curricula
 - L.L.3: Features and Design of Effective Mathematics Professional Development
 - L.L.4: Leading and Coaching Teachers
 - L.L.5: Providing Leadership for Mathematics Intervention
- Developed the 6-course K-8 Elementary Mathematics Endorsement Program, in collaboration with mathematics education faculty in the School of TEAL and mathematics faculty in the Department of Mathematics and Statistics. Submitted multiple list course forms to the Curriculum Committee and received approval for the following courses (2010-11):
 - EMTH 5030/TEAL 6521/TEPD5521: Mathematics for Teaching K-8: Numbers and Operations
 - EMTH 5040/TEAL 6522/TEPD5522: Mathematics for Teaching K-8: Rational Numbers and Proportional Reasoning
 - EMTH 5050/TEAL 6523/TEPD5523: Mathematics for Teaching K-8: Algebraic Reasoning
 - EMTH 5060/TEAL 6524/TEPD5524: Mathematics for Teaching K-8: Geometry and Measurement
 - EMTH 5070/TEAL 6525/TEPD5525: Mathematics for Teaching K-8: Data Analysis and Problem Solving
 - TEAL 6551/TEPD5551: Mathematics for Teaching K-8: Assessment and Intervention
 Oversaw the transition of the 6 Elementary Mathematics Endorsement courses to an online format (2014-2016).
- Designed 6 new courses in the PhD/EdD program for an emphasis in *Mathematics Education & Leadership*, in collaboration with mathematics education faculty in the School of TEAL. Submitted course syllabi, names, and numbers to the Curriculum Committee and received approval for the following courses (2009-10):
 - TEAL 7551: Mathematics Education Research Foundations
 - TEAL 7552: Mathematics Education Learning Theory
 - TEAL 7553: Mathematics Education Curriculum Content & Evaluation
 - TEAL 7554: Mathematics Education Teacher Preparation & Pedagogy
 - TEAL 7555: Mathematics Education Current Issues & Policy
 - TEAL 7556: Mathematics Education Research Design & Assessment

Ad Hoc Committees

- Ad Hoc Committee, PDRF Review for TEAL (2020)
- Ad Hoc Committee, select the CEHS Researcher of the Year (2019)
- Ad Hoc Search Committee CHAIR, Opportunity Hire: Math/Culture Education Faculty (2018-2019).

Promotion & Tenure Committees

- CHAIR, Teacher Education and Leadership (TEAL):
 - Chair, P&T Committee for Diana Moss (2018-2020).

- Chair, P&T Committee for Beth MacDonald (2014-2020; Tenured and Promoted to Associate Professor, 2020).
- Chair, Full Professor Promotion Committee for Cindy Jones (2016-2020; Promoted to Full Professor, 2020).
- Chair, Full Professor Promotion Committee for Steven Camicia (2015-2020; Promoted to Full Professor, 2020).
- Chair, Full Professor Promotion Committee for Sherry Marx (2016-2018; Promoted to Full Professor, 2018).
- Chair, Full Professor Promotion Committee for Kathleen Mohr (2016-2018; Promoted to Full Professor, 2018).
- Chair, Full Professor Promotion and Tenure, Expedited Review Committee for Kathy Trundle (2018).
- Chair, P&T Committee for Amy Bingham Brown (2009-15).
- Chair, Full Professor Promotion Committee for Michael Freeman (2013-14).
- Chair, P&T Committee for Dicky Ng (2009-12).
- CHAIR, Instructional Technology and Learning Sciences (ITLS):
 - Chair, P&T Committee for Brian Belland (2013-2014; Tenured and Promoted to Associate Professor, 2014).
- Teacher Education and Leadership (TEAL):
 - Committee Member, Full Professor Promotion Committee for Kimberly Lott (2021-present).
 - Committee Member, P&T Committee for Katherine Vela (2020-present).
 - Committee Member, Full Professor Promotion Committee for Suzie Jones (2020-present).
 - Committee Member, P&T Committee for Jessica Shumway (2016-present).
 - Committee Member, P&T Committee for Colby Tofel-Grehl (2016-2020; Tenured and Promoted to Associate Professor, 2020).
 - Committee Member, Full Professor Promotion Committee for Sylvia Read (2016-2018; Promoted to Full Professor, 2018).
 - Committee Member, Full Professor Promotion Committee for Louis Nadelson (2014-16).
 - Committee Member, P&T Committee for Cindy Jones (2008-2014; Tenured and Promoted to Associate Professor, 2014).
 - Committee Member, Post Tenure Review Committee for Jim Barta (2013).
 - Committee Member, Lecturer Promotion Committee for Fawn Groves (2011-13).
 - Committee Member, P&T Committee for Steve Camicia (2009-12; Tenured and Promoted to Associate Professor, 2012).
 - Committee Member, P&T Committee for Patricio Ortiz (2009-12).
 - Committee Member, P&T Committee for Todd Campbell (2008-11; Tenured/Promoted to Associate Professor, 2011).
 - Committee Member, Full Professor Promotion Committee for Parker Fawson (2008-09; Promoted to Full Professor, 2009).
- Department of Mathematics & Statistics: College of Science:
 - Committee Member, Full Professor Promotion Committee for Kady Schneiter (2021-present).
 - Committee Member, P&T Committee for Kady Schneiter (2008-12; Tenured and Promoted to Associate Professor, 2012).
- Special Education and Rehabilitation
 - Committee Member, P&T Committee for Kaitlin Bundock (2016-present).
 - Committee Member, P&T Committee for Jessica Hunt (2012-2014).
- Instructional Technology and Learning Sciences (ITLS):
 - Committee Member, P&T Committee for Jody Clarke-Midura (2018-2020; Promoted to Associate Professor, 2020).
 - Committee Member, Full Professor Promotion Committee for Brian Belland (2017-2018).
 - Committee Member, Full Professor Promotion Committee for Yanghee Kim (2016-2017).
 - Committee Member, P&T Committee for Brian Belland (2008-2012; Tenured and Promoted to Associate Professor, 2012).
- Department of Physics: College of Science:

- Committee Member, P&T Committee for Tonya Triplett (2013-2014; Promoted to Principal Lecturer, 2014).
- Health, Physical Education and Recreation (HPER):
 - Committee Member, Full Professor Tenure Committee for Gerald Smith (2008-11).

Guest Lectures

- Invited Presentation, *CVs and Interview Skills for Mathematics*. Department of Mathematics and Statistics Graduate Student Association (2019, March). Utah State University.
- Guest Lecture, TEAL 7551 Mathematics Education Research Foundations (2019, January). For Jessica Shumway, Utah State University.
- Guest Lecture, MATH 5810 Topics in Mathematics (2014, March). For Joyce Smart, Utah State University.
- Guest Lecture, PSY 7810 Advanced Development (2013, November). For Kerry Jordan, Utah State University.
- Guest Lecture, SPED 5340 Teaching Math to Students with Mild/Moderate Disabilities (2010, November). For Darci Peterson, Utah State University.
- Guest Lecture, TEAL 7810 Research Seminar for Doctoral Students (2010, September). For Joe Matthews, Utah State University.
- Guest Lecture, TEAL 7810 Research Seminar for Doctoral Students (2010, January). For Deborah Byrnes, Utah State University.
- Guest Lecture, MATH 5810 Topics in Mathematics (2009, November). For Brynja Kohler, Utah State University.

Peer Mentoring of Colleagues for Chairing PhD Students

- Diana Moss (faculty member), Jenny Nehring & Trent Fawcett (PhD students) 2018-2020
- Max Longhurst (faculty member), Andrew Glaze (PhD student) 2017-2019
- Jessica Shumway (faculty member), Jennifer Throndsen (PhD student) 2016-2018

Peer Observations of Teaching for Colleagues (19 formal observations)

- Diana Moss, 2019
- Jessica Shumway, 2017, 2018
- Cindy Jones, 2012, 2018
- Beth MacDonald, 2014, 2016
- Jim Barta, 2013
- Brian Belland, 2012
- Amy Bingham Brown, 2010, 2011, 2012
- Gerald Smith, 2011
- Steven Camicia, 2010
- Todd Campbell, 2010
- Cinthya Saavedra, 2010
- Dicky Ng, 2009, 2010
- Kady Schneider, 2008

Other College-Level Service/Presentations

- TEAL Graduate Programs Advisory Committee (GPAC) (2014-present)
- Lunch Presentation for the Northern Utah Curriculum Consortium Annual Administrative Conference (2013, October). *Launch of the Elementary Mathematics Teachers Academy*.
- Panel Presentation for the TEAL Doctoral Program (2013, March). *Developing Mentor Relationships that Work*. (with panelists Ronda Bismore, Steven Camicia, KyeKyoung Lee, Sherry Marx, Jessica Shumway, and Amy Alexandra Wilson).
- Presentation for CEHS faculty (2012, April). *Promotion and Tenure Insights from my Service on the Central Committee*; Two 90-minute informal discussions for CEHS faculty.
- Presentation for the TEAL Spring Retreat Luncheon (2011, April). *Doctoral Mentoring and the Power of the Intellectual Community*.
- Presentation for the Northern Utah K-16 Alliance (2010, June). *A Conversation about a STEM Education*, with Eric Packenham. Logan School District Office, Logan, UT.

- Presentation for the Utah Conference on Effective Practices for Teachers and Human Service Professionals (2010, June). *Unique Features of Virtual Manipulatives that Enhance Student Learning*. Utah State University.
- Alternative Routes to Licensure: ELED Ad-Hoc Program Committee Member (2008-09).
- Presentation for the Northern Utah Superintendents (2009, January). *A Conversation about STEM Education: The Important Role for School Leaders in Mathematics and Science Education*, with Eric Packenham.
- Presentation for the Dean's Administrative Council Retreat (2009, January). *A Conversation about a STEM Education Center*.
- Presentation for the Dean's National Advancement Board (2008, October). *A Conversation about STEM Education*, with Eric Packenham.
- Presentation for the Northern Utah Curriculum Consortium (2008, October). *The Preparation of Elementary Mathematics Specialists*.

GEORGE MASON UNIVERSITY
Institutional Service – University Level

- Director, Mathematics Education Center, College of Education and Human Development, George Mason University (2003-2008).
- Chair, pro tem, GMU Faculty Senate (2007-2008).
- Reviewer, Summer 2008 Research Funding for GMU Faculty (2007-2008).
- Senator, GMU Faculty Senate, College of Education and Human Development Representative (two terms, 2003-2006, 2006-2009).
- Faculty Matters Committee Member, GMU Faculty Senate Standing Committee (two terms, 2003-2006, 2006-2009): Responsibilities: Analyze and summarize survey comments for the annual report of the Faculty Evaluation of GMU Administrators; Conduct fact-finding inquiries to address concerns brought forth to the committee.
- Sergeant at Arms, GMU Faculty Senate (two terms, 2004-2005, 2005-2006).
- Commencement/Convocation Marshall, GMU Spring Commencement. (2001-2003, 2005-2007, May).
- Participant, GMU WERC Study (Work Expectations Research Collaboration). (2000-2002). Industrial/Organizational Psychology Program.

Institutional Service – College Level
College of Education and Human Development, George Mason University

- Chair of two Search Committees:
 - Mathematics Education Faculty, Elementary Level (2005-2006).
 - Mathematics Education Faculty, Middle/Secondary Level (2-year search, 2002-2004).
- Search Committee Member:
 - Elementary Education Program Coordinator (2005-2006).
 - Science Education Program Specialist (2-year search, 2000-2001).
- Other Committee Memberships:
 - PhD in Education Committee (elected two terms, 2005-2007, 2007-2008).
 - Program Coordinators and Directors Committee (2003-2008).
- First Tier Tenure Review Committee Member:
 - Promotion & Tenure Review for Lois Groth (2005).
 - Full Professor Promotion Review for Donna Sterling (2004-2005).
 - Promotion & Tenure Review for Gary Varrella (2003).
- Official Mentor for Junior Faculty Colleagues:
 - Jennifer Suh (2006-2008)
 - Sheryl Cozart (2004-2008)
 - Margret Hjalmarson (2004-2008)
- Presenter / Facilitator:
 - *Transforming a Paper into a Manuscript*, CEHD Workshop, Prince William campus (2006, April).
 - *Performance Based Assessment – Developing Rubrics*, GSE Workshop (2004, January).
- Invited Presenter for Other Faculty Members' Courses:
 - EDUC 805 Doctoral Seminar in Education (for Joan Isenberg) (2007, April).
 - EDUC 805 Doctoral Seminar in Education (for Jeff Gorrell) (2005, March).
 - EDUC 805 Doctoral Seminar in Education (for Gary Galluzzo) (2003, November).
 - EDUC 805 Doctoral Seminar in Education (for Mark Goor) (2002, February).
 - EDUC 805 Doctoral Seminar in Education (for Mark Goor) (2001, March).
 - EDUT 615 Developing Concepts in Early Childhood Mathematics and Science for Diverse Learners (for Eva Thorp) (2001, September).
- Presenter, *Snapshot of a School/University PDS Partnership*, presented to FCPS Superintendent, Jack Dale, and FCPS superintendents, and Dean Jeff Gorrell and GMU colleagues (2005, February).
- Faculty Advisor, Mathematics Emphasis, ASTL Program (2004-2008).
- Interviewer, GSE PhD candidate interviews (2003-2008).

- Faculty Sponsor, Integrating Technology in Schools Program, Master's Degree culminating experience (for Priscilla Norton) (2003, December).

Institutional Service – Program Level **Mathematics Education Leadership Program, George Mason University**

- PROGRAM COORDINATOR, MATHEMATICS EDUCATION LEADERSHIP, Ph.D. & Masters degrees (2003-2008). RESPONSIBILITIES: Develop and revise programs and courses in the Mathematics Education Leadership Ph.D. & Masters degree concentrations; Select, mentor, supervise and evaluate adjunct course instructors for the program (includes adjunct mathematics education faculty for CEHD and adjunct mathematics faculty for the College of Science); Recruit new students to the Master's and PhD MEL programs through school contacts and visits and electronic and mailing marketing strategies; Interview candidates for program admission; Advisor for all students in the Master's and PhD MEL programs; Schedule MEL Master's and PhD courses in the program; Collect systematic feedback from students to contribute to programmatic improvements; Develop and revise the MSEL program brochures, web pages, and fact sheets; Design program recruiting materials for new program concentrations and course offerings; and, Mentor junior faculty colleagues in Mathematics Education.
- Developed a new program concentration – Math Specialist Leader – in the Mathematics Education Leadership Master's Degree Program (in collaboration with colleagues Margret Hjalmanson, CEHD, and Klaus Fischer, Dept. of Mathematical Sciences). Worked with colleagues to develop 5 new courses in the Department of Mathematical Sciences for the following courses (2004-05):
 - MATH 600: Number Systems and Number Theory for K-8 Teachers
 - MATH 600: Geometry and Measurement for K-8 Teachers
 - MATH 600: Probability and Statistics for K-8 Teachers
 - MATH 600: Algebra and Functions for K-8 Teachers
 - MATH 600: Rational Numbers and Proportional Reasoning for K-8 Teachers
- Designed 2 new courses in the MEL Master's Degree program. Submitted course syllabi, names, and numbers to PDET for approval for the following courses (2003):
 - EDCI 645: Curriculum Development in Mathematics
 - EDCI 646: Mathematics Education Leadership for School Change
- Designed 6 new courses in the MEL Ph.D. program in preparation for the 2004 MEL PhD cohort. Submitted course syllabi, names, and numbers to PDET for approval for the following courses (2003):
 - EDCI 855: Mathematics Education Research on Teaching and Learning
 - EDCI 856: Mathematics Education Curriculum Design and Evaluation
 - EDCI 857: Preparation and Professional Development of Mathematics Teachers
 - EDCI 858: Mathematics Education Research Design and Evaluation
 - EDCI 725: National & International Leadership Issues in Mathematics Education
 - EDCI 726: State & Local Leadership Issues in Mathematics Education

PROFESSIONAL AFFILIATIONS & LEADERSHIP ROLES

ALABAMA COUNCIL OF TEACHERS OF MATHEMATICS (ACTM)

- District #3 Director, ACTM Executive Council (1999-2000)
- Program Committee Member for the Annual State Meeting (1997-1998)
- Presenter at State Meetings

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (AERA)

- Won Best Paper Award, Applied Research in Virtual Environments for Learning (2012)
- Proposal Referee
- Research in Mathematics Education Special Interest Group (RME/SIG)
- Applied Research in Virtual Environments for Learning Special Interest Group (ARVEL/SIG)
- Presenter at National Meetings

ASSOCIATION OF MATHEMATICS TEACHER EDUCATORS (AMTE)

- Presenter at National Meeting

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS (NCTM)

- Editor, Investigations Department (Volumes 10 & 11), *Teaching Children Mathematics* journal (2003-2005)
- NCTM Representative, West Alabama Council of Teachers of Mathematics (1998-2000)
- Alternate Delegate, NCTM Delegate Assembly (1999)
- NCTM Reviewer, Educational Materials Committee (1998)
- Reviewer, *Journal for Research in Mathematics Education*
- Reviewer, *Teaching Children Mathematics* journal
- Proposal Referee
- Presenter at National Meetings

NORTH AMERICAN CHAPTER OF THE INTERNATIONAL GROUP FOR THE PSYCHOLOGY OF MATHEMATICS EDUCATION (PME-NA)

- Session Discussant (2007)
- Proposal Referee
- Presenter at North American Meetings

PSYCHOLOGY OF MATHEMATICS EDUCATION INTERNATIONAL (PME)

- Session Presider (2007)
- Presenter at International Meetings

SCHOOL SCIENCE AND MATHEMATICS ASSOCIATION (SSMA)

- Presenter at National Meetings

SOCIETY FOR INFORMATION TECHNOLOGY AND TEACHER EDUCATION (SITE)

- Won Outstanding Paper Award, Association for the Advancement of Computing in Education (2019)
- Won Outstanding Paper Award, Association for the Advancement of Computing in Education (2018)
- Presenter at National Meetings

UTAH COUNCIL OF TEACHERS OF MATHEMATICS (UCTM)

- Executive Board Member (2009-2011)
- Presenter at State Meetings

VIRGINIA COUNCIL FOR MATHEMATICS SUPERVISION (VCMS)

- Mathematics & Science Specialist Task Force (2002-2003)

VIRGINIA COUNCIL OF TEACHERS OF MATHEMATICS (VCTM)

- Executive Board Member (2005-2007)
- Program Committee Member for the Annual State Meeting (2002-2003)
- Session Organizer, *Research Roundtable for Higher Education Faculty and Students* (2003)
- Presenter at State Meetings