

# **KATIE L. ANDERSON-PENCE**

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Associate Professor  
University of Colorado Colorado Springs

College of Education

## **EDUCATION**

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Ph.D. Education, Utah State University

Specialization: Curriculum and Instruction.

Emphasis: Mathematics Education and Leadership.

- Dissertation: *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.*

Advisor: Patricia S. Moyer-Packenham

M.Ed. Education, Southern Utah University

Emphasis: Elementary Mathematics Education.

B.S. Elementary Education, Brigham Young University

Utah Instructional II Certificate, 1–8 (2004).

## **PROFESSIONAL EXPERIENCE**

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### **University of Colorado Colorado Springs, Colorado Springs, CO**

#### **Department of Teaching and Learning**

Associate Professor

2021–present

Assistant Professor

2014–2021

#### **Leadership in the Department and College**

Associate Dean, College of Education

2023–present

Interim Associate Dean, College of Education

2022–2023

Chair, Department of Teaching and Learning

2021–2022

Program Coordinator, Elementary Education

2018–2021

## Utah State University, Logan, UT

### School of Teacher Education and Leadership

University Instructor	2009–2010, 2011–2014
Graduate Research Assistant	2009–2010, 2011–2014
University Supervisor of Student Teachers	2009–2010, 2011–2012

## Alpine School District, American Fork, UT

Elementary School Teacher, Grade 6, All subjects Freedom Elementary School, Highland, UT	2010–2011
District Math Specialist, Grades 5–6 Alpine School District Office, American Fork, UT	2007–2009
Elementary School Teacher, Grades 3, 4, & 6, All subjects Sharon Elementary School, Orem, UT	2000–2007

## REFEREED PUBLICATIONS

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### Books

**Anderson-Pence, K.L.** (estimated 2025). *Teacher Apprenticeship Case Studies in Teacher Education: Perspectives of Implementation*. Gorham, ME: Meyers Education Press.

### Peer-Reviewed Journal Articles

**Anderson-Pence, K.L.** (2020). Virtual manipulatives: Making effective instructional choices. *Colorado Mathematics Teacher*, 53(1), Article 3.  
<https://digscholarshop.unco.edu/cmt/vol53/iss1/3>

**Anderson-Pence, K.L.**, Tygret, J.A., & Crocker, L. (2020). Leveraging tutorial instructional software to enhance classroom mathematical discussions: An exploratory mixed-methods study. *Educational Research: Theory and Practice*, 31(3), 74–93. <http://www.nrmera.org/wp-content/uploads/2020/11/6-Anderson-Pence-et-al-Leveraging-Tutorial-Instructional-Software.pdf>

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. doi: 10.21890/ijres.328097

**Anderson-Pence, K.L.** (2017). Techno-mathematical discourse: A conceptual framework for analyzing K–12 classroom discussions. *Education Sciences*, 7(1), 40. doi:10.3390/educsci7010040

Watts, C.M., Moyer-Packenham, P.S., Tucker, S.I., Bullock, E., Shumway, J.F., Westenskow, A., Boyer-Thurgood, J., **Anderson-Pence, K.L.**, 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. doi:10.1016/j.chb.2016.07.029

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

**Anderson-Pence, K.L.**, & Moyer-Packenham, P. S. (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.

Moyer-Packenham, P.S., Bullock, E., Shumway, J.F., Tucker, S.I., Watts, C.M., 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

**Anderson-Pence, K.L.** (2015). Teachers' perceptions of examining student thinking: Changing mathematics instructional practice. *Cogent Education*, 2(1), 1075329. doi:10.1080/2331186X.2015.1075329

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., The Virtual Manipulatives Research Group at Utah State University. (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.

**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.org.uk/journal/moyer.pdf>

Moyer-Packenham, P.S., Baker, J., Westenskow, A., **Anderson-Pence, K.L.**, Shumway, J.F., & Jordan, K.E. (2014). Predictors of achievement when virtual manipulatives are used for mathematics instruction. *REDIMAT*, 3(2), 121-150. doi: 10.4471/redimat.2014.46

Westenskow, A., Moyer-Packenham, P.S., **Anderson-Pence, K.**, 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*, 4(1), 81-105.

**Anderson-Pence, K.L.** (2013) Ethnomathematics: The role of culture in the teaching and learning of mathematics. *Utah Mathematics Teacher*, 6, 52-61.

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.

**Anderson, K.L.** (2012). Pattern-block frenzy. *Teaching Children Mathematics*, 19(2), 116-121.

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.

### **Peer-Reviewed Conference Proceedings**

**Anderson-Pence, K.L.**, & Moyer-Packenham, P.S. (2015). *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.

- Anderson-Pence, K.L., & Moyer-Packenham, P.S.** (2015). *Using virtual manipulatives to generalize and justify through discourse*. Paper presented at the annual National Council of Teachers of Mathematics Research Conference (NCTM), Boston, Massachusetts.
- McGuire, P., Gagnon, R., & **Anderson-Pence, K.** (2015). Introducing pre-service STEM teachers to the Classroom Assessment Scoring System-Secondary (CLASS-S) using video-based assignments. *Proceedings of Society for Information Technology & Teacher Education International Conference 2015*, (pp. 2437-2442). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
- 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 Manipulative Research Group at Utah State University. (2014). *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), New Orleans, Louisiana.
- 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). 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. 1-6). 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). 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. 1-6). Herceg Novi, Montenegro.
- Anderson-Pence, K.L., & Moyer-Packenham P.S.** (2014). Techno-mathematical discourse. *Proceedings of the 12th annual Hawaii International Conference on Education (HICE)*, (pp. 1466-1483), Honolulu, Hawaii, ISSN# 1541-5880.

Boyer-Thurgood, J., Moyer-Packenham, P., Tucker, S., **Anderson, K.L.**, Shumway, J., Westenskow, A., & Bullock, E. (2014). Kindergarteners' 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.

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). 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.

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). 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.

Ng, D., & **Anderson, K.L.** (2011). Cognitive empathy and mathematics teaching, In B. Ubuz (Ed.) *Proceedings of the 35th Annual Conference of the International Group for the Psychology of Mathematics Education (PME)* (Vol. 3 pp. 273-280). Ankara, Turkey: PME.

## **PRESENTATIONS AT MEETINGS & SEMINARS PRESENTED**

### **Invited Addresses**

**Anderson-Pence, K.L.**, & Powers, A. (2019, July). *Recruitment and Retention: Supporting Mentors and Mathematics Teachers in SC BOCES*. Colorado Association of School Executives (CO-CASE), Rural Education Summit Pre-Conference. Breckenridge, Colorado.

Moyer-Packenham, P.S., Shumway, J.F., Bullock, E., **Anderson-Pence, K. L.**, Tucker, S.I., Westenskow, A., Boyer-Thurgood, J., Gulkilik, H., Watts, C.M., & Jordan, K. (2016, July). *Using Virtual Manipulatives on iPads to Promote Young Children's Mathematics Learning*. 13th International Congress on Mathematical Education. Hamburg, Germany.

**Anderson, K.L., & Ng, D.** (2011, November). *Square or Rhombus?: Developing Relational Thinking Through Geometric Reasoning Part 2*. Workshop Presentation. California Mathematics Council South (CMC-SOUTH) 52nd Annual Mathematics Conference. Palm Springs, California.

Ng, D., & **Anderson, K.L.** (2011, November). *Square or Rhombus?: Developing Relational Thinking Through Geometric Reasoning Part 1*. Workshop Presentation. California Mathematics Council South (CMC-SOUTH) 52nd Annual Mathematics Conference. Palm Springs, California.

### **International Presentations (Peer-Reviewed)**

Mitchell, R., & **Anderson-Pence, K.** (2021, August). *Promoting Remote: Impact of Preservice Teachers' Short-term Exposure to Rural Schools*. Presentation, International Symposium for Innovation in Rural Education (ISFIRE). (virtual conference)

**Anderson-Pence, 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). *Kindergarteners' 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.

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.

### **National Presentations (Peer-Reviewed)**

DeCelles, D.G., **Anderson-Pence, K.L.** (2024, February). *Devils and Details, Lessons and Logistics: Making District HR/EPP Collaborations Work*. Presentation. American Association of Colleges for Teacher Education (AACTE). Denver, CO.

- Anderson-Pence, K.L.,** Swanson, K.J., McCabe, K.M, & DeCelles, D.G. (2023, April). *Researching a Teacher Apprenticeship Model for Rural Paraprofessionals*. Roundtable Presentation. National Field Experience Conference (NFEC). Greeley, CO.
- Anderson-Pence, K.L.,** & Swanson, K. (2021, October). *Evolving Without Multiplying your Work: Science and Math Methods During COVID*. Suddenly Online Presentation. School Science and Math Association (SSMA) Annual Convention. (virtual conference)
- Anderson-Pence, K.L.** (2021, October). *Leveraging Tutorial Instructional Software to Enhance Classroom Mathematical Discussions*. Paper Presentation. Northern Rocky Mountain Educational Research Association (NRMERA). Sun Valley, Idaho.
- Mitchell, R., & **Anderson-Pence, K.L.** (2020, November). *They Want to Go There: Preservice Teacher Interest in Rural Careers*. Research Session. National Rural Education Association (NREA) National Forum to Advance Rural Education. (virtual conference)
- Anderson-Pence, K.L.** (2020, November). *Using Tutorial Virtual Manipulatives to Enhance Mathematical Discussion*. Research Session. School Science and Math Association (SSMA) Annual Convention. (virtual conference)
- Anderson-Pence, K.L.** (2020, April). *Techno-Mathematical Discourse: Encouraging Math Talk with Virtual Manipulatives*. Burst Presentation, Centennial Annual Meeting and Exposition of the National Council of Teachers of Mathematics (NCTM). Chicago, Illinois. (Conference canceled)
- Anderson-Pence, K. L.** (2019, November). *Enhancing Mathematics Instruction in Rural Schools: A Year-long Professional Development Experience*. Regular Session. School Science and Math Association (SSMA) Annual Convention. Salt Lake City, Utah.
- Anderson-Pence, K.L.,** Grant, L., & Yoo, M. (2019, October). *Examining the Effect of Coaching on Pre-service Teachers' Student-centered Instruction*. Paper Presentation. Northern Rocky Mountain Educational Research Association (NRMERA). Denver, Colorado.
- Anderson-Pence, K.L.** (2019, April). *Developing Math Teacher-Leaders in Rural Schools: A Year-long PD Experience*. Research Report. National Council of Teachers of Mathematics (NCTM) Research Conference. San Diego, California.

**Anderson-Pence, K.L.** (2018, October). *Enhancing Mathematics Instruction in Rural Schools: A Year-long Professional Development Experience to Develop Teacher-Leaders*. Northern Rocky Mountain Educational Research Association (NRMERA). Salt Lake City, Utah.

**Anderson-Pence, K.L.,** McGuire, P., Powers, A., & Valentine, A. (2018, October). *School's in for the Summer: Math PD for Rural Teachers*. National Rural Education Association (NREA) National Forum to Advance Rural Education. Denver, Colorado.

**Anderson-Pence, K.L.,** (2018, April). *Leveraging Tutorial Instructional Software to Enhance Classroom Mathematical Discussions*. Interactive Paper Session. National Council of Teachers of Mathematics (NCTM) Research Conference. Washington, DC.

**Anderson-Pence, K.L.,** (2017, October). *Using Tutorial Instructional Software to Enhance Classroom Mathematical Discussion*. Annual Conference of the Northern Rocky Mountain Educational Research Association (NRMERA). Boulder, Colorado.

**Anderson-Pence, K.L.** (2016, October). *Using Tutorial Virtual Manipulatives to Enhance Classroom Mathematical Discussion*. School Science and Math Association (SSMA) Annual Convention. Phoenix, Arizona.

**Anderson-Pence, K.L.,** & McGuire, P. (2016, June). *The Impact of Different Virtual Manipulative Types on Classroom Mathematical Discourse*. Annual Conference of the International Society for Technology in Education (ISTE). Denver, Colorado.

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

**Anderson-Pence, K.L.** (2015, October). *Virtual Manipulatives and Math Talk: An Examination of Techno-Mathematical Discourse*. Research Presentation. School Science and Math Association (SSMA) Annual Convention. Oklahoma City, Oklahoma.

Kaka, S., Clayton, G., & **Anderson-Pence, K.L.** (2015, October). *Using Video-Based Coaching with Pre-Service Teachers*. Panel Session. Mentoring Conference (UNM Mentoring Institute). Albuquerque, New Mexico.

- Anderson-Pence, K.L., & Moyer-Packenham, P. S.** (2015, April). *Using Virtual Manipulatives to Enhance Collaborative Discourse in Mathematics Instruction*. Paper Session. Annual Meeting of the American Educational Research Association (AERA). Chicago, Illinois.
- Anderson-Pence, K.L., & Moyer-Packenham, P. S.** (2015, April). *Using Virtual Manipulatives to Generalize and Justify Through Discourse*. Interactive Paper Session. National Council of Teachers of Mathematics (NCTM) Research Conference. Boston, Massachusetts.
- McGuire, P., Gagnon, R., & **Anderson-Pence, K.** (2015, March). *Introducing pre-service STEM teachers to the classroom assessment scoring system-secondary (CLASS-S) using video-based assignments*. Society for Information Technology and Teacher Education Conference. Las Vegas, Nevada.
- Anderson, K.L.** (2013, April). *Pattern Block Frenzy: Proportional Reasoning with Technology*. Presentation, 91st Annual Meeting of the National Council of Teachers of Mathematics (NCTM). Denver, Colorado.
- Moyer-Packenham, P.S., Baker, J., **Anderson, K.L.**, Shumway, J.F., Westenskow, A., & Jordan, K. (2013, April). *Hidden Achievement Predictors: Equalizing Effects of Virtual Manipulatives*. Paper Session. National Council of Teachers of Mathematics (NCTM) Research Pre-session. Denver, Colorado.
- Moyer-Packenham, P.S., Jordan, K., **Anderson, K.**, Baker, J., Shumway, J., & Westenskow, A. (2013, April). *Hidden Predictors of Achievement: The Equalizing Effect of Virtual Manipulatives for Mathematics Instruction*. Paper Session. Annual Meeting of the American Educational Research Association (AERA). San Francisco, California.
- Shumway, J., Bostwick, A., **Anderson, K.L.**, & Tucker, S. (2013, January). *Building Partnerships: A Collaborative Lesson-Study Experience in a Preservice Mathematics Methods Course*. Presentation, 17th Annual Conference of the Association of Mathematics Teacher Educators (AMTE). Orlando, Florida.
- Anderson, K.L.**, 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, Pennsylvania.

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 Math Association (SSMA) Annual Convention. Colorado Springs, Colorado.

Ng, D., & **Anderson, K.L.** (2011, April). *Square or Rhombus? Helping Students Develop Relational Thinking through Geometry*. Presentation, 89th Annual Meeting of the National Council of Teachers of Mathematics (NCTM). Indianapolis, Indiana.

Brown, A.B., & **Anderson, K.L.** (2010, November). *Broadcast, Online, Hybrid? Teaching Elementary Math Methods in Distance Education Environments*. Research Presentation, School Science and Math Association (SSMA) Annual Convention. Ft. Meyers, Florida.

### **State & Regional Presentations (Peer-Reviewed)**

**Anderson-Pence, K.L.**, & McGuire, P. (2017, September). *Multiplication Minilessons: Using Number Strings to Build Students' Understanding*. Annual Conference of the Colorado Council of Teachers of Mathematics (CCTM). Denver, Colorado.

**Anderson-Pence, K.L.** (2016, September). *Point, Click, Learn: Using Virtual Manipulatives to Enhance Mathematics Instruction*. Annual Conference of the Colorado Council of Teachers of Mathematics (CCTM). Denver, Colorado.

**Anderson-Pence, K.L.** (2013, November). *Techno-Mathematical Discourse: A Framework for Analyzing Math Talk While Working with Virtual Manipulatives*. Annual Conference of the Utah Council of Teachers of Mathematics (UCTM). Salt Lake City, Utah.

**Anderson, K.L.** (2012, October). *Pattern Block Frenzy: Proportional Reasoning with Technology*. Annual Conference of the Utah Council of Teachers of Mathematics (UCTM). American Fork, Utah.

**Anderson, K.L.** (2011, November). *Square or Rhombus?: Developing Relational Thinking Through Geometric Reasoning*. Annual Conference of the Utah Council of Teachers of Mathematics (UCTM). Salt Lake City, Utah.

**Anderson, K.L.** (2011, May). *Minilessons for Multiplying and Dividing Fractions*. Utah Council of Teachers of Mathematics (UCTM) Outreach Conference. Cedar City, Utah.

**Anderson, K.L., & Leder, A.** (2008, October). *Minilessons for Extending Multiplication*. Annual Conference of the Utah Council of Teachers of Mathematics (UCTM). Sandy, Utah.

**Anderson, K.L., & Welch, A.** (2007, November). *Motivating Students in Mathematics Through Technology: an Introduction to eNLVM*. Workshop Presentation, Consortium for Mathematics Educational Enhancement (CMEE) Annual State Conference. Salt Lake City, Utah.

**Anderson, K.L.** (2006, October). *Unraveling Integers*. Annual Conference of the Utah Council of Teachers of Mathematics (UCTM). Salt Lake City, Utah.

**Anderson, K.L.** (2005, October). *K-6 Mathematics Benchmarking System*. Annual Conference of the Utah Council of Teachers of Mathematics (UCTM). Clearfield, Utah.

**Anderson, K.L.** (2004, October). *The Ups and Downs of 3rd grade Algebra*. Annual Conference of the Utah Council of Teachers of Mathematics (UCTM). Sandy, Utah.

**Anderson, K.L., & Nielsen, M.** (2003, February). *Tumbling Tetronimoes & Broken Calculators*. Workshop Presentation, T<sup>3</sup>: Integrating Math and Technology Annual State Conference. Salt Lake City, Utah.

## **Invited Professional Development Seminars for Educators**

**Anderson-Pence, K.L., McGuire, P.** (2018, June). *Curriculum Alignment & Mapping Project*. Co-Instructor, 3-day workshop for 12 teachers and administrators, grades K-12, La Vita and Aguilar School Districts. Cripple Creek, Colorado.

**Anderson-Pence, K.L.** (2019, March). *Developing Conceptual Understanding to Effectively Teach Mathematics*. Instructor, 1-day workshop for 30 teachers, grades 3-5, El Paso County School District 49. Colorado Springs, Colorado.

**Anderson, K.L.** (2013, September). Professional Development School Partnership. Taught a 4th grade model minilesson on relational thinking with multiplication. Edith Bowen Lab School, Logan, Utah.

**Anderson, K.L.** (2012, March). *Utah Elementary Mathematics Endorsement Project*. Taught a 6th grade model lesson during a ratios and proportions unit. Alpine School District, Orem, Utah.

- Anderson, K.L., & Leder, A.** (2008–2009). K-6 Mathematics Content and Selected Topics from Algebra and Geometry. Lead Instructor, two workshops for 25 teachers, grades 4-6. Emery County School District, Castledale, Utah.
- Monroe, E.E., Bahr, D., & **Anderson, K.L.** (2006–2008). Utah Elementary Mathematics Endorsement. Co-instructor, two cohorts of 20 grades 2-6 teachers. Alpine School District, American Fork, Utah.
- Anderson, K.L.** (2008, October–November). Making Meaning for Operations. Lead Instructor, eight-week workshop for 6 participants. Alpine School District, American Fork, Utah.
- Anderson, K.L.** (2006, October–November). Introduction to eNLVM. Lead Instructor, four-week workshop for 12 participants. Alpine School District, American Fork, Utah.
- Anderson, K.L., & Welch, A.** (2006, March). Motivating Students to Engage in Mathematics Using Technology. Lead Instructor, one-day workshop for 50 participants. Alpine School District, American Fork, Utah.
- Anderson, K.L., & Welch, A.** (2006, January). Literacy and Technology in the Content Areas. Lead Instructor, one-day workshop for 50 participants. Alpine School District, American Fork, Utah.
- Anderson, K.L.** (2003, October–November). Making Meaning for Operations. Lead Instructor, eight-week workshop for 20 participants. Alpine School District, American Fork, Utah.
- Anderson, K.L.** (2002, October–November). Building a System of Tens. Lead Instructor, eight-week workshop for 20 participants. Alpine School District, American Fork, Utah.
- Anderson, K.L.** (2001–2004). Math Support Group for Investigations: Grade 3. Lead Facilitator. Year-long meetings for 6 participants. Alpine School District, American Fork, Utah.

## **GRANTS & SCHOLARSHIP**

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### **Grants Funded**

**Anderson-Pence, K.L., & DeCelles, D.G.** (2023-24). Building a Mentor Teacher Cadre. *Mentor Teacher Grant Program*. Colorado Department of Education. Total amount funded: **\$75,020**. Principal Investigator.

**Anderson-Pence, K.L.** (2023-24). Student Educator Stipends. *HB23-1001 Expanding Assistance For Educator Programs*. Colorado Department of Higher Education. Total amount funded: **\$1,242,584.60**. Principal Investigator.

**Anderson-Pence, K.L.** (2022-23). Student Educator Stipends. *HB22-1220 Removing Barriers to Educator Preparation*. Colorado Department of Higher Education. Total amount funded: **\$1,423,206.39**. Principal Investigator.

**Anderson-Pence, K.L., McGuire, P.** (2018–20). Addressing Teacher Shortages—Putting the Plan Into Action Grant. *Recruitment and Retention: Supporting Mentors and Mathematics Teachers in SC BOCES*. Colorado Department of Higher Education. Total amount funded: **\$115,909**. UCCS Subaward: **\$27,609**. Principal Investigator of UCCS subaward.

**Anderson-Pence, K.L., McGuire, P., Gorder, P., Khaliqi, D., Frye, B.** (2017–18). Colorado’s Mathematics and Science Partnership Program Grant. *South Central BOCES MSP*. Colorado Department of Education. Total amount funded: **\$400,000**. UCCS Subaward: **\$41,025**. Principal Investigator of UCCS subaward.

**Anderson-Pence, K.L., Kaka, S.** (2016). Compass Curriculum Grant. *IELM 4630–Student Teaching*. University of Colorado Colorado Springs, Office of the Provost. Amount funded: **1,000**. Co-Principal Investigator.

**Anderson-Pence, K.L.** (2016). Online Course Development Grant. *CURR 5492–Secondary Math Methods*. University of Colorado Colorado Springs, Faculty Resource Center. Amount funded: **\$3,000**. Principal Investigator.

**Anderson-Pence, K.L.** (2015). Teaching Enhancement Grant. *Using Math Manipulatives in Mathematics Education Courses*. University of Colorado Colorado Springs, Office of the Provost. Amount funded: **\$500**. Principal Investigator.

**Anderson-Pence, K.L.** (2014). Funding awarded for the conducting of dissertation research study. Utah State University, Graduate Student Senate. Amount funded: **\$1,000**. Principal Investigator.

**Anderson-Pence, K.L.** (2014). Travel funding awarded for presentation at the HICE Annual Meeting in Honolulu, Hawaii. Utah State University, Office of Research and Graduate Studies, College of Education. Amount funded: **\$1,000**. Principal Investigator.

Moyer-Packenham, P.S., Maahs-Fladung, C., & the Virtual Manipulatives Research Group (2013–2014). *Captivated! Young Children’s Learning Interactions with iPad Mathematics Apps*. Utah State University, Vice President for Research RC Funding. Amount funded: **\$20,000**. Graduate Research Assistant.

**Anderson, K.L.** (2013). Travel funding awarded for presentation at the NCTM Annual Meeting in Denver, Colorado. Utah State University, Office of Research and Graduate Studies, College of Education. Amount funded: **\$500**. Principal Investigator.

**Anderson, K.L.** (2013). Travel funding awarded for presentation at the AMTE Annual Conference in Orlando, Florida. Utah State University, Center for Women and Gender. Amount funded: **\$500**. Principal Investigator.

Moyer-Packenham, P.S., & the Virtual Manipulatives Research Group (2011–2012). Virtual Manipulatives Research Group: *Effects of Multiple Visual Modalities of Representation on Rational Number Competence*. Utah State University, Vice President for Research SPARC. Amount funded: **\$35,000**. Graduate Research Assistant.

**Anderson, K.L.** (2011). Travel funding awarded for presentation at the SSMA Annual Meeting in Colorado Springs, Colorado. Utah State University, Graduate Student Senate. Amount funded: **\$600**. Principal Investigator.

## **COURSES TAUGHT**

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### **University of Colorado Colorado Springs**

CURR 4800/5800	Schools, Society, and Diversity	Sp15*
CURR 5090	Masters Research Project	Su20*, Su21*
CURR 5172	Multimedia Development for K-12 Educators	Su16*, Su17*, Su18*
CURR 5301	Mathematical Connections and Concepts	Fa18 <sup>†</sup> , Su21 <sup>†</sup>
CURR 5304	Mathematics & Cognition	Fa14
CURR 5312	Mathematics for Teaching: Algebraic Reasoning	Su19 <sup>†</sup>
CURR 5492	Secondary Math Methods	Fa15*

GPS 1010	Gateway Program Seminar: Head of the Class, Teaching in a Muggle World; Muggle Studies	Fa16, Fa17, Fa18, Fa19, Fa20
IECE 4000	Math and Numeracy	Fa16, Fa17, Sp19, Sp20, Sp21, Sp22*, Sp23*, Sp24*
IELM 4025	Teaching Elementary Math	Fa15, Fa17, Fa18, Fa19, Fa20, Fa21
IELM 4900	Field Experience III – Elementary <sup>^</sup>	Fa18, Fa19, Fa20
IELM 4950	Student Teaching <sup>^</sup>	Sp19, Sp20, Sp21
TED 3010	Early School Diversity Practicum	Fa15
TED 4520/5520	Educational Psychology	Su15, Sp16, Su16, Sp17, Su17, Sp18, Su18
TED 4600	Elementary–School Experience <sup>^</sup>	Fa14, Fa15, Fa16
TED 4630	Elementary–Student Teaching <sup>^</sup>	Sp15, Sp16, Sp17
TED 4640	Elementary Mathematics Methods	Fa16
TED 5640	Elementary Mathematics Methods	Fa15, Fa17, Fa18, Fa19

## Utah State University

ELED 4060	Teaching Mathematics & Practicum Level III <sup>^</sup>	Sp10, Sp12, Fa12, Sp13, Fa13
ELED 5150	Student Teaching Seminar & Supervision <sup>^</sup>	Fa09, Fa11
TEAL 6522	Mathematics for Teaching K–8: Rational Numbers and Proportional Reasoning, interactive broadcast course	Sp14

\* Indicates fully online class

† Indicates hybrid course

<sup>^</sup> Indicates course with on-site supervision of pre-service teacher candidates

## Guest Lecturer

Pikes Peak Community College	EDU 221	Introduction to Education, “Teacher Education Programs at UCCS”	Sp17, Fa17, Fa18, Sp19, Fa19
University of Colorado Colorado Springs	UTED 1010	Step 1: Inquiry Approach to Teaching, “Technology in the Classroom,”	Fa15

## **RESEARCH SUPERVISION**

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### **Committee Member–PhD Graduates/Disserations Complete**

Sean Dean (PhD, 2021). *Mathematics Early Alerts: A Qualitative Comparative Analysis*.  
(Doctoral dissertation, University of Colorado Colorado Springs, 2021)

Sarah Kaka (PhD, 2017). *Preservice Teachers' Ability to Create a Student-Centered Environment*. (Doctoral dissertation, University of Colorado Colorado Springs, 2017).

Jennifer Tygret (PhD, 2017). *The Preparation and Education of First-Year Teachers: A Multiple Case Study of the Experiences and Perceptions of First-Year Teachers, Principals, and University Supervisors*. (Doctoral dissertation, University of Colorado Colorado Springs, 2017).

### **Graduate Students Mentored**

Teresa Howe; Graduation Research Assistant 2023  
University of Colorado Colorado Springs

Brenna Kuskie; Graduate Research Assistant 2022  
University of Colorado Colorado Springs

Marah Guzman; Graduate Research/Teaching Assistant 2020–2021  
University of Colorado Colorado Springs

Lauren Crocker; CURR 5090 course project 2020  
University of Colorado Colorado Springs

Jennifer Tygret; Mentored Doctoral Fellowship, 2016–2017  
University of Colorado Colorado Springs

### **Thesis Projects Advised**

Jessica Billingsly; Undergraduate Honors Program, 2012–2013  
Utah State University

## **RECOGNITIONS**

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### **University of Colorado Colorado Springs, College of Education**

Outstanding Teacher	2019
Outstanding Researcher	2016

### **Utah State University, Department of Teacher Education and Leadership**

Graduate Research Assistant of the Year	2013
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### **Utah State Office of Education**

Presidential Award for Excellence in Mathematics and Science Teaching: Finalist	2007
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### **Alpine School District**

Best of Alpine: In Recognition of Outstanding Service	2007
Teacher of the Year – Sharon Elementary	2006

### **Brigham Young University**

Graduate Cum Laude	2000
Dolores Stirling/Schneider Fund Scholarship	1999–2000
University Scholarship	1994–2000

## **PROFESSIONAL ORGANIZATIONS**

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American Association of Colleges for Teacher Education (AACTE)  
Association for Advancing Quality in Educator Preparation (AAQEP)  
Black Educator Network (BEN)  
Colorado Council of Teachers of Mathematics (CCTM)  
Council of Academic Deans from Research Education Institutions (CADREI)  
National Council of Teachers of Mathematics (NCTM)  
National Rural Education Association (NREA)  
Northern Rocky Mountain Educational Research Association (NRMERA)  
School Science and Mathematics Association (SSMA)

## **SERVICE & LEADERSHIP**

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### **College-Level Service**

Associate Dean, College of Education	2023–present
Interim Associate Dean, College of Education	2022–2023
Chair, Department of Teaching and Learning	2021–2022

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Chair, Curriculum Committee	2020–2021
Program Coordinator, Elementary Education	2018–2021
Member, Curriculum Committee	2017–2020
Chair/Member, Various Search Committees	2016–2020
Program Coordinator, BA in Inclusive Elementary Education	2016–2018
Member, Taskforce on Rural Southern Colorado Outreach	2019
Member, College Coordinating Council	2015–2018
Chair, Technology and Innovations Committee	2015–2017
Member, Research Roundtable	2014–2016

### **University-Level Service**

Co-chair, Extended Studies Policy Revision Taskforce	2023–present
Member, Compass Curriculum Committee	2022–present
Member, STEM Education Advisory Council	2019–present
Member, Gateway Program Seminar Advisory Board	2020–2023
Member, Academic Program Review Panel	2018–2022
Member, Search Committee – Director of Gateway Program Seminar	2018
Member, Taskforce on the Protection of Children/Minors on Campus Policy	2017
Member, Library Committee	2016–2017

### **State-Level Service**

Member, Colorado Department of Higher Education – Stackable Credential Pathways Steering Committee	2023–present
Member, Colorado Department of Education – Teacher Apprenticeship Feedback Group	2023
Member, Colorado Department of Education – Elementary Math Specialist Endorsement Drafting Committee	2016–2017
Member, Utah State Office of Education – Utah’s Common Core 6th Grade Committee	2010
Webmaster & Newsletter Editor, UCTM Board of Directors,	2009–2011
K–3 Representative, UCTM Board of Directors,	2007–2009
Member, State of Utah Instructional Materials Committee	2006–2008
District Math Coordinator, Alpine School District	2001–2004

### **National-Level Service**

Member, Site Visit Team (AAQEP)	2023–present
Member, Awards and Endowment Committee (SSMA)	2023–2025
Reviewer, <i>Mathematics Teacher: Learning &amp; Teaching PK-12</i> (NCTM)	2023
Colorado Representative, Executive Board (NRMERA)	2017–2020

Member, Regional Conference Program Committee (NCTM)	2018–2019
Reviewer, Annual Meeting (NRMERA)	2017–2019
Reviewer, <i>Journal for Research in Mathematics Education</i> (NCTM)	2015–2018
Reviewer, Research Conference (NCTM)	2014–2018
Reviewer, <i>Teaching Children Mathematics</i> (NCTM)	2012–2018
Reviewer, <i>Mathematics Teaching in the Middle School</i> (NCTM)	2016–2017
Member, Policy Committee (SSMA)	2014–2017
Reviewer, <i>School Science and Mathematics</i> (SSMA)	2013–2017
Reviewer, Annual Meeting, Division C, Section 1c, Mathematics (AERA)	2015

### **International-Level Service**

Reviewer, 13th International Congress on Mathematical Education (ICME-13)	2015
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### **Educational Consulting**

Elementary Mathematics Teachers Academy, Utah State University	2013–2015
Teacher Apprentice Coaching & Consulting (TASCC), Calhan, CO	2022–present

### **International Outreach**

<i>Kanazawa University</i> , Kanazawa, Japan.	May 2023
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Visited primary and secondary schools and universities; met with Japanese university administrators, faculty, and students. Topics discussed: establishment of ongoing partnership for future exchanges, study abroad programming, and research collaborations.

<i>People to People Ambassadors</i> , Mathematics Education Delegation.	October 2011
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São Paulo, Brazil. Rio de Janeiro, Brazil. Visited primary/secondary schools and universities; met with Brazilian mathematics education researchers, classroom teachers, and students. Topics discussed: Use of technology in mathematics education, ethnomathematics, culturally relevant pedagogy, and teacher professional development.

<i>People to People Ambassadors</i> , Mathematics Education Delegation:	November 2007
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Education Forum. Cairo, Egypt. Visited primary and secondary schools and universities. Topics discussed: Use of technology in education, teacher professional development.