

UtahStateUniversity



USU Math Educators Report on Research at Hawaii Conference

Mathematics educators from Utah State University were well represented at the annual Hawaii International Conference on Education held in Honolulu in January 2014. A seven-member team of faculty and doctoral students (Patricia Moyer-Packenham, Jessica Shumway, Arla Westenskow, Stephen Tucker, Katie Anderson-Pence, Jennifer Boyer-Thurgood, and Emma Bullock) presented quantitative findings from their study on young children's iPad use for mathematics learning in a presentation titled: Young Children's Mathematics Interactions with Virtual Manipulatives on iPads. The study examined 100 interviews with

children (ages 3-8) as they interacted individually with mathematics apps. Results showed that children in the Preschool group increased efficiency while maintaining performance; children in the Kindergarten group increased performance while maintaining efficiency; and children in the Grade 2 group increased their performance and efficiency in skip counting, but not in place value. Overall, children in different age groups responded in different ways to the apps, and some apps had a greater influence on children's learning performance and efficiency than others.



Top Row (L to R): Jennifer Boyer-Thurgood, Stephen Tucker, Jessica Shumway
Bottom Row: Katie Anderson-Pence, Emma Bullock, Dr. Patricia Moyer-Packenham

Other presentations by USU mathematics educators included: The Nexus of Mathematics, Strategy, and Technology in Second-Graders' Interactions with an iPad-Based Virtual Manipulative (Lead presenter: Stephen Tucker); Kindergarten's Strategy Development during Combining Tasks on the iPad (Lead presenter: Jennifer Boyer-Thurgood); Techno-Mathematical Discourse (Lead presenter: Katie Anderson-Pence); A Story Problem Assessment: Task-Based Interviews for Understanding Children's Number Sense (Lead presenter: Jessica Shumway); and Developing Number Sense Flexibility: Effectiveness of a TIER II Summer Intervention Program (Lead presenter: Arla Westenskow, with co-presenter Barbara Child from Logan City School District).

USU Welcomes New Mathematics Educator to the Faculty

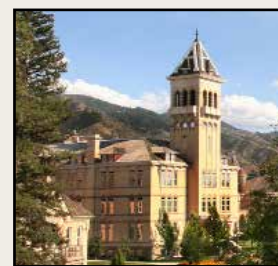
In Spring 2014, Dr. Beth L. MacDonald joined the Mathematics Education and Leadership faculty in the College of Education and Human Services as an Assistant Professor in the School of Teacher Education and Leadership. Dr. MacDonald recently earned her PhD from Virginia Tech University in Fall 2013 after working for 15 years as an elementary school teacher and 2 years as an instructional specialist. Her research focuses on the relationship between preschool children's subitizing activity and number understanding. She is particularly interested in developing mathematical games that can serve as a type of small-group intervention and dynamic assessment model. Dr. MacDonald anticipates that these embedded assessments and intervention tools resulting from her research would be used to both inform edu-

cators in the early elementary grades about what their students understand in mathematics and support differentiated instruction. Dr. MacDonald enjoys running, hiking, cross country skiing, and visiting museums with her family.



Dr. Beth MacDonald, Assistant Professor

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Math Student Awarded Graduate Teaching Assistant of the Year



Jennifer Boyer-Thurgood

In a Spring 2014 ceremony, Jennifer Boyer-Thurgood received one of the College's highest student awards – Graduate Teaching Assistant (GTA) of the Year. To win this award, seven departments in the College of Educa-

tion and Human Services each select their top GTA. The award at the college level is given to the outstanding GTA from among these seven candidates. This is the first time that a doctoral student from the Mathematics Education and Leadership programs has won this award.

Jennifer was recognized for her innovative instructional contributions to the development, delivery and marketing of the new online Elementary Mathematics Teachers Academy (EMTA; online.usu.edu/teach-math). What makes the EMTA so unique is that teachers select learning modules to personalize their professional development experience in learning mathematics content. This means that in a class of 30 teachers participating in the EMTA at any given time, every teacher is learning something different from different mathematical modules they have selected. Jennifer was able to bridge the

teams working on the content development and the technical infrastructure because of her high-level expertise in both areas.

In one recommendation letter, Robert Wagner, Executive Vice President and Provost wrote: "Jennifer has served as the critical link between faculty, departments, CIDI, and RCDE. Jennifer not only managed the development of the program but also manages the marketing, recruiting, registration, and continuing program development for the EMTA." Neal Legler, Center for Innovative Design and Instruction, wrote: "In my seven years in this position, I have never come across a more capable or dedicated graduate assistant ... Over the past six months, she has taken a primary leadership role in developing, teaching, and marketing one of the most innovative (and challenging) educational programs this university has produced." Congratulations, Jennifer!

Edith Bowen Laboratory School: Partnership for Math Success

In Fall 2012, Andrea Bostwick (Edith Bowen Laboratory School Teacher) and Jessica Shumway (USU Mathematics Methods Instructor) began a partnership between Andrea's second-grade class and Jessica's undergraduate preservice teachers. Since then, the collaboration has grown! Mathematics Methods instructors Jessica Shumway, Katie Anderson-Pence, Stephen Tucker, Emma Bullock, and Dr. Beth MacDonald partner with Edith Bowen teachers Andrea Bostwick, Marianne Christian, Fallon Farokhi, and Joan Kyriopoulos each semester to provide context-embedded mathematics teaching experiences for preservice teachers, extra support for elementary students, and opportunities for instructors, teachers, and preservice teachers to study mathematics teaching and learning together.

The common focus among the instructors, teachers, and preservice teachers within this partnership is elementary students' mathematics learning. Since beginning the partnership, teachers have described noticeable impacts on students' mathematics understandings. Laura Reina, EBLS Intervention Teacher, discussed the collaboration: "For

me, partnering with the university faculty helps to keep our faculty fresh and trying something new...I have also watched a whole class rise to a new level of understanding because they are challenged to think about math in a new way or learn a new strategy." Student teacher Kiersten Rood shared her experience: "Through this partnership, I have learned how to help the students understand math. As the students developed their understanding of the conceptual aspects of math, I saw their mathematic abilities improve dramatically. The students gained new perspectives about math, which increased their understanding of how numbers work together." The team members presented on the collaboration at the As-

sociation of Mathematics Teacher Educators Conference in Orlando, Florida. Jessica and Joan study mathematics instructional strategies together and published the article "Mastery Multiplied" in the December 2013 issue of *Educational Leadership*. The team continues to develop the partnership to provide a variety of learning experiences for teachers, preservice teachers, and students.



Kiersten Rood leads a math activity in a 4th grade classroom at Edith Bowen Laboratory School



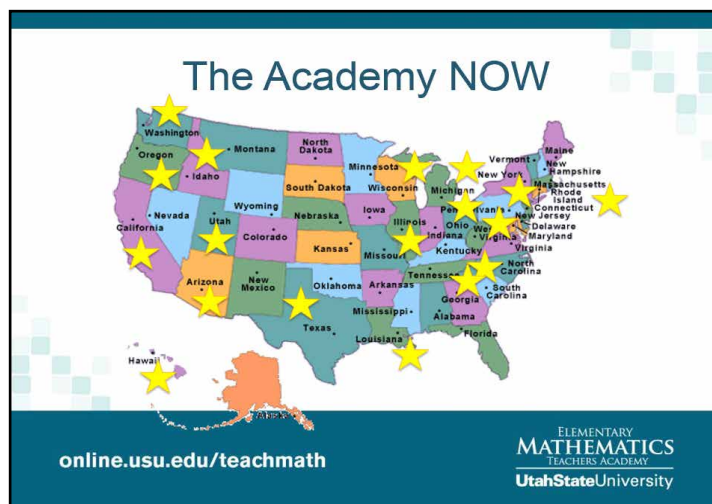
National Launch of USU Elementary Mathematics Teachers Academy

The Elementary Mathematics Teachers Academy (EMTA) is an online for-credit master's-level professional development (PD) program designed by developers at Utah State University (USU). The Academy is the first PD program of its kind in which teachers select their own learning content. In 2013, USU created over 100 grade- and content-specific online learning modules aligned with the Common Core State Standards for Mathematics. In Spring 2014, USU launched the EMTA nationwide with a marketing and advertising campaign to reach teachers throughout the United States. In addition to electronic marketing strategies and phone/email communications, educators from the USU Mathematics Education program presented at the annual Society for Information Technology and Teacher Education Conference and had a booth at the National Council of Teachers of Mathemat-

ics Conference to publicize the program. To date, the program has received inquiries and registrations from teachers and mathematics leaders in 18 states.

Early feedback from EMTA participants has been very positive. One teacher commented, "Course creation was very simple and user-friendly. I love the fact that the mod-

ules are based on the core standards, so we really know what we can expect to be learning in each." Another teacher said, "I love the idea of having the course be targeted to my needs so that I can use the information now in my teaching. It was nice to have the modules arranged by grade and also by content to sort through what I wanted. I found it to be simple to understand and create the course I wanted." Another teacher noted, "The materials are very high quality, the articles chosen fire me up and get me excited about the content. I'm already working on several thesis topics in my mind because of the content of this course and I don't even need a thesis in my degree!" Early results indicate that the EMTA provides rigorous mathematics learning for teachers and that its success is due to the quality of learning content and the flexible delivery system created by the technical development team.



EMTA has received inquiries and registrations from 18 states

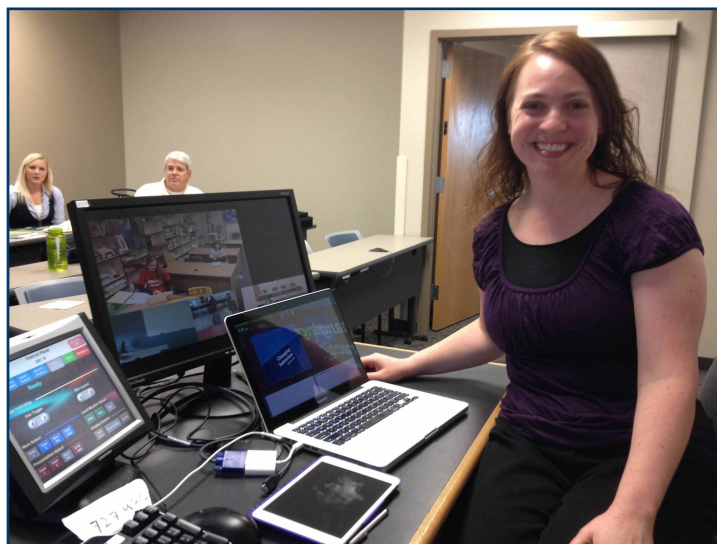
Graduate Teaching Assistants: They aren't just Face-to-Face anymore!

With the growth of USU's Mathematics Education & Leadership (MEL) PhD program along with expansion across the Regional Campuses, doctoral students have more opportunities than ever to gain valuable university teaching experience in distance formats. Dr. Amy Brown, who is a MEL faculty member based at the Tooele Regional Campus, has worked with doctoral students in her interactive video conference (IVC) and online courses at both the undergraduate and graduate levels. Co-teaching in distance formats has allowed some MEL students to parlay that experience into becoming the lead instructor of their own IVC courses.

Stephen Tucker, a MEL doctoral student nearing the completion of coursework, already had experience teaching face-to-face undergraduate students on the Logan campus. After co-teaching a Master's level IVC course in the Elementary Mathematics Endorsement with Dr. Brown, he will be the lead instructor of his own IVC en-

dorsement course in Summer 2014. Sheryl Rushton and Jodi Mantilla, two doctoral MEL students and full-time teachers in Draper and Spanish Fork, worked with Dr. Brown's IVC/online undergraduate class in 2012. In Fall 2013, they co-taught as lead instructors in an IVC middle school methods course. In Spring 2014, Katie Anderson-Pence taught the Rational Numbers course for the Elementary Mathematics Endorsement. In Fall 2014, Andrew Glaze, who is a middle school teacher in Kaysville and PhD student, will be co-teaching a middle school course with Dr. Brown over the IVC system. Dr. Brown says, "Our MEL PhD students are full-time teachers living and working all

over the state and the IVC system allows them to gain valuable teaching experience in varied distance delivery formats, which is a huge benefit to our program. These instructional experiences make doctoral students more marketable when they graduate and pursue faculty positions."



Katie Anderson-Pence teaching an IVC course



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About Us

The Mathematics Education and Leadership Programs in the School of Teacher Education and Leadership in the Emma Eccles Jones College of Education and Human Services provide students with a variety of advanced study options in mathematics education at the graduate level. Students can select the Mathematics Education and Leadership Emphasis in the PhD program, the Elementary Mathematics Endorsement emphasis in the Master of Education Degree in Elementary Education, professional development credit in the online Elementary Mathematics Teachers Academy, or the Secondary Mathematics Emphasis in the Master of Education Degree in Secondary Education. The Mathematics Education and Leadership Programs at Utah State University provide students with opportunities to focus on enhancing their mathematics education expertise and develop leadership skills for positions at all levels of mathematics teaching, learning, supervision, and research. Contact the director today to begin your graduate work in Mathematics Education and Leadership at Utah State University!



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