

UtahStateUniversity



MSP Grant Awarded for Mathematics Intervention

Co-PIs Barbara Child, Logan City School District (LSCD), Patricia Moyer-Packenham, USU's Mathematics Education and Leadership Programs, and Arla Westenskow, USU's Tutoring Intervention and Mathematics Enrichment (TIME) Clinic were awarded a 3-year Mathematics and Science Partnership (MSP) Grant from the Utah State Office of Education in the amount of \$128,298. The Intervention Training Academy partnership brings together Logan City School District (LSCD), Rich County School District, and USU's TIME Clinic to support teachers in Grades 3-5 with mathematics intervention training and tutoring experiences with students. This project will increase the effectiveness of teachers as they support Tier II struggling students in classroom and intervention settings and, is modeled after a successful summer intervention piloted by LSCD and the TIME Clinic in summer 2014. In the summer pilot program, teachers participated in two days of professional development focused on effective intervention practices. The pilot program introduced teachers to a repertoire of intervention activities, lesson ideas, and diagnostic assessments. Teachers also conducted ten sessions of one-to-one summer tutoring with Tier II students in their local schools. This experience provided teachers with an in-depth understanding of students who struggle in mathematics, and

an opportunity to practice newly learned intervention methods and assessments. Research during the project demonstrated significant pre- to post-test gains for the students in the project, and teachers reported increased understanding of specific strategies to support struggling students. The MSP grant will make it possible for all Grades 3-5 teachers in local districts to participate in similar intervention training. The research focus during the project will concern mathematics intervention and will develop the frameworks for a new mathematics intervention program for use in other school districts.



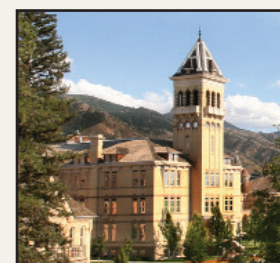
USU's Elementary Mathematics Endorsement Goes Online

Utah State University's Elementary Mathematics Endorsement (EME) is currently in a transition to move online. During the 2015 and 2016 calendar years, all six EME courses will move from their current broadcast format to being available completely online. The availability of the EME courses online allows greater flexibility for teachers who want to earn the endorsement. In the current broadcast format, each EME course is offered once every two years. Moving online means that teachers will not need to wait for a course to be on the schedule because every course will be on the schedule every semester (fall, spring or summer). In the current broadcast format, each EME course is offered on a set day and time. Moving online means that teachers will be able to complete EME modules any day of the week at any time of the day that fits their schedules. Teachers will also have the option of taking more than one course each semester, enabling them to complete the endorsement in just one year. Proposed transition schedule: TEAL 6525 Data Analysis & Problem Solving (online summer 2015); TEAL 6524 Geom-

etry & Measurement (online summer 2015); TEAL 6551 Assessment & Intervention (online fall 2015); TEAL 6521 Numbers & Operations (broadcast fall 2015, online spring 2016); TEAL 6523 Algebraic Reasoning (broadcast spring 2016, online summer 2016); and, TEAL 6522 Rational Numbers & Proportional Reasoning (online fall 2016). This transition to the online format allows teachers more flexibility in fulfilling their professional goals and completing the Elementary Mathematics Endorsement.



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Stephen Tucker Receives GRA Award



In a Spring 2015 ceremony, Stephen Tucker received one of the College's highest student awards – the Graduate Research Assistant of the Year Award.

Graduate students from across the seven departments in the College of Education and Human Services (CEHS) are nominated for the award. This is the second consecutive year a doctoral student from the Mathematics Education and Leadership program has won a college-level award, with Jennifer Boyer-Thurgood receiving the CEHS Graduate

Teaching Assistant of the Year Award in 2014.

Stephen was recognized for his research productivity while balancing graduate assistantship responsibilities that included teaching Elementary Mathematics Methods courses and conducting research. He has collaborated with faculty and students across multiple departments through his work in the Virtual Manipulatives Research Group, recently collaborating on an investigation of children's interactions with virtual manipulative mathematics iPad apps. Stephen has published four refereed journal articles, including two on which he is sole-author, and eight refereed conference proceedings. He has also presented at some of the most prestigious mathematics education conferences in his field including the American Educational Research Association (AREA), National Council of Teachers of Mathematics Research Conference

(NCTM-R), and Psychology of Mathematics Education (PME). His dissertation focuses on developing theory in the form of a conceptual framework that examines the relationships among and modification of mathematical and technological attributes, affordances, abilities, and distance in virtual manipulatives mathematics environments.

In a recommendation letter, Patricia Moyer-Packenham, Director of the Mathematics Education and Leadership Programs, wrote: "his accomplishments in research and scholarship are truly remarkable" and "unprecedented productivity for a doctoral student." Jim Dorward, Professor of Mathematics Education, wrote: "Above all, his commitment to quality is outstanding." Stephen has accepted a position as an Assistant Professor of Mathematics Education at Virginia Commonwealth University that begins fall 2015. Congratulations, Stephen!

Mathematics Education Doctoral Students are Leaders at UCTM State Meeting

USU Mathematics Education Doctoral Students (past and present) were well represented at the Annual Meeting of the Utah Council of Teachers of Mathematics (UCTM), presenting 16 of the 68 sessions offered at the meeting. Jennifer Boyer-Thurgood and Andrew Glaze also serve as members of the UCTM Board of Directors. This demonstrates the significant impact that mathematics education doctoral students affiliated with USU have on mathematics education in the state. Here is a list of presenters and presentations in the order they appeared in the UCTM program: Emma Bullock, Orchestrating Whole Class Discourse as Part of a Problem-Solving Intervention Group in a 5th Grade Classroom and Subitizing and Counting; Foundations for Pattern Building and Algebraic Reasoning; Vicki Lyons, Errors, Mistakes, and Wrong Answers, Oh My!; Jennifer Boyer-Thurgood, Early Geometry Concepts: The Theory, the Tasks, and of Course the Apps and USU's Elementary Mathematics Teachers Academy; Melanie Durfee and Melanie Arp, Research-based Strategies to Help Teach the Reluctant Learner; Kami Dupree, Execute Aunt Sally and Teach Order of Operations; Andrew Glaze, Beans to Bully-

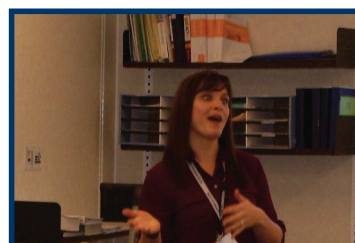
ing; Sheryl Rushton and Eric Packenham, GEAR UP Your Students to Reason About Mathematics; Ron Twitchell, Instructional Needs Associated with the SAGE Test; Patricia Stephens-French and Jennifer Thronsen, Effectively Using Assessment to Drive Differentiated Instruction; Arla Westenskow, Using Number Lines in Helping Students Develop Fraction Understanding; Stephen Tucker, Barbie and Friends Take the Measure of Mathematics for Social Justice; Lauren Burton, Unlocking the Mystery of Function Tables from Grade 7-10; and Christina Watts, Calculus in Your Career... and in Your Classroom.



Don Busenbark



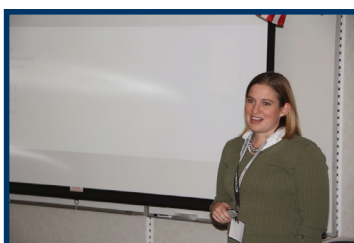
Christina Watts



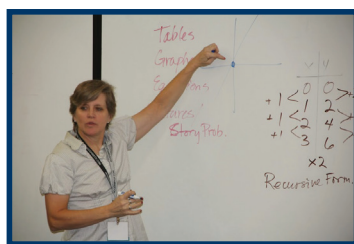
Melanie Arp



Andrew Glaze



Emma Bullock



Lauren Burton

USU Math Educators Report on Research at SITE Conference

Mathematics educators from Utah State University were well represented at the annual Society for Information Technology and Teacher Education International Conference held in Las Vegas, Nevada in March 2015. A four-member team of faculty and doctoral students (Lead Presenter: Emma Bullock with co-presenters Patricia Moyer-Packenham, Beth MacDonald, and Christina Watts) presented quantitative and qualitative findings from their study on young children's use of virtual manipulative mathematics touch-screen apps on iPads. The

presentation was titled: Effective Teaching with Technology: Managing Affordances in iPad apps to Promote Young Children's Mathematics Learning. The study examined 35 interviews with preschool children (ages 3-4) as they interacted individually with mathematics apps. Results revealed that changes in children's learning progressions during the interview were related to affordances in the mathematics apps. There were differences in children's access of affordances based on their age. Of particular note was that it was not the affordance it-

self, but the way the child accessed the affordance, that impacted children's learning.

Another mathematics-focused presentation by Scott Smith, with co-presenters Kevin Lawanto, Sarah Brasiel, and Taylor Martin, was titled: Changing Middle School Teachers' Algebra Content Knowledge and Teaching Self-Efficacy Beliefs Through Technology-Enriched Professional Development. The major findings from this study were that after participation in the professional development, seventh-grade math teachers improved in their algebra content knowledge, and both the seventh- and eighth-grade mathematics teachers improved in their self-efficacy beliefs for teaching key algebra topics.



L to R: Beth MacDonald, Emma Bullock, Christina Watts, Scott Smith, and Patricia Moyer-Packenham

Multiple Generations of USU Math Education Doctoral Students Meet

The Utah Council of Teachers of Mathematics annual meeting was held on November 7-8, 2014 at Layton High School in the Davis School District. The meeting is a way for mathematics educators at all levels across the state to come together, share their expertise, and discuss current issues in mathematics education. The meeting was also a wonderful opportunity for multiple generations of past and present USU Mathematics Education doctoral students to meet each other and share their experiences as Math Aggies!

During break times at the conference and in between sessions, current and past students met and discussed their assistantship experiences, preparing for the mathematics education job market, and future plans and collaborations. Some in attendance have already completed their PhDs and obtained university and school district positions, while others are nearing completion of the PhD program. Still others, are in their first years of the program. Everyone agreed that this was the perfect occasion to meet the members of their USU Mathematics Education family.



Front row: Dr. Arla Westenskow (cohort 1), Scott Smith (cohort 2), Janiece Edgington (cohort 2), Vicki Lyons (cohort 3), and Dr. Ron Twitchell (cohort 1)
Back row: Don Busenbark (cohort 2), Stephen Tucker (cohort 2), Lauren Burton (cohort 3), and Andrew Glaze (cohort 2)



Front row: Scott Smith (cohort 2), Janiece Edgington (cohort 2), Dr. Beth MacDonald (USU faculty), Christina Watts (cohort 3)
Middle Row: Melanie Arp (cohort 3), Jennifer Boyer-Thurgood (cohort 1), Dr. Sheryl Rushton (cohort 1), Melanie Durfee (cohort 3), Stephen Tucker (cohort 2)
Back row: Don Busenbark (cohort 2), Lauren Burton (cohort 3)



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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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Mathematics Education and Leadership Program Director

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