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Sixth Doctoral Cohort in Math Education Begins Their Journey

The Math Education Concentration in the PhD in Education program at Utah State University began in 2010. Since its inception, the math education students in the program have achieved a high rate of completion (88%), and most students have gone on to positions as faculty at Institutions of Higher Education (77%), as well as other high-level leadership positions nationally and locally.

In the fall of 2020, USU welcomed six mathematics educators to the sixth doctoral cohort in the Math Education Concentration. This cohort continues the tradition of excellence.



Kimberly Beck has been a teacher for 11 years. Prior to that, she worked as a civil engineer, but she reports that mathematics and education are her true passion. Kimberly taught at the high school level for six years, and for the past five years has been an adjunct instructor for the Mathematics and Developmental Mathematics departments at Weber State University. Kimberly is the recipient of a Graduate Research Assistantship funded by the National Science Foundation to the Computer Science for All Project. She will be conducting research during her doctoral studies under the direction of Dr. Jessica Shumway.



Lorraine Gale has taught at USU, Westminster and Weber State University (WSU), where she co-developed a six-credit Contemporary Mathematics course. She also coordinates WSU's concurrent enrollment mathematics program.



Michelle Parslow has a Bachelor's degree from Weber State University with a major in Mathematics teaching and a Minor in Visual Arts. She finished her Masters of Science degree in Mathematics Teaching at The University of Utah. Michelle has taught at various junior high schools. She is currently in her 27th year teaching public school where she teaches Math, Art, and STEAM (Science, Technology, Engineering, Art, and Math) projects.



Sandra Miles taught Algebra to seventh through ninth graders at Madison Jr. High School in Rexburg, ID. She has also been teaching a quantitative reasoning course at Brigham Young University Idaho for six years. Sandra is the recipient of a Graduate Research and Teaching Assistantship from the School of Teacher Education and Leadership. She will be conducting research during her doctoral studies under the direction of Dr. Katherine Vela.



Jason Hart teaches 3rd grade at Rose Creek Elementary. He has taught for seven years, mostly in fifth grade and now is teaching in third grade. Jason is involved in mathematics professional development for the teachers in his school district. He has also presented at NCTM and UCTM on fraction concepts.



Jameson Hardy is currently working at Dixie State University as an instructor and Math 0900/1010 coordinator. Jameson has been teaching for seven years, two of which were in high school.

These outstanding mathematics educational leaders are all looking forward to getting started on coursework this fall and earning their PhDs at Utah State University.

Math Educators Receive Prestigious Awards

Two USU mathematics educators received prestigious awards from the School of Teacher Education and Leadership for their outstanding work in research. Dr. Jessica Shumway received the Undergraduate Faculty Research Mentor of the Year Award. For the past three years, Dr. Shumway has worked with 11 undergraduate research assistants on three different research projects. Dr. Shumway mentors them on the development of materials, data collection in classrooms, scoring data, organizing data, and conducting literature reviews. The students have learned to design innovative curriculum (including using robot coding toys), conduct assessments with kindergarteners, and observe researchers' tasks in action. With Dr. Shumway's guidance, her undergraduate students have delivered three national/state conference presentations, nine student conference/symposium presentations, and published one journal article (with an undergraduate student as the lead author).



Dr. Jessica Shumway



Dr. Kami Dupree

Dr. Kami Dupree received the Outstanding Dissertation of the Year Award. The title of her dissertation was: *Secondary Mathematics Teachers Responses to Pivotal Teaching Moments*. Dr. Dupree's dissertation examined how secondary mathematics teachers responded to *pivotal teaching moments* and how the teachers perceived that their own content

and pedagogical content knowledge was related to those events. This dissertation used a multiple case study design. Dr. Dupree's data collection during the study was extensive and included 24 school visits that resulted in the collection of 24 lesson plan outlines, 48 observations, 24 interviews, and 18 reflection journals. After collecting this large volume of data, Dr. Dupree systematically walked the dissertation reader through the step-by-step multi-phased analysis that she used to identify and classify pivotal teaching moments within and across cases. She also developed participant profiles from multiple sources and synthesized the profiles within and across the cases. Her methods of cross-case analysis, to tell the story of the six teachers in her study, was exemplary and very deserving of the Outstanding Dissertation Award. Congratulations to Dr. Shumway and Dr. Dupree!

Where Are They Now? Spotlight on Dr. Melanie Durfee

Dr. Melanie Durfee earned a Ph.D. in Education with a concentration in Mathematics Education from Utah State University in 2018. Dr. Beth MacDonald served as her dissertation chair. After finishing her degree, Dr. Durfee secured a position at the Utah State Board of Education (USBE) in the Digital Teaching and Learning group as an Achievement Specialist. Dr. Durfee works for the USBE on several software initiatives as the liaison to third-party program evaluators. Dr. Durfee also oversees specific programs at the district and state level.

Some of Dr. Durfee's specific initiatives are to work with local education agency (LEA) personnel at the district and charter school level in the Digital Teaching and Learning program. The Digital Teaching and Learning program funds Utah local education agencies who propose innovative educational ideas that use technology to increase student achievement. To seek funding, districts and charter schools are required to create a five-year plan for Digital Teaching and Learning to be approved by the USBE to qualify for the funds. Dr. Durfee collaborates with LEAs to develop the plans. As a result of Dr. Durfee's work, there currently are over 80 LEAs participating in the program.

To assist LEAs in their proposal development, Dr. Durfee draws on research findings. Some of the projects that Dr. Durfee oversees include teachers' use of software to help students prepare for testing, to help

students explore mathematics through webquests, and to help teachers integrate content areas in authentic problem-based learning opportunities (<https://dtl.utah.org/scenario>). Some of the projects also fund hardware, such as video presenters, devices, and laptops. By connecting research to practice, Dr. Durfee finds that her doctoral work and expertise consistently informs her work as an Achievement Specialist. As a past doctoral student in the Mathematics Education and Leadership concentration at USU, Dr. Durfee has found leadership opportunities that draw on her expertise in the connections she makes between research and teaching.



Dr. Melanie Durfee

USU Welcomes Dr. Katherine Vela to the Math Education Faculty

In fall 2020, Dr. Katherine Vela joined the Mathematics Education and Leadership faculty as an Assistant Professor in Elementary Mathematics Education in the School of Teacher Education and Leadership. Dr. Vela is part of the Utah State University (USU) Regional Campus system and is based in Price. She received her PhD and MS in Curriculum and Instruction with an emphasis in Mathematics Education and her BS in Interdisciplinary Studies from Texas A&M University in College Station, TX. During her PhD program, Dr. Vela received the College of Education and Human Development Strategic Fellowship, the Southwest Educational Research Association (SERA) Dean's Award, and was a finalist in the 3 Minute Thesis Competition.

Her dissertation titled *Empow“her”ing Female Students to Pursue STEM Fields* investigated the impact of an all-female STEM Summer Camp on female students' perceptions and self-efficacies toward STEM fields. The study highlighted the need for engagement in STEM informal learning opportunities, such as STEM summer camps, to empower female students to pursue STEM fields. These findings are important because increasing the number of female students pursuing STEM pathways is needed to close the gender gap in STEM fields and fill the need for a diverse STEM workforce.

Additionally, Dr. Vela had seven years of experience as a mathematics classroom teacher, one year of experience as a mathematics and science instruc-



Dr. Katherine Vela

tional coach, and one year of experience as an assistant principal in elementary Texas public schools. Personally, Dr. Vela loves spending time with her family and two dogs, Sophie and Kimber, and traveling the globe to gain diverse perspectives of the world around us. Welcome Dr. Katherine Vela!

Reeder Receives the Presidential Award for Excellence in Math and Science Teaching

Rachel Reeder traveled to Washington, DC in October 2019 to receive the Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST). Each year, the United States government recognizes a very select group of K-12 teachers with the prestigious PAEMST for their outstanding STEM teaching. These Presidential Awardees travel to Washington to participate in a ceremony and receive an award signed by the President of the United States. Awardees also receive a check for \$10,000 from the National Science Foundation to recognize their excellence in teaching.

Rachel is currently in her final year as a doctoral student in the Mathematics Education and Leadership concentration of the PhD in Education pro-

gram. She has been an educator for 13 years in Wasatch and Logan school districts, six of those as a first-grade Spanish Dual Language Immersion teacher. She has taught undergraduate education courses for the School of Teacher Education and Leadership at USU and has supervised student teachers. Rachel is conducting her dissertation study on Spanish Dual Language Immersion teachers' conceptions of integrated mathematics-language teaching and learning. The title of her dissertation study is: *Investigating K-3 Spanish Dual Language Immersion Teachers' Conceptions of Mathematics-Focused Content-Based Language Teaching*. Rachel's hope is that by better understanding teachers' conceptions, she can make important contributions to teacher preparation for dual language classrooms.



Rachel Reeder



UtahStateUniversity

2605 Old Main Hill
Logan, UT 84322-2605



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 Concentration 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!

Patricia Moyer-Packenham, PhD

Mathematics Education and Leadership Program Director
patricia.moyer-packenham@usu.edu · (435) 797-2597