2013–2014 CADRE FELLOWS BIOGRAPHIES

Kreshnik Begolli

University of California, Irvine

Answering how humans gain new knowledge and learn patterns based on previous knowledge inspires Kreshnik Begolli's research. His research arena alternates between the laboratory and the classroom in attempts to develop research in understanding how humans learn and impart knowledge. Begolli's research draws from cognitive research in analogical reasoning, memory, metacognition, perceptual learning, and language acquisition, striving to reveal effective instructional strategies that foster mathematical reasoning and the process of generalization. Begolli received his BS in Cognitive Science at the University of California, Los Angeles. He received his MA in Education and is currently in his fourth year of his PhD, both at the University of California, Irvine.

Project: CAREER: Learning to Make Connections in Mathematics
PI: Lindsey Richland

K.C. Busch

Stanford University

K.C. Busch is a PhD candidate in science education at Stanford University. Currently, Busch is researching how teachers and students communicate about climate change in the classroom to improve science education. She earned an MA in Science Education from the University of Texas in Austin and a BS in Ecology from Iowa State University. She has twelve years of formal science teaching experience in secondary schools in Austin, Texas, as well as two years of informal environmental education experience in Africa with the Peace Corps and Nevada with the National Park Service.

Project: Researching the Efficacy of the Science & Literacy Academy Model
PI: Jonathan Osborne

Carlos Alberto Mejía Colindres

Texas State University

Carlos A. Mejía Colindres is a graduate research assistant for the project Mathematics Instruction for English Language Learners (MIELL). This project is investigating what teacher characteristics related to knowledge and skills contribute to Latino English language learners' achievement gains in mathematics. MIELL is now in the process of collecting data at a school district in South Texas which has outperformed other school districts serving students with similar income levels. Mejía Colindres is currently a third year doctoral student in the Mathematics Education program at Texas State University, and is working on his

dissertation proposal within the MIELL project. His focus is on determining whether the background, preparation, and translanguaging (English/Spanish) of middle school teachers in the aforementioned school district are contributing to the mathematics learning gains of their bilingual students. Mejía Colindres obtained his bachelor's degree in mathematics and a MBA in his home country, Honduras, where he also was a mathematics college teacher for 10 years.

Project: CAREER: Mathematics Instruction for English Language Learners (MIELL)
PI: M. Alejandra Sorto

Ander Erickson

University of Michigan

Ander Erickson is a doctoral candidate at the University of Michigan's School of Education and has worked for the last four years as a research associate with Dr. Patricio Herbst. He earned his MS in Mathematical Sciences at Portland State University and spent five years teaching all levels of mathematics (from remedial algebra to group theory) to adult learners. As an academic researcher, he has helped develop instruments used to examine the decision-making of geometry teachers. Erickson's dissertation research focuses on the opportunities and challenges that result from the introduction of information literacy instruction into the mathematics classroom.

Project: Supports for Learning to Manage Classroom Discussions: Exploring the Role of Practical Rationality and Mathematical Knowledge for Teaching
PI: Patricio Herbst

Jonathan Hertel

Museum of Science, Boston

Jonathan Hertel is the research and evaluation program manager for Engineering is Elementary (EiE), a curriculum development project at the Museum of Science, Boston. EiE designs curriculum and professional development that engage elementary-aged students in elementary school classrooms and out-of-school-time programs in engineering. As project manager on the DRK-12 grant Exploring the Efficacy of Elementary Engineering, he organizes logistics and assists with instrument development, data collection, and analysis for an efficacy study of the EiE curriculum in 250 classrooms across three states. He also provides formative evaluation for EiE's professional development and curriculum development projects. Hertel has a BA in Biology and English from Hope College in Holland, MI and an EdM in Learning and Teaching from the Harvard Graduate School of Education. His interests focus on the use of research in the development of high-quality digital and hands-on STEM education interventions for students and teachers.

Project: Exploring the Efficacy of Elementary Engineering
PI: Christine Cunningham

Alex Mejía

Utah State University

Joel Alejandro (Alex) Mejía is a PhD student in Engineering Education and a graduate research assistant at Utah State University. He received his BS in Metallurgical and Materials Engineering from the University of Texas at El Paso, and his MS in Metallurgical Engineering from the University of Utah. Prior to coming to Utah State University, Mejía worked in industry as a Materials Engineer and Project Engineer. His current research focuses on how Latino adolescents use engineering design processes to solve community-based projects, and how their household bodies of knowledge and social practices with their peers may connect to these design processes. Mejía is particularly interested in the use of comprehension strategy instruction in linguistically and culturally diverse classrooms; physical and digital manipulatives and their application in engineering courses; and education and outreach for minorities in STEM.
Project: [Community-Based Engineering Design Challenges for Adolescent English Learners](#)
PI: Amy Alexandra Wilson

Brian O'Connell

Tufts University

Brian O'Connell is a mechanical engineering PhD student at Tufts University and a research assistant at Tufts' Center for Engineering Education and Outreach on the Integrating Engineering and Literacy project. His research interests focus on interdisciplinary collaboration, educational technology development and analysis, K-12 STEM education, and development of assessment tools for open ended K-12 engineering education activities. He is the creator of the PaperBots® Robotics Kit and other products that utilize available classroom materials to make engineering education activities more affordable and accessible and has founded a company around those products. Prior to coming to Tufts, O'Connell worked as a mechanical engineer for a government contractor designing periscopes and optronic masts for submarines. After graduation, he intends to pursue a faculty position with a research university in order to combine his desire to teach as well as advance his fields of interest through research.
Project: [Integrating Engineering and Literacy](#)
PI: Chris Rogers

Sarah Rand

The Center for Elementary Mathematics and Science Education (CEMSE), University of Chicago

Sarah Rand is an Associate Project Director at Outlier Research and Evaluation at the Center for Elementary Mathematics and Science Education (CEMSE), University of Chicago. She has her BA in Biology from Carleton College, a certificate in Environmental Education from the Teton Science Schools in Jackson Hole, Wyoming and her master's degree in Learning Sciences from the School of Education and Social Policy at Northwestern University. Prior to working at the University of Chicago, Rand taught 4th-6th grade science and coordinated her school's outdoor education and nutrition programs in Washington State. She has

worked with Outlier Research and Evaluation since 2010 on a variety of projects focused on improving math and science education. Her recent projects include an evaluation of Google's computer science camp, an evaluation of Purple Asparagus (a nutrition education program), a study of the current landscape of computer science education, and a national research study on STEM school models. Much of Rand's work is focused on dissemination of research findings, creating interactive online reports, and developing data visualizations in efforts to make information accessible to a broad audience.

Project: [Identifying and Measuring the Implementation and Impact of STEM School Models](#)

PI: Jeanne Century

Betty Stennett

Biological Sciences Curriculum Study (BSCS)

Betty Stennett is a science educator at Biological Sciences Curriculum Study (BSCS). She is currently developing curriculum for teachers participating in the online course, Energy: A Multidisciplinary Approach for Teachers. This course includes analyzing teaching video to support teachers in strategies to reveal, support and challenge student thinking and strategies to develop a coherent science content storyline. Stennett has 13 years of science teaching experience in secondary schools. She has an MS in Multidisciplinary Science, an MEd in Instructional Technology and a BS in Composite Science Education from Texas Tech University. Stennett's interests include understanding how students make sense of science, especially in an online environment.

Project: [Energy: A Multidisciplinary Approach for Teachers (EMAT) Designing and Studying a Multidisciplinary, Online Course for High School Teachers](#)

PI: Susan Kowalski

Jonee Wilson

Vanderbilt University

Jonee Wilson is currently a doctoral candidate at Vanderbilt University's Peabody College of Education and Human Development. Before enrolling in the PhD program, she was a high school mathematics teacher at a public school in Baltimore, MD for four years. As part of her studies at Peabody, she works as a research assistant on the middle school Mathematics and the Institutional Setting of Teaching (MIST) project, which is a longitudinal study that is examining what it takes to support mathematics teachers' development of ambitious and equitable instructional practices at scale. Her research interests include examining and specifying forms of instructional practice that support traditionally marginalized students' participation in rigorous mathematical activity, specifying how to design and lead professional development that supports teachers in developing such instructional practices, and specifying how to support schools and districts in developing the capacity to design teacher work contexts that support such instructional improvement efforts.

Project: [Investigating and Supporting the Development of Ambitious and Equitable Mathematics Instruction at Scale](#)

PI: Paul Cobb