Community for Advancing Discovery Research in Education

2017–2018 CADRE FELLOWS BIOGRAPHIES

Portia Botchway

Vanderbilt University

Portia K. Botchway is a doctoral student in the Department of Learning, Teaching, and Diversity at Vanderbilt University's Peabody College where she studies Mathematics and Science Education. Portia received her AB in Organismic and Evolutionary Biology from Harvard University with a secondary field in Classics. Between her undergraduate and graduate studies, she taught middle school science and high school biology and chemistry for four years at a charter school in Boston, MA. She is currently a graduate research assistant on projects investigating how elementary students use spatial reasoning and awareness to make sense of angle, length, area, and volume measurement and how teachers interpret student work as assessment evidence. Her research interests include how elementary teachers interact with disciplinary perspectives in mathematics and how teacher learning in the context of professional learning communities impacts instruction and supports student learning.

Project: Modeling Assessment to Enhance Teaching and Learning (Collaborative Research: Lehrer)
PI: Rich Lehrer

Shondricka Burrell

Temple University

Shondricka Burrell is a doctoral student in Science Education at Temple University. She is currently a graduate research assistant working on the DR K-12 project "Engaging Students in Scientific Practices: Evaluating Evidence and Explanation in Secondary Earth and Space Science." Goals of this project include examining explanatory models, evidence-based argumentation, and critical evaluation within the context of instructional scaffolds for Earth and space science content called Model-evidence Link diagrams. As a research assistant, she has applied quantitative and qualitative analytical methodologies to investigate scientific reasoning and knowledge gains and student use of epistemic discourse to conceptualize science understanding. Prior to beginning her doctoral studies, Shondricka was a high school teacher, adjunct geology faculty, and an education specialist for the Universities Space Research Associates' ACCEDP program at NASA Ames. Her research interests include educational access and investigating how transformative learning experiences and the socio-cognitive factors of interest and self-efficacy facilitate knowledge acquisition. Shondricka holds a BA and MA in Geology, and a MEd in Curriculum and Teacher Leadership.

Project: Engaging Students in Scientific Practices: Evaluating Evidence and Explanation in Secondary Earth and Space Science
PI: Doug Lombardi

Santiago Gasca

TERC

Santiago Gasca is a research and evaluation associate at TERC, where he works on a wide range of projects that relate to STEM education. He is conducting research studies on two DR K-12 projects - one providing professional development to paraeducators and another that involves assessing and teaching computational thinking (CT) skills using the learning game, Zoombinis. In addition, he works with small nonprofits, offering technical assistance resources to enable their use of evaluation techniques that will better track and show impact. He is interested in the ways in which formal and informal education can support student development of CT skills beyond the traditional coding and programming areas. Prior to joining TERC, Santiago earned an MA in Child Development and Human Study at Tufts University, primarily working on a study of character development in trade educations.

Projects: Doing the Math with Paraeducators: A Research and Development Project; Zoombinis: The Full Development Implementation Research Study of a Computational Thinking Game for Upper Elementary and Middle School Learners
PIs: Judy Storeygard; Jodi Asbell-Clarke

Salvador Huitzilopochtli

University of California, Santa Cruz

Salvador Huitzilopochtli is a doctoral student in Education at the University of California, Santa Cruz and an advisee of Dr. Judit Moschkovich. His research interests include mathematics discourse and early algebra. He is currently a graduate student researcher for the SSTELLA project, which studies the impact of a science teacher preparation intervention that focuses on English language and literacy development. He is a graduate of University of California, Berkeley, where he received a BA in Rhetoric and graduated from the Masters and Credential in Science and Mathematics Education (MACSME) program. Salvador's work is informed by ten years of experience as a middle school mathematics teacher in culturally, linguistically, and economically diverse schools. His work centers on equity and draws upon his additional experience working in violence prevention, academic support, and mentoring.

Project: Secondary Science Teaching with English Language and Literacy Acquisition (SSTELLA)
PI: Patricia Stoddart

Jenifer Hummer

University of Delaware

Jenifer Hummer is a doctoral student at the University of Delaware. After earning a degree in Mathematics from Arizona State University, she taught high school mathematics for nine years in New York City, while earning master's degrees in Mathematics Education and Educational Leadership. Now, as a third-year doctoral student, she is primarily concerned with researching teacher learning and continuous improvement of teaching. More specifically, she is interested in conducting research that focuses on the process of lesson study and how it benefits teachers and their learning. For her second-year study, she investigated the ways in which high school geometry teachers attend to student thinking within a cycle of continuous improvement of lesson plans. For her dissertation, Jenifer plans to continue studying lesson study as professional development for secondary teachers of mathematical modeling.

Project: CAREER: Proof in Secondary Classrooms: Decomposing a Central Mathematical Practice
PI: Michelle Cirillo

Josie Melton

Western Washington University

Josie Melton is an instructor of Elementary Science Education courses in the Science, Math, and Technology Education (SMATE) program at Western Washington University. She is also a research assistant on the DR K-12 project "Model of Research-Based Education (MORE) for Teachers," which studies the effectiveness of different aspects of the elementary science teacher preparation program at Western Washington University. In the next stage of the project, she will be working on a study to test the effectiveness of online mentor modules developed for cooperating teachers supporting elementary preservice teachers in their classrooms. Josie is currently a doctoral candidate at the University of British Columbia, studying Science Education in the Department of Curriculum and Pedagogy. Josie's dissertation research explores incorporating a sense of wonder in elementary classrooms and how re-connecting with a sense of wonder might influence preservice teachers' attitudes and ideas about teaching science.

Project: Model of Research-Based Education for Teachers
PI: Daniel Hanley; **Co-PI:** Chris Ohana

Rachelle Minor

Auburn University

Rachelle Minor is a doctoral student in Computer Science and Software Engineering at Auburn University, with a focus on the Learning Sciences. She is a full-time graduate research assistant working with Dr. Jakita Thomas on the DR K-12 project "Supporting Computational Algorithmic Thinking (SCAT) in African-American Middle-School Aged Girls" to explore the relationship between self-efficacy and the development of computational algorithmic thinking skills over time. She is also a co-facilitator for the SCAT program, a free enrichment program designed to expose middle school girls to game design. In addition to the learning sciences, her research interests include affective computing, human computer interaction (HCI), and artificial intelligence (AI). She is currently working on developing assessment tools and educational assistive technology to concurrently measure and improve levels of self-efficacy during the computational thinking development process.

Project: CAREER: Supporting Computational Algorithmic Thinking (SCAT) - Exploring the Development of Computational Algorithmic Thinking Capabilities in African-American Middle School Girls
PI: Jakita Thomas

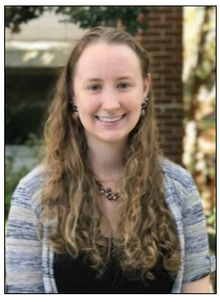
Jen Tennison

Saint Louis University

Jen Tennison is a doctoral student in Mechanical Engineering at Parks College of Engineering, Aviation, and Technology at Saint Louis University, studying surface haptics and touchscreens. Prior to her doctoral studies, she received a BS in Psychology from Southern Illinois University Edwardsville and completed coursework in Computer Science before ultimately deciding to pursue a doctorate in Mechanical Engineering. Her research interests include the non-visual perception of graphics, the perception of surface haptics, and tactile memory as they relate to increasing the accessibility of technology for no-vision and low-vision learners. Using her background in psychology and computer science, she hopes to create a more comprehensive solution to accessible technology for individuals with blindness and visual impairments or for vision-inappropriate scenarios, such as during driving.

Project: Perceptual and Implementation Strategies for Knowledge Acquisition of Digital Tactile Graphics for Blind and Visually Impaired Students (Collaborative Research: Gorlewicz)

PI: Jenna Gorlewicz



Brianna Tomlinson

Georgia Institute of Technology

Brianna Tomlinson is a doctoral student in Human-Centered Computing at the Georgia Institute of Technology. She is a graduate assistant in the Sonification Lab under the direction of Dr. Bruce Walker. Her primary focus is studying engagement, learning, and transfer for multimodal interactive systems. Her work explores how auditory displays can provide additional learning modalities for all users, especially within complex environments like Augmented Reality. Her work in the Sonification Lab emphasizes designing for an accessible user experience, especially for individuals with vision impairment. She is currently working as a research assistant on the design and evaluation of auditory displays for the DR K-12 project "Sonified Interactive Simulations for Accessible Middle School STEM."

Project: Sonified Interactive Simulations for Accessible Middle School STEM

PI: Emily Moore

Gabriela Vargas

University of Illinois at Urbana Champaign

Gabriela E. Vargas is a graduate student in Curriculum and Instruction with a focus on Mathematics Education and minors in Latina/o Studies and Gender and Women's Studies at the University of Illinois at Urbana-Champaign. She is a research assistant and project manager working with Gloriana González on the DR K-12 project "CAREER: Noticing and Using Students' Prior Knowledge." The project works with geometry teachers from high-needs schools to design and implement problem-based lessons by combining three professional development models: discussing animated vignettes, lesson study, and video club. Her general research interest is looking at how mathematics teachers develop political knowledge to support the success of urban students. Gabriela earned her BS/BA in Ethnic Studies and Mathematics from the University of California, Berkeley.

Project: CAREER: Noticing and Using Students' Prior Knowledge in Problem-Based Instruction

PI: Gloriana González