

CENTER FOR MATHEMATICS EDUCATION (CfME@UMD) FACULTY



**ANDREW BRANTLINGER** is an associate professor of mathematics education in Teaching and Learning, Policy and Leadership. His research interests pertain to urban mathematics education, teacher preparation, and critical mathematics pedagogy. He is currently a co-principal investigator on a

National Science Foundation-funded study of the career trajectories of mathematics teachers trained in a nationally-prominent, alternative route program. Recent publications appear in the *American Education Research Journal* and *Teachers College Record*.



**ANGELA STOLTZ** serves as the secondary mathematics professional development school (PDS) coordinator, supporting secondary mathematics undergraduate and graduate interns and their supervisors. In addition to her coordinator role, she teaches elementary curriculum and instruction

mathematics courses. Her research interests are equity in STEM, STEM curricula and instruction, teacher education and training.



**BEATRIZ QUINTOS** draws on socio-cultural and critical perspectives to explore student learning at the elementary level and include the knowledge and perspectives of Latina/o students and their communities. She leads the math education district-university partnerships and has experience doing professional development in Ecuador, Mexico, and the United States.



**CAROLINA NAPP-AVELLI'S** areas of interest are task-based student-centered mathematics teaching, teaching mathematics to English learners, and issues of equity and diversity in mathematics education. She often teaches the mathematics content and pedagogy courses for pre-service and in-service teachers.



**DANIEL CHAZAN'S** professional interests include student-centered mathematics teaching, the potential of history and philosophy of mathematics for informing such teaching, the role of technology in supporting student classroom exploration and practice-based teacher education, exploring possibilities for constructive links between educational scholarship and practice, and the preparation of future teachers.



**JANET WALKOE** is an assistant professor in mathematics education. Her research focuses on the teaching and learning of algebra in formal (PK-12) and informal environments.



**LAWRENCE M. CLARK** is an associate professor with experience as a mathematics teacher educator in the U.S., Ethiopia, Ecuador, and Kenya. His research interests focus primarily on examining and exploring influences on teachers' mathematics instructional practice in schools with a

history of low achievement. These influences include teachers' mathematical knowledge, teachers' beliefs, and teachers' explicit and implicit biases. Dr. Clark has also written book chapters and journal articles focused on the role of African American mathematics in the lives of African American mathematics learners.



**IMANI GOFFNEY** is an assistant professor who focuses her research on equitable teaching of mathematics. In particular, she works on preparing future elementary teachers with high leverage practices to support equitable teaching. Research publications include co-editing the

National Council of Teachers of Mathematics (NCTM) 2018 *Annual Perspectives in Mathematics Education* with Rochelle Gutiérrez, *Placing Black, Latinx, and Indigenous Students at the Center of Mathematics Education*.



**DANA GROSSER-CLARKSON** is a mathematics teacher educator in the Terrapin Teachers program. She teaches several methods courses and supports teacher candidates in early field experiences. Her research interests include the following: practice-based teacher

education, core-practices, standards-based curricula, algebraic thinking, classroom discourse, and lesson study.



CENTER FOR MATHEMATICS EDUCATION (MATHED)  
2226 Benjamin Building  
University of Maryland  
College Park, Maryland 20742

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CENTER FOR MATHEMATICS EDUCATION (CfME@UMD)

MACMTL Boosts Doctoral Program

by Daniel Chazan



The Center for Mathematics Education at the University of Maryland has no greater power of innovation and energy than the doctoral students we recruit every year. In the past fifteen years, almost 40 doctoral PhDs have graduated from CfME@UMD. Two funding sources have been especially important in recruiting strong doctoral students over these last years.

The Mid-Atlantic Center for Mathematics Teaching and Learning (MAC-MTL), funded by the National Science Foundation, was a tremendous boost to the Center's doctoral program. MAC-MTL supported the creation of five doctoral level courses that continue at CfME through the present: four foundations of mathematics education courses that focus on learning, teaching, curriculum, and professional development and teacher education, as well as a foundations of mathematics course and one credit seminars that help doctoral students advance their research agendas. MAC-MTL also supported 24 of our alumni with fellowships and graduate assistantships.

Since MAC-MTL ended, CfME@UMD has been using the proceeds of our outreach efforts with local schools to supplement generous donations from Dr. Jim Fey's royalties from the Connected Mathematics Project (CMP) to fund five-year Fey-Graeber packages for doctoral candidates. To date, 16 Fey-Graeber fellows have been named. Kristyn Lue and Margaret Wilson are our two newest Fey-Graeber fellows for the 2018-19 academic year. Please welcome them to CfME! Seven of our Fey-Graeber fellows have completed their doctoral studies and you can find links to their dissertations, as well as to dissertations of other alumni, on our webpage ([go.umd.edu/cfmealumni](http://go.umd.edu/cfmealumni)).

The CfME@UMD doctoral program has many illustrious alumni. In this year's newsletter, we highlight the work of some of these graduates – Dr. Eden Badertscher (MAC-MTL), Dr. Karen King, and Dr. Toya Frank (MAC-MTL). We also feature the work of Carolina Napp-Avelli in our faculty focus, another alumna of our Center.

In closing, I want to note a number of milestones for members of our community. Congratulations to Drs. Hollie Young and Alicia Morse who defended their dissertations in 2018. We also celebrate Dr. Karen McLaren's promotion in the Mathematics Department, another CfME@UMD alum.



(Back to front, left to right) Daniel Chazan, Andrew Brantlinger, Janet Walkoe, Sean Gruber, William Viviani, Josh Himmelsbach, Lawrence Clark, Kelly Ivy and her baby Mark Kingston Ivy, Margaret Walton, Carolina Napp-Avelli, Monica Anthony, Dana Grosser-Clarkson, Angela Stoltz, Tarik Buli, and Eric Xiang Gao.

CENTER FOR MATHEMATICS EDUCATION

(CfME) is a nationally prominent center for research and teaching addressing the improvement of mathematics education in K-16 and informal settings. We promote innovation in teacher preparation programs and focused outreach efforts to local urban schools. The promotion of access and participation of underrepresented minorities in mathematics education is a tangible CFME commitment.

COLLEGE OF EDUCATION  
UNIVERSITY OF MARYLAND

Congratulations to Briann Quinn!



A 2013 graduate with an M.Ed. in Mathematics Education, he won the \$25,000 Milken Award.

Please welcome Eric Xiang Gao!

Eric is a visiting doctoral student from East China Normal University in Shanghai. A student of Dr. Binyan Xu who visited CfME in 2017, he is doing a dissertation on problem-solving.



# Dr. Toya Frank’s Doctoral Experience at CfME Contributes to Research Success

by Margaret Walton and Kristyn Lue



Dr. Toya Frank

**ONE OF DR. TOYA FRANK’S** favorite aspects of her current job as an assistant professor at George Mason University is that she gets to take on tough questions about teaching and learning mathematics. Dr. Frank is now in her sixth year as a faculty member at George Mason University and is excited that her research projects are now beginning to come to fruition. Her research revolves around equity, math identity development, and the recruitment, retention, education, and experiences of math teachers of color.

Her research started during her time as a doctoral student at the University of Maryland. According to Dr. Frank, “while I was [at UMD], I fell in love with research.” Dr. Frank attended the University of Maryland as a doctoral student in the Center for Math Education (CfME) from 2008 to 2013, after working as a high school math teacher in Montgomery County for 11 years. She participated in the MAC-MTL fellowship, which placed her directly into several research projects with various faculty members in CfME.

One of her most formative projects was with Dr. Lawrence Clark and focused on highly respected African American teachers. Dr. Frank feels that work was very influential to what she does now. She was also able to work on a wide range of other projects, including a study with Dr. Patricia Campbell on professional development in urban spaces. In talking about the research she was exposed to at CfME, Dr. Frank appreciates how open the faculty were to different research questions and ideas. She describes the program as being

very supportive of a wide range of dissertations, and talked fondly about the CfME’s broad conception of what math education research consisted of, and what “counts” as math research.

Dr. Frank also appreciated the coursework that she took here, describing the curriculum as a good mix “that grounds you in classical work, but really pushes you to think about what lies on the horizon.” She felt a strong sense of community here, both with the faculty and her fellow graduate students. Upon graduating from the doctoral program, she felt “well-prepared to engage in research that didn’t look like everyone else’s.”

**“...while I was [at UMD], I fell in love with research.”**

Knowing that she wanted to stay immersed in research but keep her options open, she applied to a large range of positions in the DMV area, including a position at AiR, an equity-focused position with Fairfax County schools, and a few tenure-track faculty jobs. She is happy to have ultimately ended up at George Mason, where, in addition to pursuing her research interests, she teaches methods courses for pre-service secondary teachers.

When asked what she thought was most important in preparing pre-service teachers, Dr. Frank offered a few thoughts on the matter. First, teachers need the flexibility and understanding to support kids, and that support and belief perhaps come before the content knowledge – though she acknowledges the importance of knowing content, as well. She also wants to instill in teachers a willingness to keep learning. “More than anything,” she says, “I want to teach them to go out and pursue what they don’t have. I would hope that I’ve given them enough tools so that they know how to go out and get what they need.”



(Left to right) Angela Stoltz, Emily Yanisko, Patricia Campbell, and Toya Frank at the National Council of Teachers of Mathematics (NCTM) Annual Conference CfME luncheon.

# Dr. Eden Badertscher Receives 2018 Kay Gilliland Equity Lecture Award



**DR. EDEN BADERTSCHER** is a 2007 graduate from the University of Maryland. She recently received the 2018 Kay Gilliland Equity Lecture Award. The award is given annually by the National Council of Supervisors of Mathematics (NCSM) to an individual who honors the memory of Kay Gilliland through demonstrating the same kind of “unique and dedicated contributions to equity in mathematics education.” She works as a senior research scientist in the STEM division of the Educational Development Center, a Massachusetts-based global nonprofit that advances lasting solutions to improve education, promote health, and expand economic opportunity. In her role, she primarily writes and carries out grants that are focused on racial equity in math education. She originally started out as a high school teacher in Howard County, Maryland. While she originally enrolled as a doctoral student to become a better teacher, she found her eyes “opened to research” during her first year in the program.

Dr. Badertscher credits the Center for Math Education as being incredibly supportive and influential in her current work on equity and race. In her time at UMD, she worked on a case study project on well-respected urban Algebra I teachers with Dr. Chazan. The project, she said, “really helped me think about race in the context of math, and math in the context of race.” Her graduate student community was passionate about similar topics, which helped her to learn, grow, and reflect in her own research journey. After graduating from the program in 2007, she did a post-doc at Maryland to help shape the master’s program in conjunction with Prince George’s County. She

then worked in various capacities as a teacher and researcher before ultimately landing at EDC.

**Dr. Badertscher credits the Center for Math Education as being incredibly supportive and influential in her current work on equity and race.**

In her work on race and equity, Dr. Badertscher finds herself reflecting often on her own identities and how that influences and impacts her work. As a white woman working on issues of race, she discusses the importance of being aware of this identity when navigating her work. When asked what sort of advice she has for mathematics education scholars who want to do racial equity work, Dr. Badertscher offered three things. First, she emphasized the importance of understanding how the system of education perpetuates itself, and how it is connected to our broader socioeconomic and political systems. Second, she talks about the importance of researchers recognizing that their inculturation into the educational system may blind them from realizing the ways in which they perpetuate it. Third, she says to always surround yourself with good, knowledgeable people with different perspectives who are willing to listen and share.

“Eden brings together sophistication in mathematics, with practical teaching and administrative experience in schools and universities, research experience and an inquiring mind, and a deep commitment to issues of equity in our society. It is really quite a combination,” Dr. Chazan said.



Eden Badertscher and Sarah Sword



## FACULTY FOCUS: Carolina Napp-Avelli

**DR. CAROLINA NAPP-AVELLI** is a recent alumna from the Center for Mathematics Education. She graduated in 2014 and was quickly recruited at the University of Maryland to teach mathematics content and pedagogy courses in our teacher preparation programs. Dr. Napp-Avelli’s early research is a significant contribution in a high-need area to understand families’ engagement in mathematics education. Her research focuses on exploring the mathematics education experiences and perceptions of Latino immigrant families to support a more equitable education. Her professional work is enriched by a global perspective. Dr. Napp-Avelli’s teaching expertise started in Spain and Argentina after graduating with her master’s in mathematics. Being trilingual herself, she works to explore the best ways to support teachers as they teach emergent

bilinguals in mathematics classrooms. This work is an important contribution to the community surrounding UMD, as Hispanics now make up eight percent of the population of Maryland. According to census data analyzed by the Pew Research Center, Prince George’s County had a 167 percent increase in Hispanic students from 2000 to 2014, while nearby Montgomery County Public Schools had a 92 percent increase in the same time frame. In addition, Dr. Napp-Avelli leads the Creative Initiatives in Teacher Education (CITE), a program that seeks to capitalize on the diversity of teaching assistants in Montgomery County. Her work is an example of our Center’s commitment to equity and access in mathematics education of all students. We are fortunate to keep one of our alumni and see the development of her trajectory.

**DR. KAREN KING** **OUR ALUMNI HAVE TAKEN DIVERSE JOBS.** Dr. Karen King works at the National Science Foundation (NSF) as the program director in the Division of Research and Learning to improve the effectiveness of STEM learning for people of all ages. The division’s mission includes promoting innovative research, development, and evaluation of learning and teaching across all STEM disciplines by advancing cutting-edge knowledge and practices in both formal and informal learning settings. In talking about her role at NSF, she describes being able to support research in math and STEM education as one of her favorite parts of the job. She particularly enjoys being able to “see raw ideas being worked out” and being able to “watch grants progress” into finished projects. She is also the co-executive secretary for the Committee on Strategy for the National Science Board, where she gets to be involved in policy work and think about and engage in broad questions about the health of the field.

Dr. King’s journey to NSF was an unexpected one. She graduated college at the age of 19, and started at UMD as a doctoral student in the math department. Having majored in math as an undergraduate, she fell in love with the subject, but realized during her time as a doctoral student that pure math wasn’t quite the right field for her. In reflecting on the questions people would ask her about math and her experiences as a math doctoral student, she came to realize that her true interests lay in unpacking peoples’ thoughts on math. This led her to the math education department, where she was able to gain experience teaching middle schoolers through the Equity 2000 project, which was run by the College Board.

In talking about her time with the Center for Math Education, Dr. King highlighted the research she was involved in, and the people she met, as the most formative parts of her doctoral journey. She primarily worked as a graduate research assistant on a grant with the Collaborative for Excellence in Teacher Preparation, but was able to see a variety of research projects at many different stages of the process. Dr. King valued being able to “see the life cycle of a research project,” which now grounds her work at NSF. Above all, however, Dr. King values the people she met and the connections and relationships she has been able to foster over the years. While she graduated in 1997, she is still in touch with many of her colleagues from graduate school, and is grateful for those lifelong friendships from the Center for Math Education.