JULIE CWIKLA PHD
DIRECTOR OF CREATIVITY & INNOVATION IN STEM
Office of the Vice President for Research
INTERIM DIRECTOR OF THE CENTER FOR SCIENCE & MATHEMATICS EDUCATION
College of Arts & Sciences
University of Southern Mississippi
Ocean Springs, MS

Education

Ph.D. Mathematics Education

University of Delaware, School of Education, Newark, DE

Major: Curriculum & Instruction

Specialization: Mathematics Education

Minor: Mathematics

Dissertation "Professional activities that prompt teachers' understanding of students' mathematical thinking: An analysis of teachers' entry characteristics and their reactions to professional development activities."

Adviser: James Hiebert Ph.D.

M.S. Applied Mathematics

New York University, Courant Institute of Mathematical Sciences, New York, NY

Thesis "The N=2 Solution for the Extended Nonlinear Schrodinger Equation"

Adviser: Robert Kohn Ph.D.

B.S. Mathematics & Chemistry

Fairfield University, College of Arts and Sciences, Fairfield, CT

Awards & Grants

- *A River Runs Through Us: Climate Science and Conservation in MS* 2020-25
  National Science Foundation – Pending - **$2,907,419**
- *Generation Blue: Blue Economy Career Pathways on the Gulf of Mexico* – Hearin Foundation – Pending – **$400,000** 2020-21
- Southern Miss VPR Innovations Award Recipient – *Academic Partnerships* 2020
- *STEM Learning and Science Fair in Mississippi* – C-Spire **$25,000** 2019
- Ada Lovelace STEM Educator Award 2019
- Leveraging the U.S. Army JROTC Program to Develop a Regional STEM Workforce – National Science Foundation – **$971,580 -** Award #1759430 2018-21
- *Interdisciplinary Mathematics and Literacy e-Stories for Young Learners* - W.K. Kellogg Foundation - **$902,615** 2016-19
- Women in Technology: Speaker Series and Hackathons – Craig Newmark Foundation - **$50,000** 2019

- *Technology, Entrepreneurship, and App Building* – In Development
- *Creative Computing: Computational Thinking for Early Elementary Teachers and Students* – National Science Foundation – In Development
- *NRT: Training Next Generation Scientists with Experimental, Theoretical, and Computational Competencies for Complex Interfaces* – NSF - **$2,854,395** – Award #1449999 2015-20
- *Advancing Women Across the Gulf Coast* – ADVANCE - National Science Foundation – Principal Investigator **$833,000-** Award #1311017 2013-17
- *Developing Scientific Writing for High School Students* – Co-Principal Investigator - AMSTI - **$1,500,000** 2013-16
- *Professional Development Through Math Circles* – Co-Principal Investigator AMSTI - **$1,400,000** 2012-15
- *Pioneering Mars: Turning the Red Planet Green with Earth's Smallest Settlers*, Co-Principal Investigator - NASA - **$310,531** 2012-15
- *Early Fraction Learning: Links with Prosociality and Self and Other Perspective-Taking* Principal Investigator - FIRE - National Science Foundation - **$302,316** – Award #1043020 2011-15
- *Project WetKids*: Supplemental Funds Principal Investigator, NSF - **$25,000** 2011-12
- *Continuous Progress Curriculum Model for Elementary & Secondary Schools*, Co-Principal Investigator - U.S. Department of Education - **$383,197** 2008-11
- *Collaborative Research - Project WetKids: Immersion Along the Gulf Coast* Principal Investigator - AYS - National Science Foundation - **$799,999 -** Award #0639629 2006-12
- Who's Who in Education – Academic Keys, Washington, D.C. 2006-11
- *Mathematics Teacher Preparation Across Five Institutions* – Principal Investigator CAREER – National Science Foundation - **$489,367** 2003-08
- *Mathematics teaching and handheld computing devices: Potential for classroom* - Award #0238319 *improvement in every palm* – Lucas Fellowship for Faculty Excellence - **$4,875** 2003
- SERVE – Regional Educational Laboratory and the Southeast Eisenhower Regional Consortium for Mathematics & Science Education 2002-03
- Delaware Mathematics and Science Coalition - TIMSS-R Research Grant to Investigate Mathematics Assessment Items and TIMSS-R & DSTP 2000-2
- Delaware Mathematics and Science Coalition – TIMSS-R Research Grant for Program of Research for Delaware 2000-1
- Dissertation Fellowship - College of Human Services, Education and Public Policy University of Delaware, Newark, DE 1999-0

- Law School Admission Council Research Grant, Newtown, PA 1998-9
- School of Education Research Grant, University of Delaware, Newark, DE 1997-8
- United States Air Force Mathematics Research Grant, San Antonio, TX 1996
- Courant Institute of Mathematical Sciences Research Scholarship, New York University, New York, NY 1995

Publications

- Cwikla, J. & Reider, D. (In Preparation). *What Should a PhD in STEM Look Like in 2020? Lessons from the NRT.*
- Cwikla, J. & Reider, D. (In Preparation). *Women in STEM Building a Critical Mass in the Deep South.*
- Shelley-Tremblay, J. Clark, L., & Cwikla, J. (In Preparation) *Numerical Reasoning and Fine Motor Ability in Preschool-aged children.*
- Cwikla, J. & DeCristofano, C. (Under Review) *Math Stories Make a Difference.*
- Vonk, Jett, Tomeny, Mercer, & Cwikla (Under Review). *All in the Frame? Theory of Mind Interacts with Age and Framing to Predict Fair Sharing Performance in Young Children.*
- Cwikla, J. & Vonk, J. (In Revision). *Self-Generated Solutions to Fraction Fair Sharing Tasks in Early Childhood.*
- Cwikla, J. (2019). Mathematics, Computational Thinking, and Coding for Middle and High School African American Girls in the Deep South. In H. Roasario (Ed.) *Mathematical Outreach: Explorations in Social Justice Around the Globe*. pp. 185-208. Series on Mathematics Education Vol 16. World Scientific.
- Cwikla, J. (2019). *Good to Great Grant Writing: Secrets to Success.* Always Curious Publishing.
- Vonk, J., Jett, S., Tomeny, T., Mercer, S., and Cwikla, J. (2018). Young Children's Theory of Mind Predicts More Sharing with Friends Over Time. *Child Development 91(1)* pp. 63-77.
- Cwikla, J. & Vonk, J. (2015). How do Fair Sharing Tasks Facilitate Young Children's Access to Fractional Concepts? *Ways into Mathematics: A CIEAEM Sourcebook.* Switzerland: Springer. (pp. 173-190).
- Cwikla, J. Milroy, S., Reider, D., & Skelton, T. (2014). Pioneering Mars: Turning the Red Planet Green with Earth's Smallest Settlers. The *American Biology Teacher.*
- Cwikla, J. (2014). Can Kindergarteners Do Fractions? *Teaching Children Mathematics, 20 (6),* 355-364.

- Cwikla, J. & Patterson, M. (2011). Reprint - The A-Maizing Corn Lab: A geneticist's biography leads mathematics exploration. *Mathematics Teaching in the Middle School.*
- Cwikla, J. & Barry, C. (2011). Project WetKids: An out-of-school program fostering citizen scientists in the middle years. In R. Oxford & J. Lin (Eds.) *Transformative Eco-Education for Human Survival: Environmental education in a new era.*
- Cwikla, J. (2010). Using collegiate classroom video: Mathematics faculty reflect on their own and their peers' practices. *Association of Mathematics Teacher Educators Monograph Series 2010,* (pp 73-90).
- Cwikla, J. Wilner, S, & LaSalle, M (2009). "My Two Boots . . . A Walk through the Wetlands." An Annual Outing for 700 Middle School Students. *The American Biology Teacher, 71* (5), 274-279.
- Cwikla, J. (2008). Lifelong Learning: Mathematics Faculty Work to Improve Their Practice. In M. Qazi (Ed.), *Proceedings of the 5th Annual TEAM-Math Partnership Conference Pre-Session*. Tuskegee, AL: Tuskegee University. Downloaded (date) from http://www.team-math.net/tuskegeeconference/proceedings/index.html.
- Davis, A; Cwikla, J. & Barry, C. (2008). Project WetKids: An interdisciplinary investigation of integrated science and cultural arts learning along the Gulf Coast. *The International Journal of Interdisciplinary Social Sciences*, 3 (9), 63-68.
- Cwikla, J. (2007). The trials of a poor Mississippi middle school trying to catch up in mathematics: Teachers' multiple communities of practice and the boundary encounters. *Education and Urban Society, 39 (4) 554-583.*
- Cwikla, J. & Patterson, M. (2006). The A-Maizing Corn Lab: A geneticist's biography leads mathematics exploration. *Mathematics Teaching in the Middle School, 11 (9), 421-430.*
- Cwikla, J. & Morse, T. (2005). A teacher research team: Learning about handhelds in the context of practice. *Meridian: A middle school computer technologies journal.* http://ncsu.edu/meridian/win2005/middleschoolteacher/index.html
- Cwikla, J. (2005). A vehicle for mathematics lessons: Teachers learning to use PDAs in the classroom. *Technology-supported mathematics learning environments NCTM 2005 Yearbook.* Edited by William Masalski. Reston, VA: National Council of Teachers of Mathematics 2005 (pp. 203-220).
- Cwikla, J. (2004). Less experienced mathematics teachers report the problems with their professional support system. *Teachers and Teaching: Theory and Practice, 10 (2) 181-197.*
- Cwikla, J. (2004). Show me the evidence! Mathematics professional development for elementary teachers. *Teaching Children Mathematics, 10* (6) 321-326.

- Cwikla, J. (2003). The importance of setting learning goals to investigate the effectiveness of teacher professional development. *Educational Research Quarterly 27* (2) 43-59.
- Cwikla, J. (2003). *Middle School Mathematics Project (MSMP), N.R. Burger Middle School Hattiesburg, Mississippi, 2002 Summary Report.* Technical Report for SERVE, Southeast Regional Education Laboratory.
- Cwikla, J. (2002). Mathematics teachers' report of the influence of professional development activities on their attention to students' thinking. *The Professional Educator, XXIV* (2) 75-94.
- Cwikla, J. (2002). Teachers respond to mathematics reform professional development. *Proceedings of the Twenty-Fourth Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Volume 3,* 1451-1464.
- Cwikla, J. (2002). A call for teacher learning goals in professional development. *Proceedings of the Twenty-Fourth Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Volume 3,* 1592-1595.
- Cwikla, J. (2002). Voices of new mathematics teachers: Implications for staff development. *Proceedings of the Twenty-Fourth Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Volume 3,* 1596-1599.
- Cwikla, J. (2002). *Teacher preparation: How is it linked to student achievement?* DE Foundation for Science and Math Education. Technical Report University of Southern Mississippi.
- Cwikla, J. (2002). *Differential performance across students of color on the TIMSS-R.* DE Foundation for Science and Math Education. Technical Report University of Southern Mississippi.
- Cwikla, J. (2002). *Top TIMSS-R performers: What are they doing differently?* DE Foundation for Science and Math Education. Technical Report University of Southern Mississippi.
- Cwikla, J. (2001). *TIMSS-R 1999: An analysis of the Delaware Science Coalition data*. Technical Report: www.rdc.udel.edu - T01.002.1. Delaware Education Research & Development Center: Newark, DE.
- Cwikla, J. (2001). *DEMCI teachers and their concerns implementing mathematics reform curricula.* Technical Report T01.001.1 Delaware Education Research & Development Center: Newark, DE.
- Nandakumar, R., Cwikla, J., & Roussos, L.S. (1999). *Kernel-Smoothed DIF detection procedure for computerized adaptive tests.* LSAC Computerized Testing Report 00-02. Newtown, PA: Law School Admission Council.

- Roussos, L.S., Nandakumar, R., & Cwikla, J. (1998). *Theoretical formula for statistical bias in CATSIB DIF estimator due to discretization of the ability scale.* LSAC Computerized Testing Report 99-07. Newtown, PA: Law School Admission Council. ERIC Document.
- Cwikla, J. (1996). *The N=2 Case for the Extended Nonlinear Schrodinger Equation*, United States Air Force Technical Report. San Antonio, TX: Armstrong Laboratory.

Presentations

- Cwikla, J. (2020). *Changing Perceptions of Climate Science Along the Mississippi.* Twelfth International Conference on Climate Change: Impacts and Responses, Venice, Italy.
- Shelley-Tremblay, J., Clark, L., & Cwikla, J. (2020). *Can preschoolers do fractions? Yes, and fine motor skills predict their ability.* Paper presented at the Annual Meeting of the Alabama Academy of Sciences, Huntsville, AL
- Cwikla, J. & Stachowski, S. (2020). Climate Science Education on the Gulf Coast. Mississippi Association for Middle Level Educators, Natchez, MS.
- Clark, L. Shelley-Tremblay, J., & Cwikla, J. (2019). *Numerical Reasoning and Fine Motor Ability in Preschool-aged children.* Southeastern Psychological Association Annual Meeting. Jacksonville, FL.
- Cwikla, J. (Oct 2016). Math Stories Make a Difference, TEDx Women, Jackson, MS. https://www.youtube.com/watch?v=i5TIltfEQq4&feature=youtu.be
- Cwikla, J. (Sept 2014). *Building a Critical Mass of Women in science: Four Gulf Coast Institutions Partner.* 8th European Conference on Gender Equality in Higher Education. Vienna, Austria.
- Cwikla, J. Lucas, F., Valentine, J., McCane, L, Agler, L., Kimball, S., Driscoll, T., & Miller-Way, T. (March 2014). *Gulf Coast ADVANCE: Cross Institutional Synergy for Women Scientists.* National Science Foundation Meeting, Washington, DC.
- Cwikla, J. & Vonk, J. (July 2013). *Cognitive science and mathematics education: investigating the young mind and fractions*. International Group of Psychology of Mathematics Education (IGPME). Kiel, Germany.
- Cwikla, J. & Vonk, J. (July 2013). *Investigating the Young mind and Fractions.* International Commission for the Study and Improvement of Mathematics Teaching (CIEAEM). Turin, Italy.
- Vonk, J., Cwikla, J., Jett, S.E., Tomeny, T., & Soyars, S. (April 2013). Resource Allocation as a Function of Relationship to Recipient in Young Children. Society for Research in Child Development. (SRCD) Seattle, WA
- Vonk, J., Cwikla, J., Jett, S.E., Tomeny, T. (July 2012). *Does Theory of Mind and Prosociality Predict Young Children's Strategies in Solving Fair Sharing Tasks?* The 22nd Biennial Meeting

of the International Society for the Study of Behavioural Development (ISSBD). Edmonton, Canada.

- Vonk, J., Cwikla, J., Jett, S.E., Tomeny, T. (May 2012). *Self and Other-Perspective-Taking and Prosocial Behavior as Predictors for Young Children's Fractional Understanding in Social and Non-Social Contexts.* The Jean Piaget Society. Toronto, Canada.
- Cwikla, J. & Vonk, J. (April 2012). *Pre-School and Kindergarten Children's Understanding of Fraction and Fair Sharing Concepts.* SIG-RME American Education Research Association. Vancouver, Canada.
- Cwikla, J. & Vonk, J. (April 2012). *Young Children's Understanding of Fractions and Fair Sharing Concepts.* Research Pre-Session National Council of Teachers of Mathematics. Philadelphia, PA.
- Cwikla, J. (October 2011). *Early fraction learning: Links with prosociality and theory of mind.* National Science Foundation REESE PI Meeting. Washington, DC.
- Cwikla, J. & Vonk, J. (July 2011). *How do fair sharing tasks facilitate young children's access to fractional concepts?* International Commission for the Study and Improvement of Mathematics Teaching (CIEAEM). Barcelona, Spain.
- Vonk, J. & Cwikla, J. (March 2011). *Early Fraction and Fair Sharing Concepts.* Society for Research in Child Development (SRCD). Montreal, Canada.
- Cwikla, J. & Vonk, J. (Nov 2010). *Children's Early Fraction Understanding.* Mathematical Association of America Regional Conference. Pensacola, FL.
- Cwikla, J. (Nov 2010). *Project WetKids: Growing STEM leaders along the Gulf Coast.* Mississippi Environmental Education Association Annual Conference. Pascagoula, MS.
- Cwikla, J. (July 2010). *Eco-Education on the Gulf of Mexico: Out-of-School wetlands program for the middle grades.* International Conference Education, Economy, and Society. Paris, France.
- Allen, N., Cwikla, J., Emfinger, C., Lamey, N., Lawrence, S., McKernan, J., Moore, K., Price, N., Roth, C., Stachowski, S. & Walden. M. (May 2010). *Project WetKids: Eco Education Along the Gulf Coast.* Annual Conference of the Northern Gulf Institute. Mobile, AL.
- Barry, C., Cwikla, J., & Zeigler-Hill, V. (April 2010). *Project WetKids: Findings and plans for an out-of-school program that improves student interest in science.* AERA - American Education Research Association. Denver, CO.
- Cwikla, J. (February 2010). *Project WetKids: Eco-Education Along the Gulf of Mexico.* Annual Oceans Science Meeting. Portland, OR.

- Cwikla, J. (November 2009). *Looking in the Mirror: Using video to critique our own teaching.* National Council of Teachers of Mathematics Regional Conference. Nashville, TN.
- Cwikla, J. (April 2009). *Math Faculty from 5 Colleges Collaborate to Improve Practices in Higher Education.* NCTM – National Council of Teachers of Mathematics. Washington, DC.
- Cwikla, J. & Barry, C. (April 2009). *Project WetKids Community Partners Champion Interdisciplinary Out-of-School Learning.* AERA – American Education Research Association. San Diego, CA.
- Cwikla, J. (September 2008). *Lifelong Learning: Mathematics Faculty Work to Improve Their Practice.* Fifth Annual TEAM Math Conference on the Mathematical Education of Teachers. Tuskegee University, AL.
- Davis, A.; Cwikla, J., & Barry, C. (July 2008). *Project WetKids: An Interdisciplinary Investigation of Integrated Science and Cultural Arts Learning Along the Mississippi Gulf Coast.* Third International Conference on Interdisciplinary Social Sciences. Monash University Prato, Tuscany.
- Cwikla, J. (April 2008). *Promising Pedagogies in Mathematics Teacher Education Discussant.* AERA – American Education Research Association. New York, NY.
- Cwikla, J. (August 2007). *Learning from each other across five institutions: The Professional Mathematics Educators' Forum.* Fourth Annual TEAM Math Conference on the Mathematical Education of Teachers. Tuskegee University, AL.
- Cwikla, J. (February 2007). *Enhancing our capacity through a community of practice: The Professional Mathematics Educators' Forum.* – AACTE – American Association of Colleges of Teacher Education. New York, NY.
- Cwikla, J. (January 2007). *"My Ideal Mathematics Classroom" Preservice Teachers' Vision.* Association for Mathematics Teacher Educators. Irvine, CA.
- Cwikla, J. (February 2006). *The Amazing Corn Lab: A geneticist's biography leads mathematics exploration.* Eleventh Consultation of the International Consortium for Research in Science and Mathematics Education. Nassua, Bahamas.
- Cwikla, J. (January 2006). *Mathematics for non-majors: Learning from each other how to improve the teaching and learning in our classrooms.* Hawaii International Conference on Statistics, Mathematics, and Related Fields. Honolulu, Hawaii.
- Cwikla, J. (April 2005). *Inspiring improvement in the collegiate classroom: Professional development for Mathematics and Science faculty members.* – AERA – American Education Research Association, Montreal, Canada.
- Cwikla, J. (April 2005). *Using K-8 Classroom Video to Prompt Mathematics Educators' Improvement.* – AERA – American Education Research Association, Montreal, Canada.

- Cwikla, J. (February 2005). *Future teachers' mathematical understanding and beliefs compared to international students*. – SERA – Southwest Education Research Association, New Orleans, LA.
- Cwikla, J. (February 2005). *The elementary teacher learning continuum*. – SERA – Southwest Education Research Association, New Orleans, LA.
- Cwikla, J. (November 2004). *Professional mathematics educators: Practicing what we preach.* – Southern Regional National Council of Teachers of Mathematics. New Orleans, LA.
- Cwikla, J. (April 2004). *Show me the evidence: Mathematics professional development for elementary teachers* – AERA - American Education Research Association, San Diego, CA.
- Cwikla, J. & Morse, T. (April 2004). *Handheld computers: A Teacher Research Team develops technology driven lessons* – Annual meeting of the NCTM – National Council of Teachers of Mathematics. Philadelphia, PA.
- Cwikla, J. (April 2004). *Mathematics educators collaborate: Video, assessment, and survey data drive classroom changes* – Research Pre-Session of the Annual meeting of the NCTM – National Council of Teachers of Mathematics. Philadelphia, PA.
- Cwikla, J. (January 2004). *Professional development for teacher educators: Practicing what we preach.* – AMTE – Association of Mathematics Teacher Educators. San Diego, CA.
- Cwikla, J. (November 2003) *Improving teachers' mathematics preparation: A professional development program for mathematics educators.* – MSERA – Mid-South Educational Research Association. Biloxi, MS.
- Cwikla, J. & Morse, T. (October 2003). *Handheld computers: Teachers creating model middle school mathematics lessons that integrate technology* – SSMA – School Science and Mathematics Association. Columbus, OH.
- Cwikla, J. (October 2002). *A Call for Teacher Learning Goals in Professional Development* - PME - Psychology of Mathematics Education. Athens, GA.
- Cwikla, J. (October 2002). *Voices of New Mathematics Teachers: Implications for Staff Development* - PME - Psychology of Mathematics Education. Athens, GA.
- Cwikla, J. (October 2002). *Teachers Respond to Mathematics Reform Professional Development* - PME - Psychology of Mathematics Education, Athens, GA – October 2002
- Cwikla, J. (July 2002). *Story problems in mathematics: Contextual investigations.* Reading Conference, University of Southern Mississippi.
- Cwikla, J. (April 2002). *Mathematics Teachers' Report of the Influence of Professional Development Activities on their Attention to Student Thinking* - AERA - American Education Research Association, New Orleans, LA.

- Cwikla, J. (April 2002). *The Importance of Setting Learning Goals to Investigate the Effectiveness of Teacher Professional development* – AERA SIG- Research in Mathematics Ed, New Orleans, LA.
- Cwikla, J. (February 2002). *Mississippi Mathematics Teacher Preparation* – University of Southern Mississippi - Coalition of mathematics educators in southern Mississippi.
- Cwikla, J. (May 2001). *TIMSS-R 1999 Data and What it Means for Delaware Teachers*, State Department of Education, Dover, DE.
- Cwikla, J. (May 2001). *Analysis of the TIMSS-R 1999 Data and Educational Policy Implications,* State Department of Education, Dover, DE.
- Nandakumar, R, Roussos, L. & Cwikla, J. (April 2000). *Kernel-Smoothed CAT SIB DIF and Standard Error*, AERA – American Education Research Association, New Orleans, LA.
- Cwikla, J. (August 1999). *Mathematics Discourse*, DEMCI – Delaware Exemplar Mathematics Curriculum Initiative, Sponsored by the NSF, Wilmington, DE.
- Roussos, L., Nandkumar, R., & Cwikla, J. (April 1999). *Interval and Percentile Comparison of DIF Estimation,* AERA – American Education Research Association, Montreal.
- Cwikla, J. (April 1997). *Optics and the Nonlinear Schrodinger Equation* – Department of Mathematics, University of Delaware.
- Cwikla, J. (December 1996). *The N=2 Case for the Extended Nonlinear Schrodinger Equation,* Courant Institute of Mathematical Sciences, New York University.

Invited Talks

- *Good to Great Grant Writing*, College of Arts & Sciences, University of South Alabama, TBD 2020
- *Good to Great Grant Writing*, College of Engineering, Wake Forest University, June 2020
- *Working Together in Research* – University of Southern Mississippi, MS EPSCOR Annual Meeting, April 2020
- *Good to Great Grant Writing*, Kennesaw State University, October 2019
- *Good to Great Grant Writing*, Gannon University, Erie, PA, October 2019
- *Good to Great Grant Writing*, AIBS – American Institute of Biological Sciences, May 2019
- *Good to Great Grant Writing,* AIM – ADVANCE Implementation Mentors Network, May 2019
- *The Science of Teams.* Mississippi State University, MS EPSCOR Annual Meeting, April 2019
- *Getting Funds from Private Foundations*. University of Southern Mississippi. March 2018

- *Nuts and Bolts of Grant Writing*. University of Southern Mississippi. March 2017
- *The Changing Academy,* Department of Communications Seminar, University of Southern Mississippi Hattiesburg. March 2017
- *Grant Writing, Transdisciplinary Research, and the Changing Landscape*, Fairfield University, Fairfield, CT February 2017
- *Math and STEM: From Fairfield to Full Professor*, Fairfield University, Fairfield, CT February 2017
- *STEM on the Gulf Coast*, Edgewater Rotary Club, Biloxi, MS February 2017
- *Cognition, Informal Learning, and Evaluation*, Math Circles on the Road, NYC October 2016
- *Math Stories Make a Difference*, TEDx Women, Jackson, MS October 2016 https://www.youtube.com/watch?v=i5TIltfEQq4&feature=youtu.be
- National Academies of Sciences, Engineering, and Medicine Symposium on Assessing Hard-to-Measure Cognitive, Intrapersonal, and Interpersonal Competencies. *Early fraction learning: Links with prosociality and self and other perspective taking.* Washington, DC – Dec 2015
- *Project WetKids: Community Partnerships for Out-of-School STEM Learning.* Engaging America's Talent. NSF Education Outreach Conference. Little Rock – March 2010.
- *STEM Exposure in the Out-of-School Setting.* Mississippi Council of Teachers of Mathematics – University of Mississippi. Oxford, MS – October 2009.
- *Helping students make sense of mathematics: Building understanding and depth of content knowledge.* Pascagoula School District – July 2005.
- *Math 101: Helping your students make sense of mathematics* – East Baton Rouge Parish, Baton Rouge, LA – January 2004.
- *Becoming a leader for teachers: The role of mathematics specialists* – East Baton Rouge Parish, Baton Rouge, LA – June 2003.
- *Mathematics reform in higher education, what does the research tell us?* – McGill University Montreal, Quebec – March 2003.
- *The Delaware achievement gap and teacher preparation: What we learned from the TIMSS-*R- Delaware State School Board, Dover, DE – July 2002
- *TIMSS-R & State Policy Implications* - Delaware State School Board, Dover, DE – May 2001
- *Working through TIMSS-R: Classroom implications* - Appoquinimik School District, Mathematics Board, Middletown, DE – May 2001
- *Future for Women in Engineering, Mathematics, and Science.* Newtown School

District, Newtown, CT - January 1999

Research Experience

Interim Director of the Center for Science and Mathematics Education 2019-Pres

College of Arts & Sciences, University of Southern Mississippi

- Lead MS and PhD graduate STEM education programs
- Lead 40 masters and doctoral level students
- Coordinate Learning Assistants Program
- Developed 2020 STEM Education Speaker Series
- Mentor Junior Faculty Members in Grant Writing

Director of Creativity & Innovation in STEM 2014-Pres

Office of the Vice President for Research University of Southern Mississippi

- Director of iD8 - https://id8create.org/
- Director of Pioneering Mars – pioneeringmars.org
- Director – NSF - Fractions and Fair Sharing in Early Childhood Research
- Director of Gulf Coast ADVANCE Grant – NSF
- Consultant to EYE: Engaging Youth Through Engineering
- Mentor for Junior Faculty
- Stimulus for funded programs across the university
- JROTC Academy Mobile, Alabama

Full Professor & Founding Director of CISSTEM – cisstem.org 2012 – 2014

Center for Integrative Studies in Science, Technology, Engineering, and Mathematics.

- Director of Pioneering Mars – pioneeringmars.org
- Director of Project WetKids – projectwetkids.net
- Director – NSF - Fractions and Fair Sharing in Early Childhood Research
- Director of Gulf Coast ADVANCE Grant – NSF
- CISSTEM Research Center Director
- Consultant to EYE: Engaging Youth Through Engineering
- Advisor for Mobile County Public School System 80 by 20 Program

Full Professor, University of Southern Mississippi 2011-2012

- Director of Project WetKids – www.projectwetkids.net
- Director of the Professional Mathematics Educators' Forum
- Facilitate Professional Development for mathematics and science teachers.

Associate Professor, University of Southern Mississippi 2007-2011

- Director of Project WetKids – www.projectwetkids.net
- Director of the Professional Mathematics Educators' Forum
- Facilitate Professional Development for mathematics and science teachers.

Assistant Professor, University of Southern Mississippi 2001-2007

- Director of a coalition of community colleges to investigate mathematics learning goals for pre-service teachers.
- Organizing Japanese Lesson Study for middle school mathematics teachers learning to use handheld devices in their classroom.
- Investigating staff development & mathematics teacher learning in MS.

Educational Consultant 2001-Pres.

- "More Math Now" Exxon funded program for Gulf Coast Exploreum
- Common Core Standards Advisor for Mobile County Schools
- STEM Consultant on NSF Funded Mobile EYE Project Mobile, Alabama
- Evaluator for professional development at Burger Middle School, Hattiesburg, MS
- Professional developer for East Baton Rouge School District
- Professional developer for Pascagoula School District

Educational Researcher, Education Research & Development Center 2000-01

- Project Director of TIMSS-R research program for the State of Delaware
- Evaluator for the NSF – Local Systemic Change Initiative in Delaware
- Evaluation mentor for OERI Technology Challenge grants across the nation

Fellowship, University of Delaware 1999-00

- Analyzing the Delaware Student Testing Program
- Comparing the influence of testing formats
- Investigating 60,000 student performance scores in mathematics

Mathematics and Science Education Resource Center 1999-00

- Provided seminars for elementary and middle school mathematics teachers
- Formative evaluation for NSF Delaware teacher training program – DEMCI
- Implemented professional development programs throughout the State

Research Assistant, DE Education Research & Development Center 1998-99

- Researched current education concerns for area school boards
- Synthesized research literature for course manuscripts

Research Assistant, Law School Admissions Council (LSAC) 1998-00

- Conducted simulation studies for Differential Item Functioning analysis
- Researched item bias and item response functions

- Mathematically modeled Computer Adaptive Tests (CAT)
- Research conducted under Louis Roussos Ph.D.

Research Assistant, School of Education, University of Delaware 1998-99

- Assisted assessment research projects with Ratna Nandakumar Ph.D.
- Investigated Differential Item Functioning (DIF) & Item Response Theory (IRT)

United States Air Force, Brooks A.F. Base, San Antonio, TX 1996

- Civilian mathematics research contractor
- Investigated nonlinear optics and mathematical modeling
- Designed programs to model the Extended Nonlinear Schrodinger Equation (ENLS)

Teaching Experience

Professor, University of South Alabama 2012 - 2014

- Mathematics Methods for Secondary Teachers
- Grant Writing for Junior Faculty Members
- Mathematics Teaching and Learning
- Education Graduate Courses

Professor, University of Southern Mississippi 2001 - 2012

- Mathematics for Elementary Teachers I, II, and III – MAT 210, 309, 310, 410
- History of Mathematics – MAT 481
- Mathematics Methods for Elementary Ed – CIE 301
- Research and the Mathematics Reform – CIE 724
- Creating Student Centered Curriculum – REF 607
- Reading Educational Research – REF 601

School of Education & Public Schools, University of Delaware 1997 – 1998

- Elementary Pre-Service Mathematics Education Instructor
- Mathematics for Elementary Education I
- Mathematics for Elementary Education II
- A.I. Dupont Red Clay Middle School
- Caesar Rodney Middle School
- Appoquinomik School District

Department of Mathematics, University of Delaware 1997 – 1998

- Undergraduate Mathematics Instructor

- Discrete Mathematics
- Calculus II

Office of the Dean of the College of Arts and Science, NYU 1995 – 1996

- Tutor for undergraduates in Quantitative Reasoning
- Teaching Assistant for Biomathematics

Individual Private Tutoring 1991 – Pres.

- Assess student's learning needs
- Design a program of study

Comprehensive Tutoring, Monroe, CT 1994 – 1995

- Calculated students' individual learning
- Customized individual tutorial sessions

Kuman Math School, Trumbull, CT 1994 – 1995

- Taught and supervised students K-12
- Conferred with parents regarding student progress

Service Activities

- Mobile County Public Schools 80/20 Committee 2012-Pres
- National Science Foundation Review Panels 2004, 08, 11
- Model Mathematics Teacher for Elementary Students in Coastal Schools 2010-12
  - Kindergarten, Grade 1, Grade 4, Grade 6
- Grant writer for the Mary C. O'Keefe Cultural Center Ocean Springs 2008-11
  - *Camp Leonardo: Where Science Meets Art* – Gulf of Mexico Alliance - $20,000 2011
  - *Camp Leonardo: Where Science Meets Art* – Gulf of Mexico Alliance - $20,000 2010
  - *Camp Leonardo: Where Science Meets Art* – Gulf of Mexico Alliance - $20,000 2009
- Mathematics Professional Development for Bay Waveland School District 2011
- Director of www.ProjectWetKids.net and continued Regional Outreach 2006-Pres
- USM University Academic Council 2008-10
- USM College Advisory Council 2007-10
- USM University Faculty Senate 2006-08
- STEP – Standards Based Teacher Education Project – Mathematics 2003-06
  Team Leader, University of Southern Mississippi.
- USM Search Committees
  - Mathematics Education Faculty 2008, 09, 11
  - Mathematics Faculty 2007-08

- Mathematics Visiting Position 2007
- Mathematics Tutoring Lab Coordinator 2005

- Mathematics professional developer for Pascagoula School District 2005-06
- Mathematics professional developer for Mobile County Public Schools 2011-12
- NCATE Co-Chair Standard II – Assessment USM 2003-05
- Review Panel for the North Carolina State Department of Education in their selection of Mathematics and Science Partnership funding. 2004
- Editor – NCTM Journal – Teaching Children Mathematics – RRP Section 2003-05
- Discussant American Education Research Association – Division K 2003
- Reviewer American Education Research Association – Division K 2001-Pres
- Reviewer for AERA – Special Interest Group – Research in Math Education 2002-Pres
- Reviewer for Psychology of Mathematics Education 2002
- Editor for Foxwell & Davies Italia. Napoli, Italy 2003-4
- Reviewer for Teachers' College Record 2003-Pres
- Reviewer for Prentice Hall 2003-Pres
- Book Reviewer State University of New York Press 2002
- Overview of the NSF Career Program – Office of Research and Sponsored Programs, University of Southern Mississippi, invited talk. 2003, 04, 05
- Elected Representative on the College Liaison Committee - USMGC 2003-2006
- Anti-Plagiarism Committee – University of Southern Mississippi Gulf Coast 2002-3
- Academic Excellence Committee – Division of Education & Psychology 2003
- Director of the Scholarship Committee, Curriculum, Instruction, & Special Education, University of Southern Mississippi 2001-2
- Web page development for USM - CISE faculty members' use 2002
- Aided development and grading of master's comprehensive exams 2001-2
- Elementary Education Caucus, University of Southern Mississippi 2001-2
- Graduate thesis & dissertation committee service
    - Shanna Nesser – Doctoral Committee 2020
    - Lindsey Clark – Masters Committee 2020
    - Patrice Clark – Doctoral Committee 2020
    - Angel Bermudez – Doctoral Committee 2019
    - Lori Foran – Doctoral Committee 2015
    - Reggie Quinn – Doctoral Committee 2013
    - Teresa Burton – Doctoral Committee 2004
    - Myron Labat – Doctoral Committee 2003
    - Kim Bird – Doctoral Chair – Award winning dissertation 2003

- Leigh Ann Beard – Doctoral Committee 2002
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- Academic advisement of Elem. Ed. Undergraduate Students 2001-04
- Graduate Student Senate representative for School of Education, Univ. DE 1999-0
- Education Graduate Association, University of DE 1998
- Soup Kitchen Weekly Volunteer Washington Square Chapel NY, NY 1996-7
- Mathematics tutoring for children in need, Bridgeport, CT 1995
- Bridgeport Law Associates – Investigated homeless shelters - CT 1994
- S.A.A. - Student Athletic Association – Athletes' community service 1993-5

Professional Associations

- American Education Research Association, AERA
- American Mathematics Teacher Educators, AMTE
- Association for Supervision and Curriculum Development, ASCD
- Mississippi Council of Mathematics Teachers, MCMT
- National Council of Teachers of Mathematics, NCTM
- National Speakers Association, NSA
- North American Chapter of the Psychology of Mathematics Education, NA-PME
- Special Interest Group for Research in Mathematics Education, SIG-RME