

Kenneth Butler

Curriculum Vitae

EDUCATION

PhD Mathematics Education, University of South Florida, 2016

Cognate in Educational Measurement

Dissertation: *Motivation for mathematics: The development and initial validation of an abbreviated instrument.*

MA Mathematics, East Carolina University, 2000

Concentration in Statistics, post-graduate work in Computer Science

Thesis: *The Evolution of neural networks and the creation of a statistical model.*

BA Philosophy, East Carolina University, 1994

Focus on epistemology and theory of mind

EXPERIENCE IN EDUCATION

Secondary School

August 2018 – present

Mathematics Teacher,
Santa Fe Catholic, Lakeland, FL

Designed and implemented lesson plans aligned with standards for secondary school geometry for students with highly diverse abilities. Implemented IEPs for special needs students with IQs as low as 65. Improved gifted students achievement by focusing on abstract reasoning and proof.

August 2017 – May 2018

Mathematics Teacher,
Auburndale SH, Auburndale, FL

Designed and implemented lesson plans aligned with standards for secondary school geometry for high-level and struggling students. Collaborated with fellow geometry teacher on curricula. Continuously, received highly effective ratings.

August 2013 – June 2014

Secondary School Math Teacher,
Victory Christian Academy, Lakeland, FL

Designed and implemented lesson plans aligned with standards for secondary school geometry for high-level and struggling students. Designed and implemented lesson

plans for secondary school pre-calculus. Collaborated with math department on curricula. Developed online content and interacted with parents in support of student learning.

September 2015 – May 2018

Secondary School Math Teacher,
Upward Bound, Winter Haven, FL

Developed lessons to remediate mathematical misconceptions of bright high school students who are from families with no college graduates. Motivated students by incorporating related content. Counseled students on applying to college.

Post-secondary School

August 2020 – present

Assistant Professor,
University of Dayton, Dayton OH

Instruct mathematics methods for middle and high school preservice teachers, University liaison for middle and high school mathematics preservice teachers

January 2018 – May 2020

Adjunct Instructor,
University of South Florida, Tampa, FL

Instructed probability/statistics content and technology methods in mathematics education courses for undergraduate, MAT, and M.Ed. students. Supervised practicum for middle school and secondary school interns.

August 2016 – May 2017

Visiting Instructor,
University of South Florida, Tampa, FL

Collaborated with math education faculty to develop curricula for face-to-face, hybrid, and online courses. Instructed students in probability/statistics and algebra content courses, and current trends, technology methods in mathematics education, and high school methods courses for undergraduate, MAT, and M.Ed. students.

August 2019 – present

Online Instructor,
Warner University, Lake Wales, FL

Facilitated online general education college level mathematics content courses.

August 2011 – May 2013 Assistant Professor,
Warner University, Lake Wales, FL

Collaborated with math faculty to develop curricula and instructed students in college algebra, Intermediate algebra, intermediate math, liberal arts math, linear algebra, introductory statistics, trigonometry, and geometry. Developed courses and instructed students in online courses on introductory statistics, college algebra, and liberal arts mathematics. Collaborated with math faculty to develop a liberal arts mathematics track for students in non-math intensive majors. Collaborated with math faculty to schedule all mathematics courses

January 2002 - May 2005 Lecturer Mathematics,
East Carolina University, Greenville, NC

Instructed students in math methods K-5, statistics, applied calculus, college algebra, intermediate algebra, pre-calculus, introductory statistics, and trigonometry. Scheduled courses for all lecturers in mathematics.

August 1994 - January 1998 Teaching Assistant,
East Carolina University, Greenville, NC

Instructed students in intermediate algebra, college algebra, introductory statistics, and applied calculus.

Clinical Supervision

August 2016 – May 2017 Visiting Instructor,
University of South Florida, Tampa, FL

Supervised students and developed partnerships with local schools for clinical practicum experiences for 5-9 and 6-12 preservice teachers.

August 2013 – May 2015 Graduate Assistant,
University of South Florida, Tampa, FL

Observed middle school methods and content courses for Helios research grant. Supervised pre-service teachers in their internship.

EXPERIENCE IN DESIGN & MANUFACTURING

June 2005 – August 2009 Vice President of Engineering and Manufacturing,
American Environmental Container Corp., Lakeland, FL

Collaborated with owners and tool makers to design and build new models. Scanned existing molds and built 3D digital models to develop paths for robotic spray/chop system. Used FEA software to locate stress points and understand soil loadings on fiberglass swimming pools. Managed all manufacturing personnel and material purchasing for three factories.

May 1998 – August 2002 Design Engineer / Cost Analyst
Fountain Powerboats, Chocowinity, NC

Collaborated with tool makers and implemented 3D design software to digitally confirm center of buoyancy and step placement for new models. Scanned and digitized as built molds to improve deck-hull alignment. Collaborated with CNC programmers to improve fit of internal structure. Tracked production cost for the manufacturing of high performance offshore powerboats, high speed yachts, and world caliber race boats.

PUBLICATIONS

Refereed Journal Articles

Sears, R., Karadeniz, I., **Butler, K.**, Pettey, D. (2015). Are standards for mathematical practice overlooked in Geometry textbooks' Chapter Tests? *Annual Perspectives in Mathematics Education 2015: Assessment to Enhance Learning and Teaching*, 75-85.

Butler, K., Sears, R. (2016). Using toys as manipulatives: Promoting mathematics while motivating children. *Dimensions in Mathematics*, 36(2), 6-14.

Sears, R., **Butler, K.**, Krajcevski, M. (2017). The integration of technology in model eliciting activities to support mathematical reasoning. *Dimensions in Mathematics*.

In Progress Submissions

Butler, K., Dedrick, R. (submitted). Content and Internal Structural Validity of the Motivation for Mathematics Abbreviated Instrument. *SN Social Sciences*.

Conference Proceedings

Butler, K. & Sears, R. (2015). *Technology in Intermediate Algebra: Relationships with anxiety and opportunity to learn*. Proceedings from 42nd annual RCML conference.

CONFERENCE ACTIVITY

Presentations at National Conferences

Butler, K. (April 2017). *Motivation for mathematics: The development and initial validation of an abbreviated instrument*. As a winner of the 2016 AERA Division D Graduate Student In-Progress Research I received a small scholarship to present my dissertation at the “Division D Exemplary Work from Promising Researchers” formal paper session. AERA Annual Meeting in San Antonio, TX.

Butler, K. (March 2017). *Theoretical and Operational aspects of Content validity and the MMAI*. 44th annual RCML conference, Fort Worth, TX.

Sears, R., **Butler, K.**, Hopf, F. (January 2017). *Developing Intermediate Algebra Students Mathematical Communications via Workspace assignments in MyLabsPlus*. MAA Joint Mathematics Meetings, Atlanta, GA.

Butler, K. (April 2016). *Motivation for mathematics: The development and initial validation of an abbreviated instrument*. Presented in-progress research at the AREA Annual Meeting in Washington, DC. Winner of the Division D In-Progress Research Gala.

Butler, K. (March 2016). *Seeing through the eyes of the other: Switching roles to foster critical dialogue*. NAPDS National Conference, Washington, DC.

Butler, K. (February 2016). *From manipulatives to social justice: An ecological model for relatedness*. 43rd annual RCML conference, Orlando, FL.

Butler, K. (November 2015). *Incorporating social justice into the statistics curriculum*. AMATYC Conference, New Orleans, LA.

Butler, K., Sears, R. (February 2015). *Technology in Intermediate Algebra: Relationships with anxiety and opportunity to learn*. 42nd annual RCML conference, Las Vegas, NV.

Presentations at Regional Conferences

Sears, R., **Butler, K.** (October 2016). *Transforming Secondary Education with Improvement Science Plan-Do-Study-Act (PDSA) cycles*. FCTM Conference, Orlando, FL.

Butler, K. (October 2015). *From toys to social justice: An ecological model for relatedness of mathematical content in the classroom*. FCTM Conference, Orlando, FL.

Butler, K., Sears, R. (October 2014). *Toys in Math: Using play to motivate students*. FCTM Conference, Palm Harbor, FL.

Butler, K., Sears, R. (October 2013). *Computer based assessments and anxiety*. FCTM Conference, Orlando, FL.

Presentations at Local Conferences

Butler, K. (April 2015). *Incorporating social justice in Statistics*. Polk State College professional development series, Lakeland FL.

Butler, K. (March 2015). *Validity and reliability of assessments in mathematics*. Polk State College mathematics department, Lakeland FL.

Butler, K. (March 2012). *Intermediate Math: A prerequisite for College Math*. Polk State College, Lakeland, FL.

GRANTS

Research Assistant – Helios grant – *STEM Middle School Residency Program*, Anchin Center, USF - 2014 to present. Funded \$2,736,000 over 5 years

Cowriter – NSF grant – *Transforming College Algebra Teaching (TCAT): Promoting Cooperative Learning and Utilizing Performance Assessments in Large Lecture Courses*. USF - Submitted Fall 2014. Unfunded

Co-investigator – Carrollwood grant – *Using Improvement Science to Transform STEM Education*, 2016 to present. Funded

Co-investigator – Young Middle Magnet School-- *Using Manipulatives and Calculators to Facilitate Student Engagement in Middle Grades Mathematics* – January 2017. Funded

SERVICE TO EDUCATIONAL RESEARCH

Proposal Reviewer

2016 NCTM Research Conference.

2017 AERA Annual Meeting Division C.

2020 AERA Annual Meeting Division C and Division G

Proceedings Reviewer

2016 RCML Conference Proceedings.

2017 RCML Conference Proceedings.

Journal Reviewer

2019 Investigations in Mathematics Learning, Journal of RCML

2019 Psychological Reports

2020 Investigations in Mathematics Learning, Journal of RCML

Discussant

2016 Practitioner Research Conference University of South Florida.

2017 Practitioner Research Conference University of South Florida.

Judge

2017 MAA Undergraduate Poster Session 2017.

SERVICE TO UNIVERSITY

Participant

2016 – Present USF Mathematics Education Departmental Faculty meetings

2016 – Present USF College of Education Graduate School coordinators meetings

Advising and Student Support

January 2017	USF Week of Welcome event for new education students
Spring 2017	Facilitated independent studies for at risk students in Mathematics Education
2016 – Present	Advised doctoral candidates on current research and methods for their Dissertations
November 2016	USF College of Education Open House for new education students
Fall 2014	Analyzed and advised a doctoral candidate’s methodology and quantitative data for the completion of their Dissertation in education.
Spring 2013	Analyzed and advised a doctoral candidate’s methodology and quantitative data for the completion of their Dissertation in education.

SERVICE TO INDUSTRY

Standards Writer

2006-2009 Association of Pool and Spa Professionals

Collaborated with industry professionals to write ANSI approved pool and spa safety standards for the nation. Provided all illustrations for the residential pool safety standard ANSI/APSP/ICC-5. Authored white paper to detail the physics behind operational drawdown in passive vents of suction outlets for the ANSI/APSP-7 standard on suction entrapment avoidance.

PROFESSIONAL MEMBERSHIPS

NCTM – National Council of Teachers of Mathematics

AERA – American Educational Research Association (motivation in education SIG)

NAM – National Association of Mathematicians

HONORS / AWARDS

Donovan & Betty Lichtenberg Endowed Scholarship, 2013 and 2014.

Winner of the 2016 AERA Division D Graduate Student In-Progress Research at the Division D Exemplary Work from Promising Researchers Gala.

TEACHING CERTIFICATION

Florida Professional Educator Certification, Mathematics (grades 6-12) #1172130