ERIN E. WILLIAMS

CURRICULUM VITÆ

Fall 2015

CONTACT INFORMATION:

Mail: The University of Arizona
Department of Mathematics
617 N. Santa Rita Ave.
Tucson, AZ 85721-0089

Phone: (520) 621-0793

Website: `http://www.math.arizona.edu/~ewilliams/`

EDUCATION:

2013 Ph.D. in Mathematics, Texas Tech University.
Thesis: "Iteration of the Newton Map Applied to Rational Functions".
Advisors: Dr. Roger Barnard, Dr. Jerry Dwyer

2009 M.S. in Mathematics, Texas Tech University.
Thesis: "The Influence of Teacher Practice on Calculus Students' Motivation".
Advisor: Dr. Jerry Dwyer

2006 B.S. in Mathematics, Whitworth College.
Secondary Mathematics Education Certification in Washington

EMPLOYMENT:

2013 - Present Instructor.
The University of Arizona, Department of Mathematics

2006 - 2013 Graduate Part-Time Instructor.
Texas Tech University, Department of Mathematics and Statistics

TEACHING EXPERIENCE:

The University of Arizona: Instructor of Record.

- Math 109C - Applied College Algebra with Data Analysis *(Fall 2013, Spring 2014, Fall 2014)*
- Math 116 - Calculus Concepts for Business *(Fall 2013, Spring 2014, Summer 2014, Spring 2015, Fall 2015)*
- Math 116 (Online) - Calculus Concepts for Business *(Summer 2014, Summer 2015)*
- Math 122A - Functions for Calculus *(Fall 2014, Spring 2015)*
- Math 122B - First Semester Calculus *(Fall 2014)*
- Math 129 - Calculus II *(Spring 2015)*

Full course descriptions may be found at: `math.arizona.edu/academics/courses` or provided by request.

Texas Tech University: Instructor of Record.

- Math 0302 - Intermediate Algebra *(Fall 2006, Spring 2007)*
- Math 1320 - College Algebra *(Summer 2007)*
- Math 1321 (Online) - Trigonometry *(Spring 2013)*
- Math 1330 - Introductory Mathematical Analysis I *(Fall 2007, Spring 2008, Summer 2008, Fall 2008)*
- Math 1330 (Online) - Introductory Mathematical Analysis I *(Summer 2011, Fall 2011, Spring 2012, Summer 2012, Fall 2013)*
- Math 1331 - Introductory Mathematical Analysis II *(Fall 2010, Spring 2011)*
- Math 1331 (Online) - Introductory Mathematical Analysis II *(Fall 2011, Spring 2012, Summer 2012)*
- Math 2370 - Elementary Analysis I *(Spring 2009, Fall 2009, Spring 2010)*

Full course descriptions may be found at: `http://www.depts.ttu.edu/officialpublications/courses/MATH.php` or provided by request.

RESEARCH INTERESTS:

My current research interests include the fields of mathematics education, specifically undergraduate mathematics education and complex analysis, specifically iteration theory. I am currently interested in online undergraduate mathematics classes. One focus of mine is looking at how to implement and transfer successful techniques used in the standard classroom to an online environment. For my doctoral dissertation I investigated properties of the iterated Newton map of complex rational functions and classified all degree two Newton maps conjugate to quadratic polynomials. I am interested in expanding my dissertation research into classifying all degree two Newton maps, and extending this to degree three.

TALKS:

- Mathematics Instruction Colloquium, April 2014
  The University of Arizona; Tucson, Arizona
  Title: "Development of Online Math 116"
- Mathematics Instruction Colloquium, September 2014
  The University of Arizona; Tucson, Arizona
  Title: "Initial Offering of Online Math 116: Implementation, Successes and Possible Changes"
- Texas MAA Section Meeting, April 2013
  Texas Tech University; Lubbock, Texas
  Title: "Some Properties of the Newton Map of Rational Functions"
- Analysis Seminar, 2012
  Texas Tech University; Lubbock, Texas
  Title: "Iterations of the Newton Map Applied to Rational Functions"
- Invited talk for students interested in college research, 2012
  New Deal High School; New Deal, Texas
  Title: "The Mathematics of Fractal Images"

- Rocky Mountain Section Meeting of the Mathematical Association of America, 2009
  Colorado School of Mines; Golden, Colorado
  Title: "Calculus II Students' Perception of Instructors' Teaching Styles"
- Mathematics Education Seminar, 2008-2010
  Texas Tech University; Lubbock, Texas
  Various Hour Talks

PUBLICATIONS:

- "Instructor Immediacy and Motivation for Mathematics Learning," *MathAMATYC Educator* Vol. 5 # 3 (2014), 38-41 (with J. Dwyer and S. Sherrod).

DEPARTMENTAL SERVICE:

The University of Arizona.

- Mathematics Instruction Colloquium Co-Organizer *(Spring 2014-Present)*
- Online Math 116 Course Development *(Spring 2014-Present)*
- Undergraduate Teaching Assistantship Program Mentor *(Spring 2014, Spring 2015)*
- Course Coordinator, College Algebra with Data Analysis *(Spring 2015)*
- Compiling and Editing Course-wide Lecture Notes, College Algebra with Data Analysis *(Spring 2013-Summer 2014)*

AWARDS:

- Teaching/Service Award for non-tenure track faculty, *2015*

GRANTS:

- Texas Tech Noyce Scholars program - (NSF funded)
  Assisted with collecting, organizing and presenting data on scholars.
- South Plains Mathematics Scholars (SPMS) - (NSF funded)
  Gathered data about higher education mathematics courses for students within SPMS and compared this with students outside of SPMS. Conducted surveys of SPMS.

MEMBERSHIPS:

- *American Mathematical Society*