MIENIE ROBERTS, (Ph.D.)
1001 Leadership Place, Killeen, TX 76549

TEXAS A&M UNIVERSITY CENTRAL TEXAS

CURRICULUM VITAE

EDUCATION (1996-2008)

2002-2008 __ **Ph.D. in Mathematics**—Kent State University, Kent, OH, USA

- Dissertation Topic
  - On absolute continuity and the range of vector measures
- Courses Completed
  - Real Variables I: Metric Spaces, Differentiation and Integration
  - Real Variables II: Hilbert Spaces, Functional Analysis
  - Measure Theory: Integration theory, Martingales
  - Non-linear Analysis: Non-linear models
  - Mathematical Statistics I: Sampling distributions, Loss functions
  - Mathematical Statistics II: Hypothesis Tests, Non-parametric procedures
  - Probability Theory: Martingales, Expectation, Brownian motion
  - Wavelets and applications
  - Multivariate Statistics: Multiple regression, ANOVA

2002-2008 **MA in Mathematics**—Kent State University, Kent, OH, USA

- Courses Completed
  - College Teaching Mathematics: Methods of teaching Mathematics
  - Topology: Metric Spaces, Topological Spaces, Separation Axioms
  - Non-linear Analysis: Seminar on current topics
  - Complex Variables: Analytic functions, mappings, Cauchy integral theory
  - Probability Theory: Distribution functions, measure theory, random variables
  - Functional Analysis I: Principles of linear analysis in the setting of normed linear spaces and topological vector spaces
  - Functional Analysis II: Continuation of Functional Analysis I

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2001-2002 **MS Mathematics**—North West University, Potchefstroom, South Africa

- Thesis Topic
  - Operators Defined by Conditional Expectation
- Courses Completed
  - Markov Chains and Monte Carlo Simulation
  - Computer Security
  - Linear Algebra
  - Functional Analysis: Approximation theory
  - Abstract Algebra
  - Ordered Vector Spaces
  - Topology
  - Topological vector spaces
  - Real Analysis I, II
  - Riesz spaces I, II

1998-2002 **BS in Accounting and Mathematics**—North West University, Potchefstroom, South Africa

- Courses Completed
  - Accounting I, II- Models, Multivariate Statistical Analysis
  - Micro Economics
  - Macro Economics
  - Business Economics
  - Computer Science: C++, Pascal, Delphi, Assembler
  - Calculus I, II, III, Differential Equations, Linear Algebra
  - Advanced Analysis
  - Management
  - Abstract Algebra I, II
  - Science of learning I, II
  - Coding theory
  - Topology I
  - Business Statistics I, II

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TEACHING EXPERIENCE (2002-PRESENT)

2008-Present **Assistant Professor in Mathematics**—Texas A&M University – Central Texas

- Coordinator for BS in Mathematics with Certification (8-12/ 7-12) degree

  - Taught undergraduate classes to prepare students for the 4-8 and 8-12/ 7-12 mathematics content certification examinations
  - Admitted, advised, and prepared students for the 8-12/ 7-12 mathematics content certification examinations

- Instructor of upper and graduate level Mathematics and Statistics classes

  - Designed curriculum in Probability and taught a course to prepare students for the Probability/P1 Actuarial exam
  - Prepared EC-6 students for the mathematics portion of the certification examinations
  - Advised Master's Theses
  - Served on thesis committees

- Actuary Exam

  Outcomes

  - Prepared three students for the P1 Actuary exam in 2013
    (All three students successfully passed the exam)
  - Prepared one student for the P1 Actuary exam in 2010
    (Student successfully passed the exam)

2013-Present **Professional Development Coordinator—**TAMUCT-KISD Collaborative

- Created a Professional Development Collaborative for Mathematics Teachers, between Texas A&M University – Central Texas and Killeen Independent School District (KISD)

  2017-18

  - Attended to need from KISD for hosting and teaching two middle school sessions for mathematics teachers.
  - Customized the curricula for the middle school sessions, in order to address deficiencies in generalists' content knowledge in mathematics

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2016-17

- Improved the collaborative by aligning content to adhere to the new state standards for high school teachers
- Customized the curricula for the middle school sessions, in order to address deficiencies in generalists' content knowledge in mathematics

2015-16

- Improved the collaborative by aligning content to adhere to the new state standards for high school teachers
- Customized the curricula for the middle school sessions, in order to address deficiencies in generalists' content knowledge in mathematics

2014-15

- Streamlined the content covered in high school sessions
- Incorporated manipulatives and best practices in teaching mathematics to 20 middle school teachers
- Assisted the curriculum specialist in educating teachers on new standards and competencies as prescribed by the Texas Education Agency
- School district equipped all teachers at grade levels 8-12 with TI-Nspire calculators and navigation systems. Collaborated with curriculum specialist to train teachers to use the calculators and navigation systems in the classroom.

2013-2014

- Collaborated with KISD on creating a yearlong professional development series—of 6 sessions—for 20 Middle School, and 20 High School teachers. The collaborative was designed in an effort to improve state scores of students attending local schools, by strengthening teachers' content knowledge and teaching methods
- Held regular meetings with Curriculum Specialists to plan and design the sessions
- Coordinated and taught the Professional Development sessions

Outcomes

2015-2016

- Secured funding in the amount of $49,000 for one session consisting of 20 middle school teachers and one session consisting of 20 high school teachers
- Supported one mathematics graduate assistant on a graduate assistantship with funds received from KISD

2014-2015

- Strengthened middle school teachers' content knowledge in mathematics
- Equipped high school mathematics teachers with technical skills in Geogebra and Maple

- School district equipped all mathematics teachers at grade levels 8-12 with TI-Nspire navigation system calculators
- Equipped teachers with skills to use both the navigations system and the calculators
- As a consequence of the collaborative, one high school teacher passed the 7-12 mathematics certification examination

2013-2014

- Established a relationship between the mathematics department at Texas A&M University-Central Texas and the Killeen Independent School District
- Identified weaknesses in middle school mathematics teachers' content knowledge
- Identified weaknesses in high school mathematics teachers' technical skills and teaching methods
- Collaborated with the assistant principal of Killeen High School to develop a focused professional development series for the next year

2014-2018 **Higher Education Partner**—Education Service Center - Region 12

- Served as Higher Education Partner-on a grant operated by the Education Service Center - Region 12
- Taught Professional Development classes on Proportional Reasoning—in conjunction with specialists from the Education Service Center - Region 12
- Established a partnership between the mathematics department at TAMUCT and the Education Service Center at Region 12 for the 2015-2016 Texas Regional collaboratives
- Secured funding to attend the "Teaching Geometry" conference as preparation and funding for the sessions which consisted of 60 elementary school mathematics teachers
- Collaborated with the leadership team from Region 12 in designing the curricula for the summer sessions
- Taught the summer sessions to the teachers
- Taught a back-2-school booster session on Geogebra

Outcomes

- Improved 60 elementary school teachers' mathematical content knowledge by teaching sessions on proportional reasoning and geometry during the summer professional development sessions.
- Equipped teachers with technical skills in Geogebra (mathematical software) during the Back-2- School Booster session

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2014-2015 **Consultant**—Metal Networks, Inc.

- Negotiated internships for one undergraduate, and two graduate students, at Metal Networks, Inc. (a broker that buys and sells industrial metals). Managed the team of student interns in conducting a data analysis and data transfer project in R

Outcomes

- Secured funds for the project in the amount of $20,000. Students were hired at $20 per hour
- Supervised and completed a data transfer project
- Taught students R and RStudio
- Metal Networks, Inc. hired two students in full-time positions with salaries around $70,000 annually
- In the process of negotiating a continuation of the project for more customers and creating the team with new student

2015 **Coach**—Calculus Bowl Competition, the 95th Annual Conference of the Texas Section of the Mathematical Association of America

- Coached and trained students for the Calculus Bowl Competition.

(This was the first year that TAMUCT participated with three mathematics undergraduate students—28 teams, from 17 universities and colleges in Texas, participated in the annual competition)

Outcome:

- The TAMUCT Calculus Team advanced to the final round and came in (4th) fourth place

2009-2010 **Program Coordinator**—Mathematics and Physics Department, Texas A&M University – Central Texas

- Developed the new Mathematics and Physics Department

  - Designed course curricula, improved rigor
  - Hired and trained new assistant professors, adjuncts and graduate assistants in the Mathematics and Physics Department

Outcomes:

- Instrumental in hiring and training of 2 tenure-track faculty members in the Mathematics Department, as well as 5 Adjunct faculty members, 8 Graduate Teaching Assistants, and 10 Student workers
- Responsible for training students/faculty members to use the following Mathematical software:

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- Maple, R, Geometer's Sketchpad, Geogebra

2009-2017 **Faculty Advisor**—Student Projects - funded by **NSF**

- Faculty Advisor for student projects (funded by NSF-STEP grant)

Managed, developed, designed and submitted projects

Supervised undergraduate and graduate students

- Secured funding from the NSF-STEP grant on summer stipends and supplies.

Supported students on summer stipends from NSF-STEP grant:

2017: 1 student x $2,500	=$2,500
2016: 1 student x $2,500	=$2,500
2015: 2 students x $2,500	= $5,000
2014: 1 student x $2,500	= $2,500
2013: 4 students x $2,500 + $1,000 (for supplies)	= $11, 000
2012: 3 students x $2,500	= $7,500
2011: 3 students x $2,500	= $7,500
2010: 3 students x $2,500	= $7,500
2009: 1 student x $2,500	= $7,500

- Major Projects Completed, (during summer months of 2009–2015)

- 2018 3D printed improved prosthetic hand
- 2017 3D printed prosthetic hand
- 2015 Data transfer and analysis project, for Metal Networks, Inc.
- 2013-2014 3D Printing of mathematical manipulatives
- 2012 iPhone application on historic mathematicians.
- 2009-2014 Annual talks at the Bio-Science Institute on Mathematics and iPhone App development

Project Duties

- Managed projects
- Trained students to program in X-code

- Coordinated final completion of "Historic Mathematicians" I-phone Application
- Submitted application to Apple
- Guest speaker at Bio-Science Institute
- Annual talks at the Bio-Science Institute on Mathematics and I-phone App development

2007-2008 **Associate Professor of Mathematics**—Jarvis Christian College, Hawkins, TX

- Program Coordinator for Mathematics Department

  - Responsible for building the mathematics department.
  - Prepared students for the Texas Math state exams (EC-6 and 4-8)

Classes taught

- Ordinary Differential Equations
- Math Topics: Preparation for Math certification exam
- Calculus I
- An Introduction to Statistics
- Linear Algebra
- Math Topics: Methods of teaching Math with games

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SCHOLARSHIP:

PUBLICATIONS

2015 A reverse theorem on the ||.||-weak*-continuity of the dual map
Journal of Function Spaces, 2015
Mienie de Kock, Francisco Javier Garcia-Pacheco

2010 On the range of a vector measure
Journal of Operator Theory: Advanced and Applications, 201, 285-292
Mienie De Kock, Daniele Puglisi

2005 Absolute continuity of vector measures and operators
Quaestions Mathematica,. 28, 4, 479-485
Chengsun Choi, Mienie De Kock

2003 Characterization of conditional expectation in terms of positive projections
American Mathematical Society - Contemporary Math 328
Mienie De Kock, Koos Grobler

GRANTS

2017 Killeen Independent School District and Texas A&M University – Central Texas Collaborative in Mathematics -- $49,000,

2017 Higher Education Partner—Education Service Center - Region 12 on "Texas Regional Collaboratives"

–grant -- $20,000, Waco, TX

2017 NSF-STEP Grant/ Summer Research experience -- $2,500, Texas Bio-Science Institute

2016 Killeen Independent School District and Texas A&M University – Central Texas Collaborative in Mathematics -- $49,000,

2016 Higher Education Partner—Education Service Center - Region 12 on "Texas Regional Collaboratives"

–grant -- $20,000, Waco, TX

2016 NSF-STEP Grant/ Summer Research experience -- $2,500, Texas Bio-Science Institute

2015 Killeen Independent School District and Texas A&M University – Central Texas Collaborative in Mathematics -- $49,000,

2015 Internships for students at Metal Networks, Inc. --$20,000, Austin, TX

2015 Higher Education Partner—Education Service Center - Region 12 on "Texas Regional Collaboratives"

–grant -- $20,000, Waco, TX

2015 NSF-STEP Grant/ Summer Research experience -- $5,000, Texas Bio-Science Institute

2014 Killeen Independent School District and Texas A&M University – Central Texas Collaborative in Mathematics -- $49,000
2014 Internships for students at Metal Networks, Inc. --$20,000
2014 NSF-STEP Grant/ Summer Research experience -- $5,000, Texas Bio-Science Institute
2013 Killeen Independent School District and Texas A&M University – Central Texas, Collaborative in Mathematics -- $49,000,
Texas A&M University – Central Texas and Killeen Independent School District
2013 NSF-STEP Grant/Summer Research experience -- $11,000,Texas Bio-Science Institute
2012 NSF-STEP Grant/Summer Research experience -- $8,500 Texas Bio-Science Institute
2011 NSF-STEP Grant/Summer Research Experience Faculty Development Funding -- $8,500
2011 Texas Bio-Science Institute, Texas A&M University -- Central Texas -- $2,500
2010 NSF-STEP Grant/Summer Research experience -- $6,000, Texas Bio-Science Institute
2009 NSF-STEP Grant/ Summer Research experience -- $6,000, Texas Bio-Science Institute
2008 Mini-Seed Grant -- $3,000, Tarleton State University/NSF-STEP Grant
2006 International Travel Grant Funding -- $2,500, Kent State University

AWARDS

2018 Recipient of Chancellor's Academy of Teacher Educators award, Texas A&M University, College Station, TX
2015 Coach of TAMUCT's Calculus Bowl-team that placed 4th
Comprised of students from Texas A&M University – Central Texas
Team placed 4th (out of 28 schools) at the annual Calculus Bowl at the 95th Texas Section Meeting of the Mathematical Association of America in San Antonio, TX.
2014 Outstanding Graduate Faculty Award: Service – Finalist,
Texas A&M University - Central Texas
2013 Outstanding Graduate Faculty Award: Teaching - Finalist
Texas A&M University – Central Texas
2013 Outstanding Graduate Faculty Award: Scholarship – Finalist
Texas A&M University – Central Texas
2006 University Fellowship ($9,000),
Kent State University
2004 Distinguished Teacher Award - Finalist,
Kent State University
2003 National Collegiate Mathematics Award,
US Achievement Academy, Kentucky

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PRESENTATIONS AT CONFERENCES

2017 "Certified in Microsoft Excel – Levels 2 and 3, University of Sydney, Sydney, Australia

2015 "Use of Regular Expressions in R to convert unstructured customer data to a standard format."
The 95th Texas Section Meeting of the Mathematical Association of America of America, the Riverwalk in San Antonio, TX USA

2013 Hosted two workshops on "3D printing of Mathematics Manipulatives" (Invited talks)
Mathematics Education Department, North West University, Potchefstroom, South Africa

2012 "iPhone application on historic mathematicians and virtual manipulatives"
International conference on Mathematics, Science and Technology, University of South Africa, Kruger National Park

2007 "On the Range of a Vector Measure,"
18th International Workshop on Operator Theory and its Applications,
North-West University, Potchefstroom, South Africa

2006 "Vector Measures,"
Fifth conference on Function Spaces, Southern Illinois University – Edwardsville

2002 "Conditional Expectation Defined by Operators"
Fourth Conference on Function Spaces, Southern Illinois University – Edwardsville

2001 "Conditional Expectation,"
National Conference of the South African Mathematical Society, University of Durban, South Africa

CONFERENCES/ WORKSHOPS ATTENDED

2017 "Continuing Education courses in Microsoft Excel – Levels 2 and 3,
University of Sydney, Sydney, Australia

2016 Statistics short course with Python,
Galvanize, Boulder, Colorado

Introduction to Spark for Data Science Workshop
Galvanize, Denver, Colorado

2015 The Chancellor's Summit on Teacher Education
San Antonio, TX

2015 The 95th Texas Section Meeting of the Mathematical Association of America of America,
The Riverwalk in San Antonio, TX USA

2015 The Joint Mathematics Meeting of the American Mathematical Society, and The Mathematical
Association of Americas - Mini course #14 *(Teaching Statistics Using R and RStudio),*
Henry B. Gonzalez Convention Center, San Antonio, TX

2015 Learning and teaching Geometry PDA
Norris Conference Center, Austin, TX
2013 The Chancellor's Summit on Teacher Education
Austin, TX
2013 NWU-PUK Mathematics Workshop—in honor of Koos Grobler's 70th birthday.
North West University, Potchefstroom, South Africa
2012 The Chancellor's Summit on Teacher Education
Austin, TX
2011 The Chancellor's Summit on Teacher Education
Austin, TX
2011 Avid Summer Institute,
Dallas, TX
2010 The Chancellor's Summit on Teacher Education
Austin, TX
2009 The Chancellor's Summit on Teacher Education
Austin, TX
2006 Informal Analysis Seminar,
Kent State University, OH
2006 Second meeting on Vector Measures and Integration,
University of Seville, Seville, Spain, EU
2006 MAA Ohio Sectional Meeting,
New Concord, OH
2005 Teaching Conference of the University Teaching Council,
Kent State University, OH
2004 American Mathematical Sectional Conference,
University of Pittsburgh, PA
2003 Third International Conference on Abstract Analysis,
South African Mathematical Society, Berg and Dal, Kruger National Park, South Africa

SERVICE:

ACTIVITIES (PRIMARY ORGANIZER/PRESENTER)

2017 TAMUCT-KISD Mathematics collaborative
- Taught and coordinates professional development classes in mathematics to local middle-and high school teachers.

2016 TAMUCT-KISD Mathematics collaborative
- Taught and coordinates professional development classes in mathematics to local middle-and high school teachers.

2015 Coach—Calculus Bowl Competition, San Antonio, TX
- 95th Annual Conference of the Texas Section of the Mathematical Association of America

- TAMUCT students placed 4th out of 28 universities and colleges.

2015 TAMUCT-KISD Mathematics collaborative
- Taught and coordinates professional development classes in mathematics to local middle-and high school teachers.

2015 Geometric Bubble Day, Texas Bio-Science Institute, Temple, TX
- Presentation on Geometry, and on the use of Zometools Manipulatives for explaining principles of mathematics

2015 Consultation work for Metal Networks, Inc.
- Performed consultation work on data analysis and data transfer for Metal Networks, Inc.
- Secured two internships for TAMUCT students at Metal Networks, Inc.
- Metal Networks, Inc. hired two of the three students.

2014 TAMUCT-KISD Mathematics collaborative
- Taught and coordinates professional development classes in mathematics to local middle-and high school teachers.

2014 Geometric Bubble Day, Texas Bio-Science Institute, Temple, TX
- Presentation on Geometry, and on the use of Zometools Manipulatives for explaining principles of mathematics

2014 MapleSoft Training, Texas A&M University – Central Texas, Killeen, TX
- Coordinated a training session on MapleSoft software from MapleSoft, Inc. Training was focused towards upper-level mathematics students

2014 Consultation work for Metal Networks, Inc.
- Performed consultation work on data analysis and data transfer for Metal Networks, Inc.
- Secured three internships for TAMUCT students at Metal Networks, Inc.

2013 TAMUCT-KISD Mathematics collaborative
- Taught and coordinates professional development classes in mathematics to local middle-and high school teachers.

2013 Math Appreciation Day with Central Texas College
- Coordinated funds for Speaker/ Presenter—Dr. Ed Burger (Nationally awarded mathematics teacher) in collaboration with Central Texas College

2013 Mathematical Games Tournament, Texas A&M University-Central Texas, Killeen, TX

2012 Workshop at Texas Bio-Science Institute
- Workshop on Programming in X-Code

2011 Geometric Bubble Day at Texas Bio-Science Institute
- Presentation on Geometry, and on the use of Zometool manipulatives for explaining principles of mathematics

2010 Mathematical Games Tournament at Texas Bio-Science Institute
- Students can win prizes by playing mathematical games

2010 Finalist Judge at Central Texas Science Fair, Judge—Student Science Projects
2009 Geometric Bubble Day, Texas Bio-Science Institute, Temple, TX
- Presentation on Geometry, and on the use of Zometools Manipulatives for explaining principles of mathematics

2009 Judge—Science Projects, at Central Texas Science Fair
2007 Mathematics Contents Requirements (by Texas College Readiness Standards), Jarvis Christian College, Hawkins, TX
2006 Organized Informal Analysis Seminar, Kent State University

SKILLS

◆ Geogebra, Geometer's Sketchpad	Advanced
◆ Maple	Advanced
◆ X-code, Dashcode	Intermediate
◆ SPSS, Minitab, R/RStudio	Intermediate
◆ MS Word, Office, PowerPoint, Excel	Advanced
◆ Pages, Keynote, Numbers	Advanced