

# MIENIE ROBERTS

Associate Professor

Accomplished Professor with exceptional lecturing skills and expertise in Mathematics, Statistics, and Data Science. Gifted in engagement and guidance of students with thirteen years experience in postsecondary education.

## Contact

### Address

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### Phone

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### E-mail

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### WWW

<https://www.tamuct.edu/degrees/undergraduate/math>.

## Skills

R/RStudio 

Data Analysis 

Data 

Visualization/S

hiny

SPSS, Minitab 

MS Word, 

Office,

PowerPoint,

Excel

Advanced

Pages, 

Keynote,

Numbers

## Work History

2008-08 -

Current

### Associate Professor of Mathematics

*Texas A&M University-Central Texas, Killeen, TX*

- Made contributions in curricular development and innovation in teaching strategies, including incorporation of new technologies for learning and teaching mathematics.
- Mentored students, including directing research, projects or internships, as well as advising on career paths, degree requirements and post-graduate education options.
- Prepared students for the state certification examinations in Mathematics at grade levels 4-8 and 7-12.

2019-01 -

Current

### Faculty Mentor

*NSF/Texas A&M Engineering Experiment Station-grant, College Station, TX*

- Mentored a solar-research project funded by the NSF/TEES Undergraduate Research Experience-grant.
- Built a Shiny web application to facilitate data transfer, analysis, and visualization of data obtained from a scanning electron microscope.
- Mentored a student's poster presentation at the Texas Undergraduate Research Day 2021. <http://www.cpupc.org/ugrd/>

Advanced

3D printing



Statistical



Analysis

Online



teaching

Curriculum



Development

Adult



Education

2013-01 -  
2020-03

## Professional Development Coordinator

*TAMUCT-KISD Collaborative, Killeen, TX*

- Created a Professional Development Collaborative for Mathematics Teachers, between Texas A&M University – Central Texas and Killeen Independent School District (KISD).
- Assisted the curriculum specialist in educating teachers on the contents and methods of teaching mathematics based on the updated standards and competencies as prescribed by the Texas Education Agency.
- Taught professional development sessions to Middle-School Mathematics teachers.
- Secured a collaborative grant to support teacher stipends and supplies for professional development sessions.

2009-01 -  
2015-12

## Mentor for Research Projects.

*Temple Bio-Science Institute., Temple, TX*

- Secured funding from the NSF-STEP grant for summer stipends and supplies.
- Mentored student research projects.

2013-01 -  
2015-01

## Higher Education Partner

*Region 12 Education Service Center, Waco, TX*

- Evaluated and revised lesson plans and course content for professional development sessions offered at the service center.
- Taught summer sessions to high school mathematics teachers on several topics including the GeoGebra platform.
- Taught Professional Development sessions 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"-grant.
- 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.

**2014-01 -  
2015-01**

### **Consultant**

*Metal Networks, Inc., Austin, TX*

- Secured paid internships for student projects.
- Managed the team of student interns in conducting data analysis and data transfer project using the R software package.
- Taught sessions on the R and RStudio software.

**2015-01 -  
2020-05**

### **Faculty Coach**

*Texas A&M University-Central Texas, Killeen, TX*

- Coached and trained students for the Calculus Bowl Competition at the 95th Annual Conference of the Texas Section of the Mathematical Association of America.
- The TAMUCT Calculus Team advanced to the final round and came in (4th) fourth place statewide.

## **Education**

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**2002-01 -  
2008-01**

### **Ph.D.: Mathematics**

*Kent State University - Kent, OH*

Dissertation topic:

- Dissertation topic: On absolute continuity and the range of vector measures
- Recipient of a University Fellowship (2006)
- Nominated for the "Distinguished Teacher" award (2004)

2002-01 -  
2008-01

### **Master of Science: Mathematics**

*Kent State University - Kent, OH*

Courses completed:

- College Teaching Mathematics: Methods of teaching Mathematics
- Topology, Real Analysis, Probability, Statistics

2001-01 -  
2002-01

### **Master of Science: Mathematics**

*North West University - Potchefstroom, South Africa*

- Thesis Topic: Operators Defined by Conditional Expectation

1998-01 -  
2002-01

### **Bachelor of Science: Accounting and Mathematics**

*North West University - Potchefstroom, South Africa*

- Majored in Mathematics and Accounting



## **Grants**

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- 2021 Co-PI on the HSI-Creating a culture of STEM grant \$3.6 million.
- 2010-2020 Killeen Independent School District and Texas A&M University-Central Texas Collaborative in Mathematics \$49,000,
- 2014-2016 Data Mining 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
- 2008-2015 NSF-STEP Grant/ Summer Research experience \$5,000 per year for student stipends, Texas Bio-Science Institute



## **Awards**

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- 2022 Beck Family Senior Faculty Fellow
- Chancellor's Academy of Teacher Educators Award (2018) Texas A&M University
- Outstanding graduate faculty award for service

(2016)

Texas A&M University - Central Texas

- Outstanding Graduate Faculty Award: Service – Finalist (2014),

Texas A&M University - Central Texas

- Outstanding Graduate Faculty Award: Teaching - Finalist (2013)

Texas A&M University – Central Texas

- Outstanding Graduate Faculty Award: Scholarship – Finalist (2013)

Texas A&M University – Central Texas

## Publications

- "Analyze and visualize cathodoluminescence data obtained from images of a photovoltaic cell using the R language." *Journal of Education and Social development*, 4-1, 18-24 (2020), Mienie Roberts, Taylor Harvey, James Sullivan, Aida Torabi.
- "A reverse theorem on the  $|| \cdot ||$ -weak\*-continuity of the dual map." *Journal of Function Spaces*, (2015), Mienie de Kock, Francisco Javier Garcia-Pacheco.
- "On the range of a vector measure." *Journal of Operator Theory: Advanced and Applications*, 201, 285-292 (2010), Mienie De Kock, Daniele Puglisi
- "Absolute continuity of vector measures and operators." *Quaestions Mathematica*,. 28, 4, 479-485 (2005), Chengsun Choi, Mienie De Kock
- "Characterization of conditional expectation in terms of positive projections." *American Mathematical Society - Contemporary Math 328* (2003), Mienie De Kock, Koos Grobler

## Certifications

Introduction to the Tidyverse issued by Datacamp (2021)

Reporting with RMarkdown issued by Datacamp

(2021)

Linear Algebra for Data Science in R issued by Datacamp (2020)

Foundations of Probability in R issued by Datacamp (2020)

Cleaning data in R issued by Datacamp (2019)

Introduction to R issued by Datacamp in 2019

Shiny Train the Trainer Certificate issued by RStudio (2019)

Excel Level I, II, III issued by the University of Sydney Continuing Education department (2018)



## Conference Presentations

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- "Analyze and visualize cathodoluminescence data obtained from images of a photovoltaic cell using the R language." (2020)

International Conference of Advanced Research in Applied Science Engineering and Technology, Houston, TX USA (online).

- "The use of 3D printers in explaining mathematical concepts." (2019)

25th Annual National Congress of the Association for Mathematics Education of South Africa, University of KwaZulu Natal, Pinetown, South Africa.

- "Use of Regular Expressions in R to convert unstructured customer data to a standard format." (2015)

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

- Hosted two workshops on "3D printing of Mathematics Manipulatives" (2013)

Mathematics Education Department, North West University, Potchefstroom, South Africa

- "iPhone application on historic mathematicians and virtual manipulatives" (2012)  
International Conference on Mathematics, Science and Technology, University of South Africa, Kruger National Park, South Africa
- "On the Range of a Vector Measure"(2007)  
18th International Workshop on Operator Theory and its Applications, North-West University, Potchefstroom, South Africa
- "Vector Measures" (2007)  
Fifth conference on Function Spaces, Southern Illinois University – Edwardsville, Illinois, USA
- "Conditional Expectation defined by Operators" (2002)



## Web application

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- Designed a Shiny web application to analyze and visualize solar data obtained from a scanning electron microscope: