

Mary Maxwell
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Education

Ph.D., Mathematics, University of Alabama, 2013

Dissertation: *Using Bayesian Techniques with Item Response Theory to Analyze Mathematics Tests.*

Director: Jim Gleason.

M.A., Mathematics, University of Alabama, 2010.

B.S., Mathematics, University of Montevallo, 2006, *summa cum laude*. Senior Elite.

B.A., General Biology, Vanderbilt University, 1980

Teaching

Associate Professor, Mathematics, University of Montevallo, Montevallo, AL, 2019 – present, Assistant Professor, 2013-2019. Adjunct Instructor, 2012-2013.

Graduate Teaching Assistant, University of Alabama, Tuscaloosa, AL, 2007-2012.

Courses:

Intermediate Algebra

Precalculus Algebra

Finite Mathematics

Calculus I

The Nature of Mathematics

Discrete Mathematics

Introduction to Statistics

Mathematical Statistics

Senior Thesis Advisor:

Darius Burns, “Item Response Theory: Ability Estimates & Item Information.” Spring 2019/Fall 2019

Davonte Chamblin, “Exploratory Factor Analysis – An Application of Eigenvalues.” Fall 2016/Spring 2017.

Rachael Ward, “Item Response Theory: Ability Estimates.” Fall 2014/Spring 2015.

Brittany Jacobs, “Item Response Theory: Information and Item Efficiency.” Fall 2014/Spring 2015.

Jessi Clark Hairston, “Item Response Theory: Using Item Information to Reduce Test Length.” Fall 2013/Spring 2014.

Undergraduate Research Advisor:

Rachael Ward, “Item Response Theory: Ability Estimates.” Nebraska Conference for Undergraduate Women in Mathematics (January 2015) and at the UM Undergraduate Research Day (March 2015).

Jessi Clark Hairston, “Item Response Theory: Using Item Information to Reduce Test Length.” Nebraska Conference for Undergraduate Women in Mathematics (January 2014) and at the UM Undergraduate Research Day (March 2014).

Teaching Award:

Outstanding Teaching by a Doctoral Candidate, University of Alabama Department of Mathematics, 2011.

Tutoring:

University of Alabama Mathematics Technology Learning Center, 2007-2012

Research

Publications

Maxwell, M., & Gleason, J. (2018). Item efficiency: an item response theory parameter with applications for improving the reliability of mathematics assessment, *International Journal of Mathematical Education in Science and Technology*, 50:2, 216-243, DOI: [10.1080/0020739X.2018.1492038](https://doi.org/10.1080/0020739X.2018.1492038)

Maxwell, M. (2019). Using online test banks: Research-based guidelines for creating effective assessments. *MathAMATYC Educator*, 10:3, 6 – 10.

Service and Achievements

Member, Undergraduate Curriculum and Standards Committee, Fall 2014-present.

Member, Admissions Committee, Fall 2014-present

Member, Teacher Education Committee, Fall 2018 - present

General Education Assessment Coordinator for Precalculus Algebra, Finite Mathematics, The Nature of Mathematics, and Calculus I, Fall 2014-present.

TEP Interviewer, Fall 2016.

Advisor, UM Math Club

Academic Advisor to 7-10 Mathematics majors.

Responsible for the Mathematics General Education Assessment and Analysis Component of the 5-Year Comprehensive SACS Report, Spring 2016

Revised the core curriculum for MATH 247 Introduction to Discrete Mathematics to improve the preparation of students for the subsequent course, MATH 310 Foundations of Mathematics, Spring 2015.

Initiated the use of two online homework systems, WebAssign (Cengage) and MyMathLab (Pearson)

Technical Proficiencies

Canvas

TestGen

Latex

Maple Software

SPSS

R (Statistical Computing and Graphics Software)

Xcalibre

Microsoft Word, Excel, & PowerPoint

PC & Apple Computer Products/Software

Graphing Calculators