

Matt Roscoe
Assistant Professor
The University of Montana
roscoem@mso.umt.edu
(406)-243-6689

EDUCATION

Ph.D. Mathematics (May, 2011)

University of Montana, Missoula, MT

Dissertation: *Informal Mathematics Activities and the Beliefs of Elementary Teacher Candidates*

M.A. Education, Curriculum and Instruction, Math Education (May, 2001)

University of Montana, Missoula, MT

Thesis: *Enhancing Instruction in Undergraduate Precalculus with Laboratory Investigations*

Secondary Mathematics Teaching Certification (May, 2000)

University of Montana, Missoula, MT

B.S. Mechanical Engineering (May, 1993)

University of Notre Dame, Notre Dame, IN

PROFESSIONAL EXPERIENCE

- 2012- **Assistant Professor**
University of Montana, Department of Mathematical Sciences
- 2011-2012 **Associate Faculty Associate**
University of Wisconsin-Madison, Curriculum and Instruction
Director of the Middle School Mathematics Specialist Program.
Responsibilities included the design and instruction of a program of five graduate-level mathematics courses aimed at the professional development of in-service middle school teachers, the development of an on-line version of the program, and the evaluation of the program's effectiveness.
- 2003-2007 **Director of Developmental Mathematics**
University of Montana, Department of Mathematical Sciences
Directed a remedial program in mathematics with an enrollment of 1500 students per academic year. Responsibilities included design of curriculum and assessment, management of tutoring services and supervision of instruction.
- 2002-2003 **Mathematics Teacher**
Sentinel High School, Missoula, MT
Instructed integrated algebra, geometry and probability.
- 2001-2002 **Mathematics Teacher**
Hellgate High School, Missoula, MT
Instructed integrated algebra, geometry and probability.

2001-2002 **Mathematics Teacher**
Hellgate High School, Missoula, MT
Instructed integrated algebra, geometry and probability.

2000-2001 **Mathematics Teacher**
Clinton Elementary School, Clinton, MT
Instructed middle school mathematics.

POST-SECONDARY TEACHING EXPERIENCE

2012- **Assistant Professor**
University of Montana, Department of Mathematical Sciences
M605 – Learning Theories in Mathematics
M596 – Research in Mathematics Education
M572 – Algebra for Middle School Teachers
M429 – History of Mathematics
STAT 341 – Introduction to Probability and Statistics
M301 – Teaching Mathematics with Technology
M291 – Probability and Statistics for Elementary School Teachers
M291 – Teaching Mathcounts
M 136 - Mathematics for Elementary School Teachers II (Geometry)
M 135 - Mathematics for Elementary School Teachers I (Arithmetic)
M171 – Calculus I
M 115 – Probability and Linear Mathematics

2011-2012 **Middle School Mathematics Specialist Program Director**
University of Wisconsin-Madison, Curriculum and Instruction
Instructor of record for a series of five graduate-level mathematics courses:
CI 636 - Number and Generalization
CI 637 - Rational Number and Proportional Reasoning
CI 638 - Geometry and Measurement
CI 639 - Algebra and Functions
CI 640 - Conjecturing and Reasoning

2007-2011 **Teaching Assistant**
University of Montana, Department of Mathematical Sciences
Instructor of record for undergraduate courses in mathematics and visiting instructor for undergraduate courses in mathematics education:
M 135 - Mathematics for Elementary School Teachers I (Arithmetic)
M 136 - Mathematics for Elementary School Teachers II (Geometry)
CI 430 - Methods of Teaching Mathematics in Middle and High School
CI 330 - Internship Experience in Middle and High School
M 241 - Introductory Statistics
M 171 - Calculus I

2003-2007 **Director of Developmental Mathematics**
University of Montana, Department of Mathematical Sciences
Instructor of record for undergraduate courses in mathematics:
M095 - *Intermediate Algebra*
M105 - *Contemporary Mathematics*
M121 - *Precalculus*
M135 - *Mathematics for Elementary School Teachers I (Arithmetic)*
M136 - *Mathematics for Elementary School Teachers II (Geometry)*

PUBLICATIONS

- Roscoe, M. & Zephyrs, J. (In Press). Studying transformational geometry in quilt block patterns. *Mathematics Teaching in the Middle School*.
- Roscoe, M. (In Press). A vehicle for bivariate data analysis. *Mathematics Teaching in the Middle School*, 21(6), 349-356.
- Roscoe, M & Feldman, Z. (2015). Strengthening prospective elementary teachers' understanding of factors. In Che, S. M. and Adolphson, K. A. (Eds.). *Proceedings of the 42nd Annual Meeting of the Research Council on Mathematics Learning*. Las Vegas, NV.
- Roscoe, M. (2014). Reasoning and sense making with Pythagoras. *Mathematics Teacher*, 108(3), 176-182.
- Roscoe, M. (2012). Discovering the inscribed angle theorem: A means of developing mathematical reasoning. *Mathematics Teacher*, 105(7), 514-519.
- Haverhals, N. & Roscoe, M. (2012). Transitioning students to calculus: Using history as a guide. In *Crossroads in the History of Mathematics and Mathematics Education*. (Ed.) B. Sriraman. Charlotte, NC: Information Age Publishing. PP. 41-69.
- Haverhals, N. & Roscoe, M. (2012). The history of mathematics as a pedagogical tool: Teaching the integral of the secant via Mercator's projection. In *Crossroads in the History of Mathematics and Mathematics Education*. (Ed.) B. Sriraman. Charlotte, NC: Information Age Publishing. PP. 139-170.
- Roscoe, M., & Sriraman, B. (2011). A quantitative study of the effects of informal mathematics activities on the beliefs of preservice elementary school teachers. *ZDM*, 43(4), 601-615.
- Sriraman, B., Roscoe, M. & English, L., (2010). Politicizing Mathematics Education. Has Politics Gone Too Far? Or Not Far Enough? In *Theories of Mathematics Education: Seeking New Frontiers*. (Eds.) B. Sriraman and L. English. Berlin/Heidelberg: Springer Science. 621-638.
- Haverhals, N., & Roscoe, M. (2010). The history of mathematics as a pedagogical tool: Teaching the integral of the secant via Mercator's projection. *The Montana Mathematics Enthusiast*, 7(2-3), 339-368.

PROFESSIONAL PRESENTATIONS

Professional Presentations at Meetings

A Technology-Assisted, Inquiry-Based Approach to Teacher Education Using GeoGebra, Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, Seattle, WA, January 8, 2016.

Using R Simulation to Encourage Creativity in an Introductory Probability Course, Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, Seattle, WA, January 6, 2016.

Quilt Pattern Symmetries, MEA-MFT Montana Educators' Conference, Billings, MT October 15, 2015.

3D Printing to Support Mathematical Learning, MEA-MFT Montana Educators' Conference, Billings, MT October 14, 2015.

Prospective Elementary School Teachers' Reconceptualization of Factors, Annual Meeting of the Pacific Northwest Section of the Mathematical Association of America, University of Washington Tacoma, April 11, 2015.

Strengthening Prospective Elementary School Teachers' Conception of Factors, Annual Conference of the Research Council on Mathematics Learning, Las Vegas, NV, February 28, 2015.

Using Transparent Representations to Promote Prospective Teachers' Re-conceptualization of Factors, Annual Meeting of the Pacific Northwest Section of the Mathematical Association of America, Missoula, MT July 27, 2014.

A "Vehicle" for Common Core Statistics, MEA-MFT Montana Educators' Conference, Missoula, MT October 16-17, 2014.

Watch Me Move: GPS Watch as Mathematics Manipulative, MEA-MFT Montana Educators' Conference, Missoula, MT October 16-17, 2014.

Making Factors and Multiples "Transparent" to Learners, MEA-MFT Montana Educators' Conference, Missoula, MT October 16-17, 2014.

Exploring the Coordinate Plane with Desmos, MEA-MFT Montana Educators' Conference, Belgrade, MT October 18-19, 2013.

Join the Gears Revolution, MEA-MFT Montana Educators' Conference, Belgrade, MT October 18-19, 2013.

Using GeoGebra in the Middle Grades, MEA-MFT Montana Educators' Conference, Billings, MT October 18-19, 2012.

Frieze Pattern Symmetries in the Middle Grades, MEA-MFT Montana Educators' Conference, Billings, MT October 18-19, 2012.

Participation in Workshops, Symposia, Panels

Developing Standards-Based Assessments, Missoula County Public Schools Assessment Institute, The University of Montana, June 23, 2015

Developing Standards-Based Assessments, Hellgate High School, September 28, 2015

Bivariate Data Analysis, STREAM 8th Grade Launch Workshop, Bozeman, MT, February 24-25, 2015

Using GeoGebra in High School Mathematics Classes, Butte High School, September 19, 2013

Number and Operation in the Common Core, STREAM Launch Workshop, Bozeman, MT, February 1-2, 2013.

Colloquia and Other Research Seminars Presented

Guided Reinvention: The Case for Technology in the Mathematics Education Classroom. University of Montana Department of Mathematical Sciences Colloquium Series, Missoula, MT. October 28, 2013

Basic, Applied and Pedagogical Content Knowledge of Preservice Elementary School Teachers. Montana State University Mathematics Education Colloquium, Bozeman, MT, March 6, 2013

The Montana Common Core Standards for Mathematical Practice and Content. Sentinel High School, Missoula, MT, February 14, 2013. February 28, 2013

GRANT ACTIVITY

NSF-DRK12: Studies of Teacher Renewal in Education and Mathematics (STREAM) , Jennie Leubeck (PI Montana State University) and Matt Roscoe (Co-PI) \$2,919,000 pending.

OCHE Title II Improving Teacher Quality State Grants, Montana Math Teachers' Circle, Wu (PI), Erickson, Peck and Roscoe (Co-PIs), \$109,000, funded December 2015.

DOE-MSP STREAM: Standards-based Teaching Renewing Educators Across Montana, Jennie Leubeck (PI Montana State University) and Matt Roscoe (Co-PI), \$320,000 funded July 2015.

EAGER NSF STEM Teacher Leader Initiative IMPACT, David Erickson (PI) and Matt Roscoe (Co-PI) \$283,000 declined September 2015.

CAREER: Developing Concept Connectedness via Measured Quantities in Trigonometry, \$421,292, NSF Faculty Early Career Grant, Principle Investigator, declined September 2013.

Seed Grant Math Teachers' Circle, Wu (PI) and Roscoe (Co-PI), \$2000, funded October 2013.

PROFESSIONAL MEMBERSHIP AND SERVICE

Panel Editor, *The Palette of Problems*, Mathematics Teaching in the Middle School
PNW-MAA Project NExT Fellow
Collaborator Learning Mathematics for Teaching (LMT)
Member of the Psychology of Mathematics Education, North American Chapter
Member of National Council of Teachers of Mathematics
Peer Reviewer for *Mathematics Teacher*
Volunteer for *MathCounts* Regional Competition

OTHER QUALIFICATIONS

State of Montana Educator License, Mathematics Endorsement, Folio 68973, Class 1, Level 8
Proficiency in Latex
Proficiency in Moodle, Blackboard and MyMathLab
Proficiency in R and SPSS
Proficiency in GeoGebra, Geometer's Sketchpad, Desmos, TI Basic
Spanish Language Fluency