

*Department of Mathematics and Computer Science  
Northwestern Oklahoma State University  
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EDUCATION

- Ph.D. Mathematics, May 2012**, Focus: Combinatorics, University of Montana  
*Advisor:* Dr. Jennifer McNulty  
*Dissertation:* Nontraditional Positional Games: New methods and boards for playing Tic-Tac-Toe.
- M.A. Mathematics, May 2008**, Focus: Algebra, University of Montana  
*Advisor:* Dr. Nikolaus Vonessen  
*Professional Project:* Elementary Theory of Coxeter Groups
- B.A. Pure Mathematics, May 2006**, Whitman College, cum laude  
*Advisor:* Dr. Russell Gordon  
*Senior Project:* Simson Lines in Euclidean Space

TEACHING  
EXPERIENCE

**Assistant Professor**, Northwestern Oklahoma State University, Fall 2013–Present.

*Math 3223, Geometry for Elementary Teachers, Summer 2017*

one self-contained section of 4 students taught ITV to 2 sites.

Wrote syllabus, exams, assignments, etc. and determined course content and structure.

*Math 3053, Discrete Math, Spring 2017*

One self-contained section of 12 students.

Selected textbook, wrote syllabus and determined course content and structure.

*Math 3042, Math Technology, Spring 2017*

Co-instructor with Mr. Meeker. One section of 17 math and math education majors.

Responsible for a majority of the instruction, developing materials, lessons, and assignments to cover using various mathematical technologies.

Technologies covered included L<sup>A</sup>T<sub>E</sub>X, computer geometry systems such as GeoGebra, on-line graphing utilities such as Desmos, excell, Mathematica, Sage, and other programs.

Emphasis placed on incorporating multiple technologies in courses, future careers, and in particular in the classroom and in instructional design. Also discussed the use of other on-line math apps, and their utility in the study and instruction of mathematics. Limitations of technology were discussed and students performed a small literature review project.

*Math 2433, Structural Concepts in Mathematics, Spring 2017*

One self-contained section of 18 Elementary Education Majors.

Wrote syllabus, exams, assignments, etc. and determined course content and structure.

Continued use of the Lesson Plan Assignment for the course which requires students to prepare a 4th grade math lesson.

*Math 2013, Statistics, Spring 2017*

One self-contained section.

Wrote syllabus, quizzes, and exams, collaborated with other another instructor on course content and structure. Created and modified WebAssign assignments and used iclickers to check student comprehension.

*Math 1403, Contemporary Mathematics, Spring 2017*

One self-contained section.

Designed course within guidelines provided by NCTM Standards, including generating problem sets, creating a set of SMART Notes, selecting textbook, etc. Also wrote syllabus, and all quizzes and exams.

*Math 3013, Linear Algebra, Fall 2016*

Self-contained section with 10 math, math educations, and computer science majors.

Selected text for the course, wrote syllabus, and determined course content and structure.

*Math 2233, Structural Concepts in Arithmetic, Fall 2016*

One self-contained section of 22 Elementary Education Majors.

Wrote syllabus, exams, assignments, etc. and determined course content and structure.

*Math 1513, College Algebra, Fall 2016 (8 week)*

Two self-contained section with approximately 25 students each specifically designed to be delivered in an 8 week session to international students. These students came to Northwestern mathematically prepared, but often needing help with English and also needing to become accustomed to OUR educational style and system.

Wrote syllabus, quizzes, and exams, and adjusted the curriculum to account for the educational difference in the students. More rigorous material covered and less prerequisite material was reviewed.

Continued use of iClicker technology in the classroom.

*Math 1513, College Algebra, Fall 2016*

One self-contained section with approximately 25 students.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

Continued use of iClicker technology in the classroom.

*Math 1123, Intermediate Algebra, Fall 2016*

One self-contained section with approximately 20 students.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

*Math 3053, Discrete Math, Spring 2016*

One self-contained section of 2 students.

Selected textbook, wrote syllabus and determined course content and structure.

*Math 3203, Structural Concepts in Mathematics, Spring 2016*

One self-contained section of 11 Elementary Education Majors.

Wrote syllabus, exams, assignments, etc. and determined course content and structure.

Continued use of the Lesson Plan Assignment for the course which requires students to prepare a 4th grade math lesson.

*Math 1513, College Algebra, Spring 2016*

Two self-contained sections with approximately 25 students each.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

Continued use of iClicker technology in the classroom.

*Math 3323, Multivariable Calculus, Fall 2015*

One self-contained section with 6 students.

Wrote syllabus, quizzes, assignments, exams, etc. and determined course content and structure.

Incorporated use of computer technology into the classroom.

*Math 2233, Structural Concepts in Arithmetic, Fall 2015*

One self-contained section of 14 Elementary Education Majors.

Wrote syllabus, exams, assignments, etc. and determined course content and structure.

*Math 1513, College Algebra with Review, Fall 2015*

One self-contained section with 20 students. This course is part of an initiative to get students to credit bearing mathematics classes sooner. I developed a set of daily activities that provide students with more opportunity to do math in the classroom and get feedback and help at the moment they need it. These activities have since been used in other sections of College algebra with review by other instructors.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

Continued use of iClicker technology in the classroom.

*Math 1513, College Algebra, Fall 2015*

One self-contained section with approximately 25 students.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

Continued use of iClicker technology in the classroom.

*Math 3223, Geometry for Elementary Teachers, Summer 2015*

One self-contained section of 11 students taught ITV to 3 sites.

Wrote syllabus, exams, assignments, etc. and determined course content and structure.

*Math 1513, College Algebra, Spring 2015*

One self-contained section with approximately 25 student taught as a Concurrent enrollments class via ITV to 4 area high schools.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

*Math 3203, Structural Concepts in Mathematics, Spring 2015*

One self-contained section of 18 Elementary Education Majors.

Wrote syllabus, exams, assignments, etc. and determined course content and structure.

Implemented Lesson Plan Assignment for the course which requires students to prepare a 4th grade math lesson.

*Math 3053, Discrete Math, Spring 2015*

One self-contained section of 6 students.

Selected textbook, wrote syllabus and determined course content and structure.

*Math 1123, Intermediate Algebra, Spring 2015*

One self-contained section with approximately 18 students.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

*Math 3042, Math Technology, Spring 2015*

Co-instructor with Drs. Brintnall, Maharry, and Walker. One section of 7 math and math education majors, responsible for one quarter of the instruction.

Developing materials, lessons, and assignments to cover using computer geometry systems in the classroom and in instructional design. Also discussed the use of online math apps, and their utility in the study and instruction of mathematics.

*Math 3013, Linear Algebra, Fall 2014*

Self-contained section with 10 math, math educations, and computer science majors.

Selected text for the course, wrote syllabus, and determined course content and structure.

*Math 1513, College Algebra, Fall 2014*

Three self-contained sections with approximately 25 students each.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

Expanded and refined use of iClicker technology in the classroom.

*Math 2233, Structural Concepts in Arithmetic, Fall 2014*

One self-contained section of 22 Elementary Education Majors.

Wrote syllabus and determined course content and structure.

*Math 3223, Geometry for Elementary Teachers, Summer 2014*

One self-contained section of 12 students taught ITV to 3 sites.

Wrote syllabus and determined course content and structure.

*Math 1403, Contemporary Mathematics, Spring 2014*

One self-contained section of 8 students.

Designed course within guidelines provided by NCTM Standards, including generating problem sets, creating a set of SMART Notes in lieu of a textbook. Also wrote syllabus, and all quizzes and exams.

*Math 1513, College Algebra, Spring 2014*

Three self-contained sections with approximately 25 students each.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

Expanded and refined use of iClicker technology in the classroom.

*Math 3053, Discrete Math, Spring 2014*

One self-contained section of 9 students.

Selected textbook, wrote syllabus and determined course content and structure.

*Math 1123, Intermediate Algebra, Fall 2013*

One self-contained section with approximately 12 students.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

*Math 1513, College Algebra, Fall 2013*

Three self-contained sections with approximately 25 students each.

Wrote syllabus, quizzes, and exams, collaborated with other instructors on course content and structure.

Piloted use of new technology in the classroom.

*Math 3323, Multivariable Calculus, Fall 2013*

One self-contained section with 4 students.

Wrote syllabus, quizzes, and exams.

**Postdoctoral Lecturer**, University of Montana, Fall 2012–Spring 2013, full time teaching.

*Math 171, Calculus I, Spring 2013*

One self-contained section with approximately 30 students.

Wrote syllabus, collaborated with other instructors on course content and structure.

*Math 172, Calculus II, Spring 2013*

Two self-contained sections with approximately 30 students each.

Wrote syllabus, collaborated with other instructors on course content and structure.

*Math 105, Contemporary Mathematics, Fall 2012*

Two self-contained sections with approximately 25 students each.

Wrote syllabus and determined course content and structure.

*Math 225, Introduction to Discrete Mathematics, Fall 2012*

Self-contained section with approximately 30 computer science majors.

Wrote syllabus and determined course content and structure.

*Math 485, Graph Theory, Fall 2012*

Self-contained section with approximately 12 students, including 5 graduate students.

Wrote syllabus and determined course content and structure.

**Teaching Assistant/Predocctoral Associate**, University of Montana, Fall 2007–Summer 2012. Part time teaching 3 to 4 credit hours per semester.

*Math 172, Calculus II, Summer 2012*

Self-contained section with approximately 20 students.

Wrote syllabus and determined course content and structure.

*Math 162, Applied Calculus, Spring 2012*

Teaching Assistant for three weekly discussion sections of 25-30 students each.

*Math 121, College Algebra, Fall 2011*

Self-contained section with approximately 30 students.

Wrote exams and collaborated with other instructors on course content and structure.

*Math 221, Introduction to Linear Algebra, Spring 2011*

Self-contained section with approximately 20 math and computer science majors.

Selected text for the course, wrote syllabus, and determined course content and structure.

*Math 105, Contemporary Mathematics, Fall 2010, Spring 2009, Fall 2008*

Self-contained section with approximately 25 students.

Wrote syllabus and determined course content and structure.

*Math 122, College Trigonometry, Spring 2010*

Self-contained section with approximately 25 students.

Wrote exams and collaborated with other instructors on course content and structure.

*Math 151, Precalculus, Fall 2009*

Self-contained section with approximately 25 students.

Wrote exams and collaborated with other instructors on course content and structure.

*Math 162, Applied Calculus, Summer 2009*

Self-contained section with approximately 25 students.

Wrote syllabus and determined course content and structure.

*Math 115, Probability and Linear Math, Summer 2008, Spring 2008*

Self-contained section with approximately 25 students.

Wrote syllabus and determined course content and structure.

*Math 115, Probability and Linear Math, Fall 2007*

Teaching Assistant for three weekly discussion sections of 25-30 students each.

SERVICE

*Master's Thesis Adviser*, Northwestern Oklahoma State University, Summer 2015. Served as thesis adviser to Keenan Meeker; Thesis title: "Using Discrete Mathematics in the K-12 Classroom to Inspire Students to Enjoy Mathematics".

*Heartland BEST Steering Committee*, Northwestern Oklahoma State University, Fall 2013-Present.

*Oklahoma State Science Fair* Category and overall judging, Ada Oklahoma, March 27, 2015.

*NWOSU Regional Science Fair* Judging and setup, Northwestern Oklahoma State University, March 2015.

*Saturday Showcase*, Northwestern Oklahoma State University, Represented the Society of Physics Students as well as the Department of Mathematics and Computer Science, February 15, 2015.

*Ranger Preview*, Northwestern Oklahoma State University, Represented the Department of Mathematics and Computer Science, November 8, 2014.

*NWOSU Regional Science Fair* Judging and setup, Northwestern Oklahoma State University, February 2014.

*Ranger Preview*, Northwestern Oklahoma State University, Represented the Department of Mathematics and Computer Science, November 3, 2013.

*Organizer*, PNW MAA Section Meeting 2013 Special Session on Games, Willamette University, April 12-13, 2013.

*Math Day Volunteer Recruiter*, University of Montana, Department of mathematical Sciences, September 13, 2012.

*Math Circle Graduate Student Mentor*, University of Montana, Department of mathematical Sciences, 2010-2012.

*Math Day Volunteer Presenter*, University of Montana, Department of mathematical Sciences, September 23, 2011.

*Graduate Student Seminar (Organizer)*, University of Montana, Department of mathematical Sciences, Spring 2008-Spring 2011.

*Faculty Search Committee member*, University of Montana, Department of mathematical Sciences, 2010-2011.

*Math mentor for gifted students*, Washington Middle School, Missoula, MT, Fall 2006-Fall 2009.

*Volunteer Science Fair Judge*, Washington Middle School, Missoula, MT, 2007-2010.

*Student Evaluation Committee (Chair)*, University of Montana, Department of mathematical Sciences, Fall 2009.

*Graduate Student Association (Representative)*, University of Montana, 2006-2008.

PROFESSIONAL  
DEVELOPMENT  
ATTENDEE

*Lunch and Learn: New pathways in Math and English*, Northwestern Oklahoma State University March 1, 2017.

*Struggle to Juggle*, Northwestern Oklahoma State University February 8th, 2017.

*On Course Two-Day Training on Student Success and Retention*, Northwestern Oklahoma State University July 6-7, 2016.

*Online Teaching & Learning Day*, Northwestern Oklahoma State University, May 11, 2016.

*ALCA Portfolio Training*, Northwestern Oklahoma State University, April 21, 2016.

*Confessions of a converted lecturer by Eric Mazur* Faculty Enrichment Day on Just in Time Teaching, Northwestern Oklahoma State University March 25, 2015.

*Website editing workshop*, Northwestern Oklahoma State University, December 4, 2014.

*Use of Live Text to Create Your Faculty Portfolio*, Northwestern Oklahoma State University, February 27, 2014 and September 4, 2014.

*REDESIGN Mathematics: Revisiting Expectations for Developmental Education while Siting Information and Guidance for Navigation*, webinar, Northwestern Oklahoma State University, January, 30, 2014.

*Capture Creativity: Developing & Teaching New Skills for Today's Students*, webinar, Northwestern Oklahoma State University, November 15, 2013.

PROFESSIONAL  
DEVELOPMENT  
PRESENTER

*Using i-clickers and Voting Questions in the Classroom*, Northwestern Oklahoma State University, May 15, 2014. Presentation to the Science Department's Summer Academy with Tim Maharry on the use of i-clickers in the classroom and demonstration of Self-Paced Polling techniques.

*Using i-clickers and Voting Questions in the Classroom*, Northwestern Oklahoma State University, March 7, 2014. Presentation to Teacher Education Committee with Tim Maharry on the use of i-clickers in the classroom and demonstration of Self-Paced Polling techniques.

COMMITTEE  
INVOLVEMENT

- 2016-2017 Gender Equity Committee  
Social Affairs Committee (Chair)  
Academic Affairs Committee  
Sophomore Class Sponsor
- 2015-2016 Gender Equity Committee  
Social Affairs Committee (Chair)  
Academic Affairs Committee  
Junior Class Sponsor
- 2014-2015 Gender Equity Committee  
Social Affairs Committee  
Academic Affairs Committee
- 2013-2014 Gender Equity Committee  
Social Affairs Committee

# MARY JENNIFER RIEGEL

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## PROFESSIONAL MEMBERSHIPS

American Mathematical Society (AMS) 2009-Present  
Association of Women in Mathematics (AWM) 2010-Present  
Mathematical Association of America (MAA) 2008-Present  
Society for Industrial and Applied Mathematics (SIAM) 2009-Present  
American Association of University Women (AAUW) 2014-Present

## CONFERENCES ATTENDED

*MAA OK-ARK Section Meeting*, The University of Oklahoma, OKC, April 6-8, 2017.  
*AMS/MAA Joint Mathematics Meeting*, Seattle WA, January 4-7 2016.  
*MAA OK-ARK Section Meeting*, University of Tulsa, Tulsa, OK, April 10, 2015.  
*MAA Pacific Northwest Section Meeting*, Willamette University, Salem, OR, April 2013.  
*AMS/MAA Joint Mathematics Meeting*, San Diego, CA, January 9-12 2013.  
*MAA Pacific Northwest Section Meeting*, University of Portland, Portland, OR, April 2012.  
*AMS/MAA Joint Mathematics Meeting*, Boston, MA, January 2012.  
*AMS/MAA Joint Mathematics Meeting*, New Orleans, LA, January 2011.  
*MAA Pacific Northwest Section Meeting*, Seattle University, Seattle, WA, April 2010.  
*AMS/MAA Joint Mathematics Meeting*, Washington, D.C., January 2009.  
*MAA Pacific Northwest Section Meeting*, Carroll College, Helena, MT, June 2008.  
*MAA Pacific Northwest Section Meeting*, Linfield College, McMinnville, OR, April 2007.

## RESEARCH

My research is in the area of Combinatorics and Optimization. In particular my dissertation explores variations on positional games played on affine and projective geometries, matroids, and nested matroids. I am also interested in breaking matroid and graph symmetries using fixing sets and distinguished colorings as well as exploring playing games using the ideas of fixing and distinguishing on matroids and graphs.

## HONORS AND AWARDS

*Summer Graduate Research Scholarship*, University of Montana Department of Mathematical Sciences, 2010.  
*Graduate Student Distinguished Teaching Award*, University of Montana Department of Mathematical Sciences, 2010-2011.  
*National Science Foundation's Experimental Program to Stimulate Competitive Research Fellowship*, University of Montana 2006-2007.  
*Outstanding Senior Project in Mathematics*, Whitman College, 2006.  
*Presidential Scholarship*, Whitman College, 2002-2006.



# MARY JENNIFER RIEGEL

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## SELECTED TALKS

*On a Dynamic Positional Game*, AMS-MAA Joint Mathematics Meeting, San Diego, CA, January 2013.

*Another characterization of KE graphs and another proof that KE graphs are non-Edmonds*, C&O Seminar, University of Montana, October 24, 2012.

*How do you Tic-Tac-Toe?*, PNW Section Meeting of the MAA, Mathematics Meeting, Portland, OR, April 2012.

*Adding Complexity to Tic-Tac-Toe*, AMS-MAA Joint Mathematics Meeting, Boston, MA, January 2012.

## SELECTED TALKS CONTINUED

*Function Series, Catalan Numbers, & Random Walks on Trees*, C&O Seminar, University of Montana, February 16, 2011.

*An Alternative Approach to Elementary Arithmetic Education*, Graduate Student Seminar, University of Montana, February 1, 2011.

*Fire and Ice*, AMS-MAA Joint Mathematics Meeting, New Orleans, LA, January 6, 2011.

*New Results in Fire and Ice*, Graduate Student Seminar, University of Montana, December 7, 2010.

*Supersets of AP: Descending Waves (parts I, II, III)*, C&O Seminar, University of Montana, September 29, October 6, October 13, 2010.

*Introduction to Fire and Ice*, C&O Seminar, University of Montana, April 27, 2010.

*Fixing and Distinguishing Numbers of Matroids*, University of Montana Graduate Student and Faculty Research Conference, April 24, 2010.

*Fixing and Distinguishing Numbers of Matroids*, Pacific Northwest Section of the MAA, Seattle University, April 10, 2010.

*LP issues, the matching polytope, and Edmonds' Algorithm*, C&O Seminar, University of Montana, September 23, 2009.

*Min-Flow/Max-Cut Algorithms and Applications*, C&O Seminar, University of Montana, March 18, 2009.

*The Pollution Problem*, C&O Seminar, University of Montana, November 17, 2008.

*The Angel Problem*, C&O Seminar, University of Montana, September 23, 2008.

*Introduction to Tutte polynomial complexity, including #P-completeness*, Combinatorics and Optimization Seminar, University of Montana, April 8, 2008.

*Matchings, characteristic polynomials, and eigenvalue interlacing*, C&O Seminar, University of Montana, February 27, 2008.