

JESSICA L. WILLIAMS

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EDUCATION

Ph.D., Mathematics, The University of Iowa, Iowa City, Iowa, 2015
Thesis Advisors: Dr. Victor Camillo, Dr. Miodrag Iovanov
Thesis title: A Ring Theoretic Approach to Radicals of Extensions

Graduate Certificate in College Teaching, Office of Graduate Teaching Excellence,
The University of Iowa, Iowa City, Iowa
Date of completion: December 2014

M.S., Mathematics, The University of Iowa, Iowa City, Iowa

B.A., Mathematics, Transylvania University, Lexington, Kentucky, 2010
Minors: Computer Science, Philosophy
Magna Cum Laude, Holleian Society for Excellence in Liberal Arts Studies

RESEARCH INTERESTS

Ring theory, applied abstract algebra, mathematics education, mathematical modeling as applied to biology

TEACHING EXPERIENCE

Converse College

Assistant Professor of Mathematics

- Real Analysis, Fall 2016.
- Euclidean & Non-Euclidean Geometries, Spring 2016.
- Number Theory, Fall 2015, Fall 2017.
- Mathematical Modeling in Biology, January 2017.
- Differential Equations, Spring 2017.
- Calculus III, Fall 2015, Fall 2016, Fall 2017.
- Calculus I, Spring 2016, Spring 2017.
- Survey of Calculus, January 2016.
- Elementary Functions, Fall 2015, Spring 2016, Fall 2016, Spring 2017.
- Finite Mathematics, Summer 2016.

- Student Success Seminar, Fall 2016. (co-taught with Leslie West)
- Senior Seminar, Fall 2016, Spring 2017, Fall 2017.
 - Two student projects directed in Fall 2016 (Ava Cash, Brooke Beeskma)
 - Three student projects directed in Spring 2017 (Ashly Earley, Whitney Herndon, Betsy King)
- Directed Independent Studies:
 - Euclidean and Non-Euclidean Geometries, Fall 2017 (Megan Lenaghan)
 - Geometric Number Theory, Fall 2017 (Taylor Lashley)
 - Research in Mathematical Biology (Honors), January 2017 (Nicole Lidzbarski)
 - Abstract Algebra II (Honors), Spring 2017 (Ashly Earley)
 - Number Theory, Spring 2017 (Betsy King)
 - Experiential Learning, Spring 2017 (Brooke Beeksma, as teaching assistant)

University of Iowa

Instructor (responsible for all course duties)

- College Algebra, Fall 2014 & Spring 2013.
- Elementary Functions, Spring 2014.

Teaching Assistant (led discussions, graded homework & quizzes, held office hours)

- Introduction to Abstract Algebra I, Spring 2015.
- Multivariable Calculus for Engineers, Fall 2013. (with MATHEMATICA labs)
- Logic of Arithmetic (for Elementary Education majors), Fall 2012.
- Calculus II, Spring 2012.
- Calculus I, Fall 2011.
- Calculus for Business, Spring 2011.

Summer Program For Women in Mathematics, George Washington University

Teaching Assistant (Summer 2013)

- Symbolic Dynamics with Dr. Emily Burkhead.
- Discrete Models in Biology with Dr. Angela Gallegos (helped students with creative projects using the modeling software NETLOGO).

PRESENTATIONS

Conferences

- "A Novice Attempt at IBL Real Analysis," Mathematical Association of America Southeastern Section Meeting, March 2017.
- "A Novice Attempt at IBL Real Analysis," Joint Mathematics Meetings (MAA Session on Inquiry-Based Teaching and Learning), Atlanta, GA, January 2017.
- "Effects of Active Learning Techniques on Precalculus Students' Beliefs," Joint Mathematics Meetings (MAA Session on Innovative Strategies to Inspire & Prepare Potential STEM Majors Who are Not Yet Ready for Calculus), Atlanta, GA, January 2017.

- "Radicals of Extensions," Joint Mathematics Meetings (MAA General Contributed Paper Session on Research in Algebra), San Antonio, TX, January 2015.
- "On Radicals of Extensions," USTARS (Underrepresented Students in Topology and Algebra Research Symposium), University of California, Berkeley, CA, April 2014.
- "On Radicals of Extensions," Midwest Women in Mathematics Symposium, University of Notre Dame, Notre Dame, IN, April 2014.

Invited Colloquium Talks

- "Mathematics and Voting," Winthrop University Mathematics Department, February 2017.

CONFERENCES ATTENDED

MAA Southeastern Section Meeting, Mercer University, Macon, GA, March 2017.

- Seven Converse students attended.

Joint Mathematics Meetings, Atlanta, GA, January 2017.

Blackwell-Tapia Conference, University of Tennessee, Knoxville, TN, October 2016.

- Two Converse students attended.

MAA Mathfest, Columbus, OH, August 2016.

Joint Mathematics Meetings, Seattle, WA, January 2016.

MAA Mathfest, Washington, D.C., August 2015.

Joint Mathematics Meetings, San Antonio, TX, January 2015.

MAA Iowa Sectional Meeting, Clarke University, Dubuque, IA, October 2014.

USTARS, University of California, Berkeley, CA, April 2014.

Midwest Women in Mathematics Symposium, Notre Dame, IN, April 2014.

Jakobsen Graduate Conference, University of Iowa, Iowa City, IA, March 2014.

Joint Mathematics Meetings, Baltimore, MD, January 2014.

USTARS, Purdue University, West Lafayette, IN, April 2013.

AMS Central Sectional Meeting, Iowa State University, Ames, IA, April 2013.

Joint Mathematics Meetings, San Diego, CA, January 2013.

Joint Mathematics Meetings, San Francisco, CA, January 2010.

PUBLICATIONS

J. Juett and J Williams. "Strongly stable rank and applications to matrix completion." *Communications in Algebra*, 45.9 (2017): 3967-3985.

A Ring Theoretic Approach to Radicals of Extensions, Ph.D. thesis, The University of Iowa, 2015.

PROFESSIONAL DEVELOPMENT

- Research Experience for Undergraduate Faculty (REUF), Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, RI, June 2017.
- Inquiry-Based Learning Workshop, Academy of Inquiry-Based Learning, San Luis Obispo, CA, June 2016.

PROFESSIONAL MEMBERSHIPS

Mathematical Association of America (MAA), 2014-Present.

Society for Industrial and Applied Mathematics (SIAM), 2016-Present.

Association for Women in Mathematics (AWM), 2016-Present.

SERVICE

Converse College

- Chair, Department of Mathematics & Computer Science, March 2017-present.
- Chair, Mathematics Faculty Search Committee, Spring 2017.
- Math Club Advisor (informal), Fall 2015-present.
- Physics Faculty Search Committee, Spring 2017.
- Admissions Committee, 2016-2017.
- Bookstore Advisory Committee, 2016-2017.
- Attended Greenville, SC Alumnae Chapter Reception with President Newkirk, November 2016.
- Attended Board of Trustees lunch, Fall 2016.
- Attended Board of Visitors lunch, Spring 2016.
- Attended Spring Spectacular admissions event, Spring 2016.
- Scholarship Interviewer, Converse Scholar's Day, February 2016.

External

- Outside Evaluator for Math & Physics Program Review, Piedmont College, Fall 2016.
- MAA Mathfest Session Co-organizer, MAA MathFest, August 2016.
 - Co-organized the session "Creating and Assessing Effective In-Class Activities" in conjunction with participation in Project NExT.
- Moody's Mega Math Challenge Judge, SIAM & the Moody's Foundation, 2014-2017.
- Piedmont Region III Science Fair Poster Judge, University of South Carolina Upstate, February 2016.

University of Iowa

- Math Graduate Board Chair, Mathematics Department, 2013.
 - Heartland Program Speaker, Mathematics Department, 2013 & 2014.
 - "Emmy Noether and the Fundamental Theorem of Arithmetic" colloquium presentation given at Loras College and Coe College.
 - Sonia Kovalevsky Day Event Organizer, Mathematics Department, Spring 2012.
 - High School Math Modeling Competition Judge, Mathematics Department, Fall 2013, 2014.
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SELECTED AWARDS AND HONORS

- Project NExT (New Experiences in Teaching) Fellow (red dot), 2015-2016.
- Recipient of WISE (Women in Science and Engineering at the University of Iowa) Dr. Eunice Beam Travel Grant to present at Joint Mathematics Meetings, 2015.
- Recipient of University of Iowa Council on Teaching Outstanding Teaching Assistant Award (awarded annually to 30 graduate teaching assistants across all departments in the university), 2013-2014.
- Recipient of Graduate College Summer Fellowship for advanced doctoral students, University of Iowa (awarded to 150 out of over 5,500 graduate students), 2014.
- Recipient of University of Iowa Mathematics Department Summer Fellowship, 2011, 2012.
- Recipient of University of Iowa Mathematics Department VIGRE Fellowship, 2010.