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Areas of specialization

General: Algebra and Combinatorics (MSC 16, 05, 22)
Specific: Representation theory, Lie theory, Hecke algebras, diagram algebras.

Education

Ph.D. Mathematics, University of Wisconsin—Madison, expected June 2010
Dissertation title: *Two-boundary graded centralizer algebras*
Advisor: Arun Ram
Minor: Mathematics education

M.A. Mathematics, University of Wisconsin—Madison, 2006

B.S. Mathematics (with distinction), Harvey Mudd College, 2005

Employment

University of Wisconsin—Madison, Graduate student, Fall 2005-present:

Teaching assistant

Calculus (Summer 2007)

Calculus and Analytic Geometry I (Fall 2005, Fall 2006*, Fall 2007*)

Calculus and Analytic Geometry II (Fall 2008, Fall 2009*)

Linear Algebra and Differential Equations (Spring 2006)

*Teaching assistant coordinator

Research assistant and MSRI program associate (Spring 2007)

Research assistant (funded by NSF) (Summer 2007)

Faculty of Science Fellow, University of Melbourne, AU, Summer 2009

Honors, Awards, and Grants

VIGRE Merit Based Fellowships (Spring 2006, Summer 2006, Spring 2009)

Mathematics Graduate Teaching Award (2009)

Mary Ellen Rudin Fellowship (2005)

Celebrating Women in Science & Engineering Grant Program (2008 - P.I., 2009)

Publications

Voting, the symmetric group, and representation theory, (with A. Eustis, G. Minton, and M. Orrison), American Mathematical Monthly, October 2009. Vol. 116, Iss. 8.

Integrality of Quotients of Wronskians of the Andrews-Gordon Series, Integers, 6 (2006).

An Algebraic Approach to Voting Theory, Senior thesis, Harvey Mudd College (2005), (available at <http://www.math.hmc.edu/seniorthesis/archives/2005/zajj/>).

Papers in preparation:

Affine and graded BMW algebras (with A. Ram and R. Virk).

Two-boundary graded centralizer algebras.

Mentorship and Outreach Activities

Instructor, Wisconsin Emerging Scholar Program (Fall 2008)

Facilitator, UW Mentorship Program for Women in Math and Science (Fall 2007, Fall 2008)

Exploration station designer, Science Expeditions outreach fair, University of Wisconsin (Spring 2007)

Instructor, Mathematics Tutorial Program, University of Wisconsin (Fall 2006)

Co-founder and organizer, Women in Mathematics at Wisconsin (Fall 2005 - present)

Facilitator, Academic Excellence Program, Harvey Mudd College (Spring 2003 - Spring 2005)

Presentations

Two boundary graded centralizer algebras (tentative: alternate), Workshop for Women Graduate Students and Recent Ph.D.s, Joint Math Meetings, January 13-16, 2010

Two boundary graded centralizer algebras, AMS Fall Western Section Meeting, November 08, 2009.

Building two boundary diagram algebras, Special Session on Representation Theory, AMS Fall Central Section Meeting, October 16, 2009

Two boundary graded centralizer algebras, Lie Theory Seminar, University of Wisconsin, Madison, September 2009.

Combinatorics and the representation theory of centralizer algebras, Pure maths student seminars, University of Melbourne, August 2009.

Two boundary graded centralizer algebras, Algebra Seminar, University of Sydney, August, 2009.

Two boundary graded centralizer algebras, Tuesday Seminar, Department of Mathematics and Statistics, University of Melbourne, August 2009.

Building my favorite centralizer algebras, Combinatorics seminar, University of Wisconsin, Madison, March 2009.

Centralizers and the combinatorics of diagram algebras, Graduate Student Combinatorics Conference, University of California, Davis, April 2008.

Graded diagram algebras, Representation Theory seminar, University of Wisconsin, Madison, December 2007.

Introduction to affine and graded BMW algebras, Representation Theory seminar, University of Wisconsin, Madison, April 2007.

An Algebraic Approach to Voting Theory, Presentation days, Harvey Mudd College, May 2005.

An Algebraic Approach to Voting Theory, Undergraduate Special Session, AMS/MAA Joint Meetings, Atlanta, January 2005.