

PERSONAL INFORMATION

Department of Mathematics
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EDUCATION

- May 2008 **Ph.D.** in Mathematics
University of Georgia, Athens, GA
Thesis: Classifying the Representation Type of Infinitesimal Blocks of Category \mathcal{O}_S
Thesis Advisor: Brian D. Boe
- May 2006 **M.A.** in Mathematics
University of Georgia, Athens, GA
- May 2001 **M.S.** in Mathematics
Utah State University, Logan, UT
- May 1999 **B.A.** in Mathematics
Utah State University, Logan, UT

EMPLOYMENT

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|------------------------|-------------------------------------|---------------------------------|
| August 2008 – Present | Visiting Assistant Professor | Brigham Young University |
| August 2001 – May 2008 | Teaching Assistant | University of Georgia |
| August 1998 – May 2001 | Teaching Assistant | Utah State University |

RESEARCH**Research Interests**

Representation Theory of Lie Algebras and Nilpotent Orbit Theory

Refereed Publications

1. *Nonzero infinitesimal blocks of Category \mathcal{O}_S* , submitted 2009.
2. *Representation type of blocks of \mathcal{O}_S in types F_4 and G_2* , J. Algebra **322**, (2009), 3823–3838. Computational Algebra.
3. *An analog of Kostant’s theorem for the cohomology of quantum groups*, with University of Georgia VIGRE Algebra Group, Proc. Amer. Math. Soc. **138** (2010) 85–99.
4. *On Kostant’s Theorem for Lie algebra cohomology*, with University of Georgia VIGRE Algebra Group, Contemporary Math. **478** (2009), 39–60.
5. *Support varieties of Weyl modules over bad primes*, with University of Georgia VIGRE Algebra Group, J. Algebra **312** Issue 2 (2007), 602–633.
6. *Varieties of nilpotent matrices over simple Lie algebras II: Bad primes*, with University of Georgia VIGRE Algebra Group, J. Algebra **292**, (2005), 65–99.
7. *Varieties of nilpotent matrices over simple Lie algebras I: Good primes*, with University of Georgia VIGRE Algebra Group, J. Algebra **280**, (2004), 719–737.

Works in Progress

1. *Nilpotent Orbit Theory and Infinitesimal Blocks of Category \mathcal{O}_S* , with B. J. Cooper.
2. *The Robinson-Schensted Algorithm and Infinitesimal Blocks of Category \mathcal{O}_S* , with B. J. Cooper.
3. *Kazhdan-Lusztig Cells and Infinitesimal Blocks of Category \mathcal{O}_S* , with B. J. Cooper.

Theses

1. *Classifying the Representation Type of Infinitesimal Blocks of Category \mathcal{O}_S* . Ph.D. Dissertation, University of Georgia, 2008.
2. *Heteroclinic Orbits for a Periodic Hamiltonian System*. Masters Report, Utah State University, 2001.

TEACHING**Visiting Assistant Professor at Brigham Young University**

- *Mathematics for Engineering I (Multivariable Calculus and Linear Algebra)*: Fall 2009.
- *Calculus II*: Winter 2009.
- *Honors Calculus I*: Fall 2008, Fall 2009.

Teaching Assistant at University of Georgia

- *Calculus I for Scientists and Engineers*: Summer 2007, Spring 2008.
- *Differential Calculus*: Fall 2002, Spring 2003, Fall 2004, Spring 2005, Summer 2006, Fall 2006, Fall 2007.
- *Differential Calculus Lab*: Fall 2002, Fall 2004, Spring 2005, Fall 2006, Spring 2007.

Teaching Assistant at Utah State University

- *Trigonometry*: Spring 2000, Spring 2001.
- *College Algebra*: Fall 1999, Fall 2000.
- *Intermediate Algebra*: Fall 1998.

ACADEMIC HONORS

2008 Outstanding Teaching Assistant Award, University of Georgia

PROFESSIONAL ACTIVITIES

2009 Supervised reading course on Lie algebras, Brigham Young University
 2009 Member, Mathematical Association of America
 2003 Co-organizer of the Summer Graduate Student Seminar, University of Georgia
 2002–08 Teaching Assistantship, University of Georgia
 2001–06 VIGRE Fellowship Assistantship, University of Georgia

CONFERENCES AND PRESENTATIONS

Scholarly Presentations

- **October 2009:** *Nilpotent Orbit Theory and Infinitesimal Blocks of the Parabolic Category \mathcal{O}_S* . Invited address, Colloquium, Brigham Young University.
- **March 2009:** *Semisimple Blocks of Parabolic Category \mathcal{O}_S* . Invited address, MAA Intermountain Section Meeting, Brigham Young University.
- **December 2008:** *Classifying the Infinitesimal Blocks of Category \mathcal{O}_S* . Invited address, Representation Theory Seminar, University of Utah.
- **February 2008:** *Finding Non-Zero Infinitesimal Blocks of Category \mathcal{O}_S* . Invited address, Colloquium, Department of Mathematics, University of Texas, Pan American.
- **February 2008:** *Finding Non-Zero Infinitesimal Blocks of Category \mathcal{O}_S* . Invited address, Colloquium, Brigham Young University.
- **October 2007:** *Non-empty Blocks of Parabolic Category \mathcal{O}_S* . Algebra Seminar, University of Georgia.
- **March 2007:** *Representation Type of Infinitesimal Blocks of Category \mathcal{O}_S* . Invited address, 1024th AMS Meeting in Davidson NC, Special Session on Geometric and Combinatorial Methods in Representation Theory.
- **February 2007:** *Semisimple Infinitesimal Blocks of Category \mathcal{O}_S* . Algebra Seminar, University of Georgia.
- **September 2006:** *An Introduction to Category \mathcal{O}_S* . Algebra VIGRE Group, University of Georgia.
- **May 2006:** *Nonempty blocks of Category \mathcal{O}_S* . Invited address, Graduate Student Research Conference on Algebra and Representation Theory at Kansas State University.
- **February 2006:** *A Bird's-eye view of Category \mathcal{O}_S* . Graduate Student Seminar, University of Georgia.
- **November 2005:** *Representation Type of Regular Blocks of Category \mathcal{O}_S* . Department of Mathematics, University of Georgia.
- **July 2003:** *Pickin' up good vibrations: Molecular vibration and representation theory*. Graduate Student Seminar, University of Georgia.
- **April 2003:** *Cohomology Rings of Finite Groups*. Algebra Seminar, University of Georgia.
- **March 2003:** *Degrees of the Irreducible Representations of the Symmetric Groups*. Algebra VIGRE Group, University of Georgia.
- **October 2002:** *Blocks of Modular Representations*. Algebra Seminar, University of Georgia.
- **April 2002:** *More on Representations of the Symmetric Group*. Algebra Seminar, University of Georgia.
- **December 2001:** *Representations of the Symmetric Group*. Algebra Seminar, University of Georgia.
- **May 2001:** *Heteroclinic Orbits for a Periodic Hamiltonian System*. Department of Mathematics, Utah State University.

Conferences Attended

- **July 2009:** Workshop on Real Reductive Groups at University of Utah.
- **July 2009:** Conference on Real Reductive Groups at University of Utah.
- **March 2009:** MAA Intermountain Section Meeting at BYU.
- **October 2008:** 1043rd AMS Meeting in Kalamazoo MI.
- **January 2008:** Joint Mathematics Meetings in San Diego, CA.
- **March 2007:** 1024th AMS Meeting in Davidson NC.
- **May 2006:** Graduate Student Research Conference on Algebra and Representation Theory at Kansas State University.

LANGUAGE AND COMPUTER SKILLS

- Speak and write Spanish fluently.
- Reading knowledge of German.
- **Programming Languages:** Java, C++, GAP, Magma, HTML.
- **Applications:** L^AT_EX, MAPLE, Word, Excel, WeBWorK.