

Department of Mathematics
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Education

- University of Georgia, Athens, GA
 - Ph.D. in Mathematics, May 2012 (anticipated)
 - Thesis title: *Cohomology and Geometry for Frobenius Kernels of Algebraic Groups*
 - Advisor: Daniel K. Nakano
- New Mexico State University, Las Cruces, NM
 - M.S. in Mathematics, May 2008
- University of Natural Sciences, Ho Chi Minh City, Vietnam
 - B.S. in Mathematics and Computer Science, July 2004
 - Thesis title: *Some Results on the Second Cohomology Group*
 - Advisor: Dong Viet Nguyen

Teaching Experience

- Graduate Student Instructor, University of Georgia
 - Math 2200: Calculus I (Spring 2012)
 - Math 2200: Calculus I (Fall 2011)
 - Math 2200: Calculus I (Spring 2010)
 - Math 1113: Precalculus (Fall 2009)
- Graduate Student Instructor, New Mexico State University
 - Math 121G: College Algebra (Spring 2008)
 - Math 121G: College Algebra (Fall 2007)

Research Interests

- Representation Theory of Algebraic and Quantum Groups
- Lie Theory and Geometry
- Cohomology of Groups and Algebras
- Commutative Algebra (with an algebraic geometry viewpoint)
- Computational Algebra

Publications and Preprints

1. *First cohomology for finite groups of Lie type: simple modules with small dominant weights*, to appear in Transactions of the AMS (joint with the UGA VIGRE Algebra Group).
2. *Cohomology for infinitesimal unipotent algebraic and quantum groups*, to appear in Transformation Groups (joint with D. Nakano and C. Drupieski).
3. *Second cohomology for finite groups of Lie type*, to appear in Journal of Algebra (joint with the UGA VIGRE Algebra Group).

4. *Cohomology for Frobenius kernels of SL_2* , preprint.
5. *Commuting varieties of r -tuples over low rank Lie algebras*, preprint.

Software Development

In collaboration with Jon F. Carlson, I wrote a MAGMA package on Representation Theory, for computing the radical and socle layers of a given finite-dimensional module, and for classifying the simple submodules in each layer. I wrote a function which calculates the basic algebra for the first Frobenius kernel of the unipotent subgroup of Type A , and then computes the cohomology ring of that basic algebra. In my dissertation, I also created a program in MAGMA to compute character multiplicities in the cohomology module for the r -th Frobenius kernel of the Borel subgroup of SL_2 .

Conference and Seminar Talks

- 2012 Spring AMS Southeastern Section Meeting, University of South Florida, FL March 10-11:
Commuting Varieties and Cohomology of Frobenius Kernels
- Algebra Seminar, University of Georgia, December 05, 2011:
Nice Properties of Commuting Varieties
- VIGRE Seminar, University of Georgia, Fall 2011:
Barvinok's Algorithm for Counting Integral Points in a Polytope
- 2011 Fall AMS Central Section Meeting, University of Nebraska-Lincoln, NE October 14-16:
Cohomology for Infinitesimal Unipotent Algebraic and Quantum Groups
- Algebra Seminar, University of Georgia, Fall 2011:
Computing Algebraic Structures with MAGMA
- Algebra Seminar, University of Natural Sciences, Ho Chi Minh City, July 24, 2011:
Cohomology for Frobenius Kernels of Algebraic Groups
- Invited Talk in the Teaching Seminar, University of Georgia, Fall 2010:
Teaching Experiences as an International TA
- Mock AMS conference, University of Georgia, Summer 2010:
Cohomology for Infinitesimal Unipotent Algebraic and Quantum Groups
- VIGRE Seminar, University of Georgia, Summer 2009:
Integral Distances in a Circle
- Algebra Seminar, University of Georgia, Spring 2009:
Some Results on the Second Cohomology Group
- Sciences Conference at University of Natural Sciences, Ho Chi Minh City, October 2004:
Some Results on the Second Cohomology Group

Conferences and Workshops Attended

- Interactions between Commutative Algebra and Representation Theory, Syracuse University, April 2012
- Southeastern Lie Theory Workshop on Algebraic and Finite Groups, University of Virginia, June 2011

- 2011 Joint Mathematics Meetings AMS/MAA, New Orleans, LA, January 6-9, 2011
- Southeastern Lie Theory Conference on Homological Methods in Representation Theory, University of Georgia, May 2010
- VIGRE Summer School on Lie and Representation Theory, University of Georgia, May 2010
- Southeastern Lie Theory Workshop on Combinatorial Lie Theory and Applications, North Carolina State University, October 2009

Grants, Honors, and Awards

- AMS Graduate Student Travel Grant, March 2012
- AMS Graduate Student Travel Grant, October 2011
- Graduate Assistant Award 2010-2011, Department of Mathematics, University of Georgia
- Outstanding Graduate Student Award for 2007-2008, Department of Mathematical Sciences, New Mexico State University

Professional Service

- VIGRE Graduate Student Seminar Co-organizer, University of Georgia, Fall 2011-Present

References

- Daniel K. Nakano, Distinguished Research Professor of Mathematics (Ph.D. Thesis Advisor)
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- Jon F. Carlson, Distinguished Research Professor Emeritus of Mathematics
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- Leonard Chastkofsky, Associate Professor of Mathematics (Teaching Mentor)
Department of Mathematics, University of Georgia, Athens, Georgia, 30602-7403
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- Lisa Townsley, Academic Professional (Mathematics Coordinator for MATH 1113, MATH 2200)
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