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Education

1978 B.Sc. Honours, Mathematics Queen's University at Kingston
 1982 Ph.D. Mathematics Yale University

Academic and Professional Positions

1982–1985 Instructor University of Utah
 1985–1987 Lecturer University of California, Berkeley
 1987–1990 Assistant Professor University of Georgia
 1990–1999 Associate Professor University of Georgia
 1999– Professor University of Georgia

Publications

1. Pieri formula for $SO(2n+1)/U(n)$ and $Sp(n)/U(n)$, (with H. Hiller), Adv. in Math. **62** (1986), 49–67.
2. Homomorphisms between generalized Verma modules, Trans. Amer. Math. Soc. **288** (1985), 791–799.
3. A comparison theory for the structure of induced representations, (with D. Collingwood), J. Alg. **94** (1985), 511–545.
4. A comparison theory for the structure of induced representations II, (with D. Collingwood), Math. Zeit. **190** (1985), 1–11.
5. A multiplicity one theorem for holomorphically induced representations, (with D. Collingwood), Math. Zeit. **192** (1986), 265–282.
6. Intertwining operators between holomorphically induced modules, (with D. Collingwood), Pacific J. Math. **124** (1986), 73–84.
7. Determination of the intertwining operators for holomorphically induced representations of $SU(p, q)$, (with T. Enright), Math. Annalen **275** (1986), 401–404.
8. Determination of the intertwining operators for holomorphically induced representations of Hermitian symmetric pairs, (with T. Enright and B. Shelton), Pacific J. Math. **131** (1988), 39–50.
9. Kazhdan-Lusztig polynomials for Hermitian symmetric spaces, Trans. Amer. Math. Soc. **309** (1988), 279–294.
10. Multiplicity free categories of highest weight representations I, (with D. Collingwood), Commun. in Alg. **18** (1990), 947–1032.
11. Multiplicity free categories of highest weight representations II, (with D. Collingwood), Commun. in Alg. **18** (1990), 1033–1070.
12. A counterexample to the Gabber-Joseph conjecture, Contemp. Math. **139** (1992), 1–3.
13. Enright-Shelton theory and Vogan's problem for generalized principal series, (with D. Collingwood), Memoirs Amer. Math. Soc. **486**, 107 pp., 1993.
14. Characteristic cycles associated to Schubert varieties in classical Hermitian symmetric spaces, (with J. Fu), Canadian J. Math. **49** (1997), 417–467.
15. Geometry of the Jantzen region in Lusztig's Conjecture, Mathematics of Computation **70** (2001), no. 235, 1265–1280.

16. The maximum length in the restricted region, preprint, 1998.
17. A lookup conjecture for rational smoothness (with W. Graham), *Amer. J. Math.* **125** (2003), 317–356.
18. Varieties of nilpotent elements for simple Lie algebras I: Good primes (with UGA VIGRE Algebra Group), *J. Alg.* **280** (2004), 719–737.
19. Relative category \mathcal{O} , blocks, and representation type, *Resenhas Inst. Mat. Estat. Univ. Sao Paulo* **6** (2004), 121–128.
20. Representation type of the blocks of category \mathcal{O}_S (with D. Nakano), *Adv. in Math.* **196** (2005), 193–256.
21. Varieties of nilpotent elements for simple Lie algebras II: Bad primes (with UGA VIGRE Algebra Group), *J. Alg.* **292** (2005), 65–99.
22. Support varieties for Weyl modules over bad primes (with UGA VIGRE Algebra Group), *J. Alg.* **312** (2007), 602–633.
23. Category \mathcal{O} for the Virasoro algebra: Cohomology and Koszulity (with D. Nakano and E. Wiesner), *Pacific J. Math.* **234** (2008), 1–22.
24. Kostant modules in blocks of category \mathcal{O}_S (with M. Hunziker), *Commun. in Alg.* **37** (2009), 323–356.
25. Cohomology and support varieties for Lie superalgebras II (with J. Kujawa and D. Nakano), *Proc. London Math. Soc.* **98** (2009), 19–44.
26. On Kostant’s Theorem for Lie algebra cohomology (with UGA VIGRE Algebra Group), *Contemp. Math.* **478** (2009), 39–60.
27. Ext^1 -quivers for the Witt algebra $W(1,1)$ (with D. Nakano and E. Wiesner), *J. Alg.* **322** (2009), 1548–1564.
28. An analog of Kostant’s theorem for the cohomology of quantum groups (with UGA VIGRE Algebra Group), *Proc. Amer. Math. Soc.* **138** (2010), 85–99.
29. Cohomology and support varieties for Lie superalgebras (with J. Kujawa and D. Nakano), *Trans. Amer. Math. Soc.* **362** (2010), 6551–6590.
30. Complexity and module varieties for classical Lie superalgebras (with J. Kujawa and D. Nakano), *Int. Math. Res. Notices* **2011** (2011), 696–724, doi:10.1093/imrn/rnq090.
31. First cohomology for finite groups of Lie type: Simple modules with small dominant weights (with the UGA VIGRE Algebra Group), to appear in *Trans. Amer. Math. Soc.*, arXiv:1010.1203.
32. Complexity for modules over the classical Lie superalgebra $\mathfrak{gl}(m|n)$ (with J. Kujawa and D. Nakano), to appear in *Compositio Math.*, arXiv:1107.2579.
33. Second cohomology for finite groups of Lie type: Simple modules with small dominant weights (with the UGA VIGRE Algebra Group), submitted to *J. Alg.*, arXiv:1110.0228.

Presentations

- Apr 1982** Homomorphisms between generalized Verma modules, Conference on Representations of Real Reductive Groups, Park City, UT
- Nov 1984** Structure of induced representations, Special session on Representations of Semisimple Lie Groups, A.M.S. Meeting, San Diego, CA
- Oct 1985** Highest weight representations of semisimple Lie algebras, Seminar, University of Massachusetts, Amherst, MA

- Oct 1986** Kazhdan-Lusztig polynomials for Hermitian symmetric spaces, Special session on Representations of Reductive Groups, A.M.S. Meeting, Logan, UT
- Aug 1987** Highest weight representations for Hermitian symmetric pairs, Conference on Enveloping Algebras, Differential Operators, and Representation Theory, Oberwolfach, Germany
- Aug 1988** Multiplicity free categories of perverse sheaves, Conference on Intersection Homology, University of Georgia, Athens, GA
- Jan 1989** Verma modules, differential operators, and geometry, Colloquium, University of Washington, Seattle, WA
- May 1989** Multiplicity free categories of highest weight representations, Special session on Kazhdan-Lusztig Theory, A.M.S. Meeting, Chicago, IL
- Mar 1990** Harmonic analysis and representation theory, Colloquium, University of Ottawa, Ottawa, Canada
- Nov 1990** Vogan's problem #3 and Enright-Shelton theory, Special session on Representation Theory of Lie Groups, A.M.S. Meeting, Denton, TX
- Jun 1993** Intersection homology and Kazhdan-Lusztig Theory, Queen's University, Kingston, Canada (6 talks over 3 days)
- Jun 1994** Characteristic cycles associated to Schubert varieties in classical Hermitian symmetric spaces, Canadian Math. Soc. Annual Seminar, Banff, Canada
- Oct 1994** Characteristic cycles associated to Schubert varieties, special session on Geometry and Representations of Lie Groups, A.M.S. Meeting, Stillwater, OK
- Mar 1998** Lusztig's conjecture and geometry of the Jantzen region, special session on Combinatorics and Enumerative Geometry, A.M.S. Meeting, Louisville, KY
- May 2004** Representation type of the blocks of category \mathcal{O}_S , Lie and Jordan Algebras, their Representations and Applications, II, Guarujá, Brazil.
- Jul 2004** Varieties of nilpotent elements for simple Lie algebras: Restricted nullcones and support varieties, Representations of Algebraic Groups, Quantum Groups, and Lie Algebras, Snowbird, UT.
- Apr 2005** Nilpotent matrices in Lie algebras, Colloquium, University of South Alabama, Mobile, AL.
- Apr 2005** Support varieties for Lie algebras, Algebra Seminar, University of South Alabama, Mobile, AL.
- Apr 2006** Kostant modules, A.M.S. Meeting, San Francisco, CA.
- Jan 2007** Cohomology for Lie superalgebras, A.M.S. Annual Meeting, New Orleans, LA.
- Jun 2007** Lie algebra cohomology, American Institute of Mathematics Workshop, Palo Alto, CA.
- Aug 2007** On Kostant's Theorem for Lie algebra cohomology, Lie and Jordan Algebras, their Representations and Applications, III, Maresias, Brazil.
- Nov 2007** Cohomology and support varieties for Lie superalgebras II, A.M.S. Meeting, Murfreesboro, TN.
- Oct 2008** Cohomology of quantum groups: An analog of Kostant's theorem, A.M.S. Meeting, Kalamazoo, MI.
- Nov 2008** From nilpotent matrices to support varieties for Lie algebras, Algebra Seminar, Emory University, Atlanta, GA.

- Jul 2009** Complexity and module varieties for classical Lie superalgebras, Algebras, Representations and Applications, IV, Manaus, Brazil.
- Mar 2010** Lie Superalgebras and Varieties, Algebra Seminar, University of Georgia, Athens, GA.
- Mar 2010** Lie Superalgebras and Varieties, Colloquium, University of Virginia, Charlottesville, VA.
- Mar 2010** First Cohomology for Finite Groups of Lie Type, Algebra Seminar, University of Virginia, Charlottesville, VA.
- Oct 2010** First Cohomology for Finite Groups of Lie Type: Simple Modules with Small Dominant Weights, A.M.S. Meeting, Syracuse, NY.
- Sep 2011** Complexity for $\mathfrak{gl}(m|n)$ (two talks), Algebra Seminar, University of Georgia, Athens, GA.

Conferences Co-organized

- Jan 2005** Special session on Representations of Lie Algebras, A.M.S. Annual Meeting, Atlanta, GA.
- Mar 2007** Special session on Geometric and Combinatorial Methods in Representation Theory, A.M.S. Meeting, Davidson, NC.
- May 2010** Lie and Representation Theory (2-week VIGRE Summer School Program), Athens, GA.
- May 2010** Homological Methods in Representation Theory (Southeast Lie Theory II), Athens, GA.

Other Conferences Attended

- Jun 2005** Algebraic and Finite Reductive Groups, Lausanne, Switzerland.
- May 2006** Geometry and Representation Theory (Lusztig's 60th birthday), Cambridge, MA.
- Oct 2009** Combinatorial Lie Theory and Applications (Southeast Lie Theory I), Raleigh, NC (Scientific Committee).
- Oct 2009** Representation Theory and Mathematical Physics (Zuckerman's 60th birthday), New Haven, CT.
- Jan 2010** A.M.S. Annual Meeting, San Francisco, CA.
- Jan 2011** A.M.S. Annual Meeting, New Orleans, LA.
- Jun 2011** Finite and Algebraic Groups (Southeast Lie Theory III), Charlottesville, VA
- Jan 2012** A.M.S. Annual Meeting, Boston, MA.

Special Honors Received For Academic Achievement

- 2009–2012** McCay Award (for distinguished research, teaching and service), Department of Mathematics, University of Georgia

Service On Extra-University Professional Committees

- 2009–2011** Scientific Committee, Southeastern Lie Theory Network

Departmental Administration

2007– Graduate Coordinator
2009– MSRI Sponsor Institution Representative

Dissertations Directed

2005–2008 Kenyon J. Platt, University of Georgia, graduated May 2008.
Thesis: Classifying the Representation Type of Infinitesimal Blocks of Category \mathcal{O}_S .
Obtained 2-year Visiting Assistant Professorship at Brigham Young University, Utah.
Now has tenure-track Assistant Professorship at Snow College, Utah.

Prepared: January 2012