

Curriculum Vitae

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Date of CV: November 2011

Employment

2011 – Associate Professor, Universidad de Talca
2009 – 2011 EPSRC postdoc, University of Edinburgh
2006 – 2009 Visiting Assistant Professor, University of Minnesota

Education

2006 Ph.D., University of Wisconsin–Madison, directed by Arun Ram. Dissertation: “Rational Cherednik algebras and coinvariant rings”
2000 B.A. magna cum laude, with distinction in Mathematics from Carleton College

Research interests

Combinatorics in representation theory and geometry; complex reflection groups, Cherednik algebras, Hecke algebras, and homogeneous spaces.

Publications

Peer-reviewed journal articles

1. *Cell modules and canonical basic sets for Hecke algebras from Cherednik algebras* (with Maria Chlouveraki and Iain Gordon), to appear in *Contemporary Mathematics*, arXiv:1104.4070
2. *Generalized Jack polynomials and the representation theory of rational Cherednik algebras* (with Charles Dunkl), *Selecta Mathematica*, arXiv:1002.4607
3. *Catalan numbers for complex reflection groups* (with Iain Gordon), to appear in *American Journal of Mathematics*, arXiv:0912.1578
4. (with Ezra Miller and Dave Anderson) *Positivity and Kleiman transversality in equivariant K-theory of homogeneous spaces*, *Journal of the European Mathematical Society*, arXiv:0808.2785
5. *Orthogonal functions generalizing Jack polynomials*, *Transactions of the American Mathematical Society*, arxiv:0707.0251
6. Appendix to *Unitary representations of rational Cherednik algebras* (by Pavel Etingof and Emanuel Stoica) *Representation Theory* 13 (2009), 349–370.
7. *Towards a combinatorial representation theory for the rational Cherednik algebra of type $G(r, p, n)$* , *Proceedings of the Edinburgh Mathematical Society*, arXiv:math/0612733
8. *Jack polynomials and the coinvariant ring of $G(r, p, n)$* , *Proceedings of the American Mathematical Society* 137 (2009), no. 5, 1621–1629 arXiv:0806.3292
9. (with A. Ram), *Affine Hecke algebras and the Schubert calculus*, *European J. Combin.* 25 (2004), no. 8, 1263–1283

Preprints

10. Appendix to *Supports of irreducible spherical representations of rational Cherednik algebras of finite Coxeter groups* (by Pavel Etingof), arXiv:0911.3208
11. *Unitary representations of rational Cherednik algebras, II*, arXiv:1106.5094

Grant support

- 2001-2003 VIGRE graduate fellowship at University of Wisconsin, Madison.
 2006-2009 Postdoc at University of Minnesota supported by NSF Grant DMS-0449102 (PI Ezra Miller)
 2009-2011 Postdoc at University of Edinburgh supported by EPSRC Grant EP/G007632 (PI Iain Gordon)
 2011-2015 Fondecyt Proyecto Regular 1110072 (PI Stephen Griffeth, 14606000 CLP per year)

Presentations

- 2011 October University of North Carolina
 “Unitary representations of rational Cherednik algebras”
 2011 October AMS sectional meeting at Wake Forest
 “Unitary representations of rational Cherednik algebras”
 2011 January University of Nagoya
 “Specht-valued Jack polynomials and representations of rational Cherednik algebras”
 2011 January University of Nagoya
 “Introduction to symplectic reflection algebras”
 2010 October Universidad de Talca colloquium
 “Representation theory of rational Cherednik algebras”
 2010 May MIT double affine Hecke algebras and algebraic geometry workshop
 “Generalized Jack polynomials and the representation theory of rational Cherednik algebras”
 2010 April AMS sectional meeting, St. Paul
 “Catalan numbers for complex reflection groups”
 2010 April University of Texas, Denton colloquium
 “Representation theory of rational Cherednik algebras”
 2010 April University of Texas, Denton algebra seminar
 “Positivity and Kleiman transversality in equivariant K-theory of homogeneous spaces”
 2010 April AMS sectional meeting, St. Paul
 “Catalan numbers for complex reflection groups”
 2010 February University of Glasgow algebra seminar
 “Unitary representations of rational Cherednik algebras”
 2009 April MIT noncommutative algebra seminar
 “Tableau models for representations of rational Cherednik algebras”
 2009 March University of Michigan combinatorics seminar
 “Unitary representations of rational Cherednik algebras”
 2009 March Mathematisches Forschungsinstitut Oberwolfach
 “Diagonalizable and unitary representations of rational Cherednik algebras”
 2009 February University of Illinois algebra, geometry and combinatorics seminar
 “Three problems in the representation theory of rational Cherednik algebras”
 2008 September University of Virginia algebra seminar
 “The submodule structure of standard modules for the rational Cherednik algebra”
 2008 September University of Virginia topology seminar
 “Positivity in equivariant K-theory of generalized flag varieties”
 2008 June University of California, Berkeley
 Conference on geometric and combinatorial representation theory
 “The submodule structure of standard modules for the rational Cherednik algebra”

- 2008 March AMS sectional meeting
Baton Rouge, LA
Special session on geometric and combinatorial representation theory
“The submodule structure of standard modules for the rational Cherednik algebra ”
- 2008 February University of Minnesota combinatorics seminar
“A combinatorial model for representations of rational Cherednik algebras”
- 2007 January University of California–Riverside representation theory seminar
“Finite dimensional modules for rational Cherednik algebras”
- 2006 September University of Minnesota combinatorics seminar
“Rational Cherednik algebras and descent bases for coinvariant rings”
- 2005 April University of Wisconsin Combinatorics seminar
“Double affine Hecke algebras and orthogonal polynomials.”
- 2005 February University of Wisconsin Lie theory seminar
“An introduction to algebraic groups and homogeneous spaces.”
- 2004 February University of Wisconsin Combinatorics seminar
“Schubert calculus, Hecke algebras, and the Yang-Baxter equation”
- 2003 April University of Wisconsin group theory seminar
“Matrix groups have large abelian subgroups”
- 2003 March University of Wisconsin Lie Theory seminar
“A positivity conjecture for the T-equivariant K-Theory of flag varieties.”
- 2002 October University of Wisconsin Combinatorics seminar
“Alternating sign matrices and the K -theory of flag varieties”

Refereeing and reviewing service

Journals refereed for:

Advances in Mathematics
American Journal of Mathematics
Discrete Math
International Mathematics Research Notices
Journal of Algebra and Number Theory
Journal of Algebraic Combinatorics
Journal of Combinatorial Theory, Series A
Selecta Math

Teaching

Courses taught

- 2011 Lie algebras
- 2011 Introduction to algebraic geometry II
- 2011 Introduction to algebraic geometry
- 2008 Spring Number Theory and Cryptology (Math 5248)
- 2007 Fall Topics in Combinatorics: Double affine Hecke algebras and Macdonald polynomials (Math 8680)
- 2007 Spring Finite Mathematics (Math 1131)
- 2006 Fall Enumerative combinatorics (Math 5705)
- 2002–2006 Graduate Student Instructor (University of Wisconsin–Madison): Calculus I,II,III and discrete mathematics.

Undergraduate students mentored

- Fall 2007 Moua Neng, senior thesis on implementation of RSA encryption.
- Fall 2008 Troy Billings, senior thesis on implementation of elliptic curve cryptography

Seminars organized

- 2007–2008 Combinatorics seminar (at University of Minnesota)
- 2008 Fall Cohomology of homogeneous spaces and toric varieties (at University of Minnesota)

References

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