CURRICULUM VITAE

PROFESSIONAL ADDRESS:
    Department of Mathematical and Statistical Sciences
    University of Alberta
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CITIZENSHIP: Canadian

LANGUAGES: French (native), English

EDUCATION

- June 2004 Ph.D. in Mathematics, University of Chicago
  Thesis: The representation theory of rational Cherednik algebras
  Supervisor: Prof. Victor Ginzburg
- August 1999 M.Sc. in Mathematics, University of Chicago
- June 1998 B.Sc. in Mathematics, Université Laval, Québec
- 01/97-05/97 Budapest Semesters in Mathematics Program (Budapest Technical University)

POSITION

Associate professor, University of Alberta, July 2014 -

PAST PROFESSIONAL EXPERIENCE

- Assistant professor, University of Alberta, January 2009 - June 2014.
- Seggie Brown Fellow in Algebra, University of Edinburgh, September 2007 - December 2008.
- Postdoctoral researcher at the Université de Versailles-St-Quentin-en-Yvelines supported by the French Ministry of Scientific Research, September 2006 - August 2007.
- J.L. Doob postdoctoral research assistant professor, University of Illinois at Urbana-Champaign, August 2004 - December 2004, January 2006 - May 2006.
- Postdoctoral researcher under the supervision of Prof. Eric Opdam at the University of Amsterdam, January 2005 - December 2005.

RESEARCH INTERESTS

Representation theory of Lie algebras, Yangians and twisted Yangians, quantum algebras and Lie superalgebras.

SCIENTIFIC PUBLICATIONS

- *Evaluation homomorphism for the affine Yangian of type A*, with Vidas Regelskis and Curtis Wendlandt, in preparation.
- *R-matrix presentation of orthogonal and symplectic quantum loop algebras and their representations*, with Vidas Regelskis and Curtis Wendlandt, in preparation.
- *Representations of twisted Yangians of types B, C, D: II*, with Vidas Regelskis and Curtis Wendlandt, Transformation Groups, **24** (2019), no. 4, pp. 1015-1066.
- *Equivalences between three presentations of orthogonal and symplectic Yangians*, with Vidas Regelskis and Curtis Wendlandt, Letters in Mathematical Physics, **109** (2019), no. 2, pp. 327-379.
- *Representations of twisted Yangians of types B, C, D: I*, with Vidas Regelskis and Curtis Wendlandt, Selecta Mathematica, **23** (2017), no.3, pp. 2071-2156.
- *Local Weyl modules and cyclicity of tensor products for Yangians*, with Yilan Tan, Journal of Algebra, **432** (2015), pp. 228-251.
- *Deformed double current algebras of $\mathfrak{sl}_2$ and $\mathfrak{sl}_3$*, with Yaping Yang, in preparation.
- *Twisted Yangians of small rank*, with Vidas Regelskis and Curtis Wendlandt, Journal of Mathematical Physics, **57** (2016), no. 4, 041703, 28 pp.
- *Twisted Yangians for symmetric pairs of types B,C,D*, with Vidas Regelskis, Mathematische Zeitschrift, **284** (2016), no.1, pp. 131-166.
- *On deformed double current algebras of simple Lie algebras*, with Yaping Yang, Mathematical Research Letters, **24** (2017), no.5, pp. 1307-1384.
- *From twisted quantum loop algebras to twisted Yangians*, with Patrick Conner, SIGMA Symmetry Integrability Geom. Methods Appl., **11** (2015), 040, 14 pages.
- *Almost cellular algebras*, with Stewart Wilcox, Journal of Pure and Applied Algebra, **219** (2015), no.9, pp. 4105-4116.
- *Quantum Walled Brauer-Clifford superalgebras*, with Georgia Benkart, Ji Hye Jung, Seok-Jin Kang and Stewart Wilcox, Journal of Algebra, **454** (2016), pp. 433-474.
- *Vertex representations for Yangians of Kac-Moody algebras*, with Vidas Regelskis and Curtis Wendlandt, to appear in Journal de l'École polytechnique.
- *Coproduct for Yangians of affine Kac-Moody algebras*, with Hiraku Nakajima and Curtis Wendlandt, Advances in Mathematics, **338** (2018), pp. 865–911.
- *Quantum Lie superalgebras of type P*, with Dimitar Grantcharov and Saber Ahmed, in preparation.
- *Twisted Yangians, twisted quantum loop algebras and affine Hecke algebras of type BC*, with Hongjia Chen and Xiaoguang Ma, Transactions of the American Mathematical Society, **366** (2014), pp. 2517-2574.
- *From quantum loop algebras to Yangians*, with Xiaoguang Ma, Journal of the London Mathematical Society, **86** (2012), no.3, pp. 683-700.
- *Twisted affine Lie superalgebra of type Q and quantization of its enveloping superalgebra*, with Hongjia Chen, Mathematische Zeitschrift, **272** (2012), no.1, pp. 317-347.
- *Central extensions of matrix Lie superalgebras over $\mathbb{Z}/2\mathbb{Z}$-graded algebras*, with Hongjia Chen, Algebras and Representation Theory, **16** (2013), no.2, pp. 591-604.
- *Quantum algebras and symplectic reflection algebras for wreath products*, Representation Theory, **14** (2010), pp. 148-200.

- *Double affine Lie algebras and finite groups*, with David Hernandez and Sergey Loktev, Pacific Journal of Mathematics, **243** (2009), no.1, pp. 1-41.
- *Quantum algebras and quivers*, Selecta Mathematica, **14** (2009), no.3-4, pp. 667-700.
- *Affine Yangians and deformed double current algebras in type A*, Advances in Mathematics, **211** (2007), no. 2, pp. 436-484.
- *Cherednik algebras and Yangians*, International Mathematics Research Notices, **2005**, no.57, pp. 3551-3593.
- *On the Category $\mathcal{O}$ for Rational Cherednik Algebras*, with V. Ginzburg, E. Opdam and R. Rouquier, Inventiones mathematicae, **154**, no.3 (2003), pp. 617-651.
- *Projective Modules in the Category $\mathcal{O}$ for the Cherednik algebra*, Journal of Pure and Applied Algebra, **182** (2003), pp. 209-221.
- *Embeddings of Symmetric Varieties*, Transformation Groups, volume **6**, no.4 (2001), pp. 333-352.

OTHER PUBLICATIONS

- *Report on the workshop "Twenty-five years of representation theory of quantum groups"* with P. Etingof, V. Ginzburg, D. Hernandez and A. Savage, Banff International Research Station, October 2011.

TEACHING EXPERIENCE

Assistant/associate professor, University of Alberta

- MATH 125 Linear Algebra I, Fall 2018, Winter 2019, Fall 2019.
- MATH 127 Honors Linear Algebra I, Fall 2017.
- MATH 225 Linear Algebra II, Winter 2011, Winter 2015.
- MATH 228 Algebra: Introduction to Ring Theory, Fall 2010, Winter 2012, Fall 2012, Fall 2014.
- MATH 298 Problem Solving Seminar: Fall 2019, Winter 2020.
- MATH 325 Algebra: Vector spaces and modules, Winter 2010.
- MATH 326 Rings and modules, Winter 2013, Winter 2014, Winter 2017, Winter 2018, Winter 2019, Winter 2020.
- MATH 328 Introduction to Group Theory, Fall 2011, Fall 2012, Fall 2015.
- MATH 428 Advanced Ring Theory, Winter 2011 (concurrently with MATH 582).
- MATH 497 Reading in Mathematics, Fall 2016, Winter 2017.
- MATH 499 Research Project (as supervisor only), Winter 2013.
- MATH 582 Rings and Modules, Winter 2009, Winter 2011.
- MATH 600 Reading in Mathematics, Winter 2013, Fall 2014, Fall 2018.
- MATH 681 Topics in Algebra (Lie algebras), Fall 2009, Fall 2013.
- MATH 682 Topics in Algebra (Representation theory of Lie algebras), Winter 2017.
- Putnam Mathematical Contest, preparation sessions: Fall 2015, Fall 2016, Fall 2017, Fall 2018.
- Algebra Summer School, University of Alberta, August 2017, August 2019: four lectures on an introduction to representation theory.

- Alberta Summer Mathematics Institute: lectures on problem solving, 2010, 2011, 2012, 2014, 2015.
- PIMS Undergraduate Algebra Summer School, University of Alberta, May 2009: two lectures on Lie groups and Lie algebras.

Postdoctoral instructor, University of Illinois at Urbana-Champaign

- MATH 230 Calculus II, Autumn 2004 and Spring 2006.

Instructor, University of Chicago

- MATH 15100-15300 Calculus I-III, Autumn 2003–Spring 2004.
- MATH 19510-19610 Mathematical Methods in the Social Sciences I & II, Autumn 2002 and Winter 2003.

Teaching assistant, University of Chicago

- MATH 254-255 Basic Algebra I & II, Winter and Spring 2000.
- MATH 270 Complex Analysis, Autumn 1999.

SUPERVISION

- Postdoctoral researchers:
  July 2011 - May 2013: Stewart Wilcox (PIMS Postdoctoral Fellow and Max Wyman Assistant Professor)
  September 2010 - August 2012: Xiaoguang Ma (PIMS Postdoctoral Fellow)
  September 2009 - June 2011: Hongjia Chen
- Ph.D. students: Bryan Kettle (January 2019 -)
  Peggy Jankovic (September 2016 -)
  Curtis Wendlandt (May 2015 - July 2019)
  Yilan Tan (May 2010 - August 2014)
- M.Sc. students: Peggy Jankovic (May 2015 - August 2016)
  Patrick Conner (May 2013 - August 2014)
- Undergraduate Students:
  May 2019 - August 2019: Andrew Riesen
  May 2018 - August 2018: Andrew Riesen
  May 2017 - August 2017: Paul Budinski, Matthew Burr
  May 2016 - August 2016: Matthew Burr
  May 2014 - August 2014: Peggy Jankovic, Curtis Wendlandt
  May 2013 - August 2013: Michael Beaulieu, Peggy Jankovic
  May 2012 - August 2012: Patrick Conner, Curtis Wendlandt
  May 2011 - August 2011: Patrick Conner
  May 2010 - August 2010: Emily Cliff

GRANTS AND SCHOLARSHIPS

- NSERC Discovery Grant: April 2009 - March 2014, April 2014 - March 2019, April 2019 - present.
- University of Alberta Start-up Grant, January 2009 - December 2012.
- Postdoctoral Fellowship (NSERC), declined in April 2004.
- Sep. 2000 - Aug. 2003: Doctoral Research Scholarship (Fonds FCAR/FQRNT, Government of Quebec).
- Sep. 1998 - Aug. 2000: Master's Research Scholarship (Fonds FCAR, Government of Quebec).
- Oct. 1998 - June 1999: University Fellowship (University of Chicago).
- Sep. 1998 - Aug. 2000: Post-graduate Scholarship A (NSERC), declined.

INVITED TALKS

- Workshop on Representation Theory, Combinatorics and Geometry, University of Virginia, October 19-21, 2018, *Twisted Yangians for symmetric pairs of types B, C and D.*
- Southeastern Lie Theory Workshop X, University of Georgia, June 10-12, 2018, *Twisted Yangians for symmetric pairs of types B, C and D.*
- Northeastern University, Boston, AMS Spring Eastern Section Meeting, session on Hopf Algebras, Tensor Categories, and Homological Algebra, April 21-22, 2018, *Twisted Yangians for symmetric pairs of types B, C and D.*
- University of Ottawa, Conference on Lie Theory and its Interactions with Geometry and Combinatorics, November 11-12, 2017, *Twisted Yangians of types B-C-D and their irreducible finite dimensional representations.*
- Banff International Research Station, Workshop on Vertex Algebras and Quantum Groups, February 7-12, 2016, *Twisted Yangians for symmetric pairs of types B-C-D and their irreducible finite dimensional modules.*
- Georgetown University, Washington DC, AMS Spring Northeastern Section Meeting, session on Quantum Algebras, Representations and Categorifications, March 7-8, 2015, *Twisted Yangians for symmetric pairs of types B-C-D.*
- Research Institute for the Mathematical Sciences, Kyoto, Japan, Representation Theory and related topics, Camp-style seminar, February 16-20, 2015, *Deformed double current algebras associated to complex semisimple Lie algebras.*
- (Cancelled) University of Wisconsin - Eau Claire, AMS Fall Central Section Meeting, session on Lie Algebras and Representation Theory, September 20-21, 2014.
- (Cancelled) University of Ottawa, Winter Meeting of the Canadian Mathematical Society, session on Lie algebras, representations and cohomological invariants, December 6-9, 2013, *Twisted Yangians for symmetric pairs of types B, C, D.*
- University of California at Riverside, AMS Fall Western Section Meeting, session on Geometric and Combinatorial Aspects of Representation Theory, November 2-3, 2013, *Quantum walled Brauer-Clifford superalgebras.*
- Mathematical Congress of the Americas, session on Lie Representation Theory, Guanajuato, Mexico, August 6, 2013, *Quantum walled Brauer-Clifford superalgebras.*

- Fields Institute, Conference on Geometric Methods in Infinite-dimensional Lie theory, March 25, 2013, *Yangians for affine Kac-Moody algebras.*
- Centre de Recherches Mathématiques, Université de Montréal, Workshop on Infinite Dimensional Lie Theory: Algebra, Geometry and Combinatorics, August 23, 2012, *Yangians for Kac-Moody algebras.*
- University of Regina, Summer Meeting of the Canadian Mathematical Society, session on Representation Theory of Groups, Lie Algebras, and Hopf Algebras, June 2, 2012, *Coideal subalgebras of quantized enveloping algebras.*
- University of South Florida, AMS Spring Southeastern Section Meeting, session on Interaction between Algebraic Combinatorics and Representation Theory, March 10, 2012, *Twisted quantum loop algebras and affine Hecke algebras of type BC.*
- University of Texas at Arlington, Algebraic Geometry, Algebra and Number Theory Seminar, September 30, 2011, *Coideal subalgebras of quantized enveloping algebras.*
- University of California at Riverside, Lie Theory Seminar, May 5, 2011, *Twisted affine quantized enveloping superalgebra of type Q.*
- University of Richmond, AMS Fall Southeastern Section Meeting, session on Kac-Moody Algebras, Vertex (Operator) Algebras, and Applications, November 6, 2010, *Twisted affine quantized enveloping superalgebra of type Q.*
- Carleton University, Workshop on Lie Theory, February 26, 2010, *Double affine Hecke, Lie and quantum algebras.*
- University of British Columbia, Second Joint Meeting of the Canadian and Mexican Mathematical Societies, Algebra Session, August 14, 2009, *Representations of double affine Lie algebras.*
- University of Calgary, ABC Algebra Workshop, April 18, 2009, *Representations of double affine Lie algebras.*
- University of Illinois at Urbana-Champaign, AMS Spring Central Section Meeting, March 29, 2009, *Representations of double affine Lie algebras and finite groups.*
- University of British Columbia, Seminar on Algebraic Groups, Galois Cohomology and Related Structures, March 13, 2009, *Double affine quantum algebras.*
- University of California at Riverside, Lie Theory Seminar, February 17, 2009, *Double affine quantum algebras.*
- University of Glasgow, Algebra seminar, May 21, 2008, *Quantum algebras associated to quivers and reflection functors.*
- University of Cambridge, Algebra seminar, May 7, 2008, *Algebras and Lie algebras of double affine type.*
- University of Oxford, Representation Theory seminar, February 28, 2008, *Algebras and Lie algebras of double affine type.*
- University of Connecticut, Colloquium, February 12, 2008, *Double affine Lie theory.*
- Kansas State University, Colloquium, February 7, 2008, *Double affine Lie theory.*
- University of Alberta, Colloquium, February 5, 2008, *Double affine Lie theory.*
- University of Waterloo, Colloquium, February 1, 2008, *Double affine Lie theory.*
- University of Edinburgh, Artin meeting, December 7, 2007, *Double affine Lie algebras.*
- University of Edinburgh, International Workshop on Cherednik Algebras and Related Topics, June 18-22, 2007, *Quantum algebras associated to quivers and symplectic reflection algebras.*

- Centre International de Rencontres Mathématiques, Luminy, France, April 2-7, 2007, *minicourse on rational Cherednik algebras.*
- Université de Paris VII, Séminaire d'algèbre, March 19, 2007, *Quivers and double affine algebras.*
- Université de Paris VII, Séminaire Algèbres enveloppantes, February 23, 2007, *Double affine quantum algebras.*
- École Polytechnique (France), February 6, 2007, *Symplectic reflection algebras and quantum algebras.*
- MIT, Infinite Dimensional Algebra seminar, April 28, 2006, *Cherednik algebras and quantum algebras.*
- Université de Paris VII, Séminaire Algèbres enveloppantes, May 27, 2005, *Cherednik algebras and Yangians.*
- University of Amsterdam, Lie Day, May 23, 2005, *Rational Cherednik algebras.*
- Université de Sherbrooke, Algebra seminar, May 6, 2005, *Category $\mathcal{O}$ for rational Cherednik algebras.*
- University of Ottawa, Algebra Seminar, May 4, 2005, *Variations on a theme of Schur and Weyl.*
- University of Ottawa - Carleton University, Algebra Day, October 2, 2004, *Rational Cherednik algebras.*
- University of Illinois at Urbana-Champaign, Representation theory seminar, January 21, 2004, *Category $\mathcal{O}$ for rational Cherednik algebras.*
- University of Waterloo, Colloquium, January 12, 2004, *Rational Cherednik algebras.*
- Cornell University, Lie Theory Seminar, November 21, 2003, *Category $\mathcal{O}$ for rational Cherednik algebras.*
- University of Wisconsin-Madison, Lie Theory Seminar, November 4, 2003, *Category $\mathcal{O}$ for rational Cherednik algebras.*
- Université Laval, Séminaire d'analyse, February 1998, *Valence des polynômes harmoniques.*

OTHER TALKS

- Field Station, Kananaskis, Algebra Meeting, February 23, 2011, *Generalizations of Lie algebras.*
- University of Alberta, Algebra Seminar, February 11, 2009, *Double affine quantum algebras and their representations.*
- University of Edinburgh, Algebra seminar, December 8, 2008, *Representations of double affine Lie algebras.*
- University of Edinburgh, Algebra seminar, October 16, 2007, *Algebras and Lie algebras of double affine type.*
- Université de Versailles-St-Quentin-en-Yvelines (France), December 19, 2006, *Algèbres de réflexions symplectiques.*
- University of Illinois at Urbana-Champaign, Representation theory seminar, March 2006, *Affine Yangians and deformed double current algebras I,II,III.*
- University of Amsterdam, Mathematics Colloquium, May 11, 2005, *Variations on a theme of Schur and Weyl.*

ORGANIZATION OF EVENTS

- Local organizer for the Putnam Mathematical Competition, 2015 - present.
- Western Summer School in Algebra, University of Alberta, August 13-17, 2018 and August 12-16, 2019.
- Conference "Interactions between Representation Theory and Algebraic Geometry", University of Chicago, August 21-25, 2017.
- Session on Representation Theory at the 2016 CMS Summer Meeting, Edmonton, Alberta, June 24-27, 2016.
- Workshop "Twenty-five years of representation theory of quantum groups", BIRS, Banff, Canada, August 7-12, 2011.
- Session on Lie Theory at the 2011 CMS Summer Meeting, University of Alberta, June 3-5.
- Session on Lie Algebras and Representation Theory at the 2009 CMS Winter Meeting, University of Windsor, December 5-7.

OTHER CONFERENCES ATTENDED AND VISITS

- Joint National AMS-MAA meeting, San Francisco, January 15-16, 2010.
- Combinatorial and Geometric Structures in Representation Theory, LMS Symposium, University of Durham, July 6-12, 2009.
- Conference in Geometric Representation Theory and Extended Affine Lie Algebras, Fields Institute, University of Ottawa, June 29 - July 3, 2009.
- Artin meeting, University of Aberdeen, September 26-27, 2008.
- Artin meeting, University of Glasgow, May 30-31, 2008.
- LieGrits Workshop on Cluster algebras and categorification, University of Oxford, January 3-9, 2008.
- Algebraic Groups Workshop, Mathematisches Forschungsinstitut Oberwolfach, April 22-27, 2007.
- Conference on Affine and Double Affine Hecke Algebras, Centre International de Rencontres Mathématiques, Luminy, France, June 2006.
- Infinite-Dimensional Aspects of Representation Theory and Applications, University of Virginia, May 2004.
- Workshop on algebraic transformation groups, Centre de Recherches Mathé-matiques, Université de Montréal, Canada, June 2002.
- First Joint Mathematical International Meeting AMS-SMF, École Normale Supérieure de Lyon, France, July 2001.
- Visitor, Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France, July 2001.

SERVICE TO THE SCIENTIFIC COMMUNITY

- Referee for Advances in Mathematics, Advances in Theoretical and Mathematical Physics, Algebras and Representation Theory, Bulletin and Journal of the London Mathematical Society, Communications in Algebra, Communications in Mathematical Physics, International Mathematics Research Notices, Journal of Algebra, Journal of

Pure and Applied Algebra, Mathematical Research Letters, Mathematische Zeitschrift, Memoirs of the American Mathematical Society, Pacific Journal of Mathematics, Selecta Mathematica, Transformation Groups.

- Reviewer for Mathematical Reviews.
- Referee for EPSRC.
- Referee for NSERC.
- Member of the Doctoral Prize Selection Committee of the Canadian Mathematical Society (2016 - 2019).

PROFESSIONAL AFFILIATION

- Member of the Canadian Mathematical Society.