

TIANYUAN XU

Department of Mathematics and Statistics
Queen's University
Kingston, Ontario, Canada. K7L 3N6

tianyuan@queensu.ca
<https://mast.queensu.ca/~tianyuan>

EDUCATION AND EMPLOYMENT

2017-present	Coleman Postdoctoral Fellow, Queen's University
06/2017	Ph.D. in Mathematics, University of Oregon Supervisor: Victor Ostrik
01/2014	M.S. in Mathematics, University of Oregon
05/2011	B.A. in Mathematics, Reed College

AWARDS

06/2018	Postdoctoral Fellow Travel Award, Queen's University
01/2017	Johnson Travel Fellowship, University of Oregon

RESEARCH INTERESTS

Representation Theory, Algebraic Combinatorics

PAPERS

Published/Accepted:

- [1] *On the subregular J -rings of Coxeter systems*. arXiv:1702.01338. Accepted for publication in *Algebras and Representation Theory*.
- [2] *Sandpiles and dominos*, with Laura Florescu, Daniela Morar, David Perkinson and Nick Salter. *The Electronic Journal of Combinatorics*, Volume 22 (1), 2015.
- [3] *A note on the critical group of a line graph*, with David Perkinson and Nick Salter. *The Electronic Journal of Combinatorics*, Volume 18 (1), 2011.

Submitted/In Preparation:

- [4] *Classification of Coxeter groups with finitely many elements of a -value 2*, with Richard Green. arXiv:1805.06581. Submitted.

- [5] *Broken lines and the topological ordering of the alternating quiver of type A*, with Ba Nguyen, David Wehlau and Imed Zaguia. In preparation.
- [6] *Representations of the subregular J -rings of Coxeter groups via quivers*, with Ivan Dimitrov, Charles Paquette and David Wehlau. In preparation.

Other Work:

- [7] *Graph partitions and free resolutions of toppling ideals*. Reed College Undergraduate Thesis, 2011.

CONFERENCE AND SEMINAR PRESENTATIONS

Invited Research Talks:

- 2018 Geometry and Representation Theory Seminar. Queen's University.
 Ottawa-Lyon-Sao Paulo Workshop on Representation Theory. Carleton University.
 CMS Summer Meeting, special session on "Representation Theory of Algebras and Related Topics". University of New Brunswick.
 The Fifteenth Annual Meeting of "Combinatorial Algebra Meets Algebraic Combinatorics". McMaster University.
- 2017 Colloquium. Queen's University.
 Geometry and Representation Theory Seminar. Queen's University.
- 2016 AMS Central Sectional Meeting, special session on "Combinatorial Representation Theory". University of St. Thomas.
 MAA Pacific Northwest Sectional Meeting, special session on "Algebra and Number Theory". Oregon State University.
- 2010 Colloquium. Reed College.

Posters and Contributed Talks:

- 2017 Southwest Local Algebra Meeting. University of New Mexico. (poster)
 AMS-MAA Joint Mathematics Meetings. Atlanta, Georgia. (contributed talk)
- 2016 The Second US-Mexico Conference on Representation Theory, Categorification, and Noncommutative Algebra. University of Southern California. (poster)
 Southwest Local Algebra Meeting. Texas State University. (poster)
 AMS Western Sectional Meeting. University of Utah. (contributed talk)
- 2011 Northwest Undergraduate Mathematics Symposium. Reed College. (contributed talk)

Other Presentations:

- 2018 Expository talk aimed at undergraduate audience at Math Club, Queen's University.

2011-17 A total of 10 talks at the University of Oregon, including 5 talks at the Student Algebra Seminar, 3 talks at the Graduate Notions Seminar, and 2 talks at the Undergraduate Teaching Seminar.

SELECTED OTHER CONFERENCES ATTENDED

Summer School and Workshop on Lie Theory and Representation Theory, V.
East China Normal University. 07/2018

Representation Theory of Symmetric Groups and Related Algebras.
National University of Singapore. 12/2017

Lie Theory and its Interactions with Geometry and Combinatorics.
University of Ottawa. 11/2017

Algebraic and Geometric Combinatorics of Reflection Groups.
Centre de Recherches Mathématiques, Université de Montréal. 06/2017

The 7th International Conference on Representation Theory.
Huaqiao University, China. 07/2016

Lie Algebras, Vertex Operator Algebras, and Related Topics.
University of Notre Dame. 08/2015

Workshop on Soergel Bimodules and the Kazhdan-Lusztig Conjectures.
University of Oregon. 08/2014

TEACHING RELATED EXPERIENCE

Queen's University (09/2017-present):

Taught 3 courses as the sole instructor of record. The course subjects include Group Theory (23 students) and Ordinary Differential Equations (two terms with 130 students each).

University of Oregon (09/2011-06/2017):

Taught 15 courses as the sole instructor of record. The course subjects included Elementary Linear Algebra, Discrete Mathematics II, Calculus for Social Sciences II, Calculus III, Calculus II, Calculus I, Elementary Functions and College Algebra. Each of the courses had around 35 students.

Served as teaching assistant for 3 courses. The course subjects included Discrete Mathematics and Introduction to Statistics and Probability. Each of the courses had around 140 students.

Mentored two undergraduate students on a reading project on Coxeter groups in the 2016-2017 academic year. The project led to a poster presentation by the students at the math department.

Reed College (08/2008 - 05/2011):

Tutored students individually and in groups at Academic Support Services. The courses tutored include Linear Algebra, Multivariable Calculus, Calculus, Introduction to Analysis, and General Physics.

Graded homework for 6 math courses including Linear Algebra, Multivariable Calculus and Introduction to Analysis.

SERVICE AND OUTREACH

Journal Referee:

Referee for *Science China Mathematics*, 01/2017-present.

Seminar Organization:

Co-organized the Geometry and Representation Theory Seminar at Queen's University, 09/2017-present.

Organized the Student Algebra Seminar at the University of Oregon, 09/2016-06/2017.

Committee Service:

Served on the following committees at the University of Oregon Chapter of Association for Women in Mathematics.

Undergraduate Mentoring Committee, Co-chair, 09/2016-06/2017.

Undergraduate Mentoring Committee, Member, 09/2015-06/2015.

Distinguished Speaker Series Committee, Member, 09/2015-06/2016.

Served on the Thesis Committee of an undergraduate student of the Clarks Honors College at the University of Oregon. Evaluated the student's thesis defense. 03/2016-06/2016.

Served on the Exam Committee of the Oregon Invitation Mathematics Tournament. Designed and graded exams. 05/2016, 05/2012.

Community Outreach:

Served as counselor for the following programs at the Lane Education District in Lane County, Oregon. Developed lesson plans with middle and high school teachers.

Mastering Mathematical Logic & Literary Program, 07/2013-08/2013.

Workshop on the Common Core State Standards in Mathematics, 07/2012.