

# Curriculum Vitae of Andrew Schopieray

Email: [szopraj@gmail.com](mailto:szopraj@gmail.com)

Website: <https://aschopieray.com>

## Employment

- 01/2020–05/2020 Postdoctoral Fellow, Mathematical Sciences Research Institute, Berkeley, CA
- 07/2017–07/2019 Postdoctoral Scientist, University of New South Wales, Sydney, Australia
- 09/2012–06/2017 Graduate Teaching Fellow, University of Oregon, Eugene, OR
- 07/2013–02/2015 Talented & Gifted Educator (ages 10-16), University of Oregon, Eugene, OR
- 02/2011–04/2012 Community Ed. Instructor, Whatcom Community College, Bellingham, WA
- 09/2010–06/2012 Graduate Teaching Asst., Western Washington University, Bellingham, WA

## Education

- 09/2012–06/2017 PhD Mathematics, Advisor: Victor Ostrik, University of Oregon, Eugene, OR
- 09/2010–06/2012 M.S. Mathematics, Western Washington University, Bellingham, WA
- 08/2007–05/2010 B.S. Mathematics/Psychology, Grand Valley State University, Allendale, MI
- 08/2005–05/2007 A.A.S., Northwestern Michigan College, Traverse City, MI

## Fellowships and Awards

- 01/2017 AMS travel grant, 2017 Joint Mathematics Meetings
- 04/2016 AMS travel grant, 2016 Spring Western Sectional Meeting
- 09/2015–06/2016 Graduate Teaching Mentor Award, University of Oregon
- 09/2011–06/2012 Elias A. Bond Graduate Fellowship, Western Washington University
- 09/2011 Richard Greene Graduate Scholarship, Western Washington University
- 05/2010 Outstanding Senior Award, Grand Valley State University

## Research Interests

Tensor and fusion categories, quantum groups, vertex operator algebras, representation theory, conformal and topological field theories, subfactors, von Neumann algebras (please refer to *research statement* for further detail)

## Publications and Preprints

- Classification of  $\mathfrak{sl}_3$  relations in the Witt group of nondegenerate braided fusion categories. *Communications in Mathematical Physics*, 353(3):1103–1127, 2017.
- Level bounds for exceptional quantum subgroups in rank 2. *International Journal of Mathematics*, 29(5):1850034, 33, 2018.
- Lie Theory for Fusion Categories: a Research Primer. to appear in *Contemporary Mathematics*, 2018
- Prime decomposition of modular tensor categories of local modules of Type D. *submitted*. arXiv:1810.09057, 2018.
- Higher Gauss sums of modular categories. Joint with Ng, Siu-Hung and Yilong Wang. *submitted*. arXiv:1812.11234, 2019.
- Quadratic d-numbers. *submitted*. arXiv:1904.09418, 2019.

**Invited Lectures (recent)**

- 02/2019      *Numerical invariants of modular tensor categories.*  
Subfactors in Sydney, Kensington, Australia
- 10/2018      *Frobenius-Perron dimensions and fusion subcategories.*  
BIRS Workshop (18w5195), Banff, Canada
- 06/2018      *Fields of Frobenius-Perron Dimensions.*  
Ohio University Mathematics Seminar, Athens, Ohio
- 10/2017      *A quantum McKay correspondence.*  
University of New South Wales Pure Maths Seminar, Sydney, Australia
- 10/2017      *Symmetries of the Weyl alcove.*  
University of Sydney Algebra Seminar, Sydney, Australia
- 09/2017      *Organizing braided fusion categories.*  
Australia National University Algebra and Topology Seminar, Canberra, Australia
- 07/2017      *Quantum subgroups after Ostrik.*  
Conference on Quantum Symmetries: Subfactors and Planar Algebras, Maui, Hawaii
- 01/2017      *Quantum subgroups of  $SU(n)$ .*  
Joint Mathematics Meeting – Special Session on Fusion Categories, Atlanta, Georgia
- 06/2016      *Representations of quantum groups at roots of unity and de-equivariantization.*  
Representation Theory Conference 2016, Uppsala Universitet, Uppsala, Sweden
- 04/2016      *A class. of  $\mathfrak{sl}_3$  relations in the Witt group of non-degenerate braided fusion categories.*  
AMS Spring Western Sectional Meeting, University of Utah, Salt Lake City, Utah

**Conferences and Workshops (recent)**

- 10/2019      Subfactors and Applications (1944)  
MFO, Oberwolfach, Germany
- 02/2019      Subfactors in Sydney (co-organizer)  
University of New South Wales, Kensington, Australia
- 10/2018      Fusion Categories and Subfactors (18w5195)  
BIRS, Banff, Canada
- 06/2018      AMS MRC: Quantum Symmetries: Subfactors and Fusion Categories  
West Greenwich, Rhode Island
- 01/2018      NZMRI Summer Workshop on Algebra and Representation Theory  
Nelson, New Zealand
- 07/2017      Conference on Quantum Symmetries: Subfactors and Planar Algebras  
Maui, Hawaii
- 06/2017      Summer Graduate School (791) on Subfactors  
MSRI, Berkeley, California
- 08/2016      Modular Categories – Their Representations, Classification, and Applications (16w5049)  
BIRS-CMO, Oaxaca, Mexico
- 06/2016      Representation Theory Conference 2016  
Uppsala Universitet, Uppsala, Sweden
- 09/2015      Graduate Workshop on Topological Quantum Field Theory  
Simons Center, Stony Brook University, New York
- 08/2014      Algebraic Lie Theory and Representation Theory Workshop  
University of Glasgow, Glasgow, Scotland

**Teaching Experience**

- 02/2018–05/2018 **University of New South Wales** (Lecturer)
- *Higher Mathematics 1A*
- 09/2012–06/2017 **University of Oregon** (Instructor of Record)
- *Introduction to Mathematical Proof*
  - *Multi-variable Calculus I*
  - *Calculus I & II*
  - *Calculus for the Biological Sciences I & II*
  - *Calculus for Business and Social Science I, II, & III*
  - *Fundamentals of Elementary Mathematics II & III*
  - *Intermediate Algebra*
  - *Elementary Functions*
  - *College Algebra*
- 07/2013–02/2015 **University of Oregon Youth Enrichment and Gifted Programs** (Courses designed and taught by myself)
- *Binary Numbers and Calculators* (ages 10-14)
  - *Symmetry!* (ages 12-16)
  - *Proofs without Words* (ages 12-16)
  - *Mathematics and Video Games* (ages 12-16)
- 02/2011–04/2012 **Whatcom Community College** (Instructor of Record, 3 sections)
- *Preparing for the SAT* (ages 15-18)
- 09/2010–06/2012 **Western Washington University** (Instructor of Record)
- *Business Calculus*
  - *Precalculus*
  - *Functions and Algebraic Methods*

**Institutional Service**

- 02/2018 Co-organizer of *Subfactors in Sydney*, U. of New South Wales, Kensington, Australia
- 01/2013–Present Active member of the local chapter of the Association for Women in Mathematics, member of the community outreach and undergraduate research committees
- 09/2012–06/2016 Four-year elected member of the University of Oregon Graduate Affairs Committee, catered all department picnics, made significant revisions to graduate student handbook
- 01/2016–04/2016 Led an undergraduate student reading program on graph theory and applications (3 students), University of Oregon
- 09/2014–06/2016 Department-appointed graduate student mentor for a total of four first-year graduate students (over two years), University of Oregon
- 05/2015 Assisted in organization of the 2015 Oregon Invitational Mathematics Tournament (puzzles and games organizer), University of Oregon
- 01/2015–04/2015 Led an undergraduate student reading on singular-value decomposition and applications to economics (1 student, John Morehouse), thanked in student's thesis *Systematic differences between bicyclists and motor-vehicle operators*, University of Oregon

- 02/2014–03/2014 Evaluator (paid) of potential Mathematics/Biology faculty candidates, U. of Oregon  
01/2014–04/2014 Led undergraduate reading on SAGE and Project Euler (1 student), U. of Oregon  
09/2009–05/2010 Social chairman of the Math. and Stats. Club, Grand Valley State University

### Technical Skills

- Proficient use of Python/Sage, Maple, KAC, GAP, L<sup>A</sup>T<sub>E</sub>X
- Regularly instruct courses utilizing CoCalc, Geogebra, and Geometer's Sketchpad (as well as course software such as Blackboard and Canvas)
- Demonstrated proficiency in reading French mathematical texts as part of PhD candidacy at University of Oregon

### Personal Interests

- *Nature*: Wildlife photography, travel, hiking, camping
- *Volunteer work*: Trained medic, Cascades Raptor Center wildlife rehabilitation clinic, Eugene Oregon (~300 hours logged)
- *Culinary Arts*: Classically trained French/Italian cook (9 years experience)

Sydney, Australia, June 2019