Juliette Bruce

Curriculum Vitae

Department of Mathematics
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Education

- **University of Wisconsin** — Madison, WI
  Ph.D. Mathematics — *2014 – Present*
  - Advisor: Daniel Erman
- **University of Wisconsin** — Madison, WI
  M.A. Mathematics — *2014 – 2016*
- **University of Michigan** — Ann Arbor, MI
  B.S. in Mathematics & Political Science — *2010 – 2014*
  - With High Honors and Distinction

Publications

6. J. Bruce. Asymptotic Syzygies in the Semi-Ample Setting. *In preparation.*

5. J. Bruce, D. Erman, S. Goldstein, and J. Yang. Conjectures and computations about Veronese syzygies. *Submitted.* E-print: arXiv:1711.03513.

4. M. Brandt, J. Bruce, T. Brysiewicz, R. Krone, and E. Robeva. The degree of $SO(n)$. *Combinatorial Algebraic Geometry*, 207-224, Fields Inst. Commun. **80**, (2017). E-print: arXiv:1701.03200.

3. J. Bruce and D. Erman. A probabilistic approach to systems of parameters and Noether normalization. *Submitted.* E-print: arXiv:1604.01704.

2. J. Bruce, M. Logue, and R. Walker. Monomial valuations, cusp singularities, and continued fractions. *Journal of Commutative Algebra*, **7** (2015) no. 4, 495-522. E-print: arXiv:1311.6493.

1. J. Bruce, P. Kao, E. Nash, B. Perez, and P. Vermeire. Betti tables of reducible algebraic curves. *Proc. Amer. Math. Soc.* **142** (2014) 4039-4051. E-print: arXiv:1210.3064.

Awards, Grants & Honors

- **Graduate Research Fellowship** — 2015 – Present
  National Science Foundation

- **Professional Development Grant - ($1000)** December 2016
  Graduate School – University of Wisconsin
- **Outstanding Achievement in Mathematics** May 2014
  Dept. of Mathematics – University of Michigan
- **Phi Beta Kappa** April 2014
  University of Michigan
- **Chancellor's Opportunity Award** April 2014
  University of Wisconsin

Research Presentations

- **Asymptotic Syzygies in the Semi-Ample Setting (Poster)** San Diego, CA
  Joint Math Meetings AWM Poster Session *January 2018*
- **Asymptotic Syzygies in the Semi-Ample Setting** University of Michigan
  Commutative Algebra Seminar *December 2017*
- **Asymptotic Syzygies in the Semi-Ample Setting** Texas Tech University
  Structures on Free Resolutions *October 2017*
- **A Distributed Numerical Approach to Syzygies of $\mathbb{P}^2$ (Poster)** UC - Berkeley
  Free Resolutions and Computations *July 2017*
- **The Degree of $SO(n)$ and Low-rank SDP** University of Wisconsin
  Applied Algebra Seminar *March 2017*
- **A Probabilistic Approach to Noether Normalization (Poster)** Rice University
  Lectures on Arithmetic Geometry *February 2017*
- **A Probabilistic Approach to Noether Normalization (Poster)** Fields Institute
  Introductory Workshop: Combinatorial Algebraic Geometry *August 2016*
- **A Probabilistic Approach to Noether Normalization (Poster)** University of Michigan
  Commutative Algebra and Its Interactions with Algebraic Geometry *July 2016*
- **A Probabilistic Approach to Noether Normalization (Poster)** University of Notre Dame
  Midwest Commutative Algebra and Algebraic Geometry Conference *May 2016*
- **Noether Normalization in Families** University of Wisconsin
  Algebraic Geometry Seminar *April 2016*
- **Betti Tables of Graph Curves** University of Illinois - Chicago
  Midwest Algebraic Geometry Graduate Conference *April 2015*
- **Betti Diagrams of Graph Curves** University of Wisconsin
  Algebraic Geometry Seminar *December 2014*

Teaching Experience

- **Math 132: Problem Solving in Algebra, Statistics, & Probability** University of Wisconsin
  Instructor *Spring 2015*
- **Math 221: Calculus and Analytic Geometry I** University of Wisconsin
  Teaching Assistant *Fall 2014*

- **Math 310: Explorations in Randomness** — University of Michigan
  Course Assistant — *Winter 2014*
- **Math 490: Introduction to Topology** — University of Michigan
  Course Assistant — *Fall 2013*
- **Math 351: Principals of Analysis** — University of Michigan
  Course Assistant — *Winter 2013*
- **Math 105: Data, Functions, and Graphs** — University of Michigan
  Course Assistant — *Fall 2012*

Outreach Activities

- **Out in STEM (oSTEM) @ UW-Madison** — University of Wisconsin
  co-Founder — *July 2017 – Present*
- **Madison Math Circle** — University of Wisconsin
  Lead Organizer — *January 2016 – Present*
- **Madison Math Circle** — University of Wisconsin
  Student Volunteer — *January 2015 – Present*
- **Michigan Math Circle** — University of Michigan
  Organizer — *January 2013 – June 2014*

Service

- **Committee on Inclusivity and Diversity** — UW Dept. of Mathematics
  Member — *November 2016 – Present*
- **Committee on TA Pay and Performance** — UW Dept. of Mathematics
  Member — *September 2015 – Present*
- **AMS Graduate Student Blog** — American Mathematical Society
  Managing Editor — *September 2015 – Present*
- **Instructor Excellence Program** — UW Dept. of Mathematics
  Teaching Mentor — *September 2015 – May 2016*
- **Society of Undergraduate Math Students** — University of Michigan
  President and Founder — *December 2012 – June 2014*

Memberships

- **Society of Industrial and Applied Mathematics** — January 2017 – Present
- **Association for Women in Mathematics** — January 2016 – Present
- **American Mathematical Society** — September 2014 – Present