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

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

6. J. Bruce and W. Li. Effective bounds on the dimensions of Jacobians covering abelian varieties. *Pre-print.*
   E-print: [arXiv:1804.11015](https://arxiv.org/abs/1804.11015).

5. J. Bruce, D. Erman, S. Goldstein, and J. Yang. Conjectures and computations about Veronese syzygies.
   Experimental Mathematics, To Appear. E-print: [arXiv:1711.03513](https://arxiv.org/abs/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](https://arxiv.org/abs/1701.03200).

3. J. Bruce and D. Erman. A probabilistic approach to systems of parameters and Noether normalization.
   Submitted. E-print: [arXiv:1604.01704](https://arxiv.org/abs/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](https://arxiv.org/abs/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](https://arxiv.org/abs/1210.3064).

Grants

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

- **Conference Grant DMS-1812462 – $15,000**   February 2018
  National Science Foundation

- **Professional Development Grant – $1000**   December 2016
  Graduate School – University of Wisconsin

Awards, Grants & Honors

- **Mathematics TA Service Award**   April 2018
  Dept. of Mathematics - University of Wisconsin

- **Teaching Assistant Award for Exceptional Service**   February 2018
  University of Wisconsin (Campus Wide)

- **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

- **Syzygies of Surfaces via Distributed Computing**   DePaul University
  Algebra Seminar   *March 2018*

- **Asymptotic Syzygies in the Semi-Ample Setting**   University of Wisconsin
  Algebra and Algebraic Geometry Seminar   *February 2018*

- **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*

Conference Organizing

- **M2@UW** University of Wisconsin
  April 14-17, 2018
- **Math Careers Beyond Academia** University of Wisconsin
  April 14, 2017

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*
- **Out in Math: Professional Issues Facing LGBTQ Mathematicians** MAA Panel at the JMM
  Panelist *January 2018*

- **Michigan Math Circle**   University of Michigan
  Organizer   *January 2013 – June 2014*

Service

- **AMS Graduate Student Blog**   American Mathematical Society
  Managing Editor   *September 2015 – Present*
- **Committee on Inclusivity and Diversity**   UW Dept. of Mathematics
  Member   *November 2016 – August 2017*
- **Committee on TA Pay and Performance**   UW Dept. of Mathematics
  Member   *September 2015 – August 2017*
- **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