Juliette Bruce

Department of Mathematics
University of Wisconsin
480 Lincoln Dr.
Madison, WI 53706

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Curriculum Vitae

608-263-7939
juliette.bruce@math.wisc.edu
math.wisc.edu/~juliettebruce

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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.

Grants

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

Updated February 20, 2018.

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

Awards, Grants & Honors

- **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

- **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