Juliette Bruce **June 19, 2024**

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Employment & Education

- **Brown University** Providence, RI
  Postdoctoral Research Associate *2022 – Present*
- **University of California, Berkeley** Berkeley, CA
  NSF Postdoctoral Research Fellow *2020– 2022*
- **University of Wisconsin** Madison, WI
  Ph.D. Mathematics *2014 – August 2020*
- **University of Michigan** Ann Arbor, MI
  B.S. in Mathematics & Political Science *2010 – 2014*

Research Interests

Algebraic Geometry, Commutative Algebra, Arithmetic Geometry. Specifically, homological and combinatorial methods in algebraic geometry and commutative algebra.

Selected Publications & Preprints

5. J. Bruce, L. Cranton Heller, M. Sayrafi. Characterizing Multigraded Regularity on Products of Projective Space. *Submitted.* E-Print: arXiv:2110.10705

4. M. Brandt, J. Bruce, M. Chan, M. Melo, G. Moreland, C. Wolfe. On the Top-weight Cohomology of $\mathcal{A}_g$. *Geometry & Topology*, To appear. E-Print: arXiv:2012.02892

3. J. Bruce and D. Erman. A probabilistic approach to systems of parameters and Noether normalization. *Algebra and Number Theory*, **13** (2019), no. 9, 2081–2102.

2. J. Bruce, D. Erman, S. Goldstein, and J. Yang. Conjectures and computations about Veronese syzygies. *Experimental Mathematics*, **29** (2020), 398-413.

1. 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).

Selected Awards & Honors & Grants

- **Conference Grants DMS 2332592/1908799/1812462 – $73,000** 2018 – Present
  National Science Foundation & Fields Institue
- **Postdoctoral Research Fellowship – $150,000** 2020 – 2022
  National Science Foundation

- **Capstone Teaching Award** October 2019
  Awarded to one student for an exceptional record of teaching excellence.
- **Teaching Assistant Award for Exceptional Service** February 2018
  Campus-wide award recognizing TA's who perform exceptional service

Conferences for Graduate Students Organized

- **GEMS in Commutative Algebra** University of Minnesota
- **GEMS in Combinatorics (x2)** Virtually / AIM
- **Trans Math Day (x3)** Held Virtually
- **Spec**$(\overline{\mathbb{Q}})$ Fields Institute
- **GWCAWMMG** University of Minnesota

Outreach & Service Activities Aimed at Graduate Students

- **Spectra**: **The Association for LGBTQ+ Mathematicians**
  President, Immediate Past President *September 2020 – Present*
- **MSRI**: **Committee on Women in Mathematics**
  Committee Member *March 2023 – Present*
- **Michigan Research Experience for Graduate Students** University of Michigan
  Project Leader *July – August 2023*
  - Lead a diverse group of 4 early-stage graduate students on a project in geometry.
- **Algebraic Geometry in the Time of COVID** Held Virtually
  Shepard *June 2020 – October 2020*
  - A virtual, open access introductory graduate course with 1600 participants.
- **Graduate Peer Mentoring** University of Wisconsin
  Mentor *September 2018 – December 2018*
  - Mentored 5 first year graduate students from minority genders, organizing monthly dinners where the mentees could discuss issues they were facing.
- **Out in STEM (oSTEM) @ UW-Madison** University of Wisconsin
  co-Founder *July 2017 – Math 2018*
  - Founded, at the time. the only campus resource specifically for LGBTQ+ individuals in STEM, and grew the organization to over 50 members.

Teaching Experience

- **Math 221**: **Calculus and Analytic Geometry I** University of Wisconsin
  Teaching Assistant (Average score 4.9/5.0) *Fall 2014/2018/2019*
  - Selected as a TA coordinator in 2018 and 2019, and was responsible for overseeing all other TA's and mentoring first year TA's.
- **Math 228**: **Wisconsin Emerging Scholars** University of Wisconsin
  Instructor (Average score: 5.0/5.0) *Fall 2018*
  - Course providing students from underrepresented groups additional support.