



BROWN

Department of Mathematics  
<https://www.math.brown.edu>

April 18, 2023

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Subject: Application to Topos Institute Postdoc

To the Hiring Committee,

I am writing to apply for the postdoctoral research position at the Topos Institute. Currently, I am a Postdoctoral Research Association in the Mathematics Department at Brown University, a position I have held since August 2022. I received my Ph.D. in Mathematics from the University of Wisconsin - Madison in the Summer of 2020 under the guidance of my advisor Professor Daniel Erman. Previously I was an NSF Postdoctoral Research Fellow in the Mathematics Department at the University of California, Berkeley, and for the 2020-2021 academic year I was a Postdoctoral Fellow at the Mathematical Sciences Research Institute in Berkeley, CA.

My research interests lie in the intersection of algebraic geometry and commutative algebra. In particular, I am interested in using combinatorial, computational, and homological methods to study the geometry of zero loci of systems of polynomials (i.e. algebraic varieties). Further, I am passionate about promoting inclusivity, diversity, and justice in the mathematics community. However, recently I have become interested in using my mathematical

With my application I have included my curriculum vitae. A few highlights in my file are:

- Invited to speak at the *Western Algebraic Geometry Online* (April 2020), *Foundations of Computing in Mathematics* (June 2020), and *LGBTQ+Math* (July 2020).
- Excellence in Mathematical Research Award (2020) - Awarded by the Department of Mathematics at the University of Wisconsin for substantial contributions to research as part of a thesis.
- Co-organizer for seven conferences, two AMS special sessions, and numerous outreach events. Awarded approximately \$55,000 in grants to support these conferences.
- Capstone Teaching Award (2019) - Awarded by the Department of Mathematics at the University of Wisconsin to 1 student recognizing a record of exceptional teaching and service. Teaching Assistant Award for Exceptional Service (2018) - Awarded by the University of Wisconsin to up to 3 teaching assistants campus-wide recognizing their exceptional service.

Please do not hesitate to contact me with any questions, and thank you in advance for your consideration.

Sincerely,

Juliette Bruce