Juliette Bruce's Student Success Statement

My goal as an educator is to be an active guide for students, providing them with environments where they feel supported and encouraged to let their own mathematical and quantitative curiosities guide how they engage, learn, and succeed. By taking this approach, I hope to engage with students as the complete people that they are, asking them to bring all of their experiences, backgrounds, identities, and knowledge into the learning environment. I want students to experience mathematics in a humanistic way, seeing how mathematics and quantitative thinking are integral aspects of their lives. Recognizing that learning mathematics is not necessarily confined to the classroom I have sought out new and non-traditional teaching opportunities, especially those that seek to better serve underrepresented students. More broadly recognizing that my research impacts both my students and the wider world I have worked hard to be both thoughtful about these effects, and I have worked to make mathematics more inclusive and welcoming of people from underrepresented groups.

2. Adopts teaching strategies that support the learning and success of students from diverse student populations. My approach to creating an inclusive classroom environment has been influenced by the semester-long course *Inclusive Practices in the College Classroom*, which I took through the *Delta Program for Integrating Research, Teaching and Learning*. For example, one activity I implemented successfully asked students to brainstorm attributes from classes they found productive and attributes from classes they found less productive. After collecting a list of such attributes, we use this as a jumping-off point for forming community standards that we wish to shape our classroom environment. Examples of such community standards that my classes have often adopted include: "Respect everyone" and "Address the problem, not the person when discussing mistakes". I have found this helps the students believe that the classroom is an inclusive space where it is safe to make mistakes.

While at the University of California, Berkeley I actively participated in a reading/working group exploring antiracist and anti-oppressive pedagogy in the mathematics classroom. Further, I personally sought to engage with ways to humanize mathematics and support underrepresented students by exploring the works of Pamela E. Harris, Aris Winger, Rochelle Gutiérrez, Luis Leyva, and Francis Su. From this work, I have also found it important to create a space where students feel comfortable bringing their whole selves, including all of their experiences, backgrounds, challenges, identities, struggles, and knowledge. For example, I recognize that all students, like all people, will have days when negative experiences outside the classroom affect their ability to engage in the classroom. This is even more true for students who face racism, sexism, homo/transphobia, and other systems of oppression. On such a day when students enter the classroom, I look to try to meet the students where they are. For example, sometimes this means I will walk the student to the campus mental health or cultural center, or sometimes it means I create new problems specifically to help keep the student's mind off of whatever is troubling them. I try to make sure my students know I am there to provide them with whatever resources they need to succeed both in the classroom and in their life beyond. However, this human-centered approach also leads to many beautiful moments. For example, by allowing students to bring all of themselves to class they experience mathematics in a humanistic way, seeing how mathematics and quantitative thinking are an integral aspect of their life. I have found this increases students' motivation, as well as opens them up to making mistakes, growing, and learning. Going forward I am dedicated and excited to continue to learn and grow as an educator, trying to always center the needs and identities of students, especially students from underrepresented and underserved groups. In this way, I like to view teaching opportunities as a chance for me to grow as an educator, and find new strategies for supporting students.

5. Possess knowledge of challenges and barriers for underrepresented students and faculty within the discipline and use it to inform their work in specific ways. As a queer woman in mathematics I know from first-hand experience how many students from underrepresented groups feel unseen and potentially unwelcome in mathematics. In response to this, I have consistently found ways to try to make the mathematics community more inclusive and welcoming, especially for LGBTQ+ students and women. For example, since Fall 2020 I have organized *Trans Math Day*, an annual virtual conference promoting the work of transgender and non-binary mathematicians. This conference regularly has 50 participants. Highlighting the importance of such conferences one participant said, "I've been really considering leaving mathematics. [Trans Math Day] reminded me why I'm here and why I want to stay. If a conference like this had been around for me five years ago, my life would have been a lot better." Further, I have been a board member for *Spectra: The Association for LGBTQ+ Mathematicians* since 2020, including as the inaugural president in 2022. In this role, I have overseen the growth and formalization of the organization, including the creation and adoption of bylaws, the creation of an invited lecture at the Joint Mathematics Meetings, and a $20,000+ fundraising campaign. Spectra has 500 members.

Going further back, while a graduate student I co-founded oSTEM@UW as a resource for LGBTQ+ students in STEM, which eventually grew to over fifty members. As one member said, "It made me very happy to see other friendly LGBTQ+ faces around... Thanks so much for organizing this stuff – it's really helpful". From 2017-2020 I led the campus social organization for LGBTQ+ graduate students, which had over 350 members. In this role, I have co-organized a weekly coffee social hour intended to give LGBTQ+ graduate students a place to relax, make friends, and discuss the challenges of being LGBTQ+ at the UW - Madison. In the Fall of 2016, in response to a growing climate of hate, bias, and discrimination on campus, I led the creation of the Mathematics Department's *Committee on Inclusivity and Diversity*. As a member of this committee, I drafted what would become the department's commitment to inclusivity and non-discrimination. I also created syllabi statements that let students know about these department policies, and that inform them of campus resources. Everyone within the department is encouraged to use these statements.

6. Mentors and assists diverse student populations interested in pursuing graduate education. I have attempted to consistently find ways to mentor and support students from diverse populations to pursue graduate education. In particular, I have tried to organize at least one conference aimed a supporting students from underrepresented groups pursuing graduate education roughly every year. For example, *Graduate Workshop in Commutative Algebra for Women & Mathematicians of Minority Genders* focused on providing women and non-binary early career researchers (e.g., senior graduate students and early graduate students) interested in commutative algebra with support and community, and Spec($\overline{\mathbb{Q}}$) highlighted the research of LGBTQ+ mathematicians (including many students) in algebra, geometry, and number theory. Further, the "GEMS" workshops sought to build a diverse community of mathematicians to address gender equity in the mathematical community from new perspectives. Going forward I am interested in expanding these "GEMS" workshops to other areas of mathematics and creating cross-field discussions that broaden the standard notion of gender equity in mathematics.

When organizing these conferences I paid particular attention to making them as inclusive of women and non-binary researchers as possible. For example, I designed the registration form to be thoughtful of the concerns of transgender researchers and highlighted the locations of single occupancy and ADA-compliant restrooms. The importance of such efforts was highlighted by the following comment I received from a participant, "I just wanted to thank you for making this workshop inclusive for people with all gender identifications. ... I have always felt out of place when I participated in conferences/workshops for women when they do not specify that non-binary people are welcome ... I really appreciate those questions you put in the registration form. It means a lot to me."

9. Has expertise in or demonstrated commitment to teaching, scholarship, and/or service that contributes to access, diversity, and equal opportunity in higher education.

Throughout my career, I have tried to find innovative ways to broaden access to higher education, with an eye to centering the needs and experiences of those from underserved groups. While never the center of my work, I have consistently had 1-2 such projects ongoing since graduate school. For example, in response to the COVID-19 pandemic, and recognizing the disparate impacts it was having on students from underrepresented groups, I worked to find ways for online activities to reach those often at the periphery. During the Summer and Fall of 2020, I helped with Ravi Vakil's *Algebraic Geometry in the Time of Covid* project. This massive online open-access course in algebraic geometry brought together $\sim 1,500$ participants from around the world. In Spring 2021, in an effort to continue supporting students who might be disparately affected by the pandemic, I organized an 8-week virtual reading course for undergraduates in algebraic geometry and commutative algebra.

The Madison Math Circle (MMC) is an outreach program sponsored by the UW-Madison Math Department. Its goal is to kindle excitement and appreciation of math in middle and high school students, and hopefully encourage them to pursue math and science degrees. In the Fall of 2014, I began volunteering with the MMC. At the time, the circle's main programming was a weekly on-campus lecture given by a member of the math department. After a year of volunteering, I stepped into the role of organizer. As an organizer, I worked hard to address the fact that in its original form, the Madison Math Circle was failing to reach and address the needs of underrepresented students, especially students of color. During my three years as an organizer, I worked to build stronger connections between the MMC, local schools, and other outreach organizations focused on underrepresented groups. These ties helped the weekly attendance more than double, and grow substantially more diverse. I also led the creation of a new outreach arm of the MMC, which visits high schools around the state of Wisconsin to better serve students from underrepresented groups. This program has dramatically expanded the reach of the circle, and during my final year as an organizer, the MMC reached over 300 students