



A WORD FROM...

Juliette Bruce, Inaugural President of Spectra

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On June 28, 1969, in the early morning hours in New York City, facing homophobic, transphobic, and racist police violence, a group of LGBTQ+ individuals fought back in what has become known as the Stonewall Uprising. These actions, in which trans women of color played a central if often overlooked and marginalized role, marked a crucial turning point in the LGBTQ+ rights movement in the United States and beyond. In honor and remembrance of these events, as well as the struggles and successes of all LGBTQ+ people, June is commonly known as LGBTQ+ Pride Month in the United States, Canada, and other countries. This pride month, I am happy to have the opportunity to highlight recent work of Spectra, the Association for LGBTQ+ Mathematicians, and how you can become involved.

Since its founding in 2015,¹ Spectra has worked to support and promote LGBTQ+ individuals working in and studying mathematics. Despite being an entirely volunteer-led organization and relying on the generosity of a few donors for the entirety of our small budget, Spectra has accomplished a lot in the last seven years. These efforts have included: organizing and sponsoring over a dozen events including the first bi-annual LGBTQ+ in

Mathematics research conference held at ICERM in August 2021, working with various mathematical societies and publishers to adopt policies that are more inclusive to trans and non-binary mathematicians, and launching several initiatives to increase the visibility of LGBTQ+ mathematicians.

During this time the community of LGBTQ+ mathematicians has grown significantly. For example, the Spectra “Out List”²—a public list of self-identified LGBTQ+ mathematicians—now lists close to 300 people ranging from undergraduate math majors to multiple Fellows of the American Mathematical Society. Further, in the last three years, there have been over ten different conferences and workshops specifically for LGBTQ+ mathematicians [5]. On a broader scale, a 2019 national study of undergraduates found that over 20% of respondents identified as not heterosexual and over 2% identified as not cisgender [1].

Despite this amazing growth in public community and visibility, many LGBTQ+ individuals still face numerous challenges and hardships as the result of systemic oppression, bias, and harassment. The effects of these are certainly felt within science, technology, engineering, and mathematics (STEM). For example, a national longitudinal survey [2] found that LGBTQ+ students in STEM had lower retention rates than their non-LGBTQ+ peers.

These disparities are despite the fact that the same study found LGBTQ+ STEM students are more likely to engage in undergraduate research. Further, a recent study of faculty members in the United Kingdom found that LGB people³ were underrepresented among faculty members in STEM [3].



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¹In some ways Spectra traces its origins back much earlier to the 1990s. A more complete history of Spectra can be found in [4].

²The Out List and Ally List, as well as how to join them can be found at <http://lgbtmath.org/People.html>.

³Transgender, non-binary, and other members of the LGBTQ+ community were not included in this study.

In response to both this significant growth in and the decided challenges faced by the LGBTQ+ math community, Spectra has taken this moment as an opportunity to reorganize and refocus our efforts and resources. With the adoption of a new set of by-laws, a formal board of officers, and official membership we hope that Spectra can better serve and support the LGBTQ+ math community. In codifying these changes we hope to create new and easier ways for individuals to become involved with and shape the future of Spectra. Further, we are extremely hopeful that these changes will allow Spectra to undertake larger and more far-reaching initiatives to make mathematics a more inclusive place. As our new mission states, the goal of Spectra is *“to support and encourage LGBTQ+ individuals in mathematics, by working to create an inclusive and affirming environment that supports the well-being and professional development of LGBTQ+ mathematicians. Spectra strives for a time when LGBTQ+ mathematicians are able to bring their whole selves to the mathematical community.”*

Allowed to dream about how Spectra might grow into an organization better capable of living up to this lofty mission, we envision creating travel grants for LGBTQ+ students, awards to help support LGBTQ+ individuals with the fees associated with graduate school, and funds to support transgender and non-binary mathematicians with some of the professional costs of transitioning (e.g., the costs of updating government identification documents, updating academic documents, purchasing new professional attire, etc.). We hope to create research opportunities for LGBTQ+ undergraduates who may not have support at their home institution, and research groups for LGBTQ+ mathematicians seeking support and community. We imagine documenting and telling the stories of courage and tenacity, triumph and adversity, love and joy of LGBTQ+ mathematicians both in the past and present.

Making these dreams of a stronger LGBTQ+ community, which is more fully welcomed within the larger mathematics community, a reality will require and provide opportunities for increased involvement by both LGBTQ+ mathematicians and allies within Spectra. In particular, readers can get involved in any and all of the following.

- **Fundraising Campaign:** To help jump-start the many amazing programs we are hoping to launch in the near future, and cover the costs of expanding as an organization, we have created the Queer Foundations fundraising campaign (note most donations are tax deductible). With this campaign, we hope to raise \$30,000 to help place Spectra on solid ground for future growth. Additional information about the campaign, including how to donate, can be found at <http://lgbtmath.org/fundraising>.
- **Join A Committee:** Our goal is for Spectra to remain a community-centered organization, serving as a platform to amplify, encourage, and promote the work being done by others. If you're passionate about supporting the LGBTQ+ community and interested in making mathematics a more inclusive place we would love for you to join us. With committees dedicated to many different aspects of our mathematical community, from outreach and research to politics and equity, diversity, and inclusion, there are many ways for you to become involved. All are welcome to join a committee, both members of the LGBTQ+ community and allies. More information about volunteering can be found at <http://lgbtmath.org/volunteer>.
- **Become A Member:** Spectra is excited to offer both individual and institutional memberships to allow people and departments to support and shape the direction of Spectra's efforts. If you or your department are interested in becoming a member please visit <http://lgbtmath.org/membership>.

Beyond becoming involved in Spectra, and noting that the inspiration for Pride was a remembrance and celebration of actions against oppressive structures, I also want to take a moment to note other ways allies might consider supporting their LGBTQ+ students, colleagues, and friends.

- **Highlighting Pride:** The contributions of LGBTQ+ mathematicians are often overlooked, and many LGBTQ+ students feel isolated in their STEM classes. One small way to consider fighting this would be to highlight LGBTQ+ mathematicians in both your classroom and department. This could take the form of hanging the “Celebrating LGBTQ+ Mathematicians” posters⁴ in the halls of your departments, or potentially using the profiles of LGBTQ+ mathematicians being posted by Spectra's Twitter account (@LGBTMath) as a way to highlight the work of LGBTQ+ people in your classrooms.

⁴These posters are free to order thanks to the generosity of the American Mathematical Society at <https://www.ams.org/posters>.

- **Pronoun Practice:** A common challenge faced by many transgender and non-binary individuals is others respectfully and consistently using their pronouns (e.g., she/her, he/him, they/them, e/em,⁵ etc.). Failing to do so leaves many transgender and non-binary people feeling unwelcome and unseen. If you find yourself consistently struggling with pronouns consider making it your goal this month to spend a bit of time practicing, for example with <https://www.practicewithpronouns.com> or one of the many other similar resources.⁶
- **LGBTQ+ Resources:** Finally, consider reaching out to LGBTQ+ resources in your community and asking for ways you might be able to become involved in helping them implement their mission. This could be your institution's LGBTQ+ campus center, your company's LGBTQ+ employee resource group, or a local LGBTQ+ community center. If your campus, employer, or community does not have such resources try reaching out to find others in your area who you might work with to create one!

Of course the things above are merely a small step towards what must be done to fully support LGBTQ+ mathematicians and students. Further, as the LGBTQ+ community continues to grow and evolve, so must our efforts to make the mathematical community a welcoming and inclusive space adapt. In this regard, I view this as a call to all those interested and able to help Spectra continue to grow as an organization striving to make a more vibrant and prideful mathematical community. Happy Pride!

References

- [1] American College Health Association et al., *American College Health Association—National college health assessment II: Undergraduate student reference group data report*, spring 2019.
- [2] B. E. Hughes, *Coming out in STEM: Factors affecting retention of sexual minority STEM students*, *Science Advances* 4 (2018), no. 3.
- [3] Advance HE, *ASSET 2016: experiences surrounding gender equality in STEM academia and the intersections with ethnicity, sexual orientation, disability and age*, published on April 5, 2017. <https://www.advance-he.ac.uk/knowledge-hub/asset-2016> (last visited January 14, 2021).
- [4] Robert Bryant, Ron Buckmire, Lily Khadjavi, and Douglas Lind, *The origins of Spectra, an organization for LGBT mathematicians*, *Notices Amer. Math. Soc.* 66 (2019), no. 6, 875–882. MR3929579
- [5] Anthony Bonato, Juliette Bruce, and Ron Buckmire, *Spaces for all: the rise of LGBTQ+ mathematics conferences*, *Notices Amer. Math. Soc.* 68 (2021), no. 6, 998–1003. MR4270414

⁵Interestingly, the pronouns E/Em/Eir were introduced, or at the very least partially popularized, by mathematician Michael Spivak in his 1983 book *The Joy of TeX* published by the American Mathematical Society.

⁶Bonus activity: if your university uses online learning platforms like Canvas, consider seeing if you can enable your students to optionally share their pronouns if they would like to do so.