

As an educator and academic, I seek to create a safe environment for students to learn and explore. Such an environment, by definition, must be inclusive and welcoming, and it must promote equality and diversity in its members. In this pursuit, I plan to tackle the barriers and inequity that students face by supporting current students from marginalized backgrounds through academic mentorship and empowering future generations of students through outreach.

I grew up in a middle-class immigrant family with well-educated parents. From a young age, I learned the importance of hard work and persistence for achieving success. While these values are undeniably important for success, they do not account for the myriad factors that are outside of one's control. It wasn't until I entered college that I learned about the numerous barriers that some of my peers faced but I was never aware of and the various privileges that I enjoyed that many others did not share. I became even more aware of these disparities in 2020, when I heard numerous stories of the struggles that some racial minorities face both in the context of pursuing education and in their daily lives. Since then, I have been motivated to use my privilege and opportunities to help those from less advantaged backgrounds.

I will use my academic position to support students from all backgrounds, especially marginalized ones. An important way that I hope to do this is through mentorship. As a UCLA Ph.D. student, I participated in and served on the committee of the directed reading program (DRP). The DRP aims to expose undergraduates to advanced topics in mathematics by pairing them with graduate-student mentors to do independent reading projects. Because of its individualized nature, the DRP is inclusive to students with heterogeneous levels of mathematical maturity and backgrounds. I have guided my DRP students to explore topics related to my research, including topological data analysis (TDA) and models of opinion dynamics. My students have had a wide range of background knowledge; some have taken multiple graduate-level courses while others have only started taking proof-based courses. I suggested reading projects to students based their interests and mathematical background, while also helping students to bridge gaps in their mathematical understanding. I also extend opportunities for interested students to do research on the areas that they read about. The majority of students that I have mentored have been women. I will continue to mentor undergraduate students after finishing my Ph.D., and I expect that many of these students will come from marginalized and underrepresented groups.

In addition to supporting current students, it is important to empower futures ones. In many ways, starting at the college level to address the inequity that marginalized groups face is too late. By then, a student would have already spent their formative years under its effect. An important way to address this inequity is by performing outreach to students before they enter college. During my time as Ph.D. student, I (along with colleagues in my research group) wrote an article on models of opinion dynamics [1] for *Frontiers for Young Minds*, an expository journal that targets middle-school and high-school students. In the future, I plan to write similar expository articles to spark interest in a younger audience. I also hope to participate in other outreach activities. For example, I hope to participate in outreach programs to K–12 schools, particularly in low-income areas, to discuss a research career in mathematics and academia in general. Such a program can help inform students about the possibility of mathematics research (and research in general) and inspire interest for such pursuits.

I hope to use my position in academia to help uplift students from all backgrounds, especially marginalized ones, and I believe mentorship and outreach are powerful and far-reaching tools to do this. I look forward to partnering with faculty and students alike in the pursuit to tackle inequity and promote a more inclusive environment in academia.

References

- [1] G. J. Li, J. Luo, K. Peng, and M. A. Porter. Using mathematics to study how people influence each other's opinions, 2023. arXiv:2307.01915.