Building Community with COSMOS

Oscar Bender-Stone and Clyde Kertzer

Escaping a cold winter's day at the University of Colorado Boulder (CU), students ascend the stairs of the math building, reaching the top floor to enter Room 350. Just then, Oscar Bender-Stone, a volunteer (and one of the authors of this article), starts the panel, asking the panelists about how they approach research. The panel features several captivating professors, whose specialties range from topology to probability. They provide fascinating insights into how they approach research and the importance of collaboration and working through failure. The event marks another milestone for COSMOS, an organization dedicated to empowering students of all backgrounds. Today, Oscar (now Math COSMOS President), Clyde Kertzer (Student Leader for COSMOS and co-author of this article), and the rest of their team work together to create a welcoming environment for all students.

COSMOS (Community of Support for Marginalized Students) started out in the Physics department, and thanks to Matt Guerrero (University of Rochester) and Tianna Juárez (Villanova University), expanded to include mathematics students and faculty. In his freshman year, Oscar learned about this opportunity through Professor Marcos Mazari-Armida (now at Baylor University). Professor Mazari-Armida was one of the first cosponsors of Math COSMOS, along with Professor Padi Fuster (CU). The first meeting started as a Math Estimathon, where students paired up to devise strategies to estimate some crazy quantities (including the number of piano tuners in the United States and the number of bugs on the planet). COSMOS provided the support and structural elements that allowed Oscar, an autistic introvert, to form life-long friendships and more fully engage socially with his local mathematical community.

Clyde went to his first meeting in his sophomore year. He recalls asking the panel of professors and graduate students about planning and preparing graduate school applications, as well as what life was like as a graduate student. At later meetings, he quickly met other math majors at CU and started finding his place in CU's math community. Later, Clyde took classes with other COSMOS members and began to foster relationships outside of regular meetings. COSMOS was the catalyst for several lasting relationships he made at CU, as well as several engaging opportunities. He learned that he could sign up for CU's Math Research Experiences for Undergraduates (REU), where he could work with an exciting group of students and present his findings at weekly lunches. He also learned about the Experimental Math Lab, providing a chance to actively explore various mathematical topics. Clyde took advantage of these opportunities and went on to successfully disprove a conjecture with his REU group. Ultimately, Clyde found that COSMOS was a place that centralized departmental information and made it easy to know what opportunities, both academic and social, he had at CU.

In our current leadership roles, we strive to provide even more opportunities for students and help them get involved in mathematical research. Mathematical research can seem difficult to break into as an undergraduate. REUs often require an extensive mathematical background and students might feel self-doubt about their abilities and how they might compare to their peers. However, engaging with the Experimental Math Lab, attending panels, and having open communication with professors helps to remove these barriers.

Additionally, COSMOS helps build and strengthen connections between professors and students. Clyde, for example, met Professor Kate Stange in a graduate panel. He later worked with her REU group, had her as a thesis advisor, and is currently working with her as a cosponsor of COSMOS. Interacting with professors in an environment outside of the classroom in a more collegial manner allows students to see professors more as potential friends and colleagues instead of only superiors.

COSMOS values building a wider mathematical community. By better fostering informal events, panels, and research opportunities, mathematicians can connect from all walks of life, no matter where they are.

If programs like COSMOS exist on your campus, students should take advantage of them. If there are no such programs, take the initiative and create the type of welcoming environment that you would like to be part of. Ask a faculty member or two to help as well! ●

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