Redesigning STEM Curricula to Create Equity in Undergraduate Research Opportunities

STEM programs in higher education often experience significant attrition, with minoritized students leaving at a disproportionate rate. Undergraduate research is a high-impact practice that promotes inclusion, engagement, and persistence in STEM majors; however, these opportunities are typically limited and open only on a volunteer basis. The TRIUNFOS program, a $5M grant from the US Department of Education, aims to address these challenges by transforming our STEM programs at the institutional level. My role in this project is to create long-term, authentic research experiences for all students in STEM majors. I have integrated my laboratory’s research into a pre-matriculation summer “bridge” program, a first-year seminar course, and a Microbiology laboratory run as a semester long research project. I am currently developing the framework for a longitudinal, interdisciplinary, peer-mentored research course that STEM students will take to fulfill laboratory requirements in their degree programs. When fully implemented, this program will remove the barriers that prevent participation in research, foster a sense of belonging, and provide students with a sense of identity as scientists.