

**Advancing SIUC's Leadership in Inclusive Chemistry Academic Success**  
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**Abstract**

This project will determine factors impacting the academic course outcomes of racially/ ethnically diverse students in one of SIUC's gateway courses for some science, technology, engineering, and mathematics (STEM) majors, *CHEM 200: Introduction to Chemical Principles*. STEM course instruction is the most cited reason for leaving STEM given by undergraduate students. And nationally, for decades, students of color have departed from STEM at disproportionately higher rates than their White and Asian peers. Trends within SIUC's CHEM 200 courses from Spring 2017 reflected this racial inequity; making the course a gatekeeper rather than a gateway to STEM careers for SIUC's Black and Latinx students. However, a redesign of the course in Spring 2018 using a flipped model of instruction closed the racial/ethnic achievement gap observed in Spring 2017. At the time, it was the first chemistry undergraduate flipped model reporting inclusive racial/ethnic course outcomes in the literature. This project will implement a series of regression analyses using 5 years of course data to determine whether this gap remained closed in subsequent pre- and pandemic semesters and elucidate moderating factors impacting flipped CHEM 200 course grades for racially/ethnically diverse SIUC students. Moderating factors explored will include income, sex, high school grade point average, major, and CHEM 200 attendance. This study is the first of its kind in the national chemical education community and will maintain SIUC at the national forefront of inclusive chemistry gateway course academic success.