

Community Based Science Outreach to Drive Curricular Development and Outcomes  
in Science Technology Engineering and Mathematics Education

**Abstract:** Community colleges represent an affordable and accessible entry point for both high school students and adults. The City Colleges of Chicago (CCC) as a seven college district annually serves more than 120,000 students in college credit and adult education programs. Similar to many other urban areas, CCC faces tremendous challenges with the need for remedial education. On average, nearly 90% of students entering college immediately following graduation from the Chicago Public Schools (CPS) require remediation in Math, while another 80% require remediation in English and Reading. While CCC may endeavor to increase the number of students graduating with an associate's degree and/or transferring to a four year college's program in Science Technology Engineering or Math (STEM), strong remedial needs make this a daunting task. Leaving high school with college-ready skills can put a student a clear path towards degree attainment and employment. Remedial needs, however, significantly diminishes their opportunities for success. One strategy for making improvements in this area is to participate in early science outreach, engaging current STEM students and faculty to inspire k-12 students and teachers. Out of School Time (OST) is a promising vehicle for enhancing in-class performance as evidenced by the efforts of many organizations in the area. Exploring interests through informal science education channels gives student the opportunity to practice science without high stakes testing in an open inquiry-based environment. Similarly, educators may also participate in authentic scientific research such as the Research Experience for Teachers (RET) program to enhance their skills, and integrate aspects of laboratory research into the traditional classroom. Community Colleges such as CCC leverage their accessibility and economic value to support and sustain outreach activities that support classroom based learning outcomes.

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