

# **Stony Brook University The Graduate School**

## **Doctoral Defense Announcement**

### **Abstract**

Factors that Influence Community College Students' Interest in Science Coursework

By

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There is a need for science education research that explores community college student, instructor and course characteristics that influence student interest and motivation to study science. Increasing enrollment and persistence in STEM is a national concern. Nearly half of all college graduates have passed through a community college at some point in their higher education, and these higher education institutions enroll a large talent pool in the STEM pipeline. This study at a large, ethnically diverse, suburban community college showed that interest in introductory biology coursework shifted during the semester and various factors predicted this trend.

This explanatory sequential mixed-methods case study of student course interest utilized quantitative data from a pre-and post- Course Interest Survey ( $N = 636$ ) and a background and personal experiences questionnaire. Qualitative data were collected from 12 students and categorized with extrinsic and intrinsic themes emerging from their personal and academic experiences. Analysis of covariance showed that age and whether the student held a post-secondary degree were significant student characteristics that predicted increased course interest; significant instructor characteristics included part-time status, high school teaching experience, professional degree, and amount of pedagogical training; and course-level characteristics included course type (majors, elective or a service course), whether a library assignment was required, and attrition rates. A binary logistic regression model showed six significant variables that predicted increased course interest: older students, previous degree holders, students enrolled in night courses, having an instructors that taught high school, having a part-time instructor, and students whose career goals were not STEM-related. Qualitative data provided contextual insights for quantitative results. Community college students were affected by past academic experiences and required support and validation from others, particularly their instructors, to increase their interest and motivation to study science.

Findings imply that faculty orientations and professional development interventions should incorporate andragogical training for professors, since their actions and beliefs are a primary influence on student interest in science in community colleges. This study will inform efforts to improve persistence in the STEM pipeline among ethnically and socioeconomically diverse students.

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**Dissertation Advisor:** Angela M. Kelly, PhD

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