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Combining course-based research, high impact educational practices, design thinking and strengths-based coaching to support the next generation of neuroscience researchers

AUTHOR BLOCK: A. CAMARILLO¹, M. DE LA TORRE², P. A. VIEIRA³;

¹Clin. Sci., ²Biochem., ³Psychology, California State Univ. Dominguez Hills, Carson, CA

Abstract:

Historically, there has been a challenge of retaining and graduating students as STEM majors. At CSU Dominguez Hills, a regional, urban, Hispanic-Serving and Minority-Serving Institution with a large number of first-generation college students that receive Pell grants, student persistence and retention is of particular concern. The purpose of this study is to study the efficacy of combining Course-based Undergraduate Research Experiences (CUREs), High-Impact Educational Practices (HIPs), Design Thinking (DT) training and Strengths-based coaching into a First Year Seminar (FYS) course. A diverse group of first-year students from both STEM and non-STEM majors enrolled in a Neuroscience of Hedonism course where they participated in a variety of activities to 1) promote learning of basic neuroscience concepts, 2) conduct a research study using low-cost electrophysiology tools, and 3) support personal

and professional development. In addition to studying long-term effects like student retention and persistence rates, we also measure recruitment of non-STEM majors to STEM majors, science identity/literacy, self-efficacy and a variety of career-related attitudes. This pilot study will provide a framework by which STEM departments can create a survey course to recruit incoming freshmen and encourage retention and persistence in STEM majors and subsequent careers.

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