

**University of California, Irvine
Statistics Seminar**

***Leveraging Statistics to Enhance Discipline-Based Education
Research***

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4 p.m., 6011 Bren Hall
(Bldg. #314 on campus map)**

Effective analysis of “big data” in education research has the potential to transform both research and practice, and has important applications for the already established field of Discipline-Based Education Research (DBER; NRC, 2012), a promising avenue for improving student performance and retention in STEM (García-Peñalvo et al., 2017). Additionally, to improve the quality of DBER we must draw on the expertise of data scientists and statisticians who are trained to study the complexities inherent in education research (Talanquer, 2014). In this presentation, two recent studies will be presented. The first study used change detection techniques to model student engagement in the learning management system (LMS); findings include that increases/decreases in activity with the LMS is related to student success. In the second study, the impact of supplemental instruction (SI) is examined using quantile regression methods. Finally, challenges and opportunities for the development of new statistical methodologies to enhance DBER will be discussed.

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