

1125-N1-1891 **Mairead Greene*** (mairead.greene@rockhurst.edu). *Optimization: Assessing Student Understanding in an Inquiry Calculus Course.*

Mounting evidence relates improvements in student outcomes to active learning approaches to undergraduate STEM instruction (e.g. Freeman et. al., 2014). The challenge of how to support this kind of instructional change presents a pressing open question. We propose sessions in which projects aimed at supporting instructional change discuss their research and work. Optimisation is one of the richest concepts that we encounter in Calculus I. It requires multiple layers of thinking, familiarity with both concepts and skills and an ability to interpret mathematical concepts in applied situations. These components make it a very rich concept in which to study the development of student understanding and evaluate how successful we are at providing the situations necessary for students to develop that understanding. In inquiry Calculus materials I co-wrote with Dr. Paula Shorter (www.iblcalculus.com), we utilize multiple representations to provide a wide variety of opportunities for our students to develop their understanding of optimization earlier than a typical Calculus I course. I will present the results of a detailed assessment of the student work on optimization throughout our materials and illustrate how the assessment results are then used to improve student learning. (Received September 19, 2016)