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Brian Fisher*, brian.fisher@lcu.edu, and **Jason Samuels, Aaron Wangberg** and **Eric Weber**. *Raising Calculus to the Surface: Using Physical Surfaces to Facilitate Inquiry-Based Learning in Multivariable Calculus*. Preliminary report.

One significant challenge in bringing inquiry-based learning materials to multivariable calculus is creating opportunities for students to engage meaningfully with functions of more than one variable. To meet this challenge, we have developed a set of physical surfaces, measurement tools, and corresponding activities that allow students to discover many of the key concepts from multivariable calculus. In this talk we will give an overview of this project, demonstrate how these materials can be used to develop methods for optimizing along a constraint, and share results from students and instructors implementing these materials in their classroom. (This research is funded in part by the National Science Foundation as part of the Raising Calculus to the Surface project, DUE #1246094) (Received September 15, 2014)