

1086-N1-2071 **Sean P. Yee*** (syee@fullerton.edu), California State University, Fullerton, Department of Mathematics, 380A McCarthy Hall, Fullerton, CA 92834. *Improving undergraduate mathematics education using dynamic graphics embedded within WeBWork*. Preliminary report.

This presentation will demonstrate the preliminary results and data collected from collegiate calculus courses taught at Cleveland State University using customizable Adobe Flash Applets in tandem with WeBWork problems. These applets have multiple uses to scaffold students' understanding of conceptually rigorous topics such as limits in single variable and multivariable calculus. This is done using dynamic, motion-based applets embedded within the problems as an optional means of supporting conceptualization. Additionally, these applets give the student more freedom to explore problems by manipulating multiple variables, offering students a virtual learning experience. From a curriculum perspective, this software offers students a novel medium to develop a cognitively embodied understanding of calculus. The presentation will demonstrate examples of the applet as well as report on preliminary data from this NSF-funded study. (Received September 24, 2012)