

1116-VR-1393 **Richard G Chandler*** (richard.chandler@mavs.uta.edu). *Enhancing the Instruction of Multivariable Calculus using Dynamic Visualizations*. Preliminary report.

The benefits of visualization in the teaching of calculus to undergraduates has been a topics of research for some time. In particular, it has been shown that dynamic visualizations have aided students in understanding the ideas of limits, derivatives and integration in single-variable calculus. However, the need for dynamic visualizations can be realized again when students begin studying multivariable calculus. In this settings, students must not only apply concepts they learned in single-variable calculus, but they must do so while visualizing and interpreting surfaces and curves in 3-space for the first time. In this talk, we will look at some specific dynamic visualizations and animations, created using the open-source software Geogebra, that were used in a multivariable calculus class and discuss how they improved the students understanding over the course of the semester. (Received September 19, 2015)