1135-97-2339    **Paul E. Seeburger\*** (`pseeburger@monroecc.edu`), 1000 E. Henrietta Rd., Rochester, NY 14623, and **Monica VanDieren** (`vandieren@rmu.edu`) and **Deborah Moore-Russo** (`dam29@buffalo.edu`). *Improving Conceptual Understanding of Multivariable Calculus & Differential Equations Through 3D Visualization Using CalcPlot3D.* Preliminary report.

A presentation of CalcPlot3D, an interactive online 3D JavaScript app designed to enhance the teaching and learning of multivariable calculus, differential equations, linear algebra and other related topics. CalcPlot3D brings the concepts of these courses to life, making it easy to visually explore the concepts and relationships between them. Through visual verification and exploration of problems involving surfaces, contour plots, curves, velocity and acceleration, directional derivatives, gradients, vector fields/phase portraits, etc., our project seeks to improve students' geometric intuition so they more fully understand the application of these concepts in other STEM coursework.

In addition to the creation of this app, our project seeks to create a series of new visual concept explorations to improve student understanding of multivariable calculus, differential equations and linear algebra and to use the app to conduct research investigating how student understanding of these concepts changes through the use of visualization and dynamic concept explorations.

CalcPlot3D also supports 3D glasses and facilitates the generation of 3D printed surfaces. See http://web.monroecc.edu/calcNSF/. (Received September 26, 2017)