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David Brian Williams* (davidwilliams@clayton.edu), Department of Mathematics, Clayton State University, 200 Clayton State Blvd, Morrow, GA 30260. *Using Maple to Enhance Understanding of 3D Problems in Multivariable Calculus Courses*. Preliminary report.

Understanding the geometry of 3D space is essential for success in multivariable calculus. Intuition about 3D space can be developed many ways, but often a tangible (i.e. visible) result is required to seat understanding. In this talk, the author will briefly discuss two topics: the Frenet-Frame for space curves and constrained optimization with Lagrange multipliers. Prototypical, classroom-ready examples will be used. It will be shown how conclusions and generalizations can be visually and algebraically reinforced with judicious use of Maple. (Received September 20, 2007)