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**Sharon L Crumpton\*** ([sharon.crumpton@belmont.edu](mailto:sharon.crumpton@belmont.edu)), Mathematics Department, Belmont University, 1900 Belmont Blvd, Nashville, TN 37212-3757. *Using Models to Help Students Understand Calculus Topics.*

Many excellent calculus students have trouble understanding topics in three dimensions. One reason for this difficulty is that three dimensional models are drawn in two dimensions, which results in models that are difficult for students to understand. The use of three dimensional models can help students understand many topics in multivariate calculus. Models from the following list of topics will be presented: graphs of quadric surfaces, the graph of a helix, level curves, partial derivatives, tangent planes and linear approximations, directional derivatives, and multiple integrals. Clay, index cards, potato chips, straws, blocks, and other materials will be used to model various topics. If possible, participants will be able to make some of the models. (Received August 26, 2011)