1014-U1-74      **David M Strong\*** (`David.Strong@pepperdine.edu`), Natural Science Division, Pepperdine University, 24255 Pacific Coast Highway, Malibu, CA 90263. *Two hands-on demos for teaching about centroids in Calculus.*

In my integral Calculus courses, I use two hands-on demos to help students learn about and experiment with centroids. The first demo is a metallic square (an L-shaped ruler), which has a hole drilled into its corner from which it is hung. I have the students determine mathematically where the hole should be so that the square would be level when hanging, and then we see if the hole is indeed put in the right spot. The second demo is a set of function-generated shapes (e.g. the area between the $x$ axis, the line $x = 1$, and the curve $y = x^2$) for which the students can find the centroid both experimentally, by trying to find the spot at which the shape balances (e.g. on the top of a pencil eraser), as well as analytically, by doing the math to find the exact location of the centroid. Both demos are simple, and it is fun for the students to be able to literally get their hands on an examples of the calculus ideas they are learning. In my talk I will give a brief summary of the mathematical work done in finding the centroids in both examples, and I'll discuss my use of the demos in class. (Received July 18, 2005)