1067-E1-1482   **Sharon S. Emerson-Stonnell*** (`emersonstonnellss@longwood.edu`), Mathematics Department, Longwood University, Ruffner 333, Farmville, VA 23909. *"Practicing What We Preach" in Multivariable Calculus.* Preliminary report.

NCTM has six principles and ten standards for mathematics in grades 9-12. This presentation will address how two of the principles, curriculum and learning, and three of the standards, reasoning and proof, communication, and connections, can be modeled in multivariable calculus. Longwood University offers a four-credit class that is offered in a lecture and class discussion format three days a week and lab format one day a week. The course is designed primarily for mathematics, physics, and pre-engineering majors. The three-dimensional geometry taught in the course allows a unique opportunity to connect to the high school topics of measurement and conic sections. Through labs developed for multivariable calculus, students' experiences in high school are used as an introduction to those same concepts in three-dimensions and higher. Groups of are encouraged to look for patterns, determine whether or not the pattern always holds, and support their thoughts through mathematical reasoning. This presentation will share some of these labs and how they are used throughout multivariable calculus. (Received September 21, 2010)