

1056-Z1-1152

**Galen E. Turner\*** (gturner@LaTech.edu), P.O. Box 10348, 600 W. Arizona Ave., Ruston, LA 71272, and **James D. Nelson, Kelly B. Crittenden** and **Jane A. Petrus**. *A model for high-school teacher professional development and student learning.*

This paper describes a model that can be readily adapted by other universities seeking meaningful partnerships with K-12 schools. In this program, university engineering and science faculty work collaboratively with high school teachers to present challenging engineering design projects to high school students.

Our program consists of a series of Teacher Workshops for high school teachers, each followed by a Discovery Weekend with their students, and culminating in a challenge weekend. Each project includes a thorough integration of mathematics, science and engineering, thereby leading to a much deeper understanding of how the mathematics and science topics taught in high school are related to engineering design. This approach has led to increased confidence in the high school teachers, increased interest in STEM topics among the students, and a heightened awareness of the role of mathematics in solving real problems facing our society. The collaboration between university faculty and high school teachers maximizes the benefit to the students by having both their regular teachers and university faculty directly involved in their projects. It also demonstrates to the students how diverse teams can often provide better solutions to problems. (Received September 21, 2009)