1086-D5-2409   **Erica Slate Young*** (`erica.slate@uah.edu`) and **Jack Bookman** (`bookman@math.duke.edu`).
Use of 3D Modeling Software in Undergraduate Math and Science Courses: Lessons Learned From Implementation Research.

The software featured in this talk is DIYModeling, developed as part of a multi-institution, NSF-funded Phase 2 TUES project. This software enables students to build 3D simulations by concentrating entirely on the underlying science and mathematics instead of spending time programming or using software to create/display 3D images. Students building such simulations can learn a great deal about science and mathematics by building the models underlying simulations, by using the simulations to explore the implications of their models, and, when possible, by validating their models against experiments, observations, and data. The purpose of this paper is to discuss the results of implementing DIY modules at some of the participating institutions (USMA, USAFA, Emporia State & Georgia Gwinnett College). We will describe the different ways we have observed DIY used, both in and out of the classroom, such as teacher demonstration, student use of pre-built simulations to explore parameters or to check their work, and student construction of simulations using their own mathematical models. We will highlight both the successes as well as the lessons learned and also examine possible future research questions stemming from this project. (Received September 25, 2012)