

1023-M5-1779      **Joseph M Lindquist\*** ([joseph.lindquist@usma.edu](mailto:joseph.lindquist@usma.edu)), Department of Mathematical Sciences, United States Military Academy, West Point, NY 10996, and **James Dzwonchyk** ([james.dzwonchyk@usma.edu](mailto:james.dzwonchyk@usma.edu)), Department of Mathematical Sciences, United States Military Academy, West Point, NY 10996. *Modeling with Functions: A Student Centered, Discovery Approach.*

The United States Military Academy requires all graduates to complete at least four semesters of a broad based core mathematics curriculum. This core begins with a course in Mathematical Modeling that sets the stage for further study in differential and integral calculus and statistics coursework. In addition to a primer in linear algebra and discrete dynamical systems, the course also provides students an opportunity to model behavior empirically, focusing on topics of student interest. If a student has a desire to research the rushing career of their favorite NFL running back, they are encouraged to find the applicable data and model the data using techniques learned in class. Since all students, regardless of their interest in mathematics, are required to take this course, traditional instruction in functional modeling is augmented with discovery opportunities using web based experiences. These experiences allow students to vary parameter values in order to visualize the underlying mathematics at work. This session will discuss this student centered / discovery based approach to modeling with functions. (Received September 26, 2006)