1023-F1-1718 **Erica Slate Young*** (Erica.Young@usma.edu). *Data Exploration and Modeling in a College Algebra Course: Use of Heart Rate Data to Investigate Recovery Time of Athletes.*

At the U.S. Military Academy, mathematical modeling is emphasized throughout the 2-year core mathematics program. In order to incorporate data analysis and modeling, one task given to freshmen at USMA was to investigate the cardiovascular fitness level of an athlete. A measure of cardiovascular fitness is how quickly the heart rate returns to normal, or what we will call the "sedentary heart rate," after exercise. For some individuals, the rate of change will be more significant than for others. Students collected heart rate data in class from a test subject for 3 minutes after intense exercise and then spent time outside of class developing models that would help predict the recovery time of the subject. Students were expected to develop two models and then evaluate the models based on SSE, predictive power and other techniques. The task proved to be quite useful in getting students to explore the data, to think about what reasonable models would be, to learn what thoughtful model evaluation consists of. This paper will discuss the benefits of using "real" data in a college algebra class, as well as the mathematical concepts that were brought to light for the students as a result of this particular task. (Received September 26, 2006)