1067-Z1-1760 **Emese Lipcsey-Magyar***, ealipcse@ncsu.edu, and **Ava Hamilton**, **Rachel Roe-Dale**, **Kimberley Frederick** and **Katherine Roguski**. *Modeling Time-Dependent Electroosmotic Flow.* Preliminary report.

Capillary Electrophoresis (CE) is a new analytical chemistry technique that is faster, requires less sample, and generates less chemical waste than conventional methods. CE separations have a higher separation resolution than current technology and would therefore improve pathogen screenings and other blood tests. One of the major downfalls of CE is the presence of irreproducible Electroosmotic Flow (EOF). EOF is the velocity of liquid through a glass capillary when an external potential is applied. In order to predict trends in EOF, a mathematical model is needed. A biexponential function, the sum of two exponential terms, is predicted to best model EOF during discontinuous buffer conditions. Several data sets were collected and analyzed to verify this prediction. The presentation will highlight our methods of analysis including parameter estimation and residual analysis. (Received September 21, 2010)