1056-65-1916   **Glenn Steven Young*** (`younggs@jmu.edu`), 1801A Putter Court, Harrisonburg, VA 22801, and **Anthony L Tongen**, **Nina Bence** and **Corey Cleland**. *Mathematical Modeling of Tail Movement.*

Our research focused on quantifying the relationship between stimulus location and withdrawal reflex in spinalized rats' tails. Using a system of differential equations, we modeled the tail as an eleven-segment spring-mass system, with the length, mass, spring constants, and damping coefficients determined experimentally. We then solved the system of differential equations numerically to reproduce the behavior of the tail. The numerical method implemented was developed by Ed Parker and Jim Sochaki at James Madison University, and uses a modification of Picard's method to produce the power series solution. (Received September 22, 2009)