1035-92-449   **R. Drew Pasteur*** (`rdpasteu@math.ncsu.edu`), Department of Mathematics, Box 8205, NC State University, Raleigh, NC , and **James F. Selgrade** (`selgrade@math.ncsu.edu`). *Dynamical Behavior of a Two-Inhibin Model for Hormonal Control of the Menstrual Cycle.* Preliminary report.

In recent years, two forms of inhibin, a hormone important in the human menstrual cycle, have been separately assayed. Using data that includes both forms of inhibin, we expand an existing delay differential equation model of the menstrual cycle to more fully account for the effects of both inhibins. Having fit the data to this new model, we discuss the existence and stability of equilibrium and periodic solutions, and conduct a bifurcation analysis. We consider the effects of exogenous hormones, modeling both pharmacological and environmental hormone exposure. Finally, we discuss the effects of age-related hormone production changes on the menstrual cycle. (Received September 09, 2007)

1