

1023-34-209

**Jonathan Adler, Lynne Erickson, L. Thomas Hill and Kristen Mazur\***  
(mazurk@lafayette.edu), Farinon Center Box 7337, Lafayette College, Easton, PA 18042, and  
**Thomas Tyrrell.** *Delay differential equations modeling vertically transmitted diseases.* Preliminary report.

Systems of differential equations modeling the transmission of diseases that involve either a maturation delay or a partial immunity are analyzed. Under mild conditions on the model parameters, the systems have nontrivial equilibria which are asymptotically stable for small values of the delay. Sufficient conditions for the nontrivial equilibrium to be asymptotically stable for all values of the delay are given. In addition, bifurcations to stable periodic solutions are illustrated. (Received August 24, 2006)