1067-R1-380 **Michael Huber*** (huber@muhlenberg.edu), Department of Mathematics & Computer Science, Muhlenberg College, Allentown, PA 18104. *Modeling Malaria in Central America.* Preliminary report.

Malaria is endemic to more than 100 countries and territories worldwide and although the disease is predominantly found in the tropic and subtropic regions (more than 90% of malaria cases occur on the African continent), there is a significant risk associated with parts of the Pacific, Latin America, and Asia. This presentation will outline a course project which involved three approaches to studying the effects of malaria in Central America. First, we considered the pharmacokinetics of the chemoprophylaxis, an exponential decay problem. Next, we studied a compartmental model (known as SIRS), as susceptible individuals are repeatedly infected, recover, enjoy temporary immunity, and again become susceptible. Finally, we considered the nonlinear coupled equations for humans and mosquitoes, which assume that the transmission of plasmodium, both from mosquito to man and from man to mosquito, will depend jointly on the number of susceptible and infected population of each species. This project, used in an introductory ODEs course, encouraged students to develop appropriate models and solve them using various techniques, with the aid of a CAS. (Received August 30, 2010)