1035-34-619 **Bassidy Dembele***, Department of Mathematics, Howard University, Washington, DC 20059, **Avner Friedman** (`afriedman@mbi.ohio-state.edu`), Mathematical Bioscience Institute, Ohio State University, Columbus, OH 43210, and **Abdul-Aziz Yakubu** (`ayakubu@howard.edu`), Mathematics Department, Howard University, Washington, DC 20059. *Malaria Model In Seasonal Environments.* Preliminary report.

In this work, we introduce a model of malaria, a disease that involves a complex life cycle of parasites, requiring both human and mosquito hosts. The novelty of the model is the introduction of periodic coefficients into the system of ODEs, which accounts for the seasonal variations (wet and dry seasons) in the mosquito birth rate as well as in the human and mosquito infection rates. We define a basic reproduction number R0 which depends on the periodic coefficient and prove that if R0<1 then the disease becomes extinct, whereas if R0>1 then the disease is endemic and may even be periodic. (Received September 12, 2007)