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Jeremy J. Thibodeaux* (jthibodeaux@ucok.edu), University of Central Oklahoma,
Mathematics Department, 100 N. University Dr., Edmond, OK 73034. *A Mathematical Model of
Erythropoiesis Subject to Malaria Infection.*

There have been numerous mathematical studies on the dynamics of erythropoiesis. The same can be said of the dynamics of malaria infection within a particular host. In this study, we develop a mathematical model of erythropoiesis under the influence of malaria infection. The model takes the form of six coupled equations. Two are first-order, hyperbolic, partial differential equations describing the precursor and mature erythrocyte populations. The remaining four are ordinary differential equations describing the erythropoietin concentration, the parasite population, the infected erythrocyte population, and the body's immune response. (Received September 16, 2008)