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Richard C. Schugart* (rschugart@mbi.osu.edu), Mathematical Biosciences Institute, The Ohio State University, 376 Jennings Hall, 1735 Neil Ave, Columbus, OH 43210, and **Avner Friedman, Rui Zhao** and **Chandan K. Sen**. *A mathematical model for wound angiogenesis as a function of tissue oxygen tension.*

Wound healing represents a well-orchestrated reparative response that is induced by injuries. Angiogenesis, the formation of blood vessels from existing vasculature, plays a central role in wound healing. In this talk, I will present a mathematical model that addresses the role of tissue oxygen tension in cutaneous wound healing. Key components of the developed model include capillary tips, capillary sprouts, fibroblasts, inflammatory cells, chemoattractants, oxygen, and the extracellular matrix. The model consists of a system of nonlinear partial differential equations describing the interactions in space and time of the above variables. The simulated results agree with the reported literature on the biology of wound healing. The proposed model represents a useful tool analyze strategies for improved healing and can be used to generate novel hypotheses for experimental testing. (Received January 11, 2008)