

Richard Schugart

WESTERN KENTUCKY UNIVERSITY
e-mail: richard.schugart@wku.edu

Jennifer Flegg

QUEENSLAND UNIVERSITY OF TECHNOLOGY
e-mail: j.flegg@qut.edu.au

D.L.S. McElwain

QUEENSLAND UNIVERSITY OF TECHNOLOGY
e-mail: s.mcelwain@qut.edu.au

**Using mathematical modeling to assess the efficacy of
oxygen for problem wounds: use of hyperbaric or topical
oxygen therapies**

We extend a previously developed mathematical model [1] for acute wound healing to investigate the application of hyperbaric and topical oxygen therapies to treat acute, delayed, and chronic wounds. In this talk, I will present the model, a sensitivity analysis of the model, and simulation results for treating the wound with hyperbaric and topical oxygen therapies.

REFERENCES

- [1] R.C. Schugart, A. Friedman, R. Zhao, C.K. Sen, *Wound angiogenesis as a function of tissue oxygen tension: a mathematical model* PNAS USA **105** 2628–33.