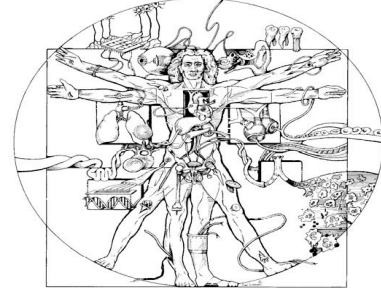


Biomedical Engineering Seminar

**Monday, October 5, 2009
2:00 pm
Keating 103**



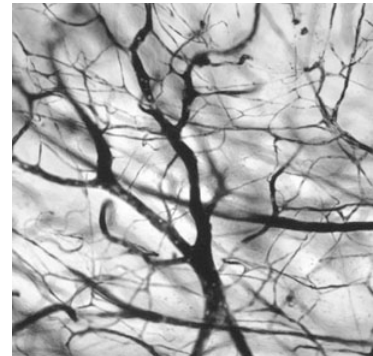
Jay Hoying, Ph.D.

Professor and Chair, Division of Cardiovascular Therapeutics
Cardiovascular Innovation Institute
Louisville, KY

“Manipulating the Microcirculation”

Abstract

The importance of an effective vascular supply for tissue health is universally accepted. In developing strategies to repair or reconstruct damaged or dysfunctional microvasculatures, it is important to consider that vascular stability depends not only the integrity of the individual vessel elements, but also the stability of the vascular network. We have found that new microvessels formed in vitro will spontaneously progress to form a stereotypical microcirculation when implanted in vivo. There is a phase in this progression during which new vessel elements are organizing into a new network of heterogeneous vessels. Interestingly, this apparently transitional phase is analogous to many of the abnormal microvascular beds that persist in pathological conditions. Successful progression through this phase appears to require blood flow. Therefore, hemodynamic input appears necessary in order for new microvessels, including those assembled in vitro, to successfully form a stable network. Consequently, we are developing a bioreactor system to support the formation of microvascular networks in vitro as well as establish intravascular perfusion through the network.



Additional information is available at <http://hoyinglab.com>.

Host: Marty Pagel, Ph.D. (404-7049)

Persons with a disability may request a reasonable accommodation by contacting the Disability Resource Center at 621-3268 (V/TTY). Requests should be made as early as possible to allow time to arrange the accommodation.