Paul Millhouse

CURRENT PROJECTS:

Spinal Cord Injury Repair:
As neuronal cells do not effectively regenerate, no cure currently exists for a spinal cord injury. Co-culturing neuronal cells and ECs would promote angiogenesis in aligned 3-D scaffolds. With the guidance of the longitudinal pores of these scaffolds, neuronal guidance and axonal connections throughout the injured spinal cord tissue could be improved.
Immediately, this research project involves controlling polymer freezing rates for precise pore formation. Eventually it will be of interest to grow neuronal cells through the pores and implant in vivo.

Vascular Graft:
Create a small diameter vascular graft from electrospun fibers.

Coated Stents:
A stent coated with polycarbonate urethane (PCU) could increase biocompatibility. This project involves experimentation with various methods of application of PCU, including electrospinning, dipping and dripping.