

Career Development Plan: Mathias

Systems Biology

- Mass-spec and mitochondrial metabolomics – interface of metabolic intermediates as signaling molecules in developmental redox biology
- RNA-seq
- Proteomics

Cell Biology

- PA endothelial and smooth muscle cell isolation and culture
- Vascular endothelial migration assays “growth”
- Vascular endothelial integrity assays “function”
- Live imaging of redox function and/or compartment specific GSSG:GSH ratios

Animal or Organoid Models of Developmental Biology on Placental-Fetal Axis

- Lung organoids in 3D culture
- Transgenic mouse models of placental vascular disease

A neonatologist and independent scientific investigator with expertise in developmental pulmonary vascular redox physiology on the placental-fetal axis.

