The concentration in Cardiovascular Physiology is designed to ensure broad training in physiology with major research interests in vascular biology, hypoxia, hypertension, sleep apnea, pulmonary hypertension, heart disease, chronic kidney disease, and stroke. Trainees are supported by a NHLBI-funded Cardiovascular Training Grant.

- Role of the adaptive immune system in chronic hypoxia-induced pulmonary hypertension
- Role of smooth muscle NFATc3 in chronic hypoxia-induced pulmonary hypertension
- Effectiveness of endothelin antagonists to prevent and treat kidney disease in an animal model of combined sleep apnea and chronic kidney disease
- Biomarkers of hypoxia exposure

- Effect of sleep apnea on progression of chronic kidney disease
- Hydrogen sulfide in sleep apnea induced hypertension
- Effectiveness of endothelin antagonists to prevent and treat kidney disease in an animal model of combined sleep apnea and chronic kidney disease.
- Development of a non-invasive screening device for peripheral vascular disease

- The role of membrane cholesterol in the regulation of vascular ion channels
- The role of microdomain [Ca^{2+}]i events within smooth muscle and endothelial cells in vascular function
- The consequences of impaired oxygenation (hypoxia) on vascular function in both the systemic and pulmonary circulations.

- Mechanisms of chronic hypoxia- and intermittent hypoxia-induced pulmonary hypertension
- Pulmonary vasoreactivity
- Endothelial regulation of vascular tone
- Regulation of vascular smooth muscle by reactive oxygen species, nitric oxide, RhoA and PKC signaling

Biomedical Sciences Graduate Program

Advanced Cell Biology (Biomed 508)
Graduate Physiology (Biomed 510)
Experimental Design and Methods in Cellular and Molecular Biology (Biomed 622)
Advanced Topics in Physiology (Biomed 657)
Structure and Function of the Cell Nucleus (Biomed 672)
Cardiopulmonary Physiology Seminar (Biomed 659)

Advanced Cell Biology (Biomed 508)
Experimental Design and Methods in Cellular and Molecular Biology (Biomed 622)

Cardiopulmonary Physiology Seminar (Biomed 659)