DEPARTMENT OF INTERNAL MEDICINE  
COLLEGE OF MEDICINE  

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN  

APPLICATION DEADLINE: 03/01/2019  

PROJECT TITLE: Oxygen Scavenging in Whole Blood for Reperfusion Injury  

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Project Description  

Ultrasound can be used to phase-transition perfluorocarbon droplets into gas microbubbles. These microbubbles are potent sinks for dissolved gases in the surrounding fluids. We have demonstrated this effect in buffers. This project would systematically investigate the ability to scavenge dissolved gas, particularly oxygen, from whole blood. The presence of hemoglobin modifies the scientific problem significantly from our past studies in buffers. The translational goal this project is to enable controlled hypoxic reperfusion of tissue following an ischemic event in order to reduce reperfusion injury.