PROJECT TITLE: Assessment of Cavitation from Lantheus Echo Contrast Agents

Physical Requirement: Must be able to work in person in the UC Cardiovascular Research Center

Project's Technical Skills Requirement: Matlab, instrument control, data acquisition skills, and enthusiasm for experimental research

Project's Available Positions: Student research assistant

Christy K. Holland, Ph.D.
Professor
Internal Medicine, Division of Cardiovascular Health and Disease and Biomedical Engineering
University of Cincinnati Cardiovascular Center 3935 231 Albert Sabin Way Cincinnati, Ohio 45267-0586

https://www.med.uc.edu/ultrasound
office: +1 513 558 5675
fax: +1 513 558 6102

Project Description

In a project funded by Lantheus, a pharmaceutical company that provides innovative diagnostics and targeted therapeutics to empower clinicians to find, fight and follow disease, we will quantify bubble activity, or cavitation, nucleated by DEFINITY® and a prototype contrast agent with a smaller mean size distribution. The UC Co-op student will evaluate the amount of stable and inertial cavitation nucleated by Definity® and a prototype contrast agent infused through a Cragg-McNamara multi-sideport catheter and exposed to 1.5 MHz pulsed ultrasound in a physiological flow model of the human femoral vein. The number density and size distribution of the agents before and after infusion will be measured. Image guidance with B-mode ultrasound and passive cavitation imaging will be used for quantitative assessment of bubble cloud activity produced by a 1.5 MHz transducer array. Bubble activity will be monitored and quantified using passive cavitation imaging. Mentorship and training will be provided to the URCF student.