BIOMEDICAL ENGINEERING
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

APPLICATION DEADLINE: 12/01/2022

PROJECT TITLE: Ultrasound image guidance of minimally invasive therapy

Physical Requirement: No special requirements
Project's Technical Skills Requirement: Desirable skills include programming in MATLAB (C, Python, and microcontroller experience also potentially helpful), CAD design for 3D printing, and experiments with bioinstrumentation or general test and measurement equipment.
Project's Available Positions: Full-time research co-op

T. Douglas Mast
Professor of Biomedical Engineering
University of Cincinnati
3938 Cardiovascular Research Center, ML 0586
231 Albert Sabin Way, Cincinnati, OH 45267-0586
(513) 558-5609 tel., (513) 558-6102 fax
doug.mast@uc.edu

Project Description

Research co-op fellowship in a Biomedical Engineering lab located in the Cardiovascular Research Center on UC's medical (East) campus. Our research is on novel ultrasound methods for image-guided therapy. Major projects include echo decorrelation imaging for real-time guidance and control of thermal ablation in cancer and cardiac therapy, and ultrasound detection of tongue motion for biofeedback in speech therapy, as well as characterization of swallowing disorders.

Fellows will perform experiments, data analysis, and programming in collaboration with teams of faculty, postdoctoral fellows, and graduate and undergraduate students. Learning opportunities include ultrasound signal and image processing, cross-disciplinary collaboration skills (e.g. collaboration of engineers with clinicians specializing in surgery, radiology, speech-language pathology, cardiology), and clinical research involving human subjects.