BIOMEDICAL ENGINEERING
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

APPLICATION DEADLINE: 11/01/2023

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 experience also potentially helpful), CAD design for 3D printing, and experiments with bioinstrumentation or general test and measurement equipment.

Project's Available Positions: Desirable skills include programming in MATLAB (C, Python experience also potentially helpful), CAD design for 3D printing, and experiments with bioinstrumentation or general test and measurement equipment.

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Project Description

Research co-op fellowship in a Biomedical Engineering lab located in the UC Bioscience 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, ultrasound characterization of vocal-tract motion for biofeedback in speech therapy and swallowing disorders, and assessment of musculoskeletal dysfunction. Fellows will perform experiments, data analysis, and programming in collaboration with teams including 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, and speech-language pathology), and clinical research involving human subjects.