



### **Description:**

Ph.D. Student positions are available at the University of Rochester (Biomedical or Electrical and Computer Engineering Departments). The research in our research lab is focused on the design and development of novel diagnostic and therapeutic methodologies, algorithms, and instrumentation, with a particular focus on ultrasound and optical (i.e. photoacoustic) based techniques. The selected graduate student will contribute to one or more of our ongoing projects: (1) Design and implement advanced endoscopic ultrasound and photoacoustic theranostic systems; (2) Design and development of an all-acoustic image-guided mild hyperthermia system for enhanced cancer treatment; (3) Ultrasound and photoacoustic guided interventional procedures; (4) Implement advanced AI and machine learning algorithms for ultrasound and photoacoustic image analysis.

For more information, you can refer to the research lab website <https://www.pureresearchlab.com/> or contact us at [Mehrlab@URMC.Rochester.edu](mailto:Mehrlab@URMC.Rochester.edu).

The research activities include design and implementation of imaging hardware (system level design), data acquisition, development of advanced image formation and image processing algorithms, conducting experiments (ranging from tissue mimicking phantoms to *in vivo* animal models), data processing and analysis, presenting at conferences and workshops, and writing manuscripts and reports.

### **Required qualifications:**

- 1- A Master's degree in Electrical and Computer Engineering, Bioengineering (instrumentation), Computer Science, Physics, Biomedical Physics, or a relevant field. Strong candidates with Bachelor's degree may be considered for the positions.
- 2- Experience in experimental biomedical ultrasound, acoustic, or optical imaging are preferred.
- 3- Experience with image reconstruction algorithms and associated coding, and/or Machine Learning/Deep Learning.
- 4- Background in design and development of biomedical instrumentation (including data acquisition and signal processing) is a key requirement for this position.
- 5- Applicants must have expertise in programming languages such as MATLAB (mandatory), Python, etc.
- 7- Strong communication skills, both verbal and written.
- 8- Proven academic track record of publications in areas related to this research program.

### **How to apply:**

Please send your detailed CV and contact information for 2 references to: [Mehrlab@urmc.rochester.edu](mailto:Mehrlab@urmc.rochester.edu)