Postdoctoral Fellow in Biomedical Research and Medical Physics

We are looking for skilled and enthusiastic candidates to fill Postdoctoral Fellow positions in the Biomedical Imaging and Radiation Technology Laboratory (BIRTLab). Our mission is to innovate, develop, and apply biomedical technology to empower cancer research.

Successful candidates will be joining our team to work on either one of the following projects:

(1). Developing a high-precision, automatic animal research facility that integrates AI, computer vision, robotic engineering, and optics. Our goal is to create a next-generation platform for advanced research on animals, allowing seamless handling for various purposes like tumor implantation, drug injection, and monitoring animal behavior and physiological conditions in response to therapeutic interventions.

We aim to revolutionize traditional biological research, significantly improving efficiency and accuracy. Our ultimate mission extends beyond enhancing research productivity; we seek to share our technology with the scientific community through commercialization. This platform will offer unparalleled capabilities in automating animal research procedures, providing valuable insights into disease mechanisms, drug development, and therapeutic interventions.

(2). Establishing novel in vivo optical imaging systems for a) low-level light detection and b) spectral unmixing, respectively. Specifically, the project a) involves developing an ultra-sensitive single pixel imaging system to overcome the limitation of conventional imaging array system in detecting low-level optical signals. The primary objective of this project is to achieve in vivo cell tracking to facilitate the development of cancer therapy. The project b) focuses on establishing a multispectral and fluorescence lifetime imaging system to resolve multiple biomarkers in vivo and facilitate cancer therapy developments.

The projects are multi-disciplinary and integrate engineering, algorithm development, optics, radiation physics, biology, and industrial components.

BIRTLab provides an outstanding environment to grow candidates toward successful careers.

- Lab director Dr. Wang works tirelessly with candidates to ensure they meet their career goals. Through attentive guidance, he encourages members to think creatively and develop their own research projects. All activities are supported by extramural funding through the NIH and Texas CPRIT.
- Successful members are also eligible for basic clinical medical physics training and a tuition fee waiver to enroll in a certificate program with CAMPEP-accredited courses, which covers medical physics didactic elements for people who enter the medical physics profession through an alternative pathway.

Multi-disciplinary projects, a strong research environment, and the medical physics pathway together provide a unique opportunity to prepare the candidate for careers in academia and industry, or to become a professional medical physicist in the U.S.

Candidates with established experience in animal behavior study, computer vision, AI, analytical calculation, numerical algorithm, biomedical optical system design and development are desired. Candidates who hold degrees in mathematics, physics, biomedical engineering, physics, and engineering are encouraged to apply. Further details about the BIRTLab and projects can be found at https://www.utsouthwestern.edu/labs/birt/. Information on our postdoctoral training program, benefits, and a virtual tour can be found at http://www.utsouthwestern.edu/postdocs.

Position and compensation are based on candidates’ experience and NIH scale with competitive benefits. Interested candidates should send a statement of interest, CV, and the contact of 3 references to:

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