

**UT Southwestern Medical Center
Advanced Imaging
Research Center**

**Faculty position (open rank) in
small animal MRI methods development**

The Advanced Imaging Research Center (AIRC) at the UT Southwestern Medical Center in Dallas / Texas / US invites applications for one tenure-track faculty position in rodent MRI methods development. The aim is to complement existing small animal imaging research programs in MRI and PET contrast agent development, MRI and NMR during hyperpolarized and labelled substrate infusion, integration of HIFU and MRI, Nanomedicine, fluorescence and bioluminescent imaging, cancer imaging and to support a recent neuroscience initiative at UTSW.

Potential topics include but are not limited to (I) novel contrasts, acquisition and analysis methods for high-resolution neuroimaging exploiting ultra-high fields and cryo-probes; (II) integration of multimodal neuro MRI with calcium recording, electrophysiology, optogenetics, two-photon microscopy and/or simultaneous PET; (III) hyperpolarized MRI instrumentation, technology, acquisition and analysis approaches; (IV) advanced quantitative, functional and metabolic body MRI in rodents possibly combined with either simultaneous PET-MRI or integration of MRI with other modalities such as fluorescence imaging or optoacoustic imaging; (V) cross-validation of MRI contrasts against invasive methods (NMR, mass spectroscopy, optical and electron microscopy, biochemical assays) to enhance the physiological interpretation of imaging contrasts.

Since its creation in 2005, the AIRC has established a track record of excellence in metabolic imaging including the development of MRI contrast agents, a hyperpolarization program, magnetic resonance spectroscopy as well as the investigation of tissue extracts by NMR after ^{13}C labelled isotope infusion. Due to the recent establishment of the O'Donnell Brain Institute at UTSW and to better support an active clinical and basic science neuroimaging community at UTSW, UTD and UTA we aim to develop a strong MRI neuroimaging methodology expertise to complement the existing focus. UTSW has an international reputation in clinical and basic science excellence. There have been six Nobel Prize recipients since 1985.

AIRC has provided access to imaging equipment for faculty and students at the three University of Texas academic institutions in north Texas to advance human imaging studies and translational research in animals. The AIRC currently consists of 10 core faculty and more than 20 adjunct faculty and is expanded by about 5 core faculty in near future. AIRC is equipped with three small animal MR scanners (4.7T, 7T, 9.4T), three human research-only 3T MR scanners (Philips Ingenia, Siemens Prisma, GE 750w), one human 7T MR scanner (Philips), two hyperpolarization setups (HyperSense for preclinical and SpinLab for human application), 7 NMR spectrometers, a MRI contrast agent chemistry lab, a tissue culture and a biochemistry lab. The instrumentation inside the AIRC is undergoing a major upgrade that includes a thorough modernization and extension of the small animal imaging facility. In the nearby Radiology Department, there is access to a cyclotron for producing radiotracers, small animal and human PET/CT and SPECT/CT scanners, bioluminescence and fluorescence imaging for rodents and to highly focused ultra-sound (HIFU) systems integrated with small

animal MRI. The installation of a new generation UHF human MRI possibly > 7T (AIRC), integrated human PET-MRI and MRI-HIFU systems (Radiology) and an integrated MR-LINAC (Radiation Oncology) are foreseen in future and will enable translational work.

Applicants for this position should have a strong scientific record of accomplishment in small animal MRI methods development, which is supported by respective publications and extramural funding. The research focus of the candidate should be the development of novel or the integration of multi-modal imaging instrumentation, the development of novel acquisition and analysis approaches or innovative approaches to validate imaging contrasts. Knowledge of either MRI sequence development, MRI or multi-modal instrumentation development or the development of comprehensive data analysis pipelines is required. Applicants should have a degree in physics, biomedical engineering, electrical engineering, computational science or applied mathematics. Experience in supervising graduate students and/or postdoctoral researchers is preferred. Faculty are expected to develop an independent, extramurally-funded research program and actively engage with clinical and basic research faculty across campus to apply the latest small animal imaging technologies to probe basic physiology and investigate disease models.

The position is available immediately and the search is going to continue until a suitable candidate is found. The rank (Assistant/Associate/Full Professor), is dependent on qualifications, previous experience and record of accomplishment of the candidate. The offer will include an attractive start-up package and a highly competitive salary.

UT Southwestern Medical Center is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans and individuals with disabilities are encouraged to apply.

Applications should include a letter of interest, a curriculum vitae, a list of publications (peer-reviewed original articles; review articles; book chapters; conference contributions; patents; other), a list of grants (please clearly distinguish grants as PI, as Co-PI and as person funded by the grant); a list of supervised students (Bachelor, Master, PhD) and postdoctoral researchers; a comprehensive summary of past research experience and future research interests (max 4 pages); PhD and Master certificates and respective transcripts; PDF copies of 5 most important publications and three references (contact details only).

All materials should be sent **electronically as a single PDF** file to Anke Henning, Director, Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, Texas, US: Anke.Henning@UTSouthwestern.edu.