Department of Radiology
Roy J. and Lucille A. Carver College of Medicine
The University of Iowa

Assistant Professor (Research Track)
Position Available

The Roy J. and Lucille A. Carver College of Medicine invites applications for a 100% research track faculty position as an Assistant Professor in the Department of Radiology.

The primary function of this position is to develop new MR imaging capabilities and independent research program in the MR Research Facility. This will include the development of new imaging as well as spectroscopic techniques to study anatomy, function, and metabolism using both proton as well as other MR visible nuclei. In addition, this position will report the results from these efforts in scientific publications as well as support the writing and submission of grant applications.

The incumbent is expected to work in a fast paced research environment with diverse team of investigators, students, and staff members. In addition, the incumbent will work with state-of-the-art imaging equipment including research dedicated 3T and 7T whole body scanners and a small animal 7T scanner.

Candidates must be committed to the University's goal of inclusiveness and have a demonstrated history of working effectively with persons of all races, ethnicities, nationalities, genders, gender identities, sexual orientations, and religions. Candidates must be prepared to explain how they have been and/or will be involved in advancing this goal with CME and the CCOM.

Required qualifications

1. A Ph.D. in an engineering or science field such as Biomedical Engineering, Electrical Engineering, Medical Physics or Computer Science.
2. Postdoctoral training or equivalent experience in MR spectroscopy, medical imaging or related scientific discipline.
3. Excellent verbal and written communication skills.
4. 1-3 years prior research experience in MR spectroscopy or MR imaging.
5. Demonstrated strong analytical and data analysis skills.
6. Experience with MRI pulse sequence development.
7. Candidate must be committed to the University's goal of inclusiveness and have a demonstrated history of working effectively with persons of all races, ethnicities, nationalities, genders, gender identities, sexual orientations, and religions.

Highly Desirable Qualifications

1. Five years of prior research experience in MR spectroscopy or MR imaging.
2. Prior success with grant applications and peer-reviewed publications.
3. Knowledge of GE EPIC pulse programming environment.
4. Prior experience with ultra-high field MR imaging and/or spectroscopy.
5. Previous experience with multi-nuclear MRI imaging.
6. Development experience in medical image analysis of different imaging modalities (e.g. MRI).

About the MR Research Facility:

The University of Iowa MR Research Facility was established in August of 2004 and now supports research dedicated 3T and 7T whole body scanners and a 7T small animal scanner. The MRRF facility has received two NIH High End Instrumentation grants over the past ten years to help support the acquisition of these instruments. In 2016, the facility moved into the Iowa Institute for Biomedical Imaging (IIBI) located within the Pappajohn Biomedical Discovery Building (PBDB). The MRRF is run as a Core University facility.

The MR Research Center aims to maintain state-of-the-art equipment and facilities. This requires an investment in both the hardware and software that compose our center's mainstay, and also an investment in recruiting and maintaining exceptional personnel. To that end, we have been actively pursuing development in the following areas to advance the research at our University...

Diffusion Tensor Imaging (DTI) - This is of interest mainly for evaluation of brain morphology changes associated with neurological and psychiatric disorders. We have been working on novel schemes for rotating the diffusion tensor and multishot approaches for high resolution Diffusion Tensor Imaging. We are also working on tools for fiber tracking. These tools are currently available through the **Neuroimaging Informatics Tools and Resources Clearinghouse.**

T1rho Imaging - The primary application of this technique is to assess and quantify pathologic cartilage matrix changes that are not detectable with standard morphological MRI. Initial work has focused on the knee joint in an ACL injury population to determine the suitability of T1rho as an imaging biomarker for early detection of osteoarthritis. Broader application to the ankle and hip joints are also being explored. We are also evaluating the utilization of this method to study pH changes that may result from stress including Post Traumatic Stress Disorder and depression.

Arterial Spin Labeling – Using the Siemens ASL WIP for VB13, we have started to evaluate this technique for functional brain activation studies. To date we have successfully generated reproducible measurements within the occipital cortex and are starting to evaluate higher order cognitive activation studies.

MR Spectroscopy – We have been working on tools for partial volume correction of brain MR spectroscopy studies and have been able to obtain the PEPSI sequence from Stefan Posse. Various pilot studies are currently being conducted using 1H-MRS, and at least one research group has voiced interest in evaluating treatment trials in Huntington's disease using 1H-MRS.

Magnetic Source Imaging – We are currently working on assessing the validity and reliability of magnetic source imaging. This is a potentially powerful tool to understand brain function at a high temporal and spatial resolution.

For more information, please see: https://medicine.uiowa.edu/mri/about-mr-research-facility

To apply: Please see requisition #74035 at http://jobs.uiowa.edu/jobSearch/index.php
Applicable background checks will be conducted.

MR Assistant Professor (research track)