Multiple Postdoctoral Research Associate Positions at the University of Iowa

The Magnetic Resonance Research Facility (MRRF) at the University of Iowa is seeking to hire postdoctoral research associates to work with our team on several advanced MR acquisition, reconstruction and analysis problems. The center is a core University of Iowa facility that operates under the Iowa Institute of Biomedical Imaging (IIBI). The IIBI is a joint collaboration between the Iowa Carver College of Medicine and the College of Engineering. The MRRF enjoys close collaborations with the vibrant research community in the Iowa Institute of Neuroscience, Electrical and Computer Engineering, Biomedical Engineering, Radiology, Radiation Oncology, and the Carver College of Medicine.

We are seeking excellent candidates, with a PhD in Electrical Engineering or in a relevant field with some background in MRI physics, MR image processing, and quantitative analysis, to propel forward our ambitious imaging research applied to brain and heart. Sample projects include

- Advanced diffusion MRI studies
  - Design and implementation of advanced pulse sequences
  - Advanced diffusion microstructure modelling and connectivity studies

- Metabolic Imaging (CEST, T1rho, Sodium, MRS)
  - Design and implementation of advanced pulse sequences
  - Quantitative Image Analysis

- Brain stimulation studies using TMS, tDCS
  - Multi-modal image analysis (fMRI, DTI)

- Accelerated Imaging and Motion Compensation
  - Implementation of MR sequences and reconstruction for ultra-high resolution imaging with motion insensitivity
  - Dynamic imaging
  - Deep learning and image recovery

These projects will be applied to cardiac (COPD, pediatric), cancer (Glioblastoma), and neuroimaging applications (Huntington’s Disease, Bipolar disorder, Major Depression, Schizophrenia, and Alzheimer’s Disease).

Prior experience in image reconstruction algorithms is highly desirable. Other desirable skills include experience with MR pulse sequences and analysis software. The projects will be supervised under the guidance of Profs Mathews Jacob (Mathews-jacob@uiowa.edu ECE, INI), Vincent Magnotta (Vincent-Magnotta@uiowa.edu Radiology, INI) and Merry Mani (Merry-mani@uiowa.edu Radiology, INI). Interested candidates may contact any of us with their CV and a brief description of the research experience and research interests. Please visit https://medicine.uiowa.edu/mri/current-research-projects-mrrf to find about previous and ongoing research projects in the group.

The candidate will have access to exceptional MRI research facility to work with. The facility is equipped with a GE MR750 3T research dedicated scanner (currently being upgraded to a GE 3T Premier), a GE MR950 7T research dedicated scanner and a GE MR901 7T small animal scanner. An Elekta MR/Linac is currently being installed to allow for simultaneous therapy and
imaging capabilities. Ready access to high performance computing facilities also. The candidate is expected to design and perform MRI experiments, collect and process MRI data, prepare manuscripts, participate in weekly lab meetings and international conferences, collaborate with other lab members and researchers within and outside the lab.

The University of Iowa is recognized as one of the leading research-intensive universities in the United States. Research in the UI Carver College of Medicine is ranked 13th among public institutions in 2018 by U.S News. It is ranked 41 in NIH Funding for FY2018. The university offers a positive and vibrant research environment in which to work. Iowa City is ranked as the best college towns in America and is frequently ranked among the best communities to live.