POSTDOCTORAL RESEARCH FELLOW — ADVANCED ULTRA HIGH-FIELD FMRI AND IMAGING MICROVASCULAR DYNAMICS

Athinoula A. Martinos Center for Biomedical Imaging
Massachusetts General Hospital (MGH)
Harvard Medical School

A post-doctoral research fellowship in Ultra-High Field functional MRI acquisition and analysis is available at the Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital (MGH). The successful candidate will be working in the High-Resolution and Ultra-High-Field Functional Imaging Group led by Dr. Jonathan Polimeni to develop cutting-edge acquisition and analysis techniques for high-resolution imaging of brain function and vascular physiology. This fellowship is supported by a recently awarded BRAIN Initiative grant (https://reporter.nih.gov/project-details/10294709) with the goal of understanding the basis of resting-state functional MRI signals. This project will integrate optical imaging and neural recordings from rodents, human fMRI data, and computational models to relate hemodynamic patterns to the underlying brain state. The postdoctoral fellow will be responsible for developing new single-vessel-resolution MR acquisition approaches, conducting human MRI experiments, and developing analysis strategies for the associated data. If there is interest, the scope of this work may also be expanded to include developing high-resolution vascular anatomical imaging methods and biophysical modeling of the fMRI signals. This research will be carried out on the two human 7 Tesla MRI scanners at the Martinos Center under the supervision of Dr. Polimeni and Dr. Bruce Rosen and in close collaboration with the neurovascular imaging group of Dr. Anna Devor (BU), the neurophysics and optical imaging group of Dr. David Kleinfeld (UCSD), the brain dynamics lab of Dr. Laura Lewis (BU), and the small animal MR imaging group of Dr. Xin Yu (Martinos).

The successful candidate will be a highly motivated researcher with a desire to begin an independent career related to or involving advanced human functional MRI. The ideal candidate would have a strong analytical background and a high level of creativity. The ideal candidate would also hold a Ph.D. degree in Neuroscience, MR Physics, Biomedical Engineering, or a related field; however, strong candidates with other scientific backgrounds will also be considered. First-hand experience with conducting human functional MRI experiments is highly desired, and skills in pulse sequence programming and training in signal processing are also desired; knowledge of cerebrovascular physiology and human neuroscience are also highly desired. Interested candidates with electrical engineering or physics training and a strong background in computational/biophysical modeling may also apply, and are welcome to inquire about suitability beforehand.

ADDITIONAL SKILLS/ABILITIES/COMPETENCIES

Candidates should be enthusiastic about working in a fast-paced, interdisciplinary environment. The successful candidate will be able to work both independently and collaboratively in a large multi-institutional project. Strong written and oral English communication skills are required.

APPLICATION

Interested applicants should send a cover letter describing research experience, interests, and future research and career goals, as well as an up-to-date curriculum vitae and contact information for three references, to Jonathan Polimeni, Ph.D., by email: jonp@nmr.mgh.harvard.edu.

Questions regarding this position and informal inquiries should be directed to Jonathan Polimeni, Ph.D., by email: jonp@nmr.mgh.harvard.edu.

This position is full-time with benefits and is available immediately. A two-year commitment is required. The Massachusetts General Hospital and Harvard Medical School are an equal opportunity employer, and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, gender identity, sexual orientation, pregnancy and pregnancy-related conditions or any other characteristic protected by law.