Postdoctoral Research Fellowship

Revealing tissue microstructure in the brain gray matter in Alzheimer's disease using in vivo high-gradient diffusion MRI

A postdoctoral research fellowship in diffusion MRI acquisition, analysis and biophysical modeling is available at the Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital (MGH), under the supervision of Dr. Hong-Hsi Lee and Dr. Susie Huang. The successful candidate will work to develop, validate, and translate cutting-edge diffusion MRI acquisition and analysis techniques for tissue microstructural imaging in the living human brain gray matter, with applications in aging and Alzheimer’s disease. The ultimate goal is to achieve in vivo histology with micron-level resolution of neuronal structure in the brain gray matter. This work will leverage the 3T “Connectom” MRI scanner at MGH/Martinos, which is currently equipped with ultra-high gradient strengths up to 300 mT/m and will be upgraded to a maximum gradient strength of 500 mT/m and slew rate up to 600 T/m/s. The project will require biophysical modeling of neuronal microstructure and translation of cutting-edge diffusion MRI acquisition and analysis techniques to studying diseases of the central nervous system.

- A Ph.D. (or equivalent) in physics, electrical engineering, chemical engineering, biomedical engineering, computational neuroscience, or a related field is required; however, strong candidates with other scientific backgrounds will also be considered.
- The ideal candidate should have a strong analytical background while displaying a high level of creativity.
- First-hand experience with the acquisition and/or analysis of diffusion MRI data is highly desired, and skills in computational methods and image processing are also desired.
- Candidates should be highly motivated and interested in working in an interdisciplinary environment with an emphasis on translational research.

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 Hong-Hsi Lee, M.D., Ph.D., by e-mail: HLEE84@mgh.harvard.edu.

Questions regarding this position and informal inquiries should be directed to Hong-Hsi Lee, M.D., Ph.D., by e-mail: HLEE84@mgh.harvard.edu.

The position is full-time with benefits and available starting October 1, 2021. A two-year time commitment is required. The Massachusetts General Hospital is an Equal Opportunity/Affirmative Action Employer.