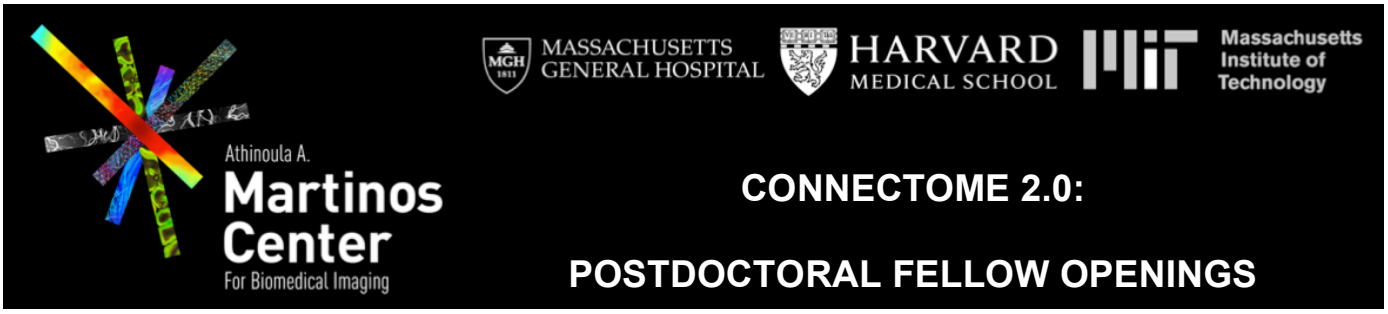

The Connectome 2.0 Project is a new BRAIN initiative-funded effort at the Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital and Harvard Medical School. Building on our experience designing the first Connectome scanner, we aim to engineer **the next-generation MRI scanner for imaging the circuitry and microstructure of the human brain**; and to use the unique data produced by this scanner to develop novel software tools for improving the analysis of more widely available neuroimaging data.

We are seeking talented and driven postdoctoral fellows to contribute to this exciting effort. The fellows would join the Martinos Center's team of leading experts in MRI instrumentation, analysis, and applications, as well as the vibrant neuroimaging community of Boston.

We have multiple openings in the following areas:

1. **Gradient characterization.** The post-doctoral fellow will simulate and design gradient hardware optimized for high-slew rate, ultra-high gradient strength diffusion MRI. The research fellow will develop approaches to characterize and correct for eddy currents. Responsibilities will include mapping the gradient fields, developing gradient nonlinearity correction software, and incorporating information on the gradient coils and eddy currents into the diffusion preprocessing and analysis pipeline. Strong expertise in C/C++ and/or Matlab is highly desirable.

2. **Diffusion microstructural modeling and analysis.** The post-doctoral fellow will design, acquire, and analyze diffusion microstructural imaging experiments to showcase the capabilities of the next-generation ultra-high gradient 3T MRI scanner. Responsibilities will include acquiring, analyzing and interpreting diffusion microstructural imaging data for in vivo and ex vivo human brain imaging in the next-generation ultra-high gradient MRI system. A strong

background in NMR and MRI physics with specific expertise in diffusion MRI and mathematical and computational modeling is essential.

3. **Algorithms for connectional anatomy.** The post-doctoral fellow will develop software tools that take advantage of the unprecedented diffusion MRI data collected by the Connectome 2.0 to produce the next-generation mapping of the connectional anatomy of the human brain. The fellow will use unique optical and histological ground truth data to validate these methods ex vivo, and will develop algorithms that can be trained on the unprecedented data of the Connectome 2.0 to improve the accuracy of diffusion MRI tractography in routine-quality, widely available in vivo data. Candidates with a strong background in image analysis/computer vision/machine learning are encouraged to apply. Experience in diffusion tractography and/or diffusion microstructural modeling is an asset.

For all positions, a Ph.D. in electrical engineering, biomedical engineering, computer science, physics, applied physics, or related field is required. Creativity, initiative, proven ability to publish, and excellent oral and written communication skills are key.

The position is full-time with benefits and available immediately. A two-year time commitment is required with a possible extension of another two years. Salary will be based on qualifications and experience. The Massachusetts General Hospital is an Equal Opportunity/Affirmative Action Employer.

Applicants should submit a curriculum vitae, the contact information of two references, and a cover letter describing their research background, interests, and professional goals by email to Drs. Susie Huang (syhuang@nmr.mgh.harvard.edu) and Anastasia Yendiki (ayendiki@mgh.harvard.edu). Please include “Connectome 2.0 postdoctoral position” in the title of your email.