The Connectome 2.0 Project is a 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 openings in the following areas:

**Image reconstruction:** The post-doctoral fellow will develop and deploy advanced MR image reconstruction techniques for high-slew rate, ultra-high gradient strength diffusion MRI. In diffusion imaging, artifacts arise due to undesired spatial-temporal encoding errors introduced by eddy currents, concomitant field terms and non-ideal impulse response of the gradient system. Work will focus on model-based image reconstruction taking models of these effects into account directly, in part relying on characterization/dynamic field measurements with a field camera. Responsibilities include selecting and developing the appropriate algorithms and deploying them to the Connectome 2.0 scanner. The successful candidate will work in a team, cooperating closely with MR physicists, image processing and diffusion modeling researchers. Strong expertise in linear algebra, optimization theory and programming in C/C++, Python and/or Matlab is highly desirable.

**Image analysis:** The post-doctoral fellow will develop algorithms that use unprecedented diffusion MRI data collected by the Connectome 2.0 to produce the next-generation mapping of the circuitry and microstructure of the human brain. Responsibilities include developing novel methods for reconstructing fiber geometries, validate these methods ex vivo using optical ground truth data, and developing algorithms that can be trained on the Connectome 2.0 data to improve the accuracy of tractography in routine-quality, widely available in vivo data. Strong
expertise in C/C++ and/or python is highly desirable. Research experience in diffusion tractography and/or microstructural modeling is an asset.

Candidates with a strong background in image reconstruction/analysis/computer vision/machine learning are encouraged to apply. 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 (susie.huang@mgh.harvard.edu) and Anastasia Yendiki (ayendiki@mgh.harvard.edu). Please include “Connectome 2.0 postdoctoral position” in the title of your email.