Postdoctoral fellow position
Neurochemical changes in aging and neurodegeneration: MRS/fMRS/combined fMRS-fMRI at Massachusetts General Hospital

The Athinoula A. Martinos Center for Biomedical Imaging, located within the Department of Radiology at Massachusetts General Hospital (MGH) and Harvard Medical School (HMS) in Boston, Massachusetts, has an opening for a highly qualified postdoctoral individual to work with Dr. Heidi Jacobs. The Jacobs lab is focused on improving the early detection and early treatment of Alzheimer's disease. The lab focuses on the neuromodulatory subcortical nuclei, in particular the locus coeruleus, using a variety of approaches, including 3T MRI, 7T MRI, PET imaging, pupil measurements, physiological recordings, blood-based markers, cognitive assessments and perturbational approaches, such as pharmacological manipulations and non-invasive vagus nerve stimulation.

We are seeking a postdoctoral fellow with experience in **magnetic resonance spectroscopy (MRS), functional MRS (fMRS), and/or combined time-resolved fMRI-fMRS** to investigate neurochemical changes associated with aging and neurodegeneration. The successful candidate will have hands-on experience setting optimal sequence parameters, designing tasks, and analyzing (f)MRS data at 3T and 7T MRI, and will be able to accurately interpret neurochemical changes while critically acknowledging the methodological limitations of these techniques. This position is well-suited to candidates with a strong interest in aging and neurodegenerative disease who want to apply and further develop their (f)MRS expertise within a multimodal imaging environment.

The candidate will work closely with the Jacobs lab team and will have the opportunity to integrate (f)MRS with other imaging modalities used in the lab, including structural and functional MRI and PET, as well as cognitive and physiological measures. The Jacobs Lab consists of a multidisciplinary team of two instructors, three postdocs, two PhD students, two clinical research coordinators, and one project manager.

The work in this project will be performed at the Athinoula A. Martinos Center for Biomedical Imaging, Charlestown Navy Yard. The candidate will be part of ongoing collaborations and work in a stimulating and inspiring environment. Our research group values open communication, motivation, optimism, mutual respect, teamwork, and innovative thinking. Dr. Jacobs is highly committed to individualized mentoring to help trainees achieve the most out of their postdoctoral candidature and to move forward in their career.

This is a one-year appointment. Extension beyond the first year will depend on funding and performance.

Requirements: Candidates should hold a Ph.D. in Bio/medical Physics, Biomedical Engineering, Neuroimaging, Cognitive Neuroscience, or a related discipline. Essential qualifications include demonstrated hands-on experience with MRS, fMRS, and/or combined time-resolved fMRI-fMRS, including optimization of sequence parameters, task design optimized for fMRS, data analysis at 3T and/or 7T MRI. Advanced programming skills (e.g., Python, MATLAB) and a solid background in signal processing are required. The candidate should be highly motivated, a strong communicator (verbally and in scientific writing), have an internal drive to learn independently, and be comfortable working as part of a larger collaborative team. A real necessity is a passion for science and a positive attitude. Experience or a strong interest in aging and/or neurodegeneration research is required. Start date as soon as possible, but is negotiable.

Apply: The successful candidate will have joint appointments at MGH and HMS. If interested, please send your CV, letter describing interests, background, major achievements, skills, goals and contact information for three professional references. Applications will be reviewed on a rolling basis until October 1st, 2026. Please send application materials to Dr. Heidi Jacobs, Associate Professor of Radiology at hjacobs@mgh.harvard.edu

Center and lab websites: www.martinos.org and www.heidijacobs.org