



Athinoula A.
**Martinos
Center**
For Biomedical Imaging



Postdoctoral Research Fellowship – MRF of Glutamate Metabolism

A post-doctoral research fellowship is available in the Paech and Farrar labs at the Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Brigham (MGB) and Harvard Medical School. This NIH-funded project seeks to develop improved methods for imaging glutamate (Glu) with chemical exchange based magnetic resonance fingerprinting (MRF). Increasing evidence has implicated the neurotransmitter glutamate as playing a critical role in driving glioma growth and invasion. The goal of the project is to optimize and validate chemical exchange based MRF methods for measuring glutamate metabolism in glioma patients, thus aiding in drug development and early treatment response assessment. The successful candidate will work on the development and validation of chemical exchange saturation transfer (CEST) and chemical exchange spin-lock (CESL) based MRF methods for imaging Glu. Machine learning based tools will be used to optimize the CESL and CEST MRF acquisition schedules. The developed Glu-MRF methods will be used to study response to tumor therapies targeting glutamate metabolism that are currently in clinical trials. For more details about our research efforts, please see some of our recent publications.

- Perlman, et al., Magn Reson Med 2022. <https://doi.org/10.1002/mrm.29173>
- Perlman, et al., Nature Biomed Eng 2021. <https://rdcu.be/cBemp>

QUALIFICATIONS

The successful candidate will be a highly motivated researcher with a desire to pursue an independent research career in MR molecular imaging. Candidates should have a PhD in biomedical engineering, biophysics, medical imaging, or related fields. Candidates with strong programming skills (Matlab, Python, C++, Tensorflow, PyTorch) and experience in clinical MRI (Siemens IDEA pulse programming) or machine learning are highly desired. 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 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 Daniel Paech (dpaech@bwh.harvard.edu) and Christian Farrar (cfarrar@mgh.harvard.edu).

This position is full-time with benefits and is available immediately. The Massachusetts General Hospital, Brigham & Women's Hospital, and Harvard Medical School are equal opportunity employers, 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.

