



## Post-Doctoral positions for development of metabolic and molecular imaging for brain cancer and neurological diseases



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**Project:** Development of MRSI/MRI methods for metabolic/molecular imaging of brain cancer and neurological diseases.

Two post-doctoral research fellow positions are available at the Martinos Center for Biomedical Imaging at Massachusetts General Hospital and Harvard Medical School to develop novel MRSI and related MRI methods to image metabolic and molecular biomarkers of brain cancer and neurological diseases (ALS, MS).

- 1) One postdoctoral position focused on software development (pulse sequence and image reconstruction)
- 2) One postdoctoral position focused on hardware development (multi-channel RF coils).

The main objectives of the project are to improve the spatial resolution, brain coverage, efficiency and quality of MRSI to investigate molecular pathways that are involved in neuro-oncological and neuropsychiatric diseases. An important goal of this work is to increase the accuracy of MRSI quantification by means of calibrated electronic reference signals. These methods will be implemented on 3T clinical scanners and high field 7T human systems. This development will be part of a NIH grant that sponsors an academic-industry partnership between Massachusetts General Hospital, HMS and Siemens Medical Solutions, USA. The project will be finalized with clinical translation of the new imaging methods for use as precision medicine tools to investigate patients enrolled in clinical trials of novel therapies for neuro-oncology and neurological diseases.

Successful candidates should have experience with pulse sequence programming, image reconstruction, and/or RF engineering for development of multi-channel RF coils. Candidates should be able to solve problems and overcome technical challenges during development. Candidates need to have a proven track record of publications in MRS/MRI acquisition, analysis, and/or hardware, be highly motivated with excellent analytical and interpersonal skills. Attention to detail, organizational capability, handling multiple concurrent tasks and strong written communication skills are required. The post-doctoral fellows are expected to be able to work independently as well as part of a multidisciplinary team at a fast pace. The post-doctoral fellows will have opportunities to develop new ideas, advance their own research interests and career in an excellent academic and industry environment.

The background of candidates should include a Ph.D. in physics, electrical engineering, computer science, or related fields. Very good programming skills in Matlab, C/C++, and Linux shell scripting are essential. Experience with neuroimaging analysis software (FSL, Freesurfer, MINC, AFNI, SPM) and spectral fitting (LCModel, jMRUI) are considered a plus. Previous experience with building RF coils is necessary for the hardware position, for which postdocs will have access to the excellent infrastructure and expertise in the RF lab of Dr. Lawrence Wald from Martinos Center at MGH.

MGH is an equal opportunity and affirmative action employer. Salary is commensurate with experience. Start date from 1<sup>st</sup> June 2017. The positions are available for up to five years, with annual renewal based on satisfactorily progress.

**Application:** Interested candidates should send their CV, cover letter and 3 letters of recommendation to Dr. Ovidiu C. Andronesi, MD, PhD, Assistant Professor of Radiology, Massachusetts General Hospital, Harvard Medical School, Thirteenth Street, Building 149, Suite 2301, Charlestown, MA 02129, USA, ([oandronesi@mg.harvard.edu](mailto:oandronesi@mg.harvard.edu)).