The MR Physics and Instrumentation Group at the Athinoula A. Martinos Center for Biomedical Imaging is seeking a full-time staff research engineer. The successful candidate will join a highly collaborative team of investigators with broad expertise spanning MRI hardware, acquisition, and image reconstruction. The primary job responsibility will be in helping design, build, and test open-source MRI hardware for dissemination to other research sites as part of a 3-year NIH-funded project. The goal is to refine, package, and document hardware and software tools for B0 shimming and local field control experiments, including shim current amplifiers and the associated control electronics. A large component of the job will be hands-on work in the radiofrequency electronics lab to build and test electronic circuits, as well as to assessing performance in the MRI scanner environment. The candidate will also be expected to help with equipment and tool maintenance and parts inventory in the lab. Depending on the skills and interests of the candidate, there are also opportunities to work on software development including graphical user interfaces to process MRI data and control the shim electronics as well as convex optimization solver software. The exact job category and compensation will be commensurate with the candidate’s experience and skills.

For more details of the project: https://rflab.martinos.org/index.php/Current_driver:Current_driver

This builds on our group’s prior work using multi-coil magnetic field control to improve the quality of MR images and MR spectroscopy. See also these references:


Arango N, Open-source, low-cost, flexible, current feedback-controlled driver circuit for local B0 shim coils and other applications, ISMRM 2016, p. 1157.

In addition to the dissemination project, there will be opportunities to work on other ongoing research projects in our group and to collaborate with a rich community of scientists at MGH and other institutions in the Greater Boston area. The job will provide training in MRI physics and instrumentation, as well as opportunities to gain experience acquiring data on both 3 Tesla and 7 Tesla MRI scanners.

Previous experience in the following are desired but not mandatory:

- Printed Circuit Board layout
- Soldering skills, familiarity with electronic test equipment, and circuit debugging experience
- Basic machine shop / mechanical fabrication skills
- CAD software to prepare models for 3D printing
- Fluency in Matlab and/or Python including graphical-user-interface (GUI) development

The candidate will be directly supervised by Dr. Jason Stockmann, with additional mentorship and guidance provided by Drs. Lawrence Wald and Kawin Setsompop, who are collaborators on the open-source project. Position is open immediately. Desired background is a bachelor’s or master’s degree in engineering (electrical, biomedical, or mechanical), physics, computer science, or a related discipline. Interested applicants should send their C.V. to jstockmann@mgh.harvard.edu

The Athinoula A. Martinos Center for Biomedical Imaging is a multi-disciplinary research center home to more than 200 research faculty, postdocs and graduate student with a vibrant culture of collegiality (journal groups, weekly seminars, informal gathering, etc.). The position is full-time with benefits. The Massachusetts General Hospital is an Equal Opportunity/Affirmative Action Employer.