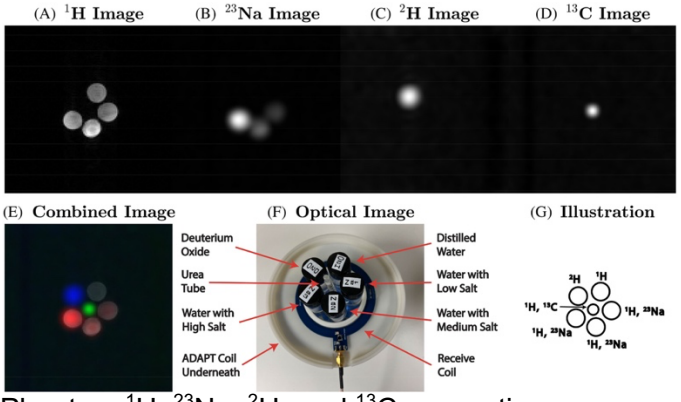
Postdoctoral Positions in MRI RF Coils at University of California, Berkeley

Research Interest:

We are seeking a motivated postdoctoral fellow to develop a novel class of MRI RF coils that can be digitally programmed to excite and receive signals of any NMR-active nucleus of interest. The coil can plug and play at any field strength. This coil, named ADAPT Coil, is recently published in Magnetic Resonance in Medicine:

Han, Victor, Charlie P. Reeder, Miriam Hernández-Morales, and Chunlei Liu. "Any-nucleus distributed active programmable transmit coil." Magnetic Resonance in Medicine (2024). https://doi.org/10.1002/mrm.30044

There are 118 known elements. Nearly all of them have NMR active isotopes and at least 39 different nuclei have biological relevance. Despite this, most of today's MRI is based on only one nucleus—^{1}H. The ADAPT Coil presents a low-cost, scalable, and efficient method for exciting arbitrary nuclei in human-scale MRI. This coil concept provides further opportunities for scaling, programmability, lowering coil costs, lowering dead-time, streamlining multinuclear MRI workflows, and enabling the study of dozens of biologically relevant nuclei.



Phantom ^{1}H, ^{23}Na, ^{2}H, and ^{13}C magnetic resonance images using the ADAPT Coil.

The fellow will also have opportunities to work on other MRI projects. UC Berkeley has a vibrate MRI research community in the College of Engineering and Neuroscience Institute. The Berkeley Brain Imaging Center houses three MRI scanners: GE 3T, Siemens Prisma 3T and NexGen 7T (https://www.nature.com/articles/s41592-023-02068-7)

Qualifications:

1. A recent PhD in physics, engineering or related fields.
2. Strong background in NMR/MRI principles.
3. Expertise in electric circuits.
4. Strong background and hands-on expertise on PCB circuit design.
5. Strong background and hands-on expertise on FPGA.

Appointment Length:

This is a full-time position and available immediately. It will start initially for two years with the possibility of being extended based on performance and sustainable funding availability.

About UC Berkeley

The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age or protected veteran status. For the complete University of California nondiscrimination and affirmative action policy see: http://policy.ucop.edu/doc/4000376/NondiscrimAffirmAct.

To apply, please submit:

Cover Letter; Curriculum Vitae; Contact information of 3 references (Letters of reference may be requested of finalists)

Contact: Prof. Chunlei Liu, Email: chunlei.liu@berkeley.edu