



Project Scientist Position - Applications of Unified Shim-RF Technology

Postdoctoral Scientist Position - Applications of Unified Shim-RF Technology

Cedars-Sinai Medical Center, affiliated with UCLA, is a world-leading hospital and is currently ranked #7 nationally on the Best Hospitals Honor Roll ([Introduction to Cedars-Sinai](#)) The Cedars-Sinai Biomedical Imaging Research Institute (BIRI) is one of leading MRI research groups with a central focus on developing and applying novel imaging technologies to today's most pressing translational research and clinical questions. BIRI has been constantly growing into a team of 70 onsite personnel including research and clinician scientists, technical and support staff, postdoctoral scientists and doctoral students. Two full-time on-site MRI scientists from Siemens Healthcare.

BIRI Research Core Facility houses a state-of-the-art 3T whole-body scanner (Siemens MAGNETOM Vida), a whole-body PET/MR system (Siemens Biograph mMR) and Bruker BioSpin 9.4T small animal scanner, all dedicated to research. A 7T MRI human scanner is expected to be installed soon. Our research and clinician scientists collaborate closely with physicians to synergistically bring together technical and clinical expertise in areas such as cardiology, neurology, and oncology imaging. ([Introduction to BIRI](#))

The candidate will join an interdisciplinary research group and focus on developing various imaging applications throughout the human body based on our completed novel MR hardware platform that enables data acquisition in new ways previously impossible. The candidate will work synergistically with the complementary MR Hardware team led by Dr. Hui Han who is the Director of MR Engineering. ([MRI Engineering Laboratory Research Lab | Cedars-Sinai](#)) He is the developer of "iPRES" MR coils for combining B0 shimming and RF detection, an impactful technology. The MRI Engineering Laboratory comprises a newly constructed lab space (2,000 sq. ft.) in the iconic Pacific Design Center in West Hollywood and a secondary lab space (150 sq. ft.) in Imaging Core Facility. You will also collaborate with internationally renowned scientists (e.g., Drs. Andrew Maudsley, Debiao Li, Hyunsuk Shim) on NIH funded projects. Ongoing projects are highly supported and anticipated by major MRI vendors as it solves major limitations of current MRI scanners and advances the field.

Desirable background and skills may include MRI scanner experience, MRI physics, pulse sequence development, image acquisition and processing, image reconstruction, and programming. Hands-on experience with acquisition, processing and analysis of MRI data is especially valued, as is experience with pulse sequence development and/or MRI reconstruction, particularly in the Siemens IDEA environment. **Experiences in hardware development are not required.** Candidate is expected to have a **strong motivation to publish** with a proven track of record. The candidate will benefit from a large BIRI group full of MR experts in pulse sequence development, image reconstruction, motion correction and artificial intelligence.

MR hardware is the basis underpinning data acquisition and image processing. Historically, MRI has been advanced by major hardware improvements such as multichannel RF detection and transmission and increased magnetic field strengths. In recent a decade, B0 shimming using localized coils becomes a rising trend in the society and combined B0 shim and RF receive arrays have drawn considerable attention. Our team has made pioneering contributions in this new field and is currently supported by multiple NIH grants (R01s, U01) on applications of the coil technology to body, cardiac and brain imaging. Our major effort is directed toward creating new capabilities of the existing MRI system, through developing clinically viable tools to advance the sensitivity, resolution, or signal to noise ratio of imaging.

[Overview of Local B0 Shimming Hardware and Techniques](#) (Login to 2020 ISMRM)

Depending on qualifications, you will be provided with a generous compensation package and may be offered guidance to develop your own grants (e.g., NIH K awards) that can benefit from our innovative MR hardware program well-funded by NIH.

Interested applicants should forward a curriculum vitae with a brief statement of research interests & career goals to Dr. Han (hui.han@cshs.org) and feel free to discuss about various career opportunities or directly apply on the website:

https://jobs.cedars-sinai.edu/job/los-angeles/project-scientist-han-lab/252/18751081?_ga=2.125189772.703862678.1613519544-1452465577.1539400265

Project Scientist Position. (Requisition # HRC0465869)

https://jobs.cedars-sinai.edu/job/los-angeles/postdoctoral-scientist-han-lab/252/18751079?_ga=2.125189772.703862678.1613519544-1452465577.1539400265

Postdoctoral Scientist Position. (Requisition # HRC0465851)