Project Scientist, Postdoc and Ph.D. Graduate Student Positions – Advanced Imaging Techniques and Applications

Biomedical Imaging Research Institute (BIRI) at Cedars-Sinai is recruiting project scientists and postdoctoral scientists. Ph.D. graduate students will enroll in the Department of Bioengineering at the University of California, Los Angeles. Cedars-Sinai Medical Center, affiliated with UCLA, is a world-leading hospital and is currently ranked #6 nationally on the Best Hospitals Honor Roll (Introduction to Cedars-Sinai). BIRI is one of the 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. BIRI has 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 candidates will join an interdisciplinary research program and work in an exciting, new growing field in MRI. You will focus on data acquisition and processing and publications about various imaging applications throughout the human body by leveraging our completed novel MR hardware platform, which enables data acquisition in new ways previously impossible. The candidate will work synergistically with the MR Hardware team led by Dr. Hui Han who is the Director of MR Engineering. (MR Engineering | Cedars-Sinai). Dr. Han is the developer of “iPRES” MR coils for combining B0 shimming and RF detection into a single array, an impactful technology. The MRI 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.

Desirable background and skills may include MRI scanner experience, image acquisition, and processing, MRI physics, pulse sequence development, image reconstruction, or programming. Hands-on experiences with acquisition, processing, and analysis of MRI data are essential. The candidate should have a strong motivation to publish with a proven track record. Experiences in hardware development are not required. Pulse sequence development and/or MRI reconstruction,
particularly in the Siemens IDEA environment is a plus. You will work on improving image quality and accuracy throughout the human body using advanced MRI techniques for example diffusion, metabolic, susceptibility, and functional imaging. These advanced techniques provide information beyond macroscopic morphology on tissue microstructure, metabolism, and function, offering unique information associated with various pathological states. The candidate will benefit from a large BIRI group full of MR experts in pulse sequence development, image reconstruction, motion correction, and artificial intelligence.

The projects are funded by NIH under a collaboration effort with Drs. Debiao Li, Andrew Maudsley, and Hyunsuk Shim. Ongoing projects are highly supported and anticipated by major MRI vendors as it solves major limitations of current MRI scanners and thus advances the field. Dr. Han is recently elected to Secretary of the ISMRM MR Engineering Study Group, who will rotate to the chair in 2023-2024 and organize the first international ISMRM Workshop on MR Engineering in 2023. He also serves as the Secretary of the Overseas Chinese Society for Magnetic Resonance in Medicine (OCSMRM) and will rotate to the President of OCSMRM in 2023.

In a larger context, MR hardware is the basis underpinning data acquisition and image processing. Historically, MRI has been in part 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 community and combined B0 shim and RF receive arrays have drawn considerable attention. Our team has spearheaded in this new field and is currently supported by NIH grants on applications of the coil technology to the 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 precision, fidelity, sensitivity, and resolution of imaging. Overview of Local B0 Shimming Hardware and Techniques (Login is required to access 2020 ISMRM lectures)

Depending on your qualifications, you will be provided with a generous compensation package. Of note, the positions have great opportunities to grow. The new research field holds multiple exciting new research opportunities. Young scientists with high ambition are especially encouraged to apply as this position could become independent with support. You will 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. BIRI has a strong track record in cultivating the next generation of leaders in biomedical imaging.

Interested applicants please contact or directly apply on the website below:
Hui Han, PhD
Director of MR Engineering
Biomedical Imaging Research Institute
Cedars-Sinai Medical Center
8700 Beverly Blvd #2900A, Los Angeles, CA 90048
Email: hui.han@cshs.org

https://jobs.cedars-sinai.edu/job/los-angeles/project-scientist-li-and-han-lab-biomedical-imaging-research-institute/252/14886810224

Project Scientist Position. (Requisition # HRC0465869C)

Postdoctoral Scientist Position. (Requisition # HRC0465851B)