Postdoctoral Positions (Novel Acquisition and Hardware)
– Advanced MRI for human data acquisition and processing (software role)
– Developing novel MR hardware and unified shim-RF coils (hardware role)

The Weill Cornell Medicine (WCM) Citigroup Biomedical Imaging Center (CBIC) provides state-of-the-art imaging instruments, including MRI, PET, SPECT, CT, Ultrasound, and optical imaging and endoscopy. MRI/MRS: We possess two 3.0 Tesla systems for whole body human and large animal studies (GE Discovery 750 3.0 Tesla, Siemens PRISMA Fit 3.0 Tesla), Bruker BioSpec 70/30 7.0 Tesla / 30 cm bore for pre-clinical studies, and a small bore 1.0 Tesla 1.0 Tesla ASPECT M3 system for small animal studies. Additionally, a 7T human MRI scanner is forthcoming.

The Weill Cornell Medicine Department of Radiology seeks Postdoctoral Associates in **both software and hardware roles**. Join Dr. Hui Han's interdisciplinary program focusing on a rapidly evolving MRI field. **The software role** centers on human data collection and processing and publication using innovative Unified Shim-RF MR coil platform and advanced MRI sequences. Acquired data will publish insights in diverse imaging applications across human organs. **The hardware role** centers on developing novel MR hardware, including combined shim-RF coils, which open up unprecedented avenues for data acquisition, processing, and novel reconstruction methods.

Postdocs will work with Dr. Hui Han's group, known for the development of "iPRES" MR coils, an impactful technology that integrates B0 shimming and RF detection within a single array coil. The team's focus encompasses advancing RF-shim technology in both hardware and software, designing novel RF coils for meeting clinical needs, validating the technology on human volunteers with different organs, exploring innovative software development in sequences and reconstruction methods that leverage the unique capabilities of the shim-RF coil platform, and developing its clinical applications throughout the human body.

Desirable qualifications and skills:
- PhD training within a sub-area of MRI.
- Proficiency in hands-on scanner experience for human data collection (**software role**).
- Proficiency in hands-on RF coil building experience (**hardware role**).
- A strong background in MRI physics is advantageous.
- Experience with MRI data collection at 3T or 1.5T, preferably within human body and brain imaging (e.g., brain, spinal, heart, liver, prostate, pelvic, breast, etc.) (software role).
- The candidate will have the opportunity to conduct research on the upcoming **7T** human scanner.
- Desirable expertise in utilizing advanced MRI sequences (e.g., DWI, DTI, MRS, SSFP, Relaxometry mapping, CEST, etc.) (software role).
- The software role will lead data acquisition and processing using advanced MRI sequences involving both healthy volunteers and patients, validating new technology, developing shim software, and advancing clinical applications throughout the human body.
- Additionally, the software position will explore innovative software development in sequences and reconstruction methods that exploit the unique capabilities of the shim-RF coil platform.

Essential to the software role is hands-on experience in acquiring and processing human MRI data. Additional valued skills may encompass image reconstruction, a solid understanding of MRI physics, and pulse sequence development. The candidate should possess a **strong motivation for publication**, with a proven track record. Prior hardware development experience is **not required** for the software role.

The software position will concentrate on enhancing image quality and precision throughout the human body, employing **advanced MRI techniques** like diffusion, spectroscopic, susceptibility, and functional imaging. Application of these techniques to diverse clinical areas including oncology, neuroscience, and cardiology will also be a focus. These advanced techniques yield insights beyond macroscopic morphology, revealing tissue microstructure, metabolism, and function, providing unique data associated with various pathological conditions. The candidate will benefit from being part of a globally leading group in the MRI Research Institute and the Department of Radiology at Cornell, consisting of clinicians, MR physicists, and engineers specializing in clinical imaging, pulse sequence development, hardware development, image reconstruction, motion correction, and artificial intelligence.

The projects are generously funded by the NIH through collaborative efforts with internationally renowned scientists. Ongoing projects have garnered significant support and anticipation from major MRI vendors, as they address significant limitations in high-field MRI scanners, thereby advancing the field. The program PI currently serves as the Chair of the ISMRM MR Engineering Study Group, as well as the President of the Overseas Chinese Society for Magnetic Resonance in Medicine (OCSMRM), the largest society for researchers of Chinese origin in the field of magnetic resonance in medicine.

Depending on the candidate's qualifications, a competitive compensation package will be offered. The research area holds a wealth of new research avenues. Enthusiastic PhD graduates interested in exploring this novel area are strongly encouraged to apply. **The position offers career growth opportunities to a Junior Faculty role at Cornell.** Salary Range (annually) based on experience:

    -Postdoctoral Associate: $64,272 - $77,234

Weill Cornell Medicine provides the above salary range in compliance with the New York City law on Salary Transparency in Job Advertisements. The above salary range for New York City based roles represents WCM's good faith and reasonable estimate of possible compensation at the time of posting.

Diversity is one of Weill Cornell Medicine's core values and is essential to achieving excellence in patient care, research, and education. We welcome applications from candidates who share our commitment to fostering a culture of fairness, equity, and belonging. Weill Cornell Medicine is an Equal Employment Opportunity Employer, providing equal employment opportunities to all qualified applicants without regard to race, sex, sexual orientation, gender identity, national origin, color, age, religion, protected veteran or disability status, or genetic information.

Interested applicants, please contact Dr. Han with including a resume and a brief description of interest:
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