Postdoctoral Fellowships in Quantitative Magnetization Transfer Imaging

About our group
The mission of the Center for Advanced Imaging Innovation and Research (CAI²R) at New York University is to connect basic research on biomedical imaging with routine patient care. The Center—located in the heart of Manhattan—is embedded in the Department of Radiology and brings together over 100 researchers, including basic MR scientists, clinical researchers, and research technicians.

About the project
We are seeking to develop quantitative magnetization transfer and relaxometry methods for neuroimaging with a focus on multiple sclerosis. We aim to develop and evaluate pulse sequences and image reconstruction methods that build on novel biophysical models and MR-Fingerprinting inspired pulse sequence concepts. The project is highly collaborative and embedded in an interdisciplinary research team at the interface between technical development and clinical application.

Available postdoctoral fellowships
We are looking for two postdoctoral fellows who will work closely with each other and the rest of our team to do the following:

- **Development of pulse sequences and image reconstruction algorithms.** The successful candidate will use numerical optimizations to tailor acquisition patterns to parameters of interest, utilize prior information about spin dynamics for designing k-space trajectories, and tailor machine-learning-based image reconstruction algorithms to quantitative MRI. They will also perform imaging experiments to test the developed methods. Preference will be given to candidates with experience in pulse sequence programming and/or image reconstruction, but we also encourage applications from candidates with strong general MRI backgrounds and an interest in learning these skills.

- **Clinical translation and data analysis.** This project involves a translational study with approximately 200 scans of participants with multiple sclerosis and healthy controls. The successful candidate will oversee this study together with PI Jakob Assländer and analyze the data in collaboration with our clinical partners. Preference will be given to candidates with experience in translational research, neurodegenerative disease, in particular, multiple sclerosis, and/or image processing software such as freeSurfer, but we also encourage applications from candidates with strong general MRI backgrounds and an interest in learning the required skills.
Required qualifications
- PhD in physics, biomedical sciences, engineering, computer science, or a related field
- MRI research experience
- Programming skills, preferably in Python, MATLAB, Julia, and/or C++

Preferred qualifications for the first position
- Experience with pulse sequence programming (Siemens)
- Experience with image reconstruction
- Experience with machine learning

Preferred qualifications for the second position
- Translational research experience
- Experience with neurodegenerative disease, in particular, with multiple sclerosis
- Experience with image processing software, such as freeSurfer

Timeline, salary, and benefits
These positions are initially offered for two years and may be extended based on satisfactory performance and availability of funds. The starting salary ranges from $70,000–$75,000 per annum and benefits include health, dental, and vision insurance, a prescription drug plan, commuter plans, as well as subsidized housing based on availability. We encourage both domestic and international applicants and provide support for immigration services.

Diversity and inclusion
We are committed to diversity and inclusion in all aspects of recruiting and employment. All qualified individuals are encouraged to apply and will receive consideration without regard to race, color, gender, gender identity or expression, sexual orientation, national origin, age, religion, creed, or disability.

To apply
Please contact Jakob Assländer (jakob.asslaender@nyulangone.org) to apply for the position or request more information. Please include your CV, a letter of interest, and 2–3 references. Any additional information that tells us more about you is welcome but optional.