Stanford University

RADIOLOGY

Jennifer A. McNab, Ph.D.
Associate Professor of Radiology
R.M. Lucas Center for Imaging
1201 Welch Road, Rm. P286, Stanford, CA, 94305-5488
mcnabj@stanford.edu

February 5, 2024

Multiple Postdoctoral Positions available in:
MRI Physics and Analysis for Neuro Diffusion MRI

Come join our passionate, multi-disciplinary team of physicists, engineers, computer scientists, neurosurgeons, neurologists, neuropathologists to develop transformative diffusion MRI methods for brain diagnostics and neurosurgical guidance. Define the relationships between MRI, histology, and brain function through innovative multi-modal experiments.

Two Postdoctoral Positions in Pulse Sequence Development for Human MRI:
Develop pulse sequences and image reconstruction pipelines to enable new image contrasts and/or more efficient acquisition schemes. Develop innovative gradient encoding waveforms the leverage the new capabilities of high-end neuro MRI platforms and combine these acquisitions with new analysis approaches to mapping microstructural features and/or structural connectivity. Push the boundaries of what can be visualized/detected in the human brain for clinical and/or neuroscientific application.

One Postdoctoral Position in Pulse Sequence Development for Preclinical MRI:
Develop pulse sequences and analysis pipelines that will bridge MRI and histology and enable whole-brain, longitudinal mapping of microstructural features such as axon diameter, myelination, cortical architecture, neuro-inflammatory markers and more in mouse models for epilepsy, mental illness, traumatic brain injury and neurodegeneration. Improve the interpretation of MRI microstructure maps through same specimen comparisons to histology. Provide the foundational data needed to translate these methods to human MRI.

One Postdoctoral Position in Tractography and Resting-State FMRI Analysis:
Develop diffusion tractography and resting-state FMRI analysis tools that will aid in the positioning of many electrodes deep in the brain for stereo-EEG detection of the seizure onset zone in epilepsy patients. Develop a framework to relate MRI connectivity maps with stereo-EEG connectivity measurements. Determine structure-function correlates and develop an MRI connectivity back-drop that provides a frame-of-reference for the sparsely-sampled stereo-EEG measurements. Develop new visualization tools with access to high-end compute.

Facilities: The Richard M. Lucas Center for Imaging is a centralized resource housing two 3T, one 3T PET-MR and one 7T human MRI scanners dedicated to biomedical imaging research on the Stanford University campus. Located on the Stanford campus adjacent to the School of Medicine and Stanford Hospitals and a short walk to the Engineering and Neuroscience buildings, the Lucas Center is ideally positioned for imaging research studies spanning the spectrum from basic to clinical.

Qualifications: Applicants are expected to have a PhD in engineering, physics, biomedical engineering, biophysics, or related discipline. A background in MR physics and strong computer programming skills in MATLAB and Python and experience with pulse sequence development and/or MRI connectivity analysis tools is strongly preferred. A commitment to diversity, equity, and inclusion through continuous development, modeling inclusive behaviors, and proactively managing bias.

Pay Range and Benefits: The expected base pay range for this position is $71,650-$82,000. The pay offered to the selected candidate will be determined based on factors including (but not limited to) the qualifications of the selected candidate, budget availability, and internal equity. For more details of the benefits that you would be eligible for, please see: http://postdocs.stanford.edu/benefits/.

DEI Statement: We value diversity — in backgrounds and in experiences. We need people from all backgrounds and swaths of life to help build the future of neuroimaging. We are a team of empathetic, caring, and supportive scientists and support staff. We are deliberate and self-reflective about the kind of team and culture that we are building, seeking scientists that are not only strong in their own aptitudes but care deeply about supporting each other's growth. Stanford University is an affirmative action and equal opportunity employer, committed to increasing the diversity of its workforce. We welcome applications from women, members of minority groups, veterans, persons with disabilities, and others who would bring additional dimensions to the university's research and teaching mission.

Location: Stanford University is based in the heart of Silicon Valley and provides many opportunities to collaborate with local tech companies and/or develop entrepreneurial skills. Stanford also offers a mild climate and fantastic weather year-round. Stanford is a ~45 min drive from San Francisco and a ~25 min drive to the beach. Gorgeous, rugged coastlines, mountain ranges and redwood forests abound.

Application Materials: Interested candidates should forward your CV, a cover letter summarizing your research experience and interests, and the contact information for 3 references to:

Jennifer McNab, Ph.D.
Associate Professor, Department of Radiology
Stanford University

Richard M. Lucas Center for Imaging
1201 Welch Road, P285
Stanford, California USA 94305

Email: mcnabj@stanford.edu