



PhD Studentship Opportunities: Development of High-Speed Functional and Spectroscopic Magnetic Resonance Imaging for Clinical Applications

The Human MR Imaging Research Laboratory at the University of New Mexico School of Medicine develops advanced MR imaging technologies for clinical applications in cancer and neuroscience research (<u>http://neurology.unm.edu/research/mr-lab/index.html</u>). The ultimate goal is to improve individualized treatment strategies and prognosis based upon patient specific imaging protocols. PhD studentships for the following projects are currently available:

- Development of high-frequency resting state fMRI in human brain and characterization of the underlying physiology. The project involves the development of ultra-high-speed functional MRI (fMRI) acquisition and reconstruction techniques using parallel imaging, mapping of task-based and resting state fMRI signal changes in healthy subjects during respiratory challenges, and presurgical mapping in patients with brain tumors.
- Monitoring of the treatment response to neoadjuvant chemotherapy in locally advanced breast cancer and characterization of the metabolic profile of brain tumors using MR spectroscopic imaging (MRSI). This project involves the development of high-speed MRSI acquisition and reconstruction techniques using parallel imaging, mapping of metabolites in patients with breast and brain cancer using model-based spectral quantification.

The research program offers training in MR physics, pulse sequence development, medical image analysis and in clinical and neuroscience research in a multi-center collaboration with physicists, engineers, oncologists and neurosurgeons. Successful candidates will pursue a PhD in physics, electrical and computer engineering, biomedical engineering, or related fields. This project requires a strong background in signal and image processing, and several years of programming experience in MATLAB and/or C++.

Please send applications (including a CV, a statement of research interests, and letters from 3 referees) to: sposse@unm.edu

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The University of New Mexico is an Equal Opportunity/Affirmative Action Employer and Educator. Qualified women and minorities are strongly encouraged to apply.

Albuquerque offers world-class hiking and skiing in the Rocky Mountains combined with a unique Southwest cultural experience (<u>http://www.visitalbuquerque.org/</u>).

