



Luis Hernandez-Garcia, Ph.D.
Research Professor, FMRI laboratory
Research Professor, Biomedical Engineering Department
Co-director, Engineering Preclinical Imaging Center

Postdoctoral research fellow at the Functional MRI Laboratory University of Michigan, Ann Arbor, MI, USA

Position title: Postdoctoral research fellow

Description: A postdoctoral research position is available at the University of Michigan's Functional MRI Laboratory to work on an NIH funded project. The candidate's job will conduct research on projects related to quantitative imaging of cerebral blood flow using MRI without the use of contrast agents. The techniques developed in this project will be applied to Parkinson's disease and other neurodegenerative disorders. The candidate will be expected to publish their findings in peer reviewed journals and international conferences.

The research will primarily involve these areas:

- Modeling MR signal under blood flow conditions
- Development of deep learning methods to solve inverse problems
- Pulse sequence design and development
- Image reconstruction and post-processing

Requirements: A strong background in signal processing and mathematical modeling is crucial for this project. The ideal candidate will have a Ph.D. degree in a relevant discipline such as Biomedical Engineering, Electrical Engineering, or Physics.

He/she will also have experience in one or more of the following MRI related areas: **Arterial Spin Labeling (ASL)**, **Magnetic Resonance Fingerprinting (MRF)**, **Neural Networks** or other pattern recognition techniques. MR pulse programming experience is also desired, preferably in EPIC.

How to Apply: Please submit a cover letter, CV and the contact information of three references to:

Luis Hernandez-Garcia, Ph.D.
2360 Bonisteel Blvd.
Ann Arbor, MI, 48109-2108
hernan@umich.edu

Environment: The Functional MRI Laboratory at the

University of Michigan, has a twenty-year history of neuroimaging and MRI engineering research. During its operation, the laboratory has provided a common forum for research groups ranging from Psychiatry to Electrical Engineering. The laboratory hosts numerous seminars given by invited speakers, are attended by investigators from the Great Lakes region. The FMRI laboratory holds an intensive two-week course in FMRI every summer, and an advanced neuroimaging speaker series in order to facilitate training of new investigators and disseminate the latest findings in the literature among the local neuroimaging community.

The laboratory houses two state-of-the-art, research-dedicated, 3.0 T GE MR750 MRI scanners, which are fully equipped for functional imaging studies and are outfitted with custom parallel transmission equipment. In addition, there is ample room for participant waiting, dressing and training rooms, computational support facilities, and a fully equipped electronics workshop for coil and phantom construction. Multiple FMRI participant stimulation devices are available to investigators for audio-visual stimulation. The University of Michigan 3D Laboratory provides the latest 3D printing services to the University community.

The Engineering Preclinical Imaging Center is also available for this project. It is a small animal imaging facility adjacent to the Functional MRI Laboratory. It consists of an Agilent 7T scanner. This system has a 31 cm bore and has 3 gradient inserts, and supports a full range of MRI pulse sequences, including echo planar imaging and diffusion tensor imaging. The system has include 4 transmit channels for parallel excitation and 4 receive channels along with several array coils for parallel imaging. Full physiological monitoring, animal holders, rapid animal positioning systems, and an animal ventilator, stereotaxic frame and heater are available.