



Florida International University is recognized as a Carnegie engaged university. Its [colleges and schools](#) offer more than 180 [bachelor's, master's and doctoral](#) programs in fields such as engineering, international relations, architecture, law and medicine. As one of South Florida's anchor institutions, FIU is worlds ahead in its local and global engagement, finding solutions to the most challenging problems of our time. FIU emphasizes research as a major component of its mission and enrolls 48,000 students in two campus and three centers including FIU Downtown on Brickell and the Miami Beach Urban Studios. More than 160,000 alumni live and work in South Florida. [FIU is a member of the Sun Belt Conference](#) and has 400 student-athletes participating in *17 sports. In 2010 the Panthers won their first bowl game.* For more information about FIU, visit <http://www.fiu.edu/>.

A postdoctoral position is available in the laboratory of Dr. Jorge Riera, i.e. the Neuronal Mass Dynamics (NMD) Lab, Department of Biomedical Engineering at FIU (<http://www.bme.fiu.edu>). The selected candidate will be part of a multi-disciplinary effort to study the main physiopathological aspects underlying refractory epilepsy in type II Focal Cortical Dysplasia (FCD). The postdoctoral researcher will combine optogenetic/pharmacological manipulations and four recording techniques to study the neuro-vascular/metabolic coupling mechanisms and microcircuit working principles at the degenerated (i.e. the core) and adjacent "edematous" regions of this type of brain lesion using a rat's model of type II FCD. The main recording techniques will be intracranial potentials obtained with MEA, large-scale EEG data, laser Doppler flowmetry and O<sub>2</sub>/NO amperometric measurements. He/she will investigate pathways for inflammatory signaling, as well as mechanisms for seizure-induced tissue damages and cellular reactivity in this type of lesion. The postdoctoral researcher will interact extensively with biomedical engineers (e.g. Dr. Wei-Chiang Lin @FIU), neuroscientists (e.g. Dr. Tara Stewart at Miami Children Hospital), industrial partners and students.

The candidates must be able to demonstrate excellent communication skills and the ability to work as part of a team. The position is for two years, renewable on a yearly basis. This work will require experimental design for physiological measurements and extensive analysis of data. A PhD or comparable advanced degree in Neuroscience, Biomedical Engineering, Physics or related fields is required. Applicants must have a strong background in neuroscience. Prior experience of working with biophysical models and/or in computational neurosciences is highly desirable. Applicants must be comfortable programming in MATLAB (desirable) or C++.

The NMD lab is focused on: **i)** developing biophysical models to interpret and fuse different modalities of brain imaging, **ii)** using them to study complex problems associated with neurological disorders in pre-clinical trials, and **iii)** finally transferring technologies resulting from these studies to biomedical industry and clinical practice. The Biomedical Engineering Department at Florida International University is leading the state in biomedical engineering education. It is endowed by generous support from the Wallace H. Coulter Foundation, the Ware Foundation and the State of Florida. Many faculty in the department work closely with researchers in the Brain Institute at the Miami Children's Hospital, CATE Institute for neuroscience research and many biomedical companies in South Florida. Applications must be submitted via email to [jrieradi@fiu.edu](mailto:jrieradi@fiu.edu) (deadline, December 1<sup>st</sup>) along with the following documents (CV, three references, cover letter).

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