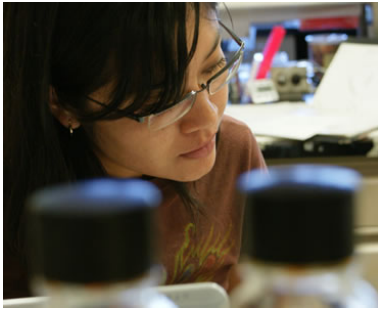


# 2010 RICARDO MILEDI NEUROSCIENCE TRAINING PROGRAM

## Neural development, physiology, imaging and degeneration



**August 16 – September 10, 2010**  
**Instituto de Fisiología Celular – Neurociencias, UNAM**  
**México D.F., México**

**COURSE DIRECTOR:** Iván Velasco, Instituto de Fisiología Celular-Neurociencias, Universidad Nacional Autónoma de México.

**GENERAL GOAL:** The aim of this 4-week course is to provide a comprehensive view of both relevant concepts and current techniques in Neuroscience. Lectures and seminars of topics related to the practical work will be made by local faculty and invited professors. The course is composed of 4 modules that will have their own dynamics depending on the available equipment for the practical sessions:

### 1) NEURAL DEVELOPMENT.

Several topics will be discussed, such as neural patterning, neural stem cells, growth and survival signaling in developing neurons, role of lipids in CNS development and retina development. Local faculty: Diana Escalante-Alcalde, Humberto Gutiérrez, Rocío Salceda, Iván Velasco. Foreign faculty: Pamela Raymond (University of Michigan) and John Rubenstein (University of California San Francisco).

### 2) PHYSIOLOGY.

The goal of this section is to understand the biophysical foundations of cell excitability and synaptic transmission through learning the concepts of synaptic plasticity, neural circuits and neuromodulation. Local faculty: José Bargas, Francisco Fernández de Miguel, Elvira Galarraga, Rafael Gutiérrez, Marcia Hiriart, Juan Carlos Gómora, Tamara Rosenbaum, Ranulfo Romo. Foreign faculty: Guillermo Pilar (Case Western Reserve University) and Osvaldo D. Uchitel (Universidad de Buenos Aires).

### 3) FLUORESCENCE IMAGING AND CALCIUM SIGNALING.

The third section will cover: principles of fluorescence and its biological applications, introduction to fluorescence microscopy, confocal and multiphoton microscopy, total internal reflection fluorescence microscopy, calcium signaling in neurons and endocrine cells. Local faculty: Tatiana Fiodelísio,

Arturo Hernández-Cruz. Foreign faculty: Luis Miguel Gutiérrez (Instituto de Neurociencias de Alicante).

### 4) NEURODEGENERATION.

In this module, several diseases will be discussed, such as brain edema, ischemia, Alzheimer's disease, Parkinson's disease and Amyotrophic Lateral Sclerosis. The presented experimental approaches will allow the student to know and understand mechanisms of neuronal degeneration and its pathological consequences. Local faculty: Clorinda Arias, René Drucker-Colín, Ana María López-Colomé, Lourdes Massieu, Julio Morán, Ricardo Tapia. Foreign faculty: José Rodríguez-Alvarez (Universidad Autónoma de Barcelona) and Ramón Trullas (Instituto de Investigaciones Biomédicas de Barcelona).

**AUDIENCE:** The primary audience is graduate students from Latin American and the Caribbean. Applicants must be able to communicate in English, as lectures and discussions will be conducted in this language. All students will be required to present and discuss their results. Full financial support for traveling and housing expenses will be provided. In addition, a travel award to attend the 2010 Society for Neuroscience Annual Meeting, November 13-17, 2010 in San Diego, CA will be provided. A total of 15 course participants will be selected.

**HOW TO APPLY:** Please see attached application for information or visit [www.sfn.org/miledi](http://www.sfn.org/miledi). Deadline for applications is May 17, 2010. For more information, please contact Dr. Iván Velasco ([ivelasco@ifc.unam.mx](mailto:ivelasco@ifc.unam.mx)). The Instituto de Fisiología Celular Web site can be accessed at [www.ifc.unam.mx](http://www.ifc.unam.mx).

*The Ricardo Miledi Program is organized by the Society for Neuroscience with generous funding from The Grass Foundation.*