

## **MEDS 5384 & BME 6086 - Brain Microcircuitry**

**Brain Microcircuitry** is an upper level course for students who wish to undertake a detailed analysis of the neuronal and synaptic organization of the central nervous system. The course is conducted in informal, small-group sessions and is designed for graduate students and upper level undergraduates who are engaged in neuroscience research. The focus of the course is the brain microcircuitry as seen in animals and man, the cell biology of the brain, gene expression, and mechanisms that govern the activity of networks of neurons. Students will learn about the relationship of structure to function and discuss the neurons and organizations that create specific brain regions.

The rat and mouse are the most commonly used animals for neuroscience and genetic research. In the **Brain Microcircuitry** course, students will examine the human and rodent gross spinal cord and brain and study histological sections from rodents. Students will discuss the neuronal specializations and microcircuitry unique to different parts of the brain. Grades will be given for classroom discussion and a final project with a written report.

**Required texts:** Shepherd G, Grillner S. (2010) Handbook of Brain Microcircuits, First Edition. Oxford Univ Press, ISBN13: 9780195389883; ISBN10: 0195389883.

**Prerequisite:** All students are expected to have some familiarity with neuroscience from previous courses. Graduate Students: An introductory neuroscience course is preferred, (e.g. PNB 5301, MEDS 5372, MEDS 5371). Undergraduates: Instructor consent is required.

**Instructors:** D. Oliver, (860) 679-2241, [doliver@neuron.uchc.edu](mailto:doliver@neuron.uchc.edu)

**Dates:** Fall semester 2011 according to graduate school calendar.

**Day/Time:** Wednesdays, 3:00-5:00 pm (All students must be at UCHC for the first class)  
Begins Wednesday Sept 7; final exam Dec 14, 2011

**Location:** UCHC room E-4036; Distance Learning from UCHC: CUE Room 331E

**Credits:** MEDS 5384, 2 credits; BME 6086, 3 credits.

**Enrollment:** Minimum of 3 students