

## **NEURO 512 Comparative Neuroanatomy (Fall 2013)**

**Instructor: Kevin Alloway**

**Time: T R F 9:05 AM – 10:20 AM**

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**Office: W316 Millennium Science Complex**

**Location: T R 519 Wartik, F 150 N. Frear**

### **Overview:**

This course is aimed at students who want to acquire an in-depth understanding of vertebrate neuroanatomy. While the course is focused on the primate central nervous system, aspects of brain organization in rodents and other vertebrates are presented throughout the semester. Each week includes two 75-minute lectures and a 75-minute laboratory session. Reading assignments include book chapters and selected research articles on neuroanatomy. The laboratory is aimed at developing a 3D knowledge of brain organization, and it includes a series of dissections of human cadaver brains as well as identification of neural structures in histological sections and structural MRIs.

### **Objectives:**

1. Explain the techniques used to elucidate the structural organization of the CNS
2. Demonstrate a working knowledge of 3-D brain structure
3. Recognize and identify neural structures in non-invasive images and histological sections in all planes
4. Describe the internal structural organization of each major subdivision of the brain and spinal cord
5. Describe the circuit connections of the sensory, motor, and limbic systems.
6. Explain the evolutionary principles that have guided the phylogenetic development of the vertebrate CNS

### **Pre-requisites:**

Graduate standing or consent of instructor