

Graduate Issues 614
Cognitive and Systems Neuroscience
Fall 2005 (weeks 1-5)
143 Straub
Mon/Wed 10:00-11:50

Instructor:

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Office Hours: Monday 2:30-3:30 or by appointment

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Overview:

The purpose of this section of Issues is to introduce you to some of the topics, questions, and approaches to cognitive neuroscience. Cognitive and systems neuroscience is concerned with understanding the brain basis of cognitive functions such as perception, action, attention, learning, memory, and plasticity. Various approaches/methods presented will include behavioral measures, functional MRI, event-related potentials, transcranial magnetic stimulation, unit recording, drug studies, computational studies, lesion studies, and genetic manipulations.

For each class there is required reading material which is available as pdf files on Blackboard (go to www.uoregon.edu to access Blackboard; pdfs are located under "course documents") or else a copy will be placed in the copy room (room 352 Straub). Each week I will indicate where the readings are located. You are expected to read the articles before class and come prepared with questions and/or comments for discussion.

Requirements:

- 1) Participation (10%).** You can participate by contributing to the discussions in class and/or by e-mailing your questions/comments to me at least 1 hour before class begins.
- 2) Short Presentation (20%).** You will give one 10-minute conference-style presentation on an article related to the day's topic. The presentation will be followed by questions from the class.
- 3) Two take-home exams (35% each; 70% total).** Each take-home exam will consist of 4-5 questions related to the lecture topics and readings.

Class Schedule

Sept. 26	Introduction to Cognitive Neuroscience: a brief intellectual history – Margaret Sereno
Sept 28	fMRI Studies of 3-D Shape Perception – Margaret Sereno
Oct 3	Neural Network Modeling Approaches to Perception – Margaret Sereno
Oct 5	Taxonomy of Multiple Visual Systems – Paul Dassonville
Oct 10	Mechanisms of Reflexive Attention – Rich Marrocco [Take-home Exam #1 – handed out]
Oct 12	Attentional Networks and the Integration of Psychological Science – Mike Posner
Oct 17	Neural Coding and Representation – Mike Wehr [Take-home Exam #1 – Due in class]
Oct 19	Neural Basis of Action and Skill – Scott Frey
Oct 24	Cellular and Molecular Basis of Learning and Memory – Cliff Kentros
Oct 26	Human Brain Plasticity – Courtney Stevens [Take-home Exam #2 – handed out. Due Monday Oct 31 – please place in Dr. Sereno's mail box by 4:00 pm]