

**Graduate Issues 614  
Cognitive and Systems Neuroscience  
Fall 2004  
Straub 156  
Mon/Wed 10:00-11:20**

Instructors:

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Office Hours: Mon. 2:30-3:30

**Class Schedule**

First half of Quarter – Cognitive

Sept. 27	Intro to Cognitive Psych – A brief intellectual history
Sept 29	Selective Attention – What is the Locus of Selection? Ed Awh
Oct 4 –	Visual Working Memory – Ed Vogel
Oct 6 –	Phonology and Language Development -- Courtney Stevens
Oct 11	Executive Control: Managing task sets – Ulrich Mayr
Oct 13	Long Term Memory — Mike Anderson
Oct 18	Central Processing Limits – Do completely task general cognitive processes exist? The Psychological Refractory Period – Ed Awh
Oct 20	Group discussion of paper topics – 5 min. presentations of hypothesis and method. Hand in written description (300 words) of paper proposal.
Oct 25	Motor Control -- Scott Frey
Oct 27	Taxonomy of multiple visual systems – Paul Dassonville

Second half of quarter – Systems Neuroscience

Nov 1	fMRI Studies of 3-D Shape Perception – Margaret Sereno
Nov 3	Neural Network Modeling Approaches to Motion Perception – Margaret Sereno
Nov 8	Cellular and Molecular Basis of Learning and Memory – Cliff Kentros
Nov 10	The Neural Correlates of Eye-Hand Coordination – Paul Van Donkelaar
Nov 15	Mechanisms of Reflexive Attention – Rich Marrocco
Nov 17	Attention as an Organ System – Mike Posner
Nov 22	Neural Mechanisms of Sound Localization – Terry Takahashi
Nov 24	Neural Basis of Action and Skill – Scott Frey
Nov 29	Human Brain Plasticity – Helen Neville
Dec 1	The Neurobiology of Consciousness – Paul Dassonville

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**Paper assignment**

The goal of this paper assignment is for you to choose a substantive psychological issue and propose an experiment or set of experiments that will further our understanding of this topic. In the spirit of this fall's theme, we would like for you to incorporate experimental methods that are focused on the relationship between brain and behavior. You can have a fair degree of latitude in the specific topic that you choose to address. The experimental techniques that would be appropriate for this proposal include: functional MRI, event-related potentials, unit recording, micro-stimulation of neurons, drug studies (related to neural function), transcranial magnetic stimulation, and lesion studies. If you have a suggestion for another method that we have not included in this list, please let us know!

This paper should be around 7-10 pages in length, but length will not be as important as the clarity and thought that you put into your proposal. We will be looking for a convincing justification of the importance of the research question you've chosen, and a careful design of the approach that may shed light on the issue. Please feel free to schedule appointments with either Ed or Margaret to discuss your paper assignment.

There are two due dates that you should be aware of:

**OCTOBER 20<sup>th</sup>** (Wed., 4<sup>th</sup> week) – group discussion of paper topics and methods. We'll engage in a round table discussion of each student's paper proposal to gather comments on hypothesis and methods. You'll also be asked to turn in a brief written description (300 words) of your paper proposal.

**DECEMBER 1<sup>st</sup>** (10<sup>th</sup> week, last day of class) – Papers are due! We will make every effort to have the graded papers returned to you before the end of finals week.