

HUMAN NEUROPSYCHOLOGY/ COGNITIVE NEUROSCIENCE

PSYCHOLOGY 449/549

WINTER QUARTER 2009: Tue-Thu 2:00-3:20 pm, 146 Straub

Instructor:	Helen J. Neville 271 Straub	neville@uoregon.edu Office Hours: Tuesday 3:20--4:20 pm (or by appointment)
Teaching Asst:	Janet Ng 351 Straub	<jng@uoregon.edu> office hour: Tuesday, 1:00--2:00 pm

<u>Date</u>	<u>Topic</u>	<u>Readings</u>
Jan. 6-15	Background, Issues and Techniques in Cognitive Neuroscience	Ch.* 1, 2, 3, 4 (2 & 3 should be review)
Jan. 20	MIDTERM	
Jan. 22-29	Sensory Development and Plasticity	Ch. 15. pp. 178-179; 626-627 **Reading (sections I and II)
Feb. 3	MIDTERM	
Feb. 5-10	Object and Face Recognition	Ch. 5, 6
Feb. 12-17	Attention	Ch. 7 ** Reading (sections IV and V)
Feb. 19	MIDTERM	
Feb. 24-26	Memory	Ch. 8
Mar. 3-10	Language	Ch. 9, 10 **Reading (section III, V, VI)
Mar. 12	Social/Emotional Cognition	Ch.13

Wed., Mar. 18 1:00 pm **FINAL EXAM:**

* Text: *Cognitive Neuroscience: The Biology of the Mind*, ****2nd Edition****, Michael Gazzaniga, Richard Ivry and George Mangum (Eds.). W.W. Norton.

** Reading: Stevens, C. and Neville, H. (in press). Profiles of Development and Plasticity in Human Neurocognition. In M. Gazzaniga (ed.), *The Cognitive Neurosciences IV*.

Grading: Midterms = (N=3) each 20% of grade
Final = 40% of grade

Grads: 4-6 page paper on your choice of cognitive process viewed from multileveled neuroscience perspective
5-10 minutes review of an original research article for class

For each of the cognitive processes we will discuss you should be able to provide evidence about:

- the brain systems that are important (between and within the hemispheres)
- functional subsystems within these cognitive processes that have been implicated by studies at several different levels of analysis
- how these functionally specialized systems develop

Different levels of analysis, types of evidence we will use to study the neural basis of cognition

1. Animal Studies
 - a. lesions
 - b. single neurons
 - c. behavior
 - d. effects of experience
 - e. gene expression
2. Human Clinical patients (adults)
 - a. lesions/MRI
 - b. split brain surgery
 - c. stimulation
3. Normal Human Adults
 - a. behavior
 - b. ERPs
 - c. PET
 - d. MEG
 - e. magnetic stimulation
 - f. fMRI
 - g. T.M.S.
 - h. effects of experience
 - i. genetic variability
4. Human Development
 - a. lesions
 - b. behavior
 - c. ERPs
 - d. fMRI
 - e. effects of experience
 - f. genetic variability

Examples of types of evidence we will discuss for:

Sensory Development and Plasticity

1a, b, c, d; 3a, b, c, d, e, f, g, h; 4a, b, c, d

Perception and Object Recognition, Functional Organization of the Visual System

1a, b; 2a; 3a, b, c, f, g, h

Face Processing

1a, b; 2a, b; 3a, b, c, f, g; 4b, c, d

Attention

1a, b, c; 2a; 3a, b, c, d, f, g, i; 4b, c, d, e, f

Memory

1a, b, c; 2a; 3a, b, f, i; 4b

Language

2a, b, c; 3a, b, c, d, e, f, g; 4a, b, c, d, e

Social/Emotional Cognition

1a, b, c, d, e; 2a; 3a, f, h, i; 4b, e