

**HUMAN NEUROPSYCHOLOGY/ COGNITIVE NEUROSCIENCE  
PSYCHOLOGY 449/549**

**SPRING QUARTER 2008:** Tue-Thu 2:00-3:20 pm, 242 Gerlinger

Instructor:	Helen J. Neville 271 Straub	neville@uoregon.edu Office Hours: Tue 3:20--4:20 pm (or by appointment)
Teaching Asst:	Cara Bohon	<cbohon@uoregon.edu> office hour: 10:00—11:00 am, Straub 392

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<u>Date</u>	<u>Topic</u>	<u>Readings</u>
Apr 1-10	Background, Issues and Techniques in Cognitive Neuroscience	Ch.* 1, 2, 3, 4 (2 & 3 should be review)
Apr 15	<b>MIDTERM</b>	
Apr 17-24	Sensory Development and Plasticity	Ch. 15. pp. 178-179; 626-627 **Reading (first half--up to language)
Apr 29	<b>MIDTERM</b>	
May 1-6	Object and Face Recognition	Ch. 5, 6
May 8-13	Attention	Ch. 7
May 15	<b>MIDTERM</b>	
May 20-22	Memory	Ch. 8
May 27-Jun 3	Language	Ch. 9, 10 **Reading (second half on language)
Jun 5	Social/Emotional Cognition	Ch.13

Wed., Jun 11 1:00 pm **FINAL EXAM:**

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

\*\* Reading: Neville, H.J. (2006). Variability of plasticity of human cognition. In M. Johnson (Ed), *Attention and performance 2004 conference proceedings*. London:Oxford University Press.

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

**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

**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

Attention

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

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