HUMAN NEUROPSYCHOLOGY/ COGNITIVE NEUROSCIENCE
PSYCHOLOGY 449/549

SPRING QUARTER 2007: Tue-Thu 2:00-3:20 pm 242 Gerlinger

Instructor: Helen J. Neville
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Office Hours: Thu 3:20-5:20 pm
(or by appointment)

Teaching Asst: Colleen Tuffy
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office hour to be determined, to be held at
Daily Grind Coffeehouse (Knight Library, lower level)
additional office hours as needed

Date	**Topic**	**Readings**
Apr 3-12	Background, Issues and Techniques in Cognitive Neuroscience	Ch.* 1, 2, 3, 4 (2 & 3 should be review)
Apr 17	**MIDTERM**	
Apr 19-26	Sensory Development and Plasticity	Ch. 15. pp. 178-179; 626-627 **Reading (first half--up to language)
May 1	**MIDTERM**	
May 3-8	Object and Face Recognition	Ch. 5, 6
May 10-15	Attention	Ch. 7
May 17	**MIDTERM**	
May 22-24	Memory	Ch. 8
May 29	Social/Emotional Cognition	Ch.13
May 31-Jun 7	Language	Ch. 9, 10 **Reading (second half on language)
Thu., Jun 14 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: 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:

<u>Sensory Development and Plasticity</u>
1a, b, c, d; 3a, b, c, d, e, f, g, h; 4a, b, c, d

<u>Perception and Object Recognition,</u> <u>Functional Organization of the Visual System</u>
1a, b; 2a; 3a, b, c, f, g, h

<u>Face Processing</u>
1a, b; 2a, b; 3a, b, c, f, g; 4b, c

<u>Attention</u>
1a, b, c; 2a; 3a, b, c, d, f, g, i; 4b, c, d

<u>Memory</u>
1a, b, c; 2a ; 3a, b, f, i; 4b

<u>Language</u>
2a, b, c; 3a, b, c, d, e, f, g; 4a, b, c, d, e

<u>Social/Emotional Cognition</u>
1a, b, c, d, e; 2a; 3a, f, h, i; 4b, e