HUMAN NEUROPSYCHOLOGY/ COGNITIVE NEUROSCIENCE
PSYCHOLOGY 449/549
WINTER QUARTER 2009: Tue-Thu 2:00-3:20 pm, 146 Straub

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

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<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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<tr>
<td>Jan. 6-15</td>
<td>Background, Issues and Techniques in Cognitive Neuroscience</td>
<td>Ch.* 1, 2, 3, 4</td>
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<td></td>
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<td>(2 &amp; 3 should be review)</td>
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<td>Jan. 20</td>
<td>MIDTERM</td>
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<td>Jan. 22-29</td>
<td>Sensory Development and Plasticity</td>
<td>Ch. 15. pp. 178-179; 626-627</td>
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<td>**Reading (sections I and II)</td>
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<td>Feb. 3</td>
<td>MIDTERM</td>
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<td>Feb. 5-10</td>
<td>Object and Face Recognition</td>
<td>Ch. 5, 6</td>
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<td>Feb. 12-17</td>
<td>Attention</td>
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<td>Feb. 19</td>
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<td>Feb. 24-26</td>
<td>Memory</td>
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<td>Mar. 3-10</td>
<td>Language</td>
<td>Ch. 9, 10</td>
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<td>**Reading (section III, V, VI)</td>
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<td>Mar. 12</td>
<td>Social/Emotional Cognition</td>
<td>Ch.13</td>
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Wed., Mar. 18 1:00 pm **FINAL EXAM:**


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 Clinic 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