

CLPS1621: The Developing Brain

Spring 2013

K Hour: TTh 2:30-3:50

Instructor: Andrea M. Simmons (x3-2283; Andrea_Simmons@brown.edu)

Office hours by appointment

This seminar course explores how neural processes active during embryological and early development mold the brain and behavior across the lifespan. We will explicitly discuss the relevance of animal models of brain development to both normal and disordered human behaviors.

Prerequisites: NEUR0010 and one other 1000-level course in brain function, either in Neuroscience, Biology, or CLPS.

Grades are based on the following criteria:

1. **Illuminating questions** on one of the assigned readings for each class: 20% of your grade. These questions/comments will form the basis for class discussion of that day's assignments, and are due *no later than midnight* the Monday or Wednesday before class. Questions must be posted on the discussion section of the myCourses site. Each submission is graded on a point basis (2=excellent; 1=acceptable; 0=unacceptable or late). You do not need to post an illuminating question on your expert discussant assignment.
DUE: Beginning with class of 2/7.
2. **Midterm exam** on lectures, covering material from 1/29-3/5: 20% of your grade. The exam will be given in class on 3/7. If you are dissatisfied with your grade on this exam, you will be able to take a make-up exam during reading period.
3. **Expert discussant** on a particular topic in brain development: 20% of your grade. Each student is required to lead one class discussion on a particular topic in brain development. This involves assigning readings to the class, presenting background or additional material on your topic, and stimulating class discussion of the material. Your readings and your discussion must include at least one paper on animal models and one paper on a human behavior/disorder. Grading of this component is based on your preparation, knowledge of the material, ability to lead the discussion, and ability to answer questions. You may work in groups of up to 4, but each member of your group will receive the same grade. The specific topic for this presentation and the assigned articles must be approved by me in advance.
DUE: Beginning with the class of 3/12.
4. **Final project** on some aspect of brain development that includes both animal and human research: 40% of your grade.
This project has 2 parts:
 - a. An annotated bibliography of readings relevant to your project: 20% of your grade. The bibliography must include at least 10 journal articles (exclusive of review papers and of papers assigned for class). The annotated bibliography must include a scholarly summary of

each article in your own words, and a statement of how each article is relevant for your project. The bibliography may be on the same topic as your expert discussant presentation. You may not collaborate with another student on this assignment.

DUE: 4/4. Revisions due 5/7.

b. Creative project on some aspect of brain development: 20% of your grade.

Examples of projects include: games, posters, pamphlets, paintings, videos. Students may work in groups of up to 4. You must present your project to the class.

DUE: 4/25 (last date)

Academic Honesty

Students are expected to be familiar with Brown's Academic Code (posted on the course website), and to complete all assignments according to the principles outlined in this code. Any assignments that are plagiarized, in full or in part, will receive a grade of NC.

Accommodations

Students needing a disability-related accommodation for this course should meet with me as soon as possible, preferably within the first 2 weeks of the semester. Please bring to the meeting a current copy of your academic accommodations letter.

TENTATIVE SCHEDULE

An updated class schedule will be posted on myCourses (calendar tool) and announced in class.

DATE	TOPIC	ASSIGNMENT
1/29	Overview	Bear et al., ch. 23
1/31	Review of neuroanatomy	myCourses materials
2/5	Development of neural circuits	Tau & Peterson 2010
2/7	Area specification: The protomap	Rakic 1988
2/12	Genes in area specification	Miyashita-Lin et al. 1999
2/14	Area specification: Protocortex	O'Leary 1989
2/19	External inputs in area specification	Sur et al. 1988
2/21	Chemoaffinity	Sperry 1976
2/26	Chemorepulsion	Pini 1993
2/28	Critical periods	Constantine-Paton 2009
3/5	Human cortical development	Gogtay et al 2004
3/7	EXAM	
3/12-4/4	Expert discussants	
4/4	Annotated bibliography due	
4/9-4/25	Final project presentations	
5/7	Revised work due	