

Development of the Nervous System

Readings

Assigned:

(1) *Development of the Nervous System, Fourth Edition* (Academic Press, 2019)

DH Sanes, TA Reh, WA Harris

(2) PDF files of primary research and review articles will be posted on NYU Classes

Journal Club

During the second half of each weekly meeting, each of us (Dan in weeks one and two) will present a primary research article that falls within that weeks lecture topic. Beginning in week three, students will make the presentations. Each article to be presented will be pre-selected and assigned to each student. Students are expected to carefully read each article in advance, and be prepared to actively participate in the discussion, whether or not they are presenting the paper. Students will be called on to critically evaluate any and all aspects of the article, including scientific motivation, research methodology, results, and interpretations. Students will fill out a brief questionnaire before the Journal Club begins to evaluate how well the basic points were understood.

Midterm Exam

The midterm exam will be comprised of short-answer and short essay questions.

Term Paper (refer to the Term Paper Description posted on NYU Classes)

The purpose of the term paper is to learn how to read and evaluate primary research. The term paper will critically evaluate 2 primary research articles that address one *hypothesis* related to a developmental disorder of the nervous system.

Students may discuss their paper topic with one another, but may **NOT** work together when writing any portion of the term paper outline or text.

Student Lecture on Term Paper Topic

Each student will deliver a presentation on the specific developmental topic covered in their term paper. The presentation should be in PowerPoint (or PDF or Keynote) format, and must not exceed 20 minutes. Questions will be encouraged and accepted throughout the presentation. You will be able to submit a preliminary version of your presentation and get feedback.

Students may **NOT** work together when preparing their lectures, but may deliver the lectures to one another for feedback on the format.

Grading

The final grade will be determined from your performance on the following assignments:

20%	Class participation & Journal Club participation
25%	Midterm Exam
10%	Outline for Term Paper
20%	Term Paper
25%	Student Lecture

Extra credit assignments are not available. Extensions are granted for documented health issues or personal emergencies.

Attendance

Attendance is compulsory.

SCHEDULE

Date	Topic	Readings
Feb 4	Lecture: Behavioral Development	Chapter 10: pgs 328-356
	Journal Club: (Dan) Recitation : * Schedule student Journal Club presentations * Choosing a topic for your term paper and lecture	Harlow and Zimmerman (1959)
Feb 11	Lecture: Neural Induction & Regional Identity	Chapter 1 & 2: pgs 1-23, 27-49
	Journal Club: (Dan) Recitation: * Selecting references for term paper and lecture * Scheduling student lectures for second half of course	PDF file at NYU Classes
Feb 18	Lecture: Birth & Migration	Chapter 3: pgs 55-77
	Journal Club: student led presentations Recitation: Drafting your term paper outline Term paper topic & 2 primary research articles due	PDF file at NYU Classes
Feb 25	Lecture: Growth Cones & Pathfinding	Chapter 5
	Journal Club: student led presentations Recitation: Writing your term paper (first paragraph) Term paper outline due	PDF file at NYU Classes
Mar 3	Lecture: Formation of Specific Connections	Chapter 6, pgs 159-176
	Journal Club: student led presentations	PDF file at NYU Classes
Mar 9	Term paper due by 11:00 p.m.	Upload paper to NYU Classes
Mar 10	Lecture: Naturally Occurring Cell Death	Chapter 7
	Journal Club: student led presentations	PDF file at NYU Classes
Mar 11	Midterm take home exam available	Download exam from NYU Classes
Mar 18	Completed Midterm Exam due by 11:00 p.m.	Upload exam to NYU Classes
(Spring Break: March 16 - 22)		

Mar 24	Lecture: Applying Basic Research 1: Genetic Disorders Guest Lecturer: Margarita Kaplow	PDF file at NYU Classes
Mar 31	Lecture: Formation of Synaptic Contacts Recitation: Student Lectures Help with lecture preparation (individual appointments)	Chapter 8: pgs 227-254 Upload your lecture to NYU Classes
Apr 7	Lecture: Elimination of Synaptic Connections Recitation: Student Lectures Help with lecture preparation (individual appointments)	Chapter 9: pgs 269-285 Upload your lecture to NYU Classes
Apr 14	Lecture: Experience-dependent Plasticity Recitation: Student Lectures Help with lecture preparation (individual appointments)	Chapter 9: pgs 285-303 Upload your lecture to NYU Classes
Apr 21	Lecture: Applying Basic Research 2: Axon Regeneration Recitation: Student Lectures Help with lecture preparation (individual appointments)	PDF file at NYU Classes Upload your lecture to NYU Classes
Apr 28	Lecture: Applying Basic Research 3: Epigenetic Disorders Recitation: Student Lectures Help with lecture preparation (individual appointments)	PDF file at NYU Classes Upload your lecture to NYU Classes
May 5	Recitation: Student Lectures	Upload your lecture to NYU Classes

Final Exam Week: May 13 - 19
NO FINAL EXAM