Neuroscience 804 - Developmental Neurobiology **Fall 2013**

Tues & Thurs **9:30-11am** in Giltner room 101, 3 units.
Instructor: Marc Breedlove, 355-1749, breedsm@msu.edu

A review of the basic principles of molecular biology and the application of those principles to the development of the nervous system.

Required textbook: *Development of the Nervous System* **3rd Edition** (2012) D.H. Sanes, T.A. Reh, W.A. Harris. Academic Press. ISBN 978-0-12-374539-2.

APPROXIMATE schedule:

Thu	Aug29	Introduction. Neuroscience of epistemology.	
M	*Sep 2*	*LABOR DAY, no classes.*	READING
Tu	Sep 3	Induction, cell-cell interactions, regulation	Ch 1
	Sep 10	Cell differentiation and body patterns, homeotic genes	Ch 2
	Sep 17	Neurogenesis and cell migration	Ch 3
	Sep 24	Cell fate and determination	Ch 4
	Oct 1	Axonal pathfinding and adhesion molecules	Ch 5

MIDTERM over chapters 1-5 only. Time and room TBA (early Oct)

Tu	Oct 8 & Th Oct 10	NO CLASS MEETINGS	
	Oct15	Student presentations of an exciting recent paper in developmental neurobiology.	
	Oct 22	Topographic mapping and synapse rearrangement	Ch 6
	Oct 29	Apoptosis and neurotrophic factors	Ch 7
	Nov 5	Synapse formation and functionality	Ch 8
	Nov 12	NO CLASS MEETING (Society for Neuroscience meetings)	
	Nov 19	Modulation of synaptic function, LTP	Ch 9
	Dec 3	Development of behavior	Ch 10

FINAL EXAM over chapters 6-10 only TTBA, RTBA. (Finals week)

There will be one midterm (over chapters 1-5) and a final exam (over chapters 6-10) of approximately equal length and value. Students will also be evaluated on their oral presentation of a recent primary report in the field.