MEETING TIME AND LOCATION
Thursdays, 10-11.15 am, NRB 3118

COURSE DESCRIPTION
The theme of this course will be "what are the basic principles guiding the emergence and maintenance of the mammalian nervous system?" The intent of this course is to present current topics in developmental neuroscience in the context of this theme. Topics will stress the biochemical, molecular, cellular, and genetic processes involved in the development and function of the mammalian nervous system.

REQUIRED TEXTS
All readings are available on online.

COURSE REQUIREMENTS
We will meet once a week for approximately an hour and 15 minutes. For most weeks there will be one or two papers to be presented and discussed. Students will be required to prepare for presentation and discussion of the papers. Everyone will have read each paper critically in order to make it relatively easy to present the paper in a concise manner. If you need help in formulating your presentation, or in identifying the key issues of a paper, instructors will be glad to help. Each Friday you will be provided with copies of the papers for the next week.

The number of required papers to be read each week is limited to 2, in order to enable thoughtful reflection and lively discussions. For each topic/paper, students will be called
upon to provide background information, including historical context and significance, and outline the relevant questions being studied. At the end of discussion, students should think about/discuss what experiments they would do next if they were in that field. Further, students should discuss the experimental flaws or alternative interpretations.

Each student should bring one written discussion-oriented question to be used in the discussion session. These questions should be handed in before class (with your name on it) and noted as to whether the question is most relevant to the first paper or the second paper to be presented. These questions can be related to the paper presented, another relevant research article, or the week's topic in general. Imaginative and thought-provoking questions or ideas for experiments will be the most fun to entertain. You should integrate your questions or ideas into the discussion of each paper.

**Grade**
The final grade for the course will be calculated as 2/3 from the quality of the presentation given and participation in discussions, and 1/3 from the final exam. Written exam (one page maximum) will be take-home and based on materials discussed in the course.

**Schedule**

**Instructors:** Anton, Bhat, Brenman, Maness, Pevny, Philpot

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- January 12: Introduction
- January 19: Early patterning of the nervous system
- January 26: Neurogenesis
- February 2: Neuronal migration
- February 9: Axon growth/guidance
- February 16: Map formation
- February 23: Neuronal plasticity
- March 1: Synaptogenesis
- March 8: Spring break
- March 15: Gliogenesis
March 22: Myelination

March 29: Neurodevelopmental disorders

April 5: Neurodegenerative disorders

April 12: Neurodegenerative disorders

April 19: Exam preparation

April 24: Take home exam