Seminars in Nervous System Development
Physiological Science 298
Fall Quarter, 2008

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Meeting: Wednesdays, 5 to 6:30 pm in Neuroscience Research Building Room (NRB) 368

Grading Basis: 1 or 2 units. This class may be taken S/U or letter grade optional; 2 unit offering includes additional reading and a written paper.

Course Objectives: Seminar for graduate students on selected topics in developmental neurobiology, such as neuronal migration, axonal guidance, gene expression and synaptogenesis. Initial lecture by faculty followed by weekly primary literature presentations by students. All graduate students are required to present a one-hour seminar on the assigned weekly reading; students enrolled for 2 units must also complete a written analysis of additional primary literature papers. May be repeated for credit.

Class size: Limited to 7 graduate students

Topic and reading assignments:
Growth and survival functions of neurotrophins during development and regeneration

Week 1, Oct. 1: Introductory lecture on the historical perspective and an overview of growth and survival signals during development.

Week 2, Oct. 8: BDNF and axon outgrowth and turning

Week 3, Oct. 15: Neurotrophins and growth cone collapse
Week 4, Oct. 22: Neurotrophins and synaptic density

Week 5, Oct. 29: Neurotrophins and axon pruning

Week 6, Nov. 5: Neurotrophin receptors regulate sympathetic neuron growth

Week 7, Nov. 12: Neurotrophin signaling required for dorsal root injury repair

Week 8, Nov. 19: No class due to Neuroscience meeting

Week 9, Nov. 26: Neurotrophins overcome inhibition by MAG

Week 10, Dec. 3: BDNF promotes axon regeneration following spinal cord injury