4910 Course Objectives

1. Gain an intuitive understanding for important concepts in Cellular Neurobiology.
2. Gain experience and competence in electrophysiological techniques (Job Skills!)
3. Understand and appreciate the experimental paradigms of the field.
4. Polish your scientific thinking and writing.
5. Appreciate the personal excitement of a research physiologist interacting with a living system.

What’s a Model System? What are the main research model systems?

4.9 Research Model Systems (not to scale!)

Reasons to use invertebrates for teaching neuroscience

1. Evolutionary conservation of excitability and synaptic transmission
2. Inexpensive to buy and maintain
3. No animal protocols (no IAUCUC)
4. Hardy nervous systems
5. Often cultured for food

Why are invertebrate animals used as model systems to teach signal transmission in human nervous systems?
Neuronal excitability and synaptic transmission changed little in a half-billion years.

"Never the less, all living things are about the same." C. Darwin

Course website
http://courses.cit.cornell.edu/bionb4910/index.html

Spring 2015 Schedule

4910 Syllabus (cont)
Required “Texts”


4910 Grading

A. 35% - Lab Reports
B. 15% - Problem Sets and Other Assignments
C. 25% - Midterm Paper
D. 30% - Final Paper (25%) and Presentation (5%)

Submit to BLACKBOARD!

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**Blackboard: Neuronal Simulation Assignments**

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4910 Grading

A. 35% - Lab Reports
B. 15% - Problem Sets and Other Assignments
C. 20% - Midterm Paper
D. 30% - Final Paper (25%) and Presentation (5%)

Extra credit for helping lead lab exercises for an Engineering class!

Next week
First Lab: Model Neuron
membrane resistance,
time constant, oscilloscope.
LabChart software tutorial