SYLLABUS
SPECIAL TOPICS COURSE
Biol 493/693

Topics in Neuroscience Fall 2006
Instructors: Michael Harris and Barbara Taylor
Office: AH 260 Phone: x7801 Email: FFMBH@uaf.edu Office Hours: TBA
Credit: 2
Prerequisites: 493 Students must have completed 16 credits of Upper Division (300/400) Chemistry or Biology
693 Students must have Graduate Standing and Permission of Instructor
Location: TBA
Meeting time: Tuesdays, 9:15-11:15; Fall 2006

Course Description:
This will be a small group discussion based class focused on current topics in neurobiology. This course will review primary literature and current data, and will involve presentations by invited speakers. Students will also participate in regular departmental seminars.

Course Goals: This course will provide a detailed introduction to topics in the field of Neurobiology. It will provide and ongoing summary of the work being pursued by members of the Harris/Taylor labs as well as a mechanism to review current research in the neural control of breathing and neural responses to extreme conditions such as hypoxia, hypercapnia, torpor, freeze tolerance, etc. In addition, it will provide a forum for interaction with visiting scientists.

Learning Outcomes: Students will develop detailed background knowledge of selected specific research themes. Students will practice critical assessment of literature and data, and integration of information from different sources. Students will obtain experience by discussing their own research and presenting material to peers in a seminar format.

Instructional Method: The course will involve extensive background reading to be determined based on class selection of focus topics, lecture, group discussion and seminar-style presentation, and will rely heavily on review of the current neuroscience literature.

Course Calendar: Specific material will be assigned in advance of class meeting. Class will meet weekly during the Fall 2006 term. Departmental seminar attendance will be mandatory and topics will be announced.

Week 1: Triple-Risk Hypotheses and the Serotonin Hypothesis of SIDS
Week 2: Mechanisms of Central Chemosensitivity
Week 3: Mechanisms of Central Chemosensitivity: Current controversies
Week 4: Neural Control of Breathing: Historical review
Week 5: Neural Control of breathing: Current concepts
Week 6: Preparation for Soc. Neurosci. AGM
Week 7: Hypoxia
Week 8: Review of Soc. Neurosci AGM
Week 9: Gaspversus Eupnea
Week 10: In vitro Preparations for studying Respiratory control: I
Week 11: In vitro Preparations for studying Respiratory control: II
Week 12: Sleep Apnea
Week 13: Thanksgiving
Week 14: Hiccup and Cough
Week 15: Rhythm and Pattern Generation
Course Policies: Students are expected to attend all class sessions, and actively participate in all class activities.

Evaluation: Students will be evaluated on three criteria: participation and two presentations. Student participation will be judged as their ability and willingness to constructively criticize presented research. Each student will make one presentation on their own research (proposed or in progress) and one on a research article germane to their research topic. The presentations will be judged on their clarity, organization, and provision of supporting material (powerpoint slides and handouts). In assigning the final letter grade, participation will contribute 50% and each presentation will contribute 25%. The class will be graded on a straight percentage basis: 90-100% is an A, 80-89.9% is a B, 70-79.9% is a C, 60-69.9% is a D, and < 60% is an F. Presentations by 493 students will be expected to incorporate material from a single reference source for a topic discussion. 693 students will synthesize material from 2 to 3 sources.

Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. This course will be implemented in cooperation with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.