NS 191C SYLLABUS
Spring, 2005

Course Title: Cellular and Molecular Mechanisms of Learning and Memory (NS191C)

Instructor: Cui-Wei (Tracy) Xie, M.D., Ph.D.
Office: NPI C8-854  (x 6-0083)
Lab:    MRL 2545  (x 6-2946)
E-mail: cxie@mednet.ucla.edu

Guest Speakers: Dr. Bruce Kagan (bkagan@npih.mednet.ucla.edu)
Dr. James A. Waschek (jwaschek@npih.mednet.ucla.edu)

Prerequisite: M101C preferred, but not an absolute request.

Credits: 4
3 hr class, once per week, plus one hr per week for student preparation.

Enrollment: 15

Format: Introductions by the instructor and guest speakers for each topic;
Student presentations and group discussions of selected articles from current literatures

Grading: Letter grades* will be determined as follows:
33% paper reading and participation in the group discussion
33% oral presentation
34% term paper
* Only one integrated grade will be given at the end of quarter.

Course Web site: http://www.lsic.ucla.edu/classes/spring05/

Class rooms: Rm C8-177 for: 4-06-05, 5-04-05, 5-11-05, 6-08-05
Rm C8-872 for: 4-13-05, 4-20-04, 4-27-05, 5-18-05, 5-25-05, 6-01-05

Office hour: Monday, 1- 3 pm, NPI C8-854
**Weekly Schedule:** *, lectures by the instructor or guest speakers, the rest is for student presentation and discussion.

Wk 1. Course Introduction *
Wk 2. Long-term potentiation (LTP): induction and expression*
  Student presentations: early-phase LTP
Wk 3. Late-phase LTP
Wk 4. Long-term depression (LTD)
Wk 5. LTP: structural changes and neurogenesis
Wk 6. The relation between synaptic plasticity, learning and memory
Wk 7. Professor James A. Waschek: Genetic and Molecular Approaches to Learning and Memory*
  Student presentation
Wk 8. Student presentations
Wk 9. Professor Bruce Kagan: Alzheimer’s dementia *
  Student presentation
Wk 10. Student presentations

**Reading Assignment:**

Students can choose a research article from the following list or from current literature for their oral presentations. Review articles in each section (A-C) are required reading materials but not for presentations. Course Reader that includes all the papers listed below is available at COURSE READER MATERIAL, 1141 Westwood Blvd, (310) 443-3303.

**A. LTP and LTD Models (Week 1-6)**

**Review Articles**


**Research Articles**

**Week 2. LTP induction, expression and the early phase**


Week 3. Late-phase LTP


Week 4. LTD and Depotentiation


Week 5. Neurogenesis and Structural Changes during plasticity and Learning


Week 6. Is LTP or LTD Related to Learning and Memory?

B. Genetic and Molecular Approaches to Learning and Memory (week 7, 8)

Review Article


Research Articles


C. Learning, Memory and Behavioral Disorders (week 9, 10)

Review Articles


Research Articles

Books or Book Chapters for References: