

CNS Neuropharmacology: Mechanisms/Synaptic Transmission (VETPR 704)

Fall 2008

C3-129 Vet Med Center

Tuesdays and Thursdays Lectures 9:00-10:00 AM/presentations 10-10:30

Course Description: This is an intermediate advanced level course in central nervous system (CNS) synaptic physiology and pharmacology with an emphasis on understanding cellular and molecular level mechanisms of transmitter release, cellular responses and roles in brain function.

Course Director: Linda M. Nowak; email lmn1@cornell.edu; phone 253-3655
Take home mid-term and final exams are due one week after distribution.

Date	Day	Lecture Title
Aug. 21	Th	1. Overview of Synaptic Transmission
Aug. 26	Tu	2. Voltage-gated channels: Action Potentials
Aug. 26	Th	3. Voltage-gated Ca ²⁺ channels
Sept. 2	Tu	4. Presynaptic mechanisms: Vesicular Release I
Sept. 4	Th	5. Presynaptic mechanisms: Vesicular Release II
Sept. 9	Tu	6. Ligand gated channels: neuromuscular junction
Sept. 11	Th	7. Neuronal nicotinic receptor-channels
Sept. 16	Tu	8. Neuronal nicotinic receptors in addiction
Sept. 18	Th	9. GABA receptor diversity and function
Sept. 23	Tu	10. GABA transporters and receptors in neurological disease
Sept. 25	Th	11. Glycine receptor-channels
Sept. 30	Tu	12. Glutamate release and reuptake
Oct. 2	Th	13. Glutamate receptors and channels
Oct. 7	Tu	No Class Meeting
Oct. 9	Th	14. Synaptic Plasticity: LTP & LTD 15. Serpentine Receptors & G-proteins
Oct. 14	Tu	16. Signal transduction pathways I: phosphorylation
Oct. 16	Th	17. Signal transduction pathways II: desensitization

Date	Day	Lecture Title
Oct. 21	Tu	18. Signal transduction pathways III: phospholipids
Oct. 23	Th	19. Muscarinic cholinergic receptors in cognitive function
Oct. 28	Tu	20. GABA _B receptors: serpentine receptor dimers
Oct. 30	Th	21. Neuropeptide Neurotransmitters: Opiate Peptides and Receptors
Nov. 4	Tu	22. Opiate Receptors: receptor recycling
Nov. 6	Th	23. Opiate Receptors: mechanisms of addiction
Nov. 11	Tu	24. Overview: brain catecholamines and serotonin
Nov. 13	Th	25. Why did Greengard win the Nobel Prize?
Nov. 18	Tu	26. Dopamine Receptors: Links to Psychiatric Disorders
Nov. 20	Th	No Meeting
Nov. 25	Tu	27. Serotonin Receptors: how much do we understand?
Nov. 27	Th	28. Pharmacology of Depression and Compulsive Disorders