NEUR402 Principles of Neural Science (Spring 2022)

Course director: Ben Strowbridge (bens@case.edu); room E659; 368-6974
Location/times: Mondays and Wednesdays 3-4:30 PM (room TBA)
First module on-line at **Zoom ID**: 936 8200 9450 Passcode: 685369
Textbook: Principles of Neural Science, 5th Edition (Kandel et al.)

Jan 10 Introduction to course and overview of neuroscience (Strowbridge lecture #1)
Jan 12 Brain anatomy/function overview (Silver lecture #1)
Jan 17 *(MLK day, no class)*
Jan 19 Neurotransmitters and neuromodulators; neurotransmitter biosynthesis (Zigmond lecture #1)
Jan 24 Neurotransmitter receptors (Sun lecture #1)
Jan 26 Intracellular signaling (Xiong lecture #1)
Jan 31 Ion channels and basis of the resting membrane potential (Friel lecture #1)
Feb 2 Action potential generation and propagation (Friel lecture #2)
Feb 7 Synaptic function: presynaptic mechanism (Strowbridge lecture #2)
Feb 9 Synaptic function: postsynaptic mechanisms and LTP (Strowbridge lecture #3)
Feb 14 Exam 1

Feb 16 Controlling neurotransmitter phenotype (Deneris lecture #1)
Feb 21 Synaptic activity dependent changes in neuronal morphology and function (Deneris lecture #2)
Feb 23 Neurodegeneration mechanisms (Xiong lecture #2)
Feb 28 Neuro-immune interactions (Zigmond lecture #2)
Mar 2 Cerebellum (Friel lecture #3)
Mar 7 *(Spring break, no class)*
Mar 9 *(Spring break, no class)*
Mar 14 Hippocampus (Sun lecture #2)
Mar 16 Memory function (Strowbridge lecture #4)
Mar 21 Olfaction (Tabuchi lecture #1)
Mar 23 Exam 2

Mar 28 Insect neurobiology (Tabuchi lecture #2)
Mar 30 Structure/functional of receptors (Chakrapani lecture #1)
Apr 4 Transcriptional control of neuronal identity (Philippidou lecture #1)
Apr 6 Neurotrophins (Philippidou lecture #2)
Apr 11 PNS development and target interactions (Zigmond lecture #3)
Apr 13 Neurogenesis and glial proliferation, differentiation and migration (Silver lecture #2)
Apr 18 Synaptogenesis (Mei lecture #1)
Apr 20 Activity-dependent development mechanisms (Mei lecture #2)
Apr 25 Exam 3