

Cellular and Molecular Neuroscience

Instructor : Dr. Maegan Weltzin, 907-474-6527, mmweltzin@alaska.edu
Department of Chemistry and Biochemistry
Murie 113E

Lecture: MWF 11:45 am ±12:45 pm (YES, you can bring your lunch)
REIC 203

Office Hours: 1-3 M Murie 113E or arrange via phone/email

Textbook s: I will be following Purves for assigned readings and course organization but either one of the three text books will be adequate for the course.

- x Neuroscience (6th Edition); Sinauer Associates
Dale Purves et al., ISBN: 9781605353807
- x From Neuron to Brain (5th Edition); Sinauer Associates
John G. Nicholls et al, ISBN-13: 978-0878936090 or ISBN-10: 0878936092
- x From Molecules to Networks: An Introduction to Cellular and Molecular Neuroscience (3rd Edition, 2014); Academic Press John H. Byrne, Ruth Heidelberger, M. Neal Waxham, ISBN-13: 978-0123971791 or ISBN-10: 0123971799

Additional Reading: Scientific research articles and review articles

membrane excitability, ion channel function, G-protein signaling, synaptic transmission, development of the nervous system and innervation patterns. Fundamentals of the functional properties of neurons will provide the background for discussions of small neuronal circuits that regulate behavior, the cellular/molecular basis of learning and memory, and pharmacological approaches for the treatment of neuronal pathologies.

Course Goals:

- x Acquire the foundation of the cellular and molecular concepts governing neuronal communication
- x Understand how cellular and molecular concepts integrate into complex behaviors
- x Appreciate parallels between development and plasticity of neuronal interconnectivity
- x Acquire the ability to critically evaluate scientific research articles in cellular, molecular, and developmental neuroscience

Learning Outcomes:

Students will not collaborate on any quizzes, in-

