PSYC/BIPN 189: Brain, Behavior and Evolution

Meeting Time: Tuesday & Thursday 9:30 - 10:50 AM
Location: CENTER HALL (CNTR) 222

Instructor: Tim Gentner
Office Hours: Tuesday 11 - 12 PM, or by appointment
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Office Hours:
Office:
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Course Description: Over the last 80 years the research traditions of Neuroscience, Ethology, and Psychology have intersected in pursuit of understanding how complex natural behaviors are regulated by the central nervous system. This field is called Neuroethology. Problems of interest to neuroethologists include sensory signal detection, recognition, discrimination, localization, decision-making, coordinated movement, orientation, and the hormonal mechanisms underlying periodic behaviors. By necessity, the context for these problems and their corresponding study is set within the development and evolution of natural behaviors. This course considers, in detail, several of the classic and contemporary neuroethological systems such as birdsong, prey capture and localization, electroreception, and echolocation.

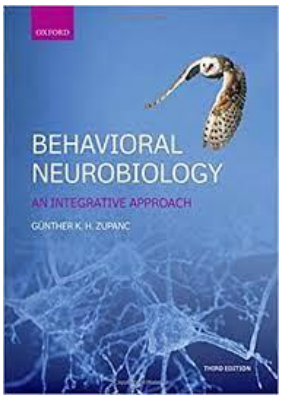
Grading: Two exams (30% each), a research paper (35%), class participation (5%), **ATTENDANCE IS MANDATORY**. I will randomly take attendance. There are no make-up exams without prior permission of the instructor.

Research Paper: You are required to write a research paper for this course. The paper must be 10-12 pages and formatted as a scientific research review using only **primary literature citations**. Proposed paper topics are due by October 30th @ 5PM. Papers are due by Nov 25th @ 11:59PM.

All students are expected to understand and comply with the UCSD Policy on Integrity of Scholarship. Take the pledgehttp://academicintegrity.ucsd.edu/forms/form-pledge.html

Text

Behavioral Neurobiology: An Integrative Approach, Zupanc (3rd edition)



Your digital course materials are provided by the UC San Diego Bookstore through Canvas and are free for the first two weeks of classes. After two weeks, your student account will be charged $41.15 unless you opt out. If you decide to opt out you must complete the process by ***Oct 8th, 2022*** *and you will be responsible for sourcing the materials elsewhere.*
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Research paper

Topic*:* The topic is unrestricted, except that it must address the neural correlates of a naturally occurring behavior of interest to you. If you choose a neuroethological system that is well-studied you'll be expected to touch on contemporary research findings. If you choose a system that is less well-studied, you should focus on aspects of the behavior that you find interesting **and** describe potential experiments to explore their neural basis. **Do not choose a behavior that is unstudied!**

Content: The paper should focus on factual observations, conclusions and general principles derived from those conclusions. Use only **primary literature citations.** Do not recite a list research methods and statistics. We will discuss how to structure the paper in class.

Format: The paper must be 10-12 pages, double spaced, including references.

Process and due dates: As a part of the scientific writing process, you must submit a draft for peer-review. Proposed paper topics are due by October 30th @ 5PM. A draft of your paper, for peer review, is due on November 11th @ 5 PM. Peer reviews are due on Nov 14th @ 5 PM. The final draft of your paper is due by Nov 25th @ 5PM

Peer review: When you turn in your draft, you will be assigned one draft to review. We will discuss details of the peer-review process in class. Briefly, it involves reading and providing constructive feedback on a classmate's draft according to the grading rubric. Reviews are submitted through Canvas https://guides.instructure.com/m/4212/l/54363-how-do-i-submit-a-peer-review-to-an-assignment

Rubric: See CANVAS>*Modules>Research Paper Materials>research paper rubric*

Lecture schedule

Date	Class	Topic	Notes
Sept 22	**1**	Principles of Behavior and Neurobiology (ch. 2 & 3)	189_behave_neuro
Sept 27	2	Principles of Behavior and Neurobiology (ch. 2 & 3)	189_behave_neuro
Sept 29	3	Sound & the auditory system	189_sound_aud
Oct 4	4	Bats 1 (Zupanc 5)	189_bats_1
Oct 6	5	Bats 2 (Zupanc 5 + readings)	189_bats_2
Oct 11	6	Owls 1 (Zupanc 7)	189_owls_1
Oct 13	7	Owls 2 (Zupanc 7 + readings)	189_owls_2
Oct 18	8	Crickets 1(Zupanc 12)	189_crickets
Oct 20	9	Crickets 2 (Zupanc 12 + readings)	189_crickets
Oct 25	**10**	**MIDTERM EXAM**	
Oct 27	11	*Research Tutorial*	
Oct 30	**-**	**Research paper proposal due by 11:59 PM**	
Nov 1	12	Electric Fish 1 (Zupanc 8)	189_efish_1
Nov 3	13	Electric Fish 2 (Zupanc 8 + readings)	189_efish_2
Nov 8	14	Guest Lecture	
Nov 10	15	Paper writing day!	
Nov 11	**-**	**Research Paper Draft Due by 11:59 PM**	
Nov 15	16	Locust Flight 1 (readings)	189_locust
Nov 14	**-**	**Research Paper Peer Review Due by 5:00 PM**	
Nov 17	17	Locust Flight 2 (readings)	189_locust
Nov 22	18	Bird Song 1 (readings)	189_birdsong
Nov 25		**Research Paper Due by 11:59 PM**	
Nov 29	19	Bird Song 2 (readings)	189_birdsong
Dec 1	20	Learning/Memory (Zupanc 13)	189_spatial
Dec 8		**FINAL EXAM 8:00 – 11:00 AM**	