

PSYC/BIPN 189: Brain, Behavior and Evolution

Meeting Time: Tuesday & Thursday 9:30 - 10:50 AM

Location: Pepper Canyon (PYCH) 120

Instructor: Tim Gentner

Office Hours: Tuesday 11 - 12 PM, or by appointment

Office: 5334 McGill; <https://ucsd.zoom.us/my/tgentner>

Email: tgentner@ucsd.edu

TA: Lauren Stanwicks

Office Hours: Thursday 11 - 12 PM, or by appointment

Office: 3535 Mandler; zoom: 977 219 2021 code: rC5JZh

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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**. There are no make-up exams without prior permission of the instructor.

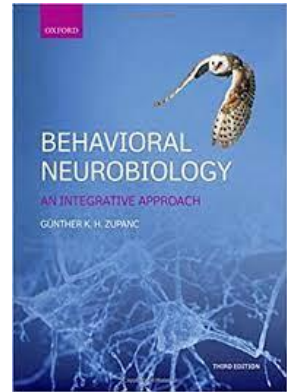
Research Paper: You are required to write a research paper for this course. The paper must be 12-15 pages and formatted as a scientific research review using only **primary literature citations**. Proposed paper topics, and completion of the [plagiarism tutorial](#) are due by **May 6th @ 5PM**. Papers are due by **May 27th @ 5PM**.

All students are expected to understand and comply with the [UCSD Policy on Integrity of Scholarship](#). Take the pledge <http://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 **April 9th, 2022** and you will be responsible for sourcing the materials elsewhere. For any questions about billing please contact textbooks@ucsd.edu. For any questions about using your eBook please reference [RedShelf Solve](#).



To opt-out:

- Click the RedShelf link in Canvas>Modules>Textbook
- Click View Course Materials
- Scroll down to the gray opt-out button and follow the prompts to opt out.

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, and completion of the [plagiarism tutorial](#) are due by **May 6th @ 5PM**. A draft of your paper, for peer review, is due on **May 17th @ 5 PM**. Peer reviews are due on **May 20st @ 5 PM**. The final draft of your paper is due by **May 27th @ 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 classmates draft according to the final grading rubric. <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](#)
https://canvas.ucsd.edu/courses/26040/files/3894767/download?download_frd=1

Lecture schedule

Date	Class	Topic	Notes
Mar 29	1	Principles of Behavior and Neurobiology (ch. 2 & 3)	189_behave_neuro
Mar 31	2	Principles of Behavior and Neurobiology (ch. 2 & 3)	189_behave_neuro
Apr 5	3	Sound & the auditory system	189_sound_aud
Apr 7	4	Bats 1 (Zupanc 5)	189_bats_1
Apr 12	5	Bats 2 (Zupanc 5 + readings)	189_bats_2
Apr 14	6	Owls 1 (Zupanc 7)	189_owls_1
Apr 19	7	Owls 2 (Zupanc 7 + readings)	189_owls_2
Apr 21	8	Crickets 1 (Zupanc 12)	189_crickets
Apr 26	9	Crickets 2 (Zupanc 12 + readings)	189_crickets
Apr 28	10	MIDTERM EXAM	
May 3	11	<i>Research Tutorial</i>	
May 5	12	Electric Fish 1 (Zupanc 8)	189_efish_1
May 6	-	Research paper proposal due by <u>5:00 PM</u>	
May 10	13	Electric Fish 2 (Zupanc 8 + readings)	189_efish_2
May 12	14	Locust Flight 1 (readings)	189_locust
May 17	15	Locust Flight 2 (readings)	189_locust
May 17	-	Research Paper Draft Due by <u>5:00 PM</u>	
May 19	16	Bird Song 1 (readings)	189_birdsong
May 20	-	Research Paper Peer Review Due by <u>5:00 PM</u>	
May 24	17	Bird Song 2 (readings)	189_birdsong
May 26	18	Learning/Memory (Zupanc 13)	189_spatial
May 27		Research Paper Due by <u>5:00 PM</u>	
May 31	19	Topic TBD	
Jun 2	20	Topic TBD	
Jun 7		FINAL EXAM 8:00 – 11:00 AM	