Psyc 317: Laboratory in Behavioral Neuroscience

Fall 2015
Friday, 11:30-1:00 PM, KINSC Sharpless 507

Professor: Laura Been, PhD
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610-896-1017
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Office hours: by appointment

Course Description and Learning Goals: The goal of this laboratory course is provide students with hands-on experience in the design, execution, analysis, and presentation of behavioral neuroscience research. Using Syrian hamsters as a model organism, students will participate in experiments that examine the complex relationship between the brain and behavior. Throughout the semester, students will write an APA-style research report detailing the experimental rationale, methods, results, and broader implications of the experiments.

Course Readings: There is no textbook for this course. On several occasions, however, journal articles or other readings will be distributed electronically. Access to the APA style guide is also strongly recommended. Copies are on reserve in the Science Library.

Attendance and Participation: Laboratory research requires dedication and commitment. **ATTENDANCE IS MANDATORY** except when conflicts are discussed ahead of time; if you have a conflict during one of our course meetings, it is your responsibility to let me (and your group members) know as soon as possible and I will determine whether the absence is excusable. Any unexcused absences will result in a ½ grade deduction from your final grade.

Laboratory research also requires the ability to work effectively and respectfully as part of a team. Individual team members may have different strengths—that is okay. The goal is to learn from each other and support one another in our experiments. That said, everyone is required to be engaged and actively participate in our experiments. Failure to do so will negatively impact your final grade.

Course Policies: Please note that this course will involve the use of laboratory animals. This is perhaps not surprising, as research involving animal models is one of the most powerful and common methods in Behavioral Neuroscience research. We will spend a substantial amount of course time discussing the ethical use of animals in research. Furthermore, all students will receive extensive training on working with animals in the laboratory; this training will be administered not just by Dr. Been, but also by Haverford College's attending veterinarian, as well as the College's Committee on Laboratory Safety. **I welcome and encourage students who have questions or concerns about working with animals in this course to come speak with me as early as possible.**

Working with animals in a research setting is a privilege, and one that I do not take lightly. Abusing this privilege in any way will not be tolerated and will result in immediate removal from the course and notification of the Office of Academic Affairs and the Honor Council. Taking photos, videos, or other digital media is strictly prohibited. If you see another student interacting with the animals in a way that makes you uncomfortable, or if you feel uncomfortable for any other reason, please come speak with me as soon as possible.

On days where we will be working directly with animals or chemicals, please wear closed-toed shoes and appropriate laboratory attire.

Disability Statement: Haverford College is committed to supporting the learning process for all students. Please contact me as soon as possible if you are having difficulties in the course. There are also many resources on campus available to you as a student, including the Office of Academic Resources (https://www.haverford.edu/oar/) and the Office of Access and Disability Services (https://www.haverford.edu/access-and-disability-services/). If you think you may need accommodations because of a disability, you should contact Access and Disability Services at hc-ads@haverford.edu. If you have already been approved to receive academic accommodations and would like to request accommodations in this course because of a disability, please meet with me privately at the beginning of the semester (ideally within the first two weeks) with your verification letter.

Grading:
Participation: 20 pts
Assignments: 30 pts
Peer Reviews: 15 pts
Final Research Report: 35 pts
Total Points Possible: 100

Grading Scale:	93-100 points = A	77-80 points = C+
	90-92 points = A-	73-76 points = C
	87-89 points = B+	70-72 points = C-
	83-86 points = B	67-69 points = D+
	80-82 points = B-	63-66 points = D

At the end of the semester, I will calculate your grade and determine if I believe it correctly reflects your achievement in this course. Final grades will be assigned at my discretion.

Course Schedule:

Date	Topic	Readings	Activities	Assignments
9/4	Introduction to Behavioral Neuroscience Laboratory		Introductions and group assignments	Make appointment with Health Services ASAP mgitter@haverford.edu
9/11	Ethics in Behavioral Neuroscience Research	Gannon, 2007		
9/18	Sex Behavior in female hamsters: a model for motivation		LAB 1A: Sex Behavior Testing + Behavior Analysis	Methods for Behavior Testing + Analysis
9/25	Hormonal influence on female sex behavior: periphery		LAB 1B: Ovariectomy	Methods for Ovariectomy Surgery
10/2	Hormonal influence on female sex behavior I: periphery	Takahashi, 1990	LAB 1C: Sex Behavior in the absence of hormones + Behavior Analysis	Peer Review
10/9	Hormonal influence on sex behavior: periphery		LAB 1D: Sex Behavior with hormone replacement + Behavior Analysis	Statistical Analysis of Lab 1
10/16	*No Class Fall Break*			
10/23	Hormonal influence on sex behavior: brain	Nugent *et al*, 2015	LAB 2A: Stereotaxic Brain Lesion	Methods for Stereotaxic brain lesion methods
10/30	Hormonal influence on sex behavior: brain	Debold *et al*, 1982	LAB 2B: Post-lesion Sex Behavior Testing + Behavior Analysis	Statistical Analysis of Lab II
11/6	Hormonal influence on sex behavior: brain		LAB 2C: Perfusion and Brain Removal	Methods for Perfusion and Brain Removal
11/13	Visualizing the Brain I: Histology		LAB 2D: Histology	Peer Review

11/20	Visualizing the Brain II: Immunohistochemistry		LAB 2E: Immunohistochemistry and Lesion Verification	Methods for Histology and Lesion verification
11/27	*No Class Thanksgiving Break*			
12/4	Data Analysis and Figure Preparation		Work in groups to complete data analysis and figure preparation	
12/11	Wrap-up and Broader Impacts		Final (in-class) Peer Review of Research Proposal Broader Impacts Discussion	
12/18	***Final Research Report Due by 5 PM***			