

Psy 513 Hormones, Brain and Behavior
Professors Anthony Auger and Catherine Marler
Spring 2016
513: TuTh 11:00AM - 12:15PM; Room 121

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Course Description

Complex social behavior emerges from the interplay of hormones, the brain and environmental signals. This course is structured to introduce psychology and neurobiology students to how hormones and neurotransmitters shape brain and behavior in animals and humans. We will review the mechanisms by which hormones shape brain sex differences and its consequences on juvenile (i.e. play) and adult behavior. We will discuss how hormones influence sexual behavior using basic animal models, and extend this to human sex differences, including sexual orientation. Additional topics include how hormones shape competitive and affiliative behaviors, eating disorders, and stress and mental health. We will also discuss how individual variation occurs in response to the changing environment and genetic landscape, including epigenetics at an introductory level. Some specific questions we will ask are listed below:

How are sex differences in behavior created?

Why do some individuals express greater levels of affiliative behavior?

What neurohormones can trigger how much we eat?

Is sexual orientation shaped by hormones?

Is there plasticity in the adult brain that can influence behavior?

How can hormones influence behavior during critical periods in early development?

Is there any association between testosterone levels and competitive human interactions?

Text: Introduction to Behavioral Neuroendocrinology (Volume 4) by Randy Nelson

Attendance and participation: We do not intend to take attendance in lecture, but we firmly believe that regular attendance will be essential to learning and to making a good grade in the course. Not only do we present material that is not in your text and other readings, but also you will be responsible for any special announcements or assignments made either in class or lab. We also make announcements via the class email list or on the Learn@UW class website. Be sure to obtain any materials that you missed from fellow students.

Grading: Grades will be assigned on the basis of cumulative scores, and will be posted at Learn@UW. I recommend that you keep a running tally of your points. We'll talk about grade cut-offs in class. There is no fixed distribution of grades (that is, any proportion of the class can earn any grade).

We will have 3 exams during class time. Exams will be a combination of multiple choice, fill in the blanks and short answer. No grades will be dropped, and no retakes of exams are allowed without an official letter or you can take a cumulative comprehensive final exam. Each examine will total 100 points and each will contribute to 25% of the grade. Therefore, 75% of the grade will be from lecture.

The discussion grade will be based on submission of discussion questions on readings, class participation and paper presentation. Similar to an exam, there are 100 discussion points that will contribute to 25% of the grade.

There is no cumulative final exam.

Exam 1 (100 points; 25%); Exam 2 (100 points; 25%); Exam 3 (100 points; 25%);
Discussion Grade (100 points; 25%)

The grading scale is: A 91 - 100, AB 85 - 90, B 80 - 84, BC 75 - 79, C 70 - 74, D 60 - 69, and F 0 - 59.

Honors Section:

Students in the honors section will participate in the discussion section/lab taught by Drs. Auger and Marler.

Disclaimer:

This syllabus is intended to be a general guide. Sometimes topics take longer or less time than planned. All adjustments will be announced in class, email, or Learn@UW.

Ethics of Being a Student in the Department of Psychology:

The members of the faculty of the Department of Psychology at UW-Madison uphold the highest ethical standards of teaching and research. They expect their students to uphold the same standards of ethical conduct. By registering for this course, you are implicitly agreeing to conduct yourself with the utmost integrity throughout the semester.

In the Department of Psychology, acts of academic misconduct are taken very seriously. Such acts diminish the educational experience for all involved – students who

commit the acts, classmates who would never consider engaging in such behaviors, and instructors. Academic misconduct includes, but is not limited to, cheating on assignments and exams, stealing exams, sabotaging the work of classmates, submitting fraudulent data, plagiarizing the work of classmates or published and/or online sources, acquiring previously written papers and submitting them (altered or unaltered) for course assignments, collaborating with classmates when such collaboration is not authorized, and assisting fellow students in acts of misconduct. Students who have knowledge that classmates have engaged in academic misconduct should report this to the instructor.

Instructional Accommodation Statement:

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility.

Students are expected to inform their instructor of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. The instructor will work either directly with the student or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations, as part of a student's educational record is confidential and protected under FERPA.

Complaints:

Occasionally, a student may have a complaint about a TA or course instructor. If that happens, you should feel free to discuss the matter directly with the TA or instructor. If the complaint is about the TA and you do not feel comfortable discussing it with him or her, you should discuss it with the course instructor. If the complaint is about the instructor and you do not feel comfortable discussing it with him or her, make an appointment to speak to the Department Chair, Professor H. Hill Goldsmith (chair@psych.wisc.edu).

If your complaint has to do with sexual harassment, you may also take your complaint to Dr. Linnea Burk, Clinical Assistant Professor and Director, Psychology Research and Training Clinic, Room 315 Psychology (262-9079; burk@wisc.edu).

If you believe the TA or course instructor has discriminated against you because of your religion, race, gender, sexual orientation, or ethnic background, you also may take your complaint to the Office of Equity and Diversity, Room 179-A Bascom Hall (www.oed.wisc.edu)

Weekly Topics:

The Study of Behavioral Endocrinology

The Endocrine System (hormones and neurotransmitters)

Sex Differences in Behavior: Sex Determination and Differentiation

Sex Differences in Behavior: Animal Models and Humans

Male Reproductive Behavior

Female Reproductive Behavior

Affiliative Behavior

Hormones and Social Behavior

Homeostasis and Behavior (i.e. eating disorders)

Stress

Hormones and Affective Disorders

Aggression or dominance interactions

Communication, Courtship and Mate choice

Behavioral Epigenetics (how the environment shapes brain differences)

Week	Date	Lecture Topic (tentative)	Reading
1	1/19-21	Course Introduction News and Views; The Study of Behavioral Endocrinology (definition of hormones and history)	Auger and Marler Chapter 1
2	1/26-28	Methodology	Chapter 1: Auger
3	2/2-4	The Endocrine System (endocrine glands and hormonal mechanisms of action)	Chapter 2: Auger
4	2/9-11	Sex Determination and Differentiation	Chapter 3: Auger
5	2/16-18	Epigenetics and Sex differences	Auger (cont)
6	2/23-25	Exam #1 Sex differences in play behavior	Chapter 4: Auger
7	3/1-3	Female Reproductive Behavior Male Reproductive Behavior	Chapter 5 + 6: Auger Marler
8	3/8-10	Sex Differences in Behavior and its regulation by hormones (i.e. contraceptives and behavior, steroid hormones and learning/ memory, voting preferences)	Chapter 4: Marler
9	3/15-17	Humans (Gender identity, sexual orientation, and cognitive abilities) mental health & disease	Chapter 4: Auger
-	3/22-24	UW Spring Break	
10	3/29-31	Exam # 2 Pheromones	Marler
11	4/5-7	Hormones and Social Behavior: affiliation and aggression	Chapter 8: Marler
12	4/12-14	Stress	Chapter 11: Marler
13	4/19-21	Homeostasis and behavior: feeding behavior Hormones and Reward	Chapter 9: Marler
14	4/26-28	Bird song	Chapter 11: Marler
15	5/3-5	Course Summary and Student Evaluations Exam #3	Marler and Auger