

Human Biology (HBIO) 406 Theory and Methods in Human Evolutionary Biology
Focus: Primate Life history, sociality, reproduction

Time & Location: Wed & Fri 12-1:50pm, VKC 200

Professor: Dr. Caitlin O'Connell
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Office Hours: F 2:30-3:30

- E-mail is always the best way to reach me for questions or an appointment.

Course Description: The goal of this course is for you to obtain a clear knowledge of the theories and methods used to understand human evolution and undertake a capstone project that integrates knowledge gained throughout the Human and Evolutionary Biology track. This course will focus on sociality within a life history framework. We will consider the trade-offs of different kinds of social behavior over an individual's life span, looking at both non-human primate and human studies. We will explore the use of both non-human primates and humans as study subjects and survey the methods employed to gather data. You will learn to critique and discuss the theories and methods used in research on life history and gain experience in articulating with your peers in a discussion-based format. Additionally, you will learn to create a scientific hypothesis and test it by gathering behavioral data on captive primates. Since this course has a capstone project it is strongly recommended that students take it in their senior year.

Course Objectives:

- To examine and understand the major theoretical issues facing human evolutionary biology in the 21st century, particularly in the field of primatology
- Explain the main theoretical paradigms in human evolutionary biology: natural selection, sexual selection, the evolution of behavior, primate socioecology
- Analyze historical trends in the development of theories to explain primate behavior
- Analyze behavioral data using appropriate statistical methods
- Critique the methodology and interpretation of results of evolutionary biological studies
- Evaluate the ethical implications of using humans as subjects in evolutionary biological research, 'ownership' of human remains, and the habituation of wild primates
- Create an ethogram to capture target behavioral phenomena to test a hypothesis about primate behavior in a captive setting
- Produce a scientific presentation and paper that integrates and synthesizes evolutionary principles learned in the HEB track as they relate to a research question and to human behavior

Required Textbooks:

Field and Laboratory Methods in Primatology: A Practical Guide, edited by Setchell and Curtis, 2nd edition 2011, ISBN: 978-0521142137

Measuring Behaviour: An Introductory Guide, by Martin and Bateson, 3rd edition 2007, ISBN: 978-0521535632

Grading: 10% - Literature search for discussion material
15% - Participation in seminar discussions

- 20% - Moderation of discussion
- 10% - Summary of discussion
- 45% - Primate Behavioral Research
 - 15% Research report
 - 15% Presentation
 - 15% Introduction, hypotheses, methods draft

Literature search for discussion material: A major skill to master is finding appropriate literature to use in research and be able to critically review and discuss it. You are given the objective to find a primary research article for one of the specified discussion sessions. A sign-up period during week 3 will allow you to choose the topic that interests you the most. You then have 2 weeks (due by week 5) to search for an appropriate resource and have it approved by Dr. O'Connell. This article will then be read by the entire class for discussion. Further instructions will be provided.

Discussion Sessions: Discussion sessions have three components to complete. The first is that each of you will (1) moderate one session during the semester. This means leading the discussion by presenting a short summary and offering your critical evaluation of the reading using 1-2 Powerpoint slides. You will provide discussion questions to students so they can prepare for discussions (to be posted on Blackboard). Second, everyone will be graded individually on their (2) participation during discussions and all students **MUST** read the assigned articles. Finally, each meeting will have one person charged with (3) summarizing the important points of the discussion that day. This should generally not be longer than a page (single-spaced). Summarizers should link ideas and views with the people who offered them. The summarizer should identify and highlight the following: the 3 most important ideas presented (and explain why) and the best quote of the day (linked to the person who generated it). The summary is due the Monday following the discussion.

Research: The majority of your grade is based on your primate behavioral research project. You will be required to have a one-on-one meeting with Dr. O'Connell to discuss your areas of interest and plan out what you would like to research. You will consider a particular question and hypothesis and then observe captive primates and obtain behavioral data. You will find relevant scientific articles that will provide you with context on the topic for your introduction and questions. A draft of your introduction (with citations and references), questions/hypotheses, and methods will be due week 8. The mandatory fieldtrip to the LA Zoo is tentatively scheduled for week 11 to collect your data. You will then present your research in a 10-15 minute lecture the final week of classes (this means you must be concise). Your final written report is due the week of finals. It is also *recommended* to check in with me periodically in brief meetings throughout the semester for help in collecting resources and developing the logistics of your research.

Absence: Un-excused absence for discussion participation will result in a grade of zero. Absence on the day of your assigned moderation or summarizing is **unacceptable** and will result in a grade of 0. A sign-up will be posted on Blackboard for Moderators and Summarizers, so you should plan accordingly with your schedules.

Late Assignments: Students who submit work up to one week late will receive a penalty of 10% applied to the grade achieved on the late assignment regardless of the day of the week on which the work is submitted. Students who submit the project more than one week late will receive a grade of 0 unless they have made arrangements with the instructor prior to the due date.

SCHEDULE (*Subject to revision*)

	Topic	Readings
Week 1: Jan 15 & 17	Introduction, Primate traits, Lit Searches	FLMP 1, 2, 11
Week 2: Jan 22 & 24	Methods: wild primates, habituation	MB 1-3
	Behavioral data collection	MB 4-6
Week 3: Jan 29 & 31	Sociality and Life History Theory	Reading on BB
	Methods: IBIs, age-class determinations...	
Week 4: Feb 5 & Feb 7	Reliability and design	MB 7&8
	Fri: Discussion: Ethics (professor leads)	FLMP 2, San Statement
	Fri: Article approval due	
Week 5: Feb 12 & 14	Methods: Camera trapping & GPS/GIS	FLMP 4 & 17
	Methods: Feeding ecology	FLMP 12-14
Week 6: Feb 19 & 21	W: Life History	Reading on BB
	Fr: Life History	SPL
Week 7: Feb 26 & 28	W: Development of social behavior	Reading on BB
	Fr: Development of social behavior	SPL
Week 8: Mar 4 & Mar 6	W: Methods: parasites, hormones, SDB	Reading on BB
	Fr: Costs of sociality (aggression, stress, disease, etc.)	SPL (2)
	Fr: Intro, hypotheses, methods draft DUE	
Week 9: Mar 11 & 13	W: Social bonds, grooming	Reading on BB
	Fr: Benefits of social relationships	SPL (2)
Week 10: Mar 18 & 20	Spring Break – NO CLASS	
Week 11: Mar 25 & 27	Communication	FLMP 16 & 17
	FRI: ZOO Fieldtrip	
Week 12: Apr 1 & 3	Energetics and Reproduction	SPL
	Social Networks	SPL

Week 13: Apr 8 & 10	Statistics and Analyses Mother-infant interaction	MB 9-11 SPL (2)
Week 14: Apr 15 & 17	Human reproductive ecology AAPA	SPL (2)
Week 15: Apr 22 & 24	Hormonal mechanisms of sociality/life history Synthesis and research prep	SPL FLMP 22
Week 16: Apr 29 & May 1	Research presentations	
Report due Friday, May 8th 11am		

SPL – student provided literature (see Literature search for discussion material)

Other classroom policies:

Tardiness: There is a 5-minute grace period for arriving to class on-time. After that you begin losing participation points for that day.

Food: This class meets over lunch time. Please plan accordingly. If you are unable to eat right before or right after class, you may bring a snack to class if you are neat and discreet about it. Elaborate meals are disruptive and prevent you from taking notes and participating fully.

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call

studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298

equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symphlicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

ombuds.usc.edu

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.