

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

**Time & Location:** Wed & Fri 12:00 PM - 1:50 PM, AHF 259

**Professor:** Dr. Caitlin O'Connell  
Office: AHF (Hancock), Jane Goodall Center, B10-B  
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Office Hours: T, Th 2:00 PM – 3:00 PM or by 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. 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 nonhuman primate and human studies. Additionally, you will learn to create a scientific hypothesis and test it by gathering behavioral data on captive primates. We will explore the use of both non-human primates and humans and the methods employed to gather data. You will learn to critique and discuss the theories and methods used in research on life history and social behavior and gain experience in articulating your ideas to a group.

**Course Objectives**

- Develop a deeper comprehension of the central and cross-disciplinary concepts of human evolutionary biology, particularly in the field of primatology
- Identify, explore, assess and solve real world problems through independent study and self-directed group and individual projects.
- Understand and apply the scientific method and develop critical thinking skills within an evolutionary framework — particularly in developing research methods, collecting data, and analyzing results.
- Effectively communicate evolutionary principles regarding human biology through in class discussions.
- Discuss how biology can contribute to the resolution of ethical, social, and environmental issues.

**Required Textbooks:**

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

*Measuring Behaviour: An Introductory Guide*, by Martin and Bateson, 3<sup>rd</sup> edition 2007, ISBN: 978-0521535632

**Other sources:** The following list contains edited volumes covering issues in life history evolution from which occasional chapters will be drawn for our weekly readings. These are not required texts, but are listed here for your interest and as possible sources for the background of your research projects.

Clancy K.B.H., Hinde K., Rutherford J.N., Eds. (2013) *Building Babies: Primate Development in Proximate and Ultimate Perspective*. Developments in Primatology: Progress and Prospects, Vol. 37. New York: Spring Science+Business Media.

Ellison P.T. (2001) *Reproductive Ecology and Human Evolution*. New York: Walter de Gruyter.  
Hawkes K. & Paine R.R., Eds. (2006) *The Evolution of Human Life History*. Santa Fe: School of American Research Press.

Kappeler P.M. & Pereira M.E., Eds. (2003) *Primate Life Histories and Socioecology*. Chicago: University of Chicago Press.

Pereira M.E. & Fairbanks L.A. (1993) *Juvenile Primates: Life History, Development, and Behavior*. Chicago: University of Chicago Press.

**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 in research 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 offering your critical evaluations of the assigned readings. This does not mean simply rephrasing or summarizing the content of the papers. It is highly recommended that you 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. *Group projects are accepted (no more than 2 students)*. 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:** If you have a legitimate (documented) reason for an absence on a discussion day, please contact me within 24 hours of the class to discuss a make-up option for your participation points. Unexcused absences 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 zero. A sign-up will be posted on Blackboard for Moderators and Summarizers, so you should plan accordingly.

**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 prior arrangements with the instructor.

**SCHEDULE** (*Subject to revision*)

	<b>Topic</b>	<b>Readings</b>
Week 1: Jan 9 & 11	Introduction and Primate traits	FLMP 1, 2, 11
Week 2: Jan 16 & 18	Methods: wild primates, habituation	MB 1-3
	Behavioral data collection	MB 4-6
Week 3: Jan 23 & 25	Socioecology, Life History Theory	
	Methods: IBIs, age-class determinations, social network analysis	
Week 4: Jan 30, Feb 1	Reliability and design	MB 7&8
	Th: Discussion: Ethics (professor leads) <b>Th: Article approval due</b>	FLMP 2
Week 5: Feb 6 & 8	Methods: Camera trapping & GPS/GIS	FLMP 4 & 17
	Methods: Feeding ecology	FLMP 12-14
Week 6: Feb 13 & 15	Life History	SPL
Week 7: Feb 20 & 22	Development of social behavior	SPL
Week 8: Feb 27 & Mar 1	Costs of sociality (aggression, stress, disease)	SPL
	<b>Intro, hypotheses, methods draft DUE</b>	
Week 9: Mar 6 & 8	Benefits of social relationships	SPL
Week 10: Mar 13 & 15	Spring Break – NO CLASS	
Week 11: Mar 20 & 22	Energetics and reproduction	
	<b>THURS: ZOO Fieldtrip</b>	
Week 12: Mar 27 & 29*	Communication	FLMP 16 & 17
	Social networks	SPL
Week 13: Apr 3 & 5	Statistics and Analyses	MB 9-11
	Hormonal mechanisms of sociality	SPL
Week 14: Apr 10 & 12	Mother-infant interaction	SPL

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Week 15: Apr 17 & 19

Synthesis and research prep

FLMP 22

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Week 16: Apr 24 & 26

**Research presentations**

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**Report due Thursday, May 2<sup>nd</sup> 10am**

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

\*Dr. O’Connell at AAPA

## USC's Statements 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 Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage [sarc@usc.edu](mailto:sarc@usc.edu) describes reporting options and other resources.

### Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students.

### *The Office of Disability Services and Programs*

[http://sait.usc.edu/academicsupport/centerprograms/dsp/home\\_index.html](http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

If you are having a problem that is getting in the way of your academics, Student Support and Advocacy can help you devise a plan. Housed in the Office of the Vice President for Student Affairs, **Student Support and Advocacy** serves to enhance the quality of service offered to all USC students. Problem solving: (213) 821-4710. Crisis Management: (213) 740-2421. <https://studentaffairs.usc.edu/ssa/ssa-what-we-d/>