



Human Reproductive Ecology

BIO A 469/568

MWF 1:00 – 2:20 PM

Room SMI 404

Instructor: Dr. Melanie Martin

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Office Hours: Mondays 2:30 – 3:30 PM Denny Hall Rm 144
(and by appointment)

Course Description

Why do people go through puberty at different ages? How do culture, environment, and individual circumstances influence one's decision whether or not to have children, age at first birth, length of interbirth intervals, and total number of children? What shapes differences in maternal and paternal investment in offspring? Why does fertility decline with age? These are questions typical of the field of human reproductive ecology—the study of how and why human reproductive patterns vary within and across populations. The field integrates topics and methods from human biology, evolutionary ecology, demography, and clinical medicine.

Course Tasks and Learning Outcomes

- Enhance scientific literacy and interpretation of quantitative
- Attain working knowledge of hormonal pathways mediating fecundity and reproductive effort in males and females
- Link reproductive outputs to developmental and ecological influences
- Critically evaluate recent developments in the field against earlier studies
- Evaluate, edit, and contribute original content to Wikipedia entries on topics relevant to human reproductive ecology

COURSE OVERVIEW

Required readings: (1) Wood, JW (1994), *Dynamics of Human Reproduction: Biology, Biometry, Demography* (ISBN-10: 0202011801). (2) Ellison PT (2001) *On Fertile Ground* (ISBN-10: 0674011120). Both texts are available online (new and used), in the bookstore, and on reserve in the library. Additional required and suggested articles (listed in the course bibliography below) will be posted on Canvas.

Assignments: Your course grade will be based on a combination of take-home assignments (20%), in-class activities (40%) and one final group project (40%). Take-home assignments will include short essays and small group projects to be completed over 2-3 days. In-class activities will include polls (10%), quizzes (10%), reading questions (10%), and group work (10%). **Almost every class will include an in-class poll or activity. Regular attendance is crucial. You will need to bring a smartphone, tablet, or laptop with you every day to class order to complete polls and activities.** Tablets and laptops can be checked out for free for varying lengths of time through the [UW Student Technology Loan Program](#). There is no mid-term or final exam.

The final project will consist of reviewing, editing, and adding new content to existing Wikipedia entries. You will work in groups of ~4 over the quarter to complete training modules and edit and add content. You will also write a personal reflection and give a brief presentation of your work during Finals week. Additional details about the project, including group assignments, will be discussed in Week 2.

The complete calendar of course topics and calendar of assignment deadlines is posted on canvas. Readings and assignments are subject to change but will be immediately posted on Canvas.

Graduate students (BIO A 568/600): Your grade will be based on the same class activities, plus one in-class presentation each. Your final project will consist of a group Wikipedia entry and annotated bibliography. We will meet separately to discuss assignments and expectations.

Check Canvas regularly for a detailed and current calendar of readings and assignments!

WEEK	TOPICS
Week 1 (Sep 26 – 28)	Intro to HRE, fundamentals of reproductive decisions & reproductive fitness
Week 2 (Oct 1 -5)	Demography, reproductive physiology and maturation
Week 3 (Oct 8 – 12)	Reproductive maturation continued (Guided activity HZ) Final project group assignments; (Library Workshop Oct. 10th 1 – 2:30)
Week 4 (Oct 15 – 19)	Mate choice, mating, marriage (Guided activity AP)
Week 5 (Oct 22 – 26)	Fecundity, Fertilization, implantation, gestation
Week 6 (Oct 29 – Nov 2)	Parental investment: strategies, birth, parent-offspring conflict (DG)
Week 7 (Nov 5 – 9)	Allomaternal care: paternal care and cooperative breeding
Week 8 (Nov 14 – 16)	Breastfeeding & lactational amenorrhea (Labor Day Nov. 12 NO CLASS)
Week 9 (Nov 19 – 21)	Low fertility (Thanksgiving Nov. 23 NO CLASS)
Week 10 (Nov 26 – 29)	Reproductive senescence (Guided activity MO)
Week 11 (Dec 3 – 6)	Catch-up and final project work
Finals Week	Final project presentations (Monday Dec. 10 2:30 – 4:20)

COURSE POLICIES

Communication: you can arrange to meet with me by appointment in my office or via skype/zoom/gchat outside of posted office hours. Practice [professional communication in your correspondence](#): use your uw.edu email address, employ proper salutations (Dr. or Prof. Martin) and sign-offs, don't write in textspeak or emojis, and make sure you are not asking a question that is answered in the syllabus, on Canvas, or with a quick search. I will respond to emails within 48 hours. If you need to urgently communicate with me, please add *urgent* to the subject line.

Letters of recommendation: I am happy to write a letter of recommendation for you *if* I can confidently write a positive and personal one. Requests for recommendations should be made at least 2 weeks before the due date, and [should include all relevant information](#) (links or forms needed, your CV/resume, brief recap of the course(s) and/or other work you completed with me, your performance, brief description of the position, your qualifications, and any personal or professional details you would like me to include).

Technology in the classroom: You will be using technology regularly in this classroom to answer online polls, conduct searches, and use computer software for group projects. However, use of technology during lectures can be overly distracting to you and other students, and ultimately detract from your learning. During the lectures, I ask that you disable notifications and refrain from any online activity except when specifically directed to online polling questions and quizzes.

Absences and make-up work: There are no make-up options for missed in-class Poll Everywhere responses (polls and quizzes). *If you are absent for a lecture with an in-class poll, you will lose those points.* In the event of a serious conflict or emergency, other missed in-class and take-home assignments may be turned in late IF (a) you had prior communication and permission from me or (b) you provide appropriate documentation of extenuating circumstances.

HELPFUL RESOURCES

- Contact the [Disability Services Office](#) (206-543-6450 or dso@uw.edu) to request accommodations
- For writing, research, and language services or support, visit the [Anthropology Writing and Research Center](#), the [CLUE Writing Center](#), the [Office of Minority Affairs and Diversity Instructional Center](#), or the [Odegaard Writing and Research Center](#)
- [Anne Davis](#) is the UW Anthropology Librarian (adavey@uw.edu or 206-616-1969)
- Contact the [Counseling Center](#) (401 Schmitz Hall, 206-543-1240) for confidential counseling for stress, anxiety, depression and relationship problems. The Counseling Center also offers career counseling, to help you clarify a major or identify career interests.
- Call the Mental Health Clinic at Hall Health (206-583-1551) for same day and next day support and other psychiatric services.
- UW resources for [Emergency food or aid](#)

COURSE BIBLIOGRAPHY

Books:

Ellison, P. T. *On Fertile Ground*. (Harvard University Press, 2001).

Prum, R. O. *The evolution of beauty: how Darwin's forgotten theory of mate choice shapes the animal world-- and us*. (Doubleday, 2017).

Smith, E. A. & Winterhalder, B. *Evolutionary ecology and human behavior*. (Aldine de Gruyter, 1992).

Wood, J. W. *Dynamics of human reproduction: biology, biometry, demography*. (Aldine de Gruyter, 1994).

Articles:

Blake, K. R., Bastian, B., Denson, T. F., Grosjean, P. & Brooks, R. C. Income inequality not gender inequality positively covaries with female sexualization on social media. *Proc. Natl. Acad. Sci.* **115**, 201717959 (2018).

Borgerhoff Mulder, M. Economic inequality drives female sexualization. *Proc. Natl. Acad. Sci.* **115**, 201812331 (2018).

Bribiescas, R. G. Reproductive ecology and life history of the human male. *Am. J. Phys. Anthropol.* 148–176 (2001). doi:10.1002/ajpa.10025

Buck Louis, G. M. *et al.* Environmental Factors and Puberty Timing: Expert Panel Research Needs. *Pediatrics* (2008). doi:10.1542/peds.1813E

Colleran, H., Jasienska, G., Nenko, I., Galbarczyk, A. & Mace, R. Fertility decline and the changing dynamics of wealth, status and inequality. *Proc. Biol. Sci.* **282**, 20150287 (2015).

Ellis, B. J. Timing of Pubertal Maturation in Girls: An Integrated Life History Approach. *Psychol. Bull.* **130**, 920–958 (2004).

Geronimus, A. T. What teen mothers know. *Hum. Nat.* **7**, 323–352 (1996).

Gettler, L. T. Becoming DADS: Considering the Role of Cultural Context and Developmental Plasticity for Paternal Socioendocrinology. *Curr. Anthropol.* **57**, 38–51 (2016).

Gibson, M. A. & Mace, R. An energy-saving development initiative increases birth rate and childhood malnutrition in Rural Ethiopia. *PLoS Med.* **3**, e87 (2006).

Gubrium, A. C. *et al.* Realizing reproductive health equity needs more than Long-Acting Reversible Contraception (LARC). *Am. J. Public Health* **106**, 18–19 (2016).

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Hermanussen, M., Lehmann, A. & Scheffler, C. Psychosocial pressure and menarche: A review of historic evidence for social amenorrhea. *Obstetrical and Gynecological Survey* (2012). doi:10.1097/OGX.0b013e31824c94ad

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- Martin, MA Garcia, G., Kaplan, HS & Gurven, MD. Conflict or congruence? Maternal and infant-centric factors associated with shorter exclusive breastfeeding durations among the Tsimane. *Soc. Sci. Med.* **170**, 9–17 (2016).
- McKerracher, L., Collard, M., Altman, R., Richards, M. & Nepomnaschy, P. The ex-pat effect: presence of recent Western immigrants is associated with changes in age at first birth and birth rate in a Maya population from rural Guatemala. *Ann. Hum. Biol.* **44**, 441–453 (2017).
- Nelson, R. G. Residential context, institutional alloparental care, and child growth in Jamaica. *Am. J. Hum. Biol.* **28**, 493–502 (2016).
- Parent, A. S. *et al.* The Timing of Normal Puberty and the Age Limits of Sexual Precocity: Variations around the World, Secular Trends, and Changes after Migration. *Endocr. Rev.* **24**, 668–693 (2003).
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- Stulp, G. & Barrett, L. Wealth, fertility, and adaptive behaviour in industrial populations. *Philos Trans R Soc L. B Biol Sci* (2016). doi:10.3788/
- Towner, M. C., Nenko, I. & Walton, S. E. Why Do Women Stop Reproducing before Menopause? A Life History Approach to Age at Last Birth. *Philos. Trans. R. Soc. B, Biol. Sci.* (2016). doi:10.1098/rstb.2015.0147
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