

A501/P657: Concepts in Reproductive Diversity: Differences Among the Sexes

Meeting time and place: F 2:00-3:30 PM, CISAB House, 409 N. Park. The class will meet "In Person" so we can strive for an interactive class that facilitates questions and discussion.

Lead Instructor: Dr. Dale Sengelaub [sengelaub@indiana.edu] 855-9149, M/T 1:30-2:30

Course Description: Sex is a key biological variable that must be considered in all biomedical research, as males and females differ physiologically as well as in the incidence and progression of pathology. Scientific history has shown that important insights into the basic mechanisms of reproduction and development can be gained by the study of non-human model systems as well as evolutionarily diverse non-model systems. Despite the enormous insights we have gained from reductionist approaches, it is increasingly clear that future progress will require a synthesis of organismal, systems, and genomic biology because the organism is more than the sum of its parts. In particular, efforts to explain variation in reproduction and development will depend on interdisciplinary efforts that combine multiple levels of analysis, from the molecular and cellular, organismal, ecological and evolutionary. This course examines the anatomical, physiological, ecological, environmental and evolutionary influences that contribute to the development and maintenance of sexually dimorphic phenotypes in human and non-human animals. Understanding the basis of sex differences has broad potential for clarifying the role of sex on issues related to human and non-human development and health, including sex-related variation in the quality and quantity of parental care and sex differences in social behaviors, communication, stress susceptibility and cognition.

Schedule of Topics

Date	Instructor	General Topic
8/27	Dale Sengelaub	Organizational meeting
9/3	Ellen Ketterson	Hormones and life histories
9/10	Curt Lively	Evolution of sex
9/17	Kim Rosvall	Sexual Selection and mating systems
9/24	Greg Demas	Endocrine mechanisms of sex differentiation
10/1	Art Arnold	Sex differences embedded in the genome: sex chromosomes in physiology and disease
10/8	<i>FALL BREAK (NO CLASS)</i>	
10/15	Dale Sengelaub	Sex on the brain (neuroanatomy)
10/22	Laura Hurley	Sex differences in neurochemical systems
10/29	Troy Smith	Sex differences in communication or other
11/5	Cara Wellman	Sex differences in effects of stress on brain and behavior
11/12	Jeff Alberts	Non-obvious originations of sex differences
11/19	Troy Smith	Sex-changing fish
11/26	<i>THANKSGIVING BREAK (NO CLASS)</i>	
12/3	Justin Garcia	Sexual behavior, gender, relationships
12/10	Peter Todd	Human mate search

Attendance: Attendance is required and students will be held responsible for all announcements, assignments and material covered in class whether it is presented orally or in any assigned readings or handouts.

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Readings: While there is no textbook for the course, assigned readings will appear in the Resources folder on IU Canvas prior to each class. Papers should be read prior to the class for which they are assigned and students should be prepared to engage in a thoughtful discussion of the papers.

Grading: Course evaluation will be based largely on in-class participation, as well as performance on an end-of-semester take-home essay. The essay will consist of a short (3-5 pages) think piece that will require synthesis and integration of course material.

Policy on Plagiarism: Plagiarism constitutes using others' ideas, words or images without properly giving credit to those sources. If you turn in any work with your name on it, we will assume that work is your own and that all sources are indicated and documented in the text (with quotations and/or citations). We will respond to acts of academic misconduct according to university policy concerning plagiarism; sanctions for plagiarism can include a grade of F for the assignment in question and/or for the course and a report to the Dean of Students Office. If you have any questions about how to properly acknowledge others' intellectual property, please ask an instructor or the staff at Writing Tutorial Services.

Mask Requirements: Masks (covering mouth and nose) are required in all IU buildings and classroom requirements. There are no exemptions (e.g., medical exemptions).

At IU, an "adequate mask" is defined as "a face covering with multiple layers of fabric worn over the nose and mouth that fits snugly while allowing for breathing without restriction and meets CDC guidelines." Face masks with exhalation valves, bandannas, and buffs/neck fleeces are not acceptable.

Student Non-Compliance: If a student is without an approved and properly worn mask, they will be reminded that it is a requirement. Those that don't have masks will be asked to leave and get one (masks will be available in multiple locations). If they continue to not wear a mask, they will be asked to leave. If a student refuses to wear a mask and also refuses to leave, they will be dealt with as a disruptive student. <https://ufc.iu.edu/doc/policies/disruptive-students.pdf>.

Eating in class: Technically, eating is not supposed to happen in classrooms. Under normal circumstances, many of us overlook this and it is not an issue. However, given the situation with Covid, we are adopting a policy of no eating in classrooms, at least while mask wearing is mandatory.

Policy on religious observances: Students must notify instructors two weeks before the observance: <https://iu.instructure.com/courses/1453936/pages/religious-observances-attendance-policy>

Accommodations for Disabled Students. Every attempt will be made to accommodate qualified students with disabilities (e.g., mental health, learning, chronic health, physical, hearing, vision neurological, etc.). You must have established your eligibility for support services through the appropriate office that services students with disabilities. Note that services are confidential, may take time to put into place and are not retroactive; Captions and alternate media for print materials may take three or more weeks to get produced. Please contact Disability Services for Students (<https://studentaffairs.indiana.edu/student-support/disability-services>) at iubdss@indiana.edu or 812-855-7578 as soon as possible if accommodations are needed. The office is located on the third floor, west tower, of the Wells Library,

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Room W302. Walk-ins are welcome 8 AM to 5 PM, Monday through Friday. You can also locate a variety of campus resources for students and visitors that need assistance at: <https://ada.sitehost.iu.edu/>.