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Format: The goal of this course is to familiarize students with current, exciting research topics in Evolutionary Biology. Class meetings will combine lectures and student presentations/ discussions. Students will work in groups of 2-5, depending on class size. Each class period, a 15-minute PowerPoint presentation of a paper from the primary literature (details below) will be given by one student/group. This will be followed by a general discussion of the paper and topic area. A lecture pertinent to the following week's discussion will be given by one faculty member in the second half of the class session. Holding the student presentations on lecture topics one week after the related lecture provides time for students to absorb the lecture material and facilitates understanding of the advanced topics (i.e. Week 1 lecture topic **A**; Week 2 student presentations topic **A** + Week 2 lecture topic **B**; Week 3 student presentations topic **B** + Week 3 lecture topic **C** ...).

Lecture topic schedule

MONTH	DATE	PRESENTER	TOPIC	STUDENT PPTS
AUG	27	KALISZ	Introduction	--
SEP	3	REBEIZ	The evolution of the phenotype	--
	10	REBEIZ	Evolutionary development: regulatory networks	1
	19	KALISZ	Natural selection	2
	26	PRUITT	Levels of selection: Kin selection and group selection	3
OCT	1	MOREHOUSE	Sexual selection	4
	8	MOREHOUSE	Sexual conflict	5
	15	TONSOR	Modes of gene action and the basis of inheritance	6
	22	KALISZ	Within-species genetic processes	7
	29	KALISZ	Within-species genomic processes	8
NOV	5	KALISZ	Among-species pattern, process, speciation	9
	12	KALISZ	Evolution sex and mating systems	10
	19	KALISZ	Coevolution and adaptive evolution in communities	11
	27	---	Thanksgiving Recess	
DEC	3	---	Final Student Presentations	**
	10	---	Final Student Presentations	**

Readings: There are three types of readings for this course.

1. Readings for lecture. These will be posted in pdf format on Courseweb the weekend before class and must be read **prior** to the weekly class meeting.
2. Readings for discussion. By noon on Friday, each group will choose and email 3 potential papers (in pdf format) that they would like to discuss. The lecturing faculty will choose 1 reading for each group, and post all chosen readings on Courseweb by Saturday @ noon. All chosen readings must be read by all class members ever week.

3. Refresher readings. For students who would like to refresh their knowledge in areas specific to the weekly advanced topics, we will suggest background/primer readings related to each topic, as needed.

Note: How to critique a scientific paper: There are several excellent guides for evaluating and critiquing scientific papers that will help you in preparing presentations and writing questions. Please use these as a guide in preparing your presentation or writing your individual reviews. Examples: <http://www.cysjournal.ca/node/37>
www.utm.utoronto.ca/...papers/how_to_read_a_scientific_paper.pdf

Course Components: Grades will be determined by:

1. Class participation in discussion of readings. Participating faculty will keep a record of student participation in discussions.
2. Weekly PowerPoint presentations by one group member. Students will work in groups to prepare a PowerPoint that critiques the paper chosen by the group. One student from the group will be chosen to present the critique (at random in class) by the faculty. The presenter will be graded on the completeness of the critique and understanding of the material in the paper. Each student will be given equal opportunities to present for their group.
3. For each discussion paper, each student will write 3 probing questions related to the topic of the paper. These questions must be emailed as a word document to the faculty prior to the beginning of each class.
4. Final presentation. Each of you is asked to identify an outstanding question in an area of evolutionary research covered in this course and to propose a research program that would tackle that question. The choice of question/topic is up to you, as is the system (i.e., organism, community, gene network, simulation method) you would employ to approach the question. In a 20 minute presentation, you should describe 1) the question and its importance/broader relevance, 2) what is and isn't currently known, 3) the system and experimental approach you would use, including justifying these choices and 4) your (multiple!!) hypotheses and predicted outcomes. Ideally, your experimental approach should allow you to discriminate between multiple competing hypotheses, but in instances where it will not, this should be acknowledged and your planned interpretation of such results discussed. Your ability to clearly devise and communicate this set of objectives will be evaluated by all participants of the course using evaluation forms. 20-25 minute presentations will be followed by 5 minutes of questions and discussion.
Some details about the final presentation. I ask that you not simply recycle a rotation topic or grant proposal you have already constructed, although you can propose to use an experimental system from your own work. It is up to you to decide the limits of the depth and complexity of your proposal. This is something you will have to do over and over during your career as a scientist, so you might as well get started. I want to see that you are taking some things of value with you from this course. The most important steps are laying out the problem, identifying the key issues to be pursued, then developing a framework for pursuing them. Do not worry about what it would cost - consider what it would take pursue the key issues.

I will be looking for evidence that:

1. You have been thinking about the content of the papers, lectures and discussions.
2. You can identify a question/problem that is both of fundamental importance and exciting in the context of your developing view of your field of study.

3. You can articulate the general value of the question.
4. You can come up with a workable structure for approaching the problem.
5. You can engage others in a critical and useful discussion of the problem.

This will not be fundamentally different from what we will be doing in class all semester, except in two ways:

1. Many of the problems and questions we discuss will be left hanging during our class discussions- dangling there waiting for further exploration. This is your chance to address them.
2. All of the work except for this final presentation will be done in a group context. The final presentation is an opportunity for you to provide me with a little more insight into your individual thinking and the extent to which you have taken ownership of the learning process.

Other information from the University:

Communication with students: Every student is issued a University e-mail address (username@pitt.edu) upon admittance. The University uses this e-mail address for official communication with students and students are expected to read e-mail sent to this account on a regular basis. I will use your official University of Pittsburgh email address for all course communications. Failure to read and react to e-mail communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g. Gmail, Yahoo). Students who choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to <http://accounts.pitt.edu> -- login to your account, click on Edit Forwarding Addresses, and follow the instructions on the page.

Students with disabilities: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union, 412-648-7890/412-383-7355 (FTY), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

Academic Integrity Policy: Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, noted below, will be required to participate in the outlined procedural process as initiated by the instructor. Written assignments will be checked with Turnitin. A minimum sanction of a zero score for assignment will be imposed.