

ZOO4926/ ZOO6927: Applications in Evo Devo

Spring 2020

Tuesdays Period 5: 11:45-12:35pm; Carr Hall 521
Course Instructors: Dr. Gareth Fraser, Dr. Connie Rich
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Course description and learning goals

This course is designed to provide upper-level undergraduate and graduate students with experience in reading, analyzing, critiquing, and discussing scientific publications. This will be done in the context of classical and modern evolutionary developmental biology techniques. After introduction of techniques, students will lead classroom discussions of selected primary literature. Oral and visual description and examination of scientific concepts is a fundamental tool in academia as well as other careers. This course will give students experience in these processes.

Students will each be responsible for presenting 3 papers over the semester: the student will present relevant background/introduction (5-10 min) and the research presented by the publication including analysis/critique (10-15 min). All students not presenting will be expected to participate in discussion. One paper presented will be part of the introduction of the topic and will focus more on the history/significance of a technique/topic (see schedule below), and 2 papers presented will focus on modern use of the technique. Papers will be assigned at least one week in advance.

Students will also benefit from periodic seminars from faculty at UF that conduct research in the area of evo devo and related fields.

How your success will be determined

Your grade will be determined by your presentation as well as your participation in discussions.

Presentations	60% (20% from each of 3 presentations)
Participation	40%

Students will have access to the rubric used for grading the presentation. We emphasize open discussions, welcoming everyone's thoughts on the rigor, practicality, ethics, down-sides, and up-sides of the research that we analyze. As such, students will respect other's thoughts and opinions. Students not participating will be called out.

Tentative Schedule:

Week	Date	Topic
1	1/7/20	Introduction, discussion, schedule
2	1/14/20	I The classics: using what's there. ISH, IHC, grafting
3	1/21/20	Topic I journal club
4	1/28/20	II Getting genetic: "classical" gene editing and labeling Electroporation, morpholinos, lipofection, RCAS, etc
5	2/4/20	Topic II journal club
6	2/11/20	III Advanced messing things up: inducible systems Cre-lox, tamoxifen-inducible
7	2/18/20	Topic III journal club
8	2/25/20	Guest lecture
9	3/3/20	<i>Spring break- no class!</i>
10	3/10/20	IV Fancy messing things up: CRISPR! Plus TALEN, RNAi, etc
11	3/17/20	Topic IV journal club
12	3/24/20	V Genomic analyses I Transcriptomics and GRNs
13	3/31/20	Topic V journal club
14	3/7/20	Guest lecture: Dr. Fraser
15	3/14/20	VI Genomics II Enhancer assays and epigenetics
16	3/21/20	Topic VI journal club

For each topic, we will start with approx. 20 min introduction of techniques and theories. One group will then present a classical paper using that technique (approx. 20 min) to show history, significance, and/or reinforce theories behind it. The next week will be a journal-club style discussion of 2 papers (2 groups) approx. 20 min each.

Grades and Grade Points: For information on current UF policies for assigning grade points, see: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Attendance and input: Our learning environment depends heavily on discussion, and each student has a responsibility to attend and contribute to the class. Requirements for class attendance and, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Online Course Evaluation Process: Student assessment of instruction is an important part of efforts to improve teaching and learning. **Students are** encouraged to share your opinions at any time with Dr. Rich or Dr. Fraser in person or by email. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

Academic Honesty: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

Software Use: All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources: Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently

enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392- 1575, www.counseling.ufl.edu/cwc/
Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library
Training Programs

- U Matter We Care, www.umatter.ufl.edu/
- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Services for Students with Disabilities: The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty- student disability related issues. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 392-8565, www.dso.ufl.edu/drc/

Student Complaints: Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://www.distance.ufl.edu/student-complaint-process> for more details.

Sexual Harassment: It is the policy of The University of Florida to provide an educational and working environment for its students, faculty, and staff that is free from sex discrimination and sexual harassment. In accordance with federal and state law, the University prohibits discrimination on the basis of sex, including sexual harassment. Sex discrimination and sexual harassment will not be tolerated, and individuals who engage in such conduct will be subject to disciplinary action. The University encourages students, faculty, staff, and visitors to promptly report sex discrimination and sexual harassment. If you believe you have been subjected to sex discrimination or sexual harassment please report the incident to me or any University official, administrator, or supervisor. The Office of Human Resource Services investigates all complaints. Incidents should be reported as soon as possible after the time of their occurrence (larry-ellis@ufl.edu).