

**Genomics Research Lab
Bi 610 Fall 2016
Tentative Syllabus**

General Course Information

Instructor:

Dr. Leslie Coonrod
lvanos@uoregon.edu

Office hours: By appointment

Class meetings:

TH	10:00 AM – 10:50 AM	KLA 107
F	10:00 AM – 11:50 AM	KLA 107

Course goals:

- Design and communicate workflow of an analysis pipeline in a team setting
- Report quality of NGS (next generation sequencing) data
- Implement and evaluate quality filtering of NGS data
- Convey experimental plan and biological problem to both lay and technical audiences
- Analyze data by writing original scripts and utilizing appropriate software tools
- Visualize data and draw conclusions using statistical evidence
- Demonstrate proficiency at reading and discussing primary research literature
- Create a clear and visually pleasing poster that adequately describes the research project

Course Organization

Group project: You will be assigned to a group to work on a real life™ project. Each group will have an advisor who was involved in designing the experiment/generating the data. Projects will include the following:

Bibliography: You will be assigned 2 relevant papers to your project. From there, you will search the literature and develop a bibliography for the project. Due Sept 27.

Overview presentations: In a 15-20 minute talk, concisely state the background, significance, and goals of the project. Outline the general strategy you plan to take. To be presented the second week of class.

Layperson talks: In a 12-15 minute talk, communicate the relevance and goals of the project to a non-technical audience. These are formal in nature. Will take place on Week 3 and Week 5.

Progress reports: In a 20 minute talk, report your progress to the class, with the purpose of receiving feedback.

Poster: Groups will create a poster on their projects to present at the Genomics in Action meeting. Draft due Nov 1, posters will be printed the week of the meeting.

Final presentations: In a 20 minute talk, communicate the background/introduction, results, conclusions, and future directions of the project. This should be a polished talk. Presentations will be judged based on clarity, quality of analysis, use of appropriate tools, drawing reasonable conclusions, data visualization and interpretation.

Assignments, quizzes: During the course of the class, you will have several in class and out of class assignments and quizzes.

Group presentations: Journal club-style group presentations on assigned papers will be held throughout the term.

Class participation: Students are expected to ask questions during lecture, take part in class discussion, and participate in all labs.

Student Resources

DISABILITY: Any student with a documented disability, who may anticipate needing accommodations in this course, should arrange to meet with Leslie during the first week of class. Please request that a counselor at the Accessible Education Center send a letter verifying the disability. The Accessible Education Center is located in room 164 Oregon Hall and can be reached by e-mail: uoaec@uoregon.edu, and phone: 346-1155.

STUDENT LIFE: If you need help and are not sure where to go, check out the **Office of Student Life**. The student life staff is dedicated to helping students have the most successful experience they can while studying at the University of Oregon. The Office of Student Life staff is available to help you find solutions and resources to most issues and concerns on a drop-in basis Monday–Friday, 8:00 a.m.–noon and 1:00–5:00 p.m. In emergencies after hours and on weekends, contact the Department of Public Safety at 346-5444 and have an on-duty staff member paged. The Office of Student Life is located in room 164 Oregon Hall; phone: 346-3216; e-mail: stl@uoregon.edu.

UNIVERSITY OF OREGON CRISIS CENTER: is a student-funded organization that provides students with confidential telephone crisis intervention 24 hours a day, 7 days a week. The hotline number is 346-4488. *“Often students believe that their issues are not “severe” enough for them to call a crisis intervention hotline. Here at the Crisis Center, we truly believe that there is no problem too small for us. At one time or another everyone needs a little help through a difficult personal situation.”*

DUTY TO REPORT: UO is committed to providing an environment free of all forms of prohibited discrimination and sexual harassment, including sexual assault, domestic and dating violence and gender-based stalking. Any UO employee who becomes aware that such behavior is occurring has a duty to report that information to their supervisor or the Office of Affirmative Action and Equal Opportunity. The UO Health Center and University Counseling and Testing Center can provide assistance and have a greater ability to work confidentially with students. All UO employees are also required to report to appropriate authorities when they have reasonable cause to believe that any child with whom they come in contact has suffered abuse or any person with whom they come in contact has abused a child.

ACADEMIC INTEGRITY: You are expected to do your own work on homework, proposals, and exams. You are encouraged to discuss ideas with each other and to study together, but don’t copy someone else’s work and don’t allow someone else to copy your work. All students are expected to conform to the student conduct code (can be found online at <http://uodos.uoregon.edu/StudentConductandCommunityStandards/StudentConductCode/tabid/69/Default.aspx>); students not in compliance will be brought to the attention of the university.

Tentative Fall 2016 Schedule

Schedule	Topic	Assignments due
Week 1 Tues, Sept 27 Thurs, Sept 29 Fri, Sept 30	Project decisions Github review Journal club – Groups 1 & 2	PCR dup. lab Peer resume review
Week 2 Tues, Oct 4 Thurs, Oct 6 Fri, Oct 7	Background/strategy presentations Background/strategy presentations Journal club – Groups 3 & 4	Draft resume
Week 3 Tues, Oct 11 Thurs, Oct 13 Fri, Oct 14	Layperson talks Layperson talks Journal club – Groups 5 & 1	Bibliography Final resume
Week 4 Tues, Oct 18 Thurs, Oct 20 Fri, Oct 21	Mock interviews Mock interviews Journal club – Groups 2 & 3	
Week 5 Tues, Oct 25 Thurs, Oct 27 Fri, Oct 28	Project updates Project updates Journal club – Groups 4 & 5	
Week 6 Tues, Nov 1 Thurs, Nov 3 Fri, Nov 4	Poster review Print posters GENOMICS MEETING	
Week 7 Tues, Nov 8 Thurs, Nov 10 Fri, Nov 11	Meeting review Open lab – Project wrap-up Open lab – Project wrap-up	
Week 8 Tues, Nov 15 Thurs, Nov 17 Fri, Nov 18	Alternative splicing analysis Projects talks Projects talks	
Week 9 Tues, Nov 22 Thurs, Nov 24 Fri, Nov 25	Open lab – Alternative splicing NO CLASS – THANKSGIVING NO CLASS – THANKSGIVING	
Week 10 Tues, Nov 29 Thurs, Dec 1 Fri, Dec 2	Differential expression analysis Open lab – DEA Open lab – PCR duplication	Alt. splice PS DEA PS
FINALS WEEK Thurs, Dec 8	Final projects and PCR duplication write-up due	