ECL 298 Syllabus

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Today

Workshops

Teams of students of 2-4 people. Grades assigned by team. In each class we will start by going over results and interpretation from previous week, then lecture on new topic, then hand-on work to start computation for new topic.

Proposal

Abstract due week 5. Full proposal due week 8.
Page limit, format?? Suggest NSF GPG!

Panel Review

Each proposal gets 3 reviewers, 1 primary and 2 secondary. Primary gets 5 minutes, secondaries get to add comments and overall panel discussion. Last hour of 2nd class will be for ranking and overall discussion. Rank on science, choose best science that is also feasible for next year?

Schedule

1. Lectures
    - Introduction to genomics (Whitehead)
    - Experimental design (Miller)
        - HW: work through UNIX tutorial, bring functioning *NIX OS.
2. Workshop/Reading
    - Mon. Workshop: Introduction to UNIX, ssh
        - basic UNIX, UNIX philosophy, project setup, ssh
        - HW: Get a cluster account, make a project directory, download files
    - Wed. Reading: Chapters from Buffalo

3. Workshop/Reading
    - Mon. Workshop: Sequence data
        - sequence data, data quality issues, read mapping issues
        - HW: Estimate depth, clean data, map reads.
    - Wed. Reading: TBA
4. Workshop/Reading
    - Mon. Workshop: SNPs and diversity
        - SNP calling, genotype likelihoods, ANGSD intro
        - HW: call genotypes, estimate diversity and D across a chromosome (one chromosome per group)
    - Wed. Reading: TBA
5. Workshop/Reading
    - Mon. Workshop: Population Structure
        - STRUCTURE theory, F_{ST}
        - HW: run ANGSD admixture, F_{ST} analysis
    - Wed. Reading: TBA
6. Workshop/Reading
    - Mon. Workshop:
        -
        - HW:
    - Wed. Reading: TBA
7. Workshop/Reading
    - Mon. Workshop:
        -
        - HW:
    - Wed. Reading: TBA
8. Workshop/Reading
    - Mon. Workshop:
        -
        - HW:
    - Wed. Reading: TBA
9. Panel discussions
10. Fieldwork
    - TBA