

Spring 2023 Course Announcement

Quantitative Genomics and Genetics

Professor: Jason Mezey
Computational Biology (Cornell)
Department of Genetic Medicine (Weill Cornell)

Dates: Jan 24 – May 9
Days: Tues. and Thurs.
Time: 8:05 am – 9:20 am

COURSE DESCRIPTION: A rigorous treatment of analysis techniques used to understand the genetics of complex phenotypes when using genomic data. This course will cover the fundamentals of statistical methodology with applications to the identification of genetic loci responsible for disease, agriculturally relevant, and evolutionarily important phenotypes. Data focus will be genome-wide data collected for association analysis, as well as for inbred and pedigree experimental designs. Analysis techniques will focus on the central importance of generalized linear models in quantitative genomics with an emphasis on both Frequentist and Bayesian computational approaches. Tools learned in class will be implemented in the computer lab, during which the language R will be taught from the ground up (no previous experience required or expected)

GRADING: S/U or Letter Grade.

CREDITS: 4 (lecture + computer lab).

SUGGESTED PREREQUISITES: At least one class in Genetics and one class in probability and / or statistics.