

## *Spring 2017 Course Announcement*

# **Quantitative Genomics and Genetics**

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

Dates: Jan. 26 – May 9  
Days: Tues. and Thurs.  
Time: 8:40 am - 9:55 am

Room for Cornell, Ithaca: 224 Weill Hall  
Room for WCMC: Belfer 204A or 302A

**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, 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.