BIOST/STAT 551:
Statistical Genetics II: Quantitative Genetics
Autumn Quarter, 2014

Instructor: Timothy A. Thornton, Ph.D.
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Office Hours: By Appointment

Time and Place: Tuesdays and Thursday, Health Sciences Building T474, 9:00AM-10:20AM

Website: **http://faculty.washington.edu/~tathornt/BIOST551**

Course Description: This course focuses on the theory and application of statistical methodology for describing variation in quantitative traits, the decomposition of trait variation into components representing genes, environment and gene-environment interaction, and mapping and characterizing quantitative trait loci.

Prerequisites: BIOST/STAT 550; STAT 423 or BIOST 515;
Otherwise, permission of instructor.

Grading: Participation in Class: 5% of grade for course
5 Homework Assignments, worth 55% of grade for course
Final Exam/Project, worth 40% of grade for course

Participation in class will be determined by lecture summaries and participation in class discussions and problem-solving exercises. Summaries will be given by a pre-selected student and are to be informal five-minute reviews of the previous lecture.

Class Format: Most class presentations will use overhead slides. Students will also work through problems as in-class exercises. Regular class attendance and participation is expected.

Textbook: There is no official textbook for this course. Course material will be a combination of lecture notes, journal articles, and handouts.

Students may find the following books helpful. These six books are on reserve in the Health Sciences Library for students' reference.

- Lynch M, Walsh B (1998) Genetics & Analysis of Quantitative Traits. Sinauer.
- Falconer DS, Mackay TF (1998) Introduction to Quantitative Genetics, 4th Edition. Sinauer.
- Khoury M, Beaty TH, Cohen BH (1993) Fundamentals of genetic epidemiology. Oxford.
- Ott J (1999) Analysis of Human Genetic Linkage. John Hopkins.
- Thompson EA (2000) Statistical inferences from Genetic Data on Pedigrees. IMS.
- Weir BS (1996). Genetic Data Analysis II. Sinauer.

Class Web Page: The class web page (http://faculty.washington.edu/~tathornt/BIOST551) will serve as an archive of homework, handouts, lecture notes, and datasets. It will also be the place to find announcements concerning course logistics. Students should check the web page regularly for information.

Software There is no official software for this course. Software packages for the analysis of genetic data will be introduced.

Acknowledgment: Some course material was developed by Prof. Bruce Weir who previously taught this course.