

Syllabus

Fall 2004

- Course:** Statistics 892, Statistical Genomics
- Instructor:** Steve Kachman
- Office:** 104 D Miller Hall
- Phone:** 472-7302
- Office Hours:** I will generally be available in the afternoon
- Prerequisites:** Basic Statistics
Basic Biology
- Homework:** Approximately once every other week
20% will be deducted for each day late.
- Exams:** Two exams, will be announced at least one week in advance
- Final Exam:** Monday, December 13 10:00-Noon
Revise travel plans accordingly.
- Conflicts:** Expected to take exams at the scheduled time
If an exam conflicts with an activity vital to your program,
please have your major adviser contact me well in advance.
I should be notified as soon as possible of any potential conflicts.
- Grading:** Exams 200 pts
Final 150 pts
Homework and Quizzes 100 pts
Grading will be on a straight 90, 80, 70, 60 percent basis.
Available at <http://blackboard.unl.edu/>
- Web page:** <http://statistics.unl.edu/faculty/steve/statgen/2004/>

Statistical genomics involves the integration of both statistics and genetics. As such, students will be expected to understand both biology and the statistics. As with many areas of science, teams which bring together people with different areas of expertise are the norm. This is the approach we will take in this class.

The objective of this course is to examine a variety of topics in the area of statistical genomics. Initially we will examine the design and analysis of cDNA microarray experiments. The specific topics to be covered later in the course will depend on the specific areas of interest of students in the class.

Preliminary Topics

- Basic Genetics
- cDNA Microarrays
 - Introduction
 - Design
 - Normalization
 - Estimation and Testing
 - * Linear Models
 - * Bayesian models
 - * False Discovery Rate