

BioGD 4000 Genomics

- How many students register, on average?
30-35
- Approximately what is the proportion of graduate to undergraduate students?
graduate:undergraduate ratio is 3:2
- What Field(s) are most highly represented among the grad students?
The BBS Fields
- Do you have a class website?
Yes on Blackboard
- Would you consider this a high level course, appropriate only for advanced students with specific training (e.g. strong statistical background required, computational skills needed, etc. and if so, which do you consider the most important)
Requires a basic understanding of genetics and molecular biology

BIOGD 4000 Genomics

Fall. 3 credits. Prerequisites: one year introductory biology plus BIOGD 2810 or 3300 or 3330 or 3310/3320 or permission of instructor. S–U or letter grades. Lec. J. Schimenti. Introduction to principles underlying the organization of genomes and the methods of studying them, emphasizing genome-wide approaches to research. Covers the application of genomics methodologies for addressing issues including gene regulation, evolution, complex systems, genetics, and gene: phenotype relationships. Landmark and timely genomics papers and other research developments will be discussed. Basic bioinformatics tools will be incorporated.

Monday/Wednesday 2:50-4:10

Instructor: John Schimenti (jcs92@cornell.edu) VRT T9014A

TA: Ed Strong (ers37@cornell.edu)

Warren 131

Date	Topic	Lecturer
Sept 1	Course overview; History of Genome Project	Schimenti
Sept 3	Genome mapping & Sequencing	Schimenti
Sept 8	Gene finding and expression analysis	Schimenti
Sept 10	Genome features and gene regulation	Schimenti
Sept 15	Bioinformatics I	Schimenti
Sept 17	Genome evolution/comparative genomics	Schimenti
Sept 22	Genetic mapping technologies	Schimenti
Sept 24	Forward genetics	Schimenti
Sept 29	Reverse genetics	Schimenti
Oct 1	non-coding RNAs	Schimenti
Oct 6	Bioinformatics II	Schimenti
Oct 8	Mid-term review	

Take-home Midterm due Oct. 14

Oct 15	Functional genomics	Schimenti
Oct 20	Gene regulation II	Schimenti
Oct 22	Epigenetics	Schimenti
Oct 27	Cloning and stem cells	Schimenti
Oct 29	The "Interactome"	Schimenti
Nov 3	Genomics in disease analysis	Schimenti
Nov 5	Proteomics	Schimenti
Nov 10	Complex traits/Association mapping	Sutter
Nov 12	Genomics & drug development	Schimenti
Nov 17	Systems Biology	Schimenti
Nov 19	Genomics & Personalized Medicine	Schimenti
Nov 24	Bacterial Genomics	Stanhope
Dec 1	Genomics & Society	Schimenti
Dec 3	The Future, and Review	Schimenti

Take-home Final

Each student in this course is expected to abide by the Cornell University Code of Academic Integrity (<http://cuinfo.cornell.edu/Academic/AIC.html>). Any work submitted by a student in this course will be the student's own work.