Biostatistics 666
Statistical Models and Numerical Methods in Human Genetics

Instuctor: Goncalo Abecasis

Text:
Selected manuscripts.

Lecture 01 -- Refresher on Genetics
Lecture 02 -- Common Study Designs
Lecture 03 -- Linkage Disequilibrium
Lecture 04 -- Introduction to the Coalescent
Lecture 05 -- The Coalescent: Distribution of Mutations
Lecture 06 -- The Coalescent: Effect of Recombination
Lecture 07 -- Maximum Likelihood
Lecture 08 -- Strategies for Likelihood Maximization
Lecture 09 -- The E-M Algorithm
Lecture 10 -- Haplotyping
Lecture 11 -- Exam Revision Q & A
Lecture 12 -- Mid Term Exam
Lecture 13 -- IBS Linkage Analysis
Lecture 14 -- The MLS Method of Linkage Analysis
Lecture 15 -- Genetic Models and IBD for Affected Relatives
Lecture 16 -- Relationship Inference for Pairs of Individuals
Lecture 17 -- Introduction to Pedigree Likelihoods
Lecture 18 -- The Elston-Stewart Algorithm
Lecture 19 -- The Lander-Green Algorithm
Lecture 20 -- Non-parametric Linkage Analysis using Affected Relatives
Lecture 21 -- Detection and Modeling of Genotyping Error
Lecture 22 -- Monte-Carlo Methods for Linkage Analysis
Lecture 23 -- Family Based Association Tests
Lecture 24 -- Covariance Between Relatives
Lecture 25 -- Quantitative Trait Linkage Analysis
Lecture 26 -- Quantitative Trait Association Analysis
Lecture 27 -- Exam Revision Q & A
Lecture 28 -- Final Exam