1	April 4	Review of basic concepts
2	April 6	Heritability
3	April 11	Mixed models
4	April 13	PCA and factor analysis
5	April 18	Guest lecture (Bogdan Pasaniuc)
6	April 20	Multiple testing (Nolan Donoghue)
7	April 25	Imputation (Ariel Wu)
8	April 27	Correcting for confounders (Ruth Johnson)
9	May 2	Phasing (Kathy Burch)
10	May 4	Causality (Jazlyn Mooney)
11	May 9	Gene expression analysis (Gleb Kichaev)
12	May 11	The coalescent (Michael Thompson)
13	May 16	Deep learning in genomics (Lisa Gai)
14	May 18	Demographic inference (Arun Durvasula)
15	May 23	Guest lecture (Jason Ernst)
16	May 25	Admixture
17	May 29	Epigenome-wide association analysis
18	May 31	Project presentations
19	June 6	No class
20	June 8	Project presentations

Project presentation schedule:

May 31:

1. Arun/Jazlyn
2. Ariel
3. Nolan

June 8 :

1. Ruth
2. Kathy
3. Mike
4. Lisa
5. Gleb

1. Models of genetic variation
   Li and Stephens Genetics 2003

2. Heritability
   Zuk et al. PNAS 2011
   Yang et al. Nature Genetics 2010

3. Linear Mixed Models
   Lippert et al.Nature Methods 2012
   Loh et al. Nature Genetics 2015

4. PCA and factor analysis
   Patterson et al. PLoS Genetics 2006
   Price et al. Nature Genetics 2006
   Engelhardt and Stephens, PLoS Genetics 2012

5. Imputation
   Howie et al. Nature Genetics PLoS Genetics 2009
   Dahl et al. Nature Genetics 2016

6. Fine-mapping
   Hormozdiari et al. Genetics 2014

Kichaev et al. PLoS Genetics 2014

7. Risk prediction
   Carbonetto and Stephens, Bayesian Analysis 2012
   Logdson et al. BMC Bioinformatics 2010
   Hoggart et al. PLoS Genetics 2008

8. Multiple testing
   Moskvina and Schmidt AJHG 2008
   Han et al. PLoS Genetics 2009

9. Correcting for confounders
   Kang et al. Genetics 2008
   Kang et al. Nature Genetics 2010
   Song et al. Nature Genetics 2015

10. Phasing
    Loh et al. Nature Genetics 2016
    O'Connell et al. Nature Genetics 2016

11. Epigenome-wide Association Studies
    Houseman et al. BMC Bioinformatics 2012
    Rahmani et al. Nature Methods 2016

12. Gene expression analysis
    Stegle et al. PLoS Computational Biology 2010

13. Causality (Mendelian randomization, mediation)
    Sheehan et al. Genetic Epidemiology 2011
    Bowden et al. IJE 2015

14. Compressed storage (PBWT, Li-Stephens on PBWT)
    Durbin, Bioinformatics 2014
    Lunter, Biorxiv 2016

15. Deep learning
    Sheehan and Song, PLoS Computational Biology 2015
    Zhou and Troyanskaya Nature Methods 2015
    Alipanahi et al. Nature Biotechnology 2014

16. Privacy-preserving GWAS
    Dwork et al. 2014
    Simons et al. Cell Systems 2015

17. The coalescent
    Wakeley, chapter 3
(http://dna.ac/filogeografia/PDFs/Wakeley/Wakeley_06_Chapter_3.pdf)

18. Demographic inference
    Li and Durbin Nature 2011
    Palacios and Ramachandran Genetics 2016

19. Selection
    Voight et al. PLoS Biology 2006
    Field et al. Science 2016

20. Admixture
    Pritchard et al. Genetics 2002
    Alexander et al. Genome Research 2009
    Raj et al. Genetics 2014
    Gopalan et al. Nature Genetics 2016

21. Ancient DNA
    Green et al. Science 2010
    Mathieson et al. Nature 2016