

Genetic Analysis of Disease in Diverse Individuals

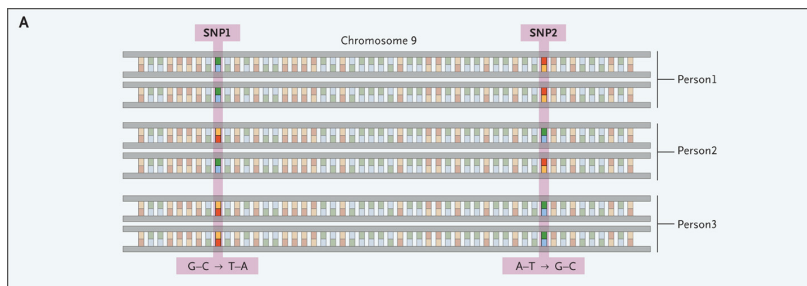
LA's Best
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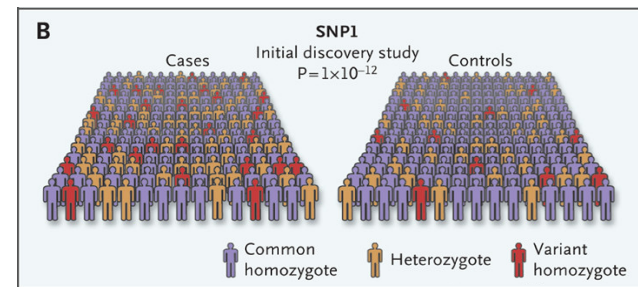
Keck School of
Medicine of **USC**

Genome-wide association studies

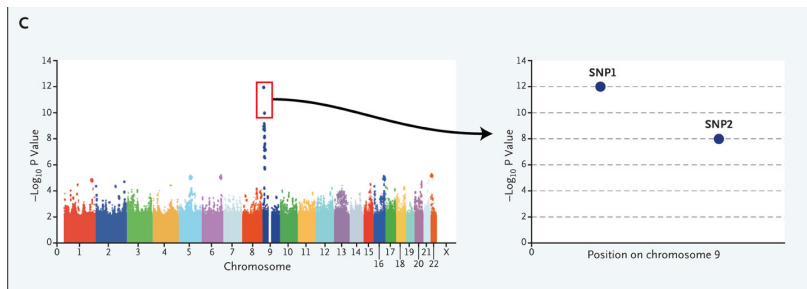
Quantify common genetic variation (SNPs)



Large cohorts and simple models

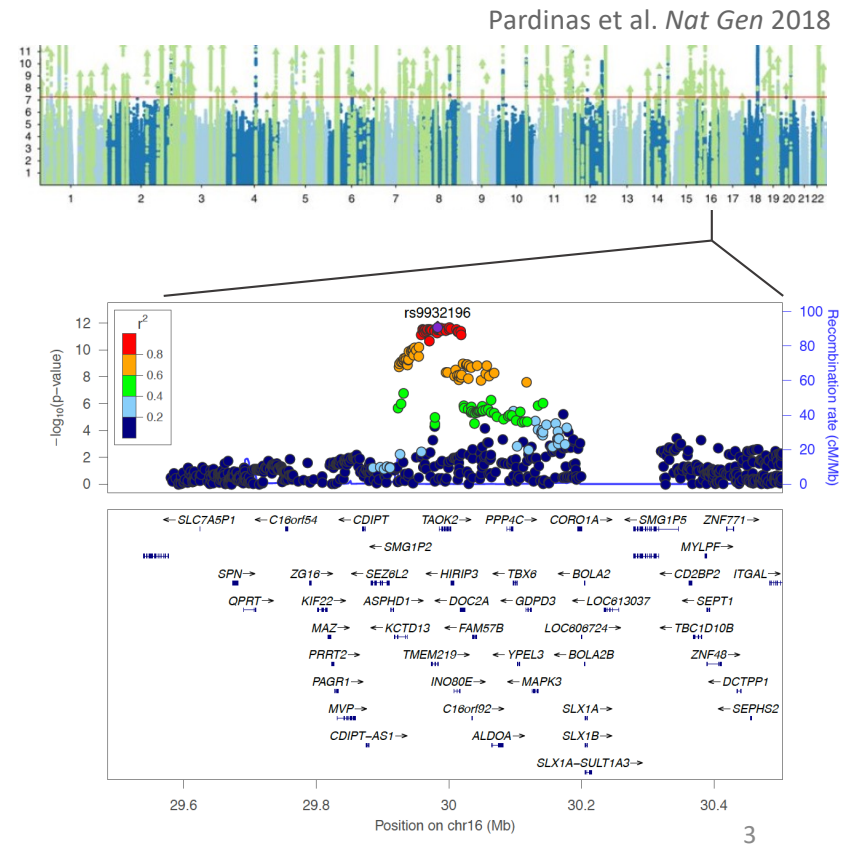


Test for association between SNP and disease

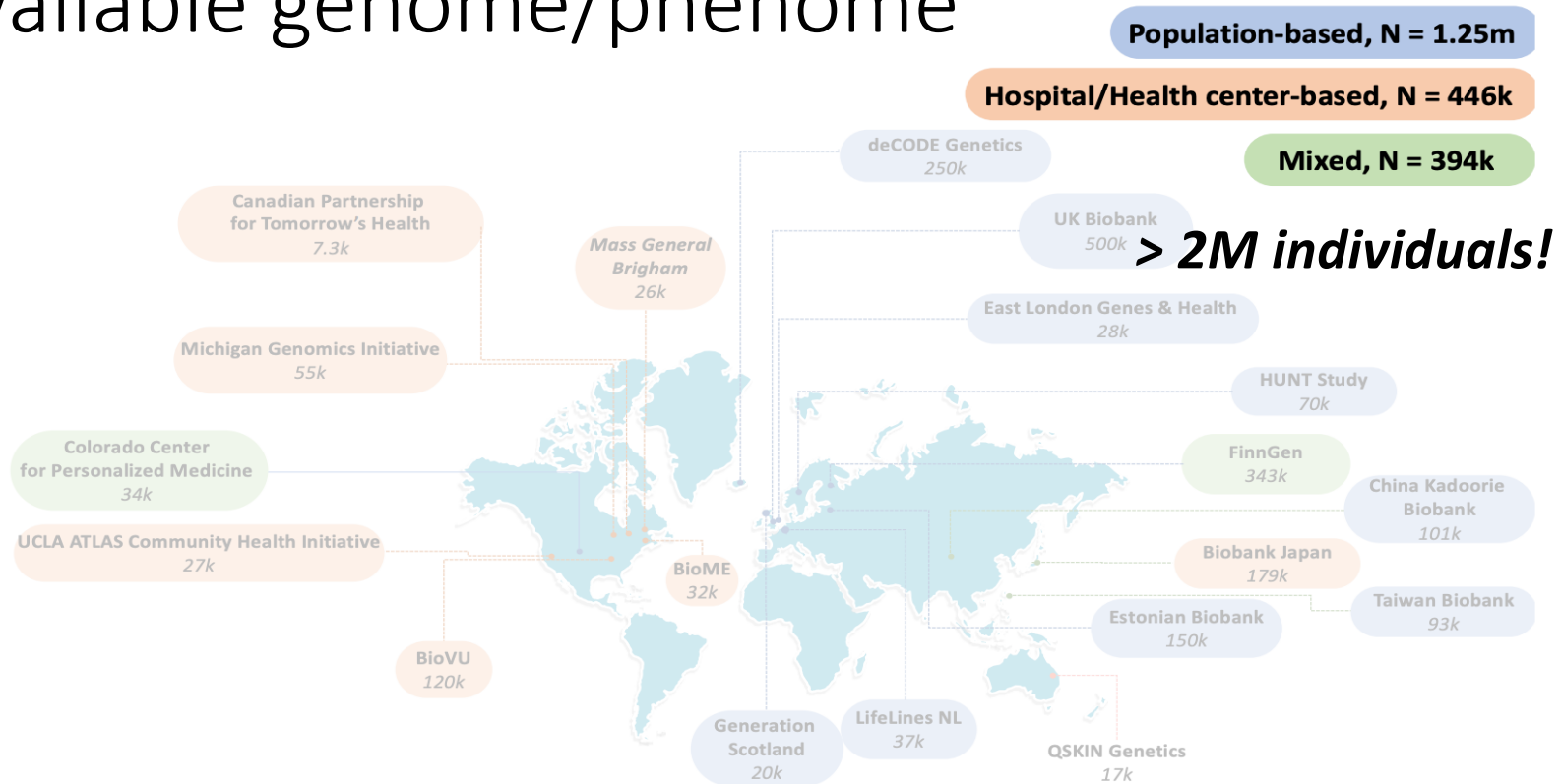


GWAS does not provide *causal mechanisms*

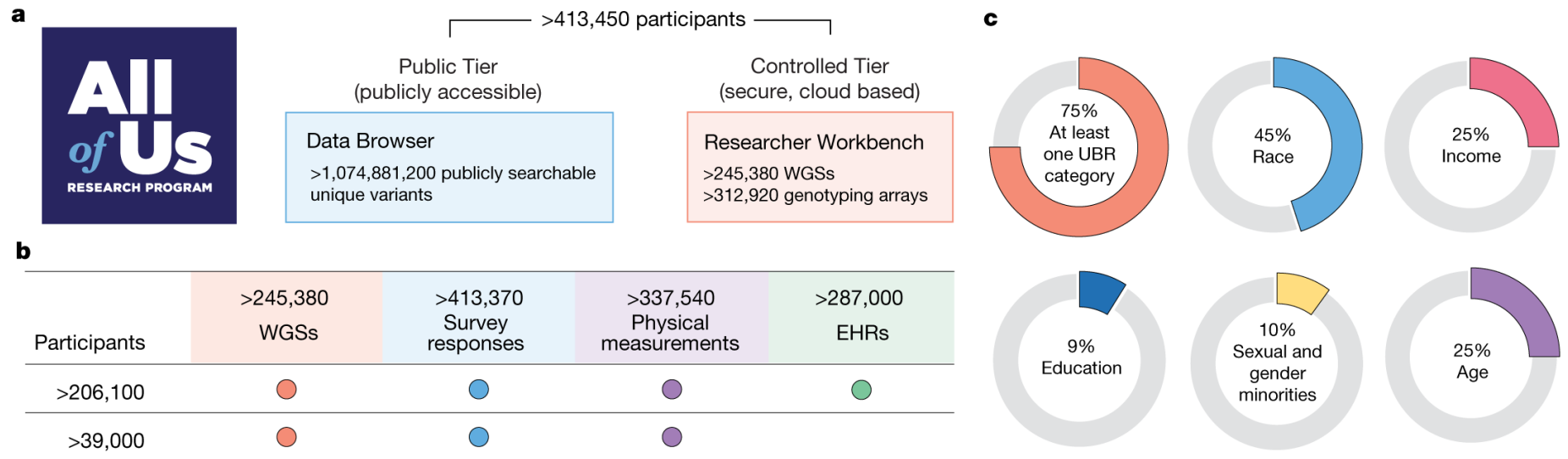
- GWAS provides **regions** associated with disease risk
- What are the **mechanisms** driving disease risk?
- Most associations are **non-coding**
 - SNPs with **regulatory** function are strong candidates



Global biobanks reflect *massive* scale of available genome/phenome



All of US Biobank



LA's Best Project: All of Us Analysis

- Project Aims:
 - Learn to navigate genetic + phenotypic data on AOU portal
 - Select phenotype and construct analysis group (non EHR related!)
 - Visualize diverse ancestry components using PCA
 - Perform GWAS
- Deliverables
 - Small presentation/writeup on any potential genetic findings