

# Improving genetic prediction for genetic-testing consumers

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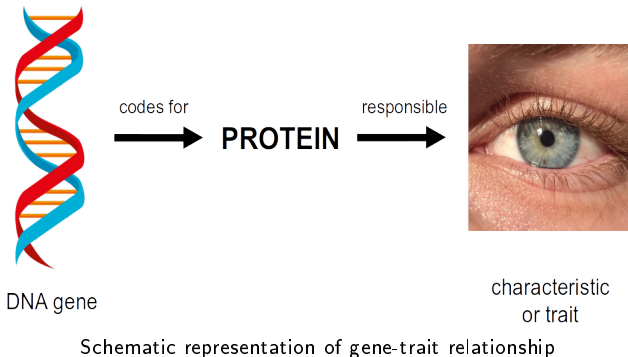


THE UNIVERSITY  
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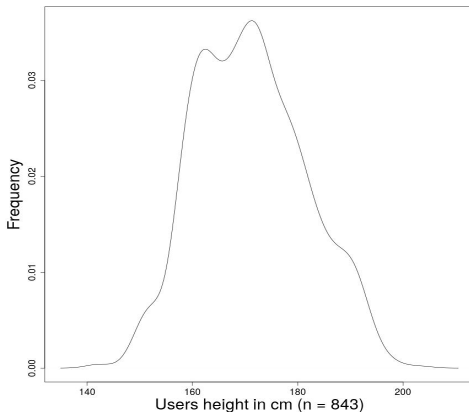
## Relevance of genetics

- Well known influence for some traits aside the environment
- Gaps in the knowledge about specific genetic determinants
- Limited genetic prediction of traits



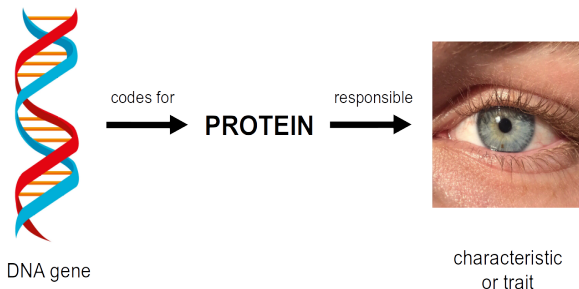
## openSNP: genetic prediction of height

- Open-access database with genetic and height data
- 5.7 GB of genetic and height data scrapped with an API
- $\approx 9$  thousand genetic variants associated with height



## Genetic algorithms to predict height

- Genetic algorithms selecting best genetic variants
  - Filtering by p-value (from gene-height association)
  - Considering functional impact on proteins
- Fine tuning of algorithm parameters → battery of algorithms
- Influence of algorithm parameters on height prediction



Schematic representation of gene-trait relationship

## Proof of concept

- Improvement of algorithms for genetic prediction
- Future testing on larger datasets with clinical data
- More robust predictions of disease risk for consumers