

# Improving genetic prediction for genetic-testing consumers

Diego F. Salazar-Tortosa

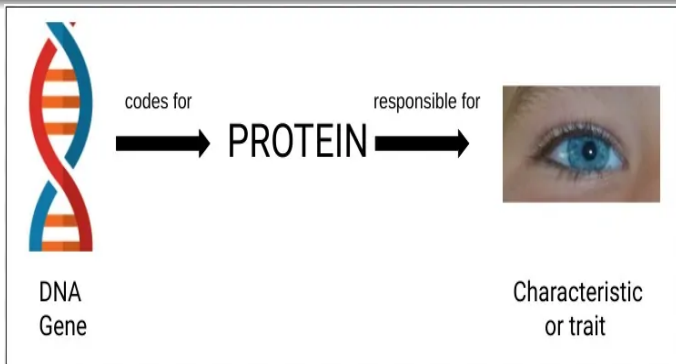


THE UNIVERSITY  
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## Relevance of genetics

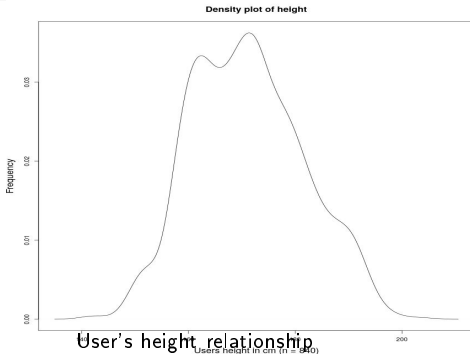
- Well known influence for some traits aside the environment
- Gaps in the knowledge of specific genetic determinants
- Limited genetic prediction of traits



Schematic representation of gene-trait relationship

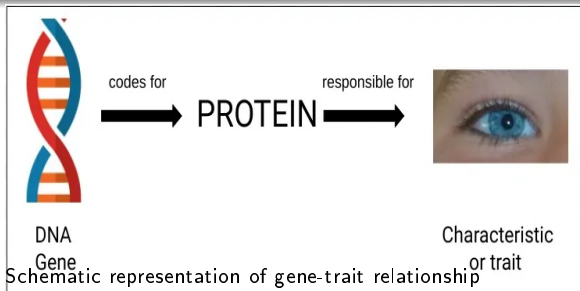
## openSNP: genetic prediction of height

- Open-access database with genetic and height data
- 5.7 GB of genetic and height data scrapped with API
- $\approx 10$  thousand genetic variants associated with height



## Genetic algorithms to predict height

- Genetic algorithms selecting most explanatory variants
  - Filtering by p-value thresholds
  - Considering functional impact on proteins
- Fine tuning of algorithm parameters -> battery of algorithms
- Quantify influence of parameters on height prediction



## Proof of concept

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