

Can we find disease fingerprints in our metabolome?

UNIL BSc course: Solving Biological Problems that
require Math 2018

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Phenotype



<https://www.meatfreemondays.com/>

Environment and lifestyle



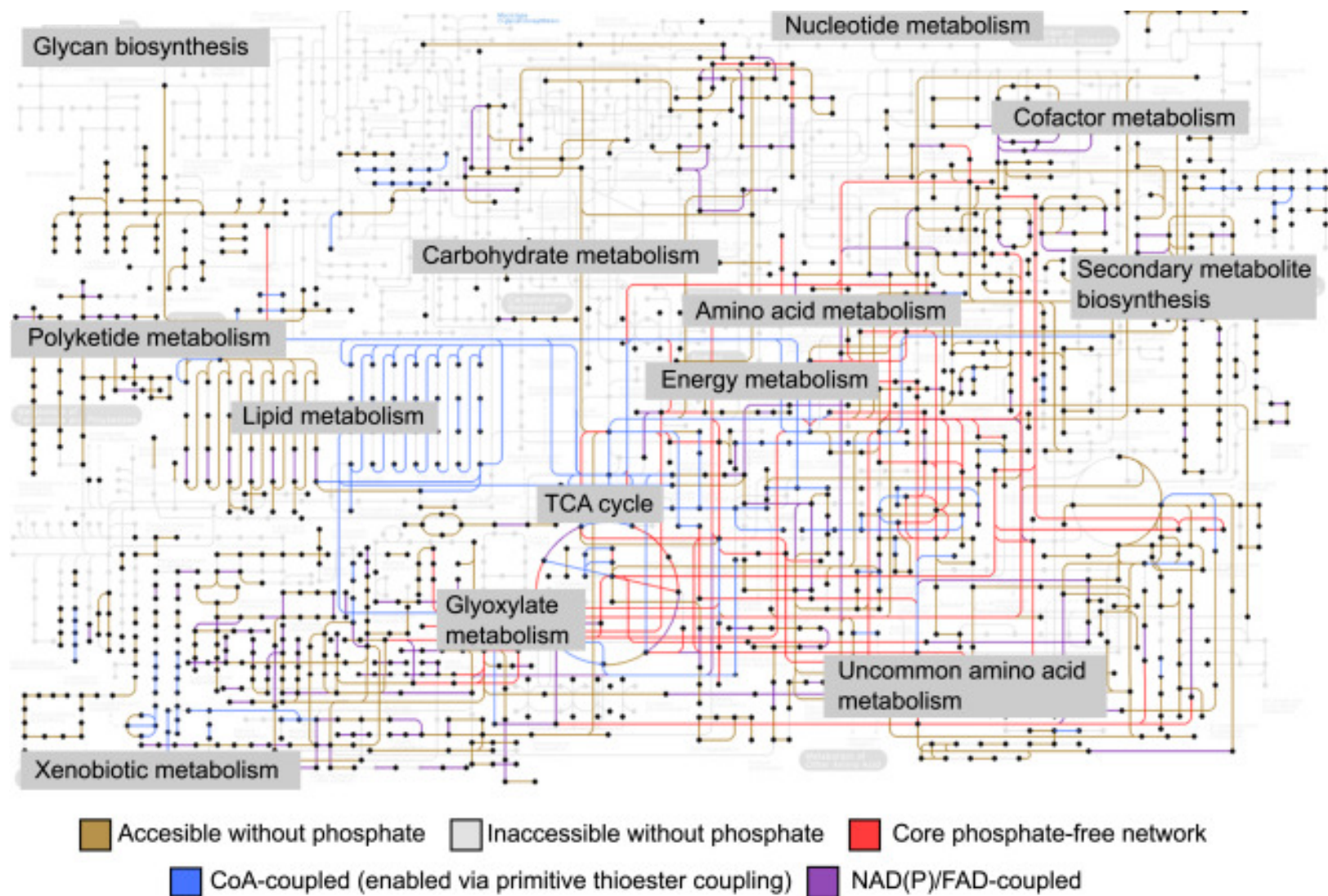
Phenotype



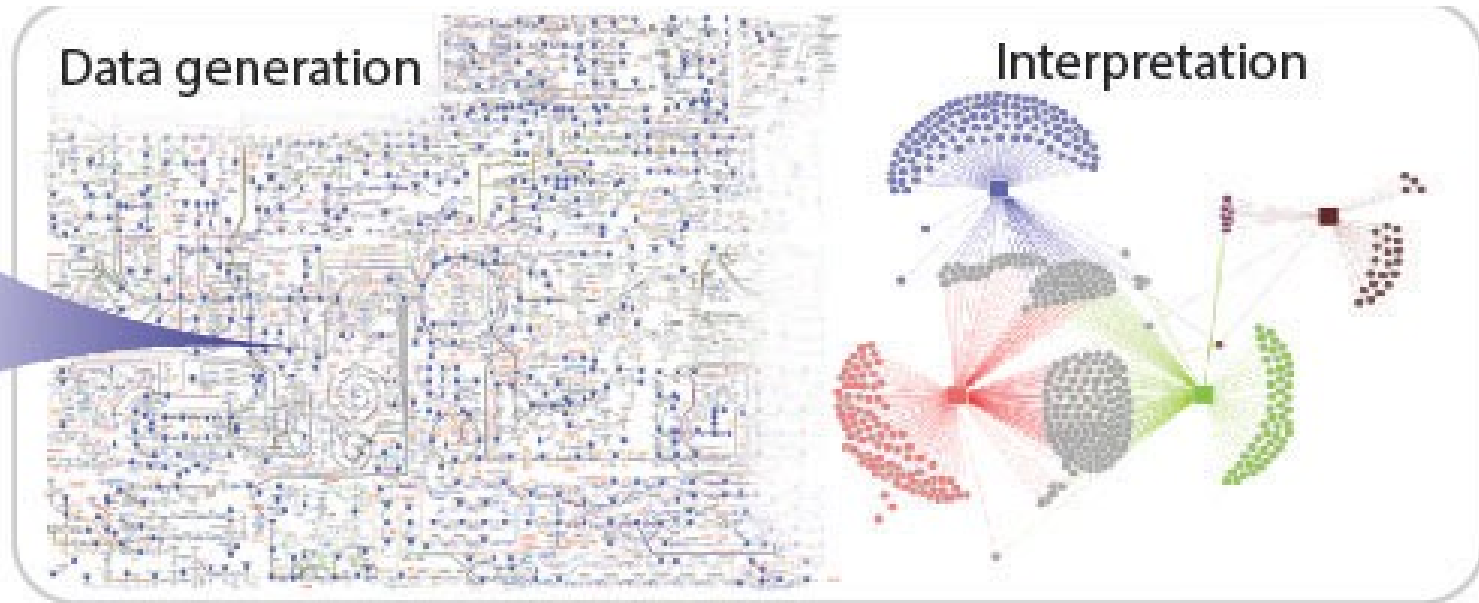
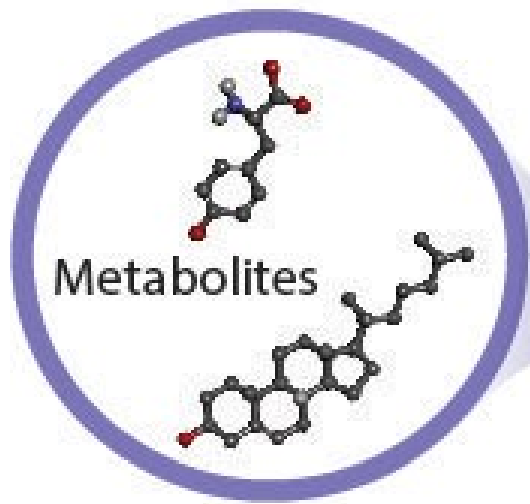
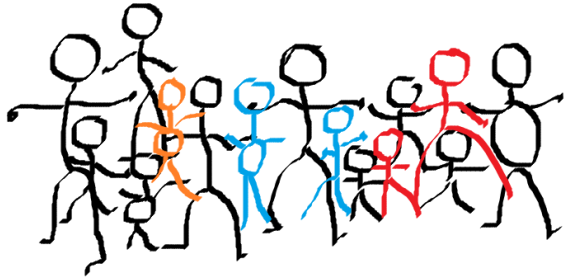
Genetics



Metabolism

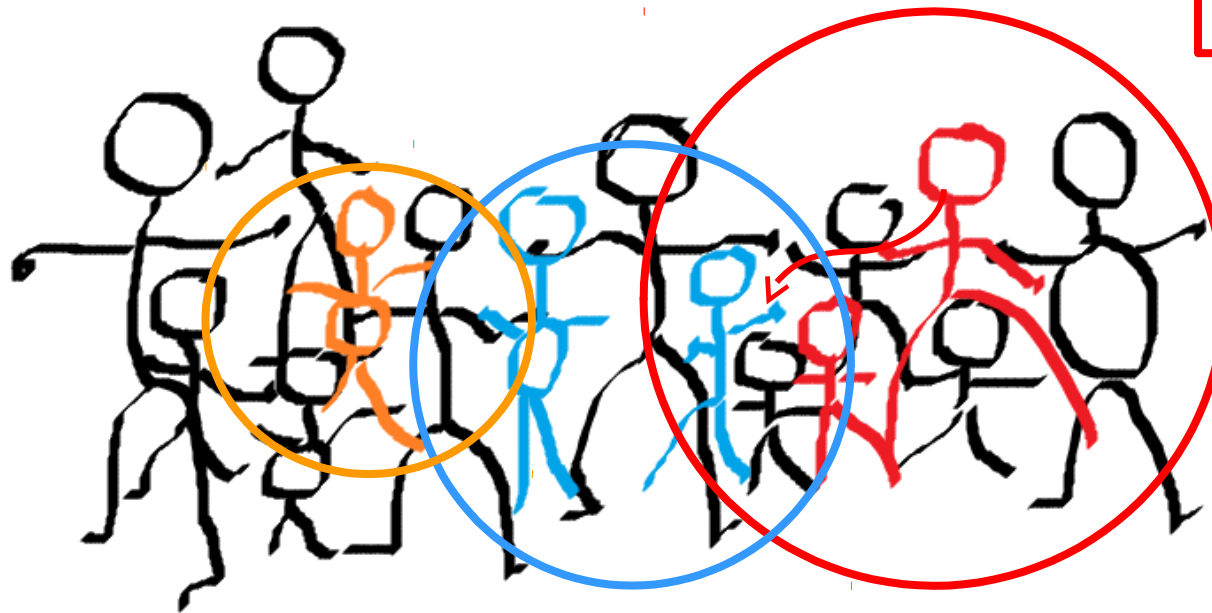


Metabolomics



Disease A

Disease B

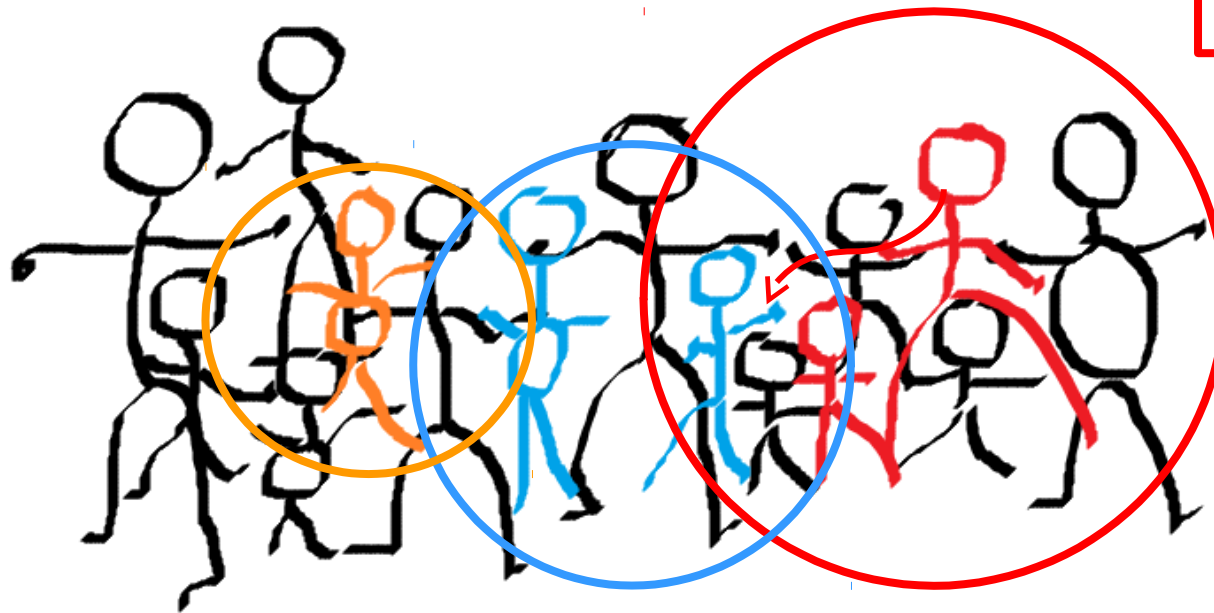


Phenotype

Disease C

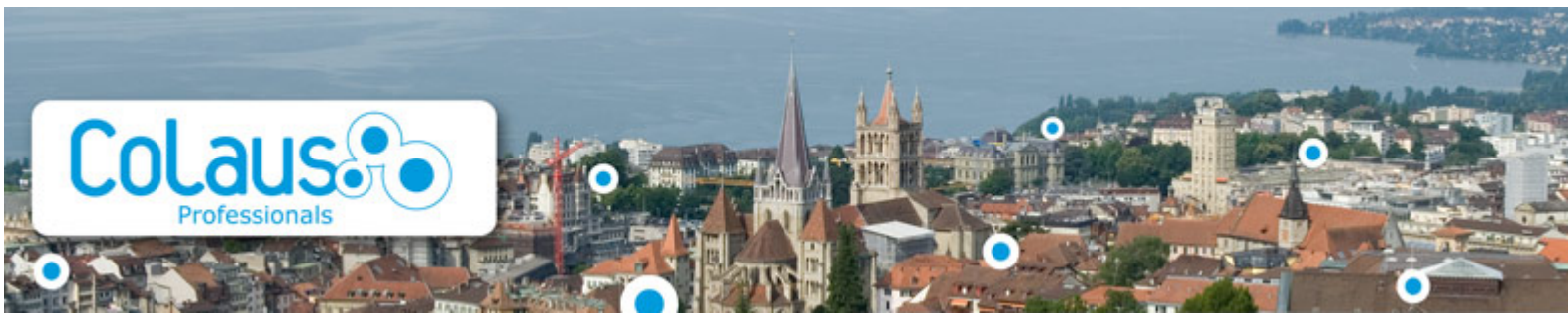
Biomarker A

Biomarker B



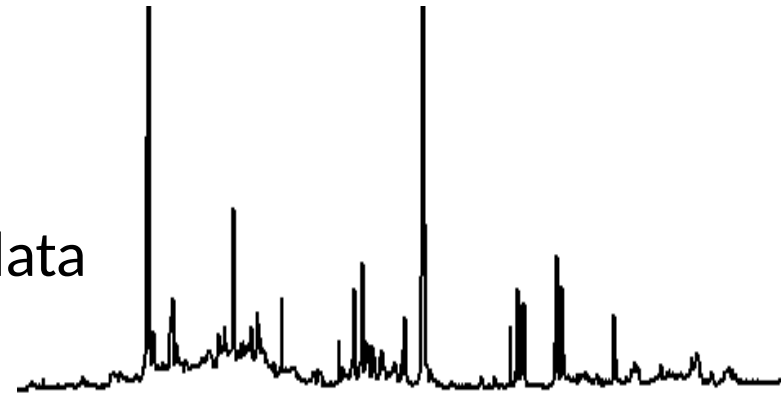
Phenotype

Biomarker C



Data

- Phenotype
 - Disease of interest (Cardiovascular disease, diabetes...)
 - Other phenotypes?
- Metabolomics (835 urine samples)
 - Nuclear magnetic resonance (NMR) data



Goals

- **Analyze NMR data using R**
 - Group individuals with similar metabolomics profile
 - Identify metabolites as biomarkers
- **Tools**
 - Clustering methods
 - Linear regression analysis

Thank you!

Questions?