RHAPSODY

- Federating clinical data for biomedical research in type 2 diabetes -
• Improve prediction of type 2 diabetes and its progression
  • Multi-omics platforms
• Support patient segmentation
  • Define subsets of type 2 diabetes
  • Define fast and slow progressors

Study populations

1) Deploy a server
2) Harmonize the clinical data (CDISC)
3) Upload clinical data to the server
4) Upload multi-omics data to the server
   a) SomaLogic
   b) Metabolomics
   c) Lipidomics
   d) MicroRNA
The federated database system

- Login: username + password
- Load tables
- Filtering and subsetting of tables
- Powerful federated analysis
  - Meta data is returned
Real data analyses in Rhapsody

- Through the federated data system

Effects on the long-term blood glucose level (HbA1c)
Concluding remarks

- The federated data system is “live” and working in Rhapsody
  - Enables standardised analysis across multiple observational cohorts in Rhapsody
    - Reproducible results
    - High flexibility

- Identify robust biomarkers for assessing disease risk and progression in type 2 diabetes
  - Correlation of multi-omics data with clinical relevant traits
  - **Patient segmentation**: Cluster diabetes study population in subsets of diabetes