

Topic of the training: Bioinformatics / Advanced computational skills in OMICs to generate disease-related signatures and risk assessment, to design targeted/personalized prevention and treatment plans

Title of the training session: From data to biologically relevant information. Short course on how you can retrieve the biology hidden in lists.

Trainer: Prof. Éva Csősz, PhD, DSc – Professor of Biochemistry, Executive Committee Member, European Proteomics Association (EuPA), Chair, EuPA Conferences & Communication Committee, Council Member, Human Proteome Organization (HUPO), ELIXIR-HU Training Coordinator

Detailed program

Day 1 – October 30, 2025	
Time	Session
09:00	Introduction, wrap-up
09:15	Introduction to omics data
10:00	Data types & acquisition methods – benefits and limitations
11:00	☕ Coffee break
11:30	How can we get the protein lists? Protein identification, fragmentation patterns
13:00	🍴 Lunch
14:00	Public repositories: PRIDE, ProteomeXchange, Human Protein Atlas
14:30	Tutorial: Data download
15:00	Data quality control, missing values, imputation in case of mass spectrometry- and non mass spectrometry-based proteomics data and mass spectrometry-based metabolomics data – case presentations
17:00	End of Day 1

Day 2 – October 31, 2025	
Time	Session
09:00	Statistical analysis, networks, functional analysis, deduced networks
10:00	Tutorial: Network generation and network analysis: String, Cytoscape
11:30	☕ Coffee break

12:00	Functional analysis – case presentation
12:30	Gene Set Enrichment Analysis
13:00	🍴 Lunch
14:00	Biomarkers. What are biomarkers? When can we call a molecule a biomarker?
15:00	Closing session & feedback
15:30	End of course