



CANCER  
RESEARCH  
UK

CITY OF  
LONDON  
CENTRE

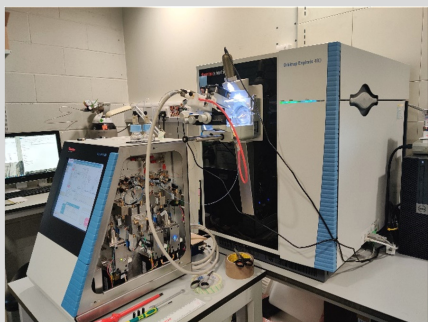
# Proteomics Research TTP



- Proteome and subproteome profiling
- Signalling analysis: PTMs
- Interactomes and network analysis
- Targeted pathway monitoring

## Instruments

### Orbitrap Exploris 480 coupled to EASY nLC 1200 (Thermo Fisher Scientific)



Cutting edge Liquid Chromatography Mass Spectrometry (LC-MS) system used for discovery- and advanced hypothesis-driven proteome analyses. These workflows enable sensitive and unbiased peptide-level measurements in complex and lower input samples.

### Q-Exactive Plus coupled to EASY nLC 1200 (Thermo Fisher Scientific)



Standard Liquid Chromatography Mass Spectrometry (LC-MS) system used for discovery- and hypothesis-driven proteome analyses. This instrument is set up for sub-proteome samples of lower complexity


### Ultimate 3000 BioRS UHPLC (Thermo Fisher Scientific)



Offline LC is employed for high pH Reversed-Phase peptide fractionation with the goal to reduce the complexity of samples. It is typically used for global proteome analysis of highly abundant samples.



## Experimentation, Analysis and Bioinformatics

- Preparation and analysis of peptide digests from whole or sub-proteomes or protein complexes
  - Subproteomes are obtained by enriching a cellular fraction, a protein complex, or the ensemble of post-translationally modified proteins (phosphorylated, ubiquitinated, glycosylated...)
  - Depending on the complexity of a desired sample, tailored approaches such as labelling followed by multiplexing or complexity reduction by chromatographic separation or fractionation will be employed to maximise proteome coverage
  - Targeted analysis will be designed for specific sets of proteins or complete pathways that require sensitive and accurate detection and quantification
  - The analysis of low input samples will require newly developed sample preparation protocols and labelling followed by multiplexing in order to boost signal during LC-MS data acquisition
  - Each experimental design will require a unique computational data processing workflow to achieve quantitative data presentation, statistical analysis, functional bioinformatics, and integration with other data sources
- 

## Training

- Researchers undertaking proteomic projects are trained during a pilot project where they learn how to prepare their samples and how they will be analysed
- Techniques - Basics of Proteomics lecture introduces proteomics as a research discipline to 1st year PhD students
- Undergraduate students learn about proteomics during their BSc and MSc projects. These can be wet or dry lab-based

## Seminars

The Cancer Research UK City of London Proteomic Seminar Series seminars showcase the latest proteomic developments and research highlights from global leaders in the field.

## Contact

Silvia Surinova  
Head of the Proteomics  
Research TTP  
Email: [s.surinova@ucl.ac.uk](mailto:s.surinova@ucl.ac.uk)



Amandeep Bhamra  
Mass Spectrometry and  
Proteomics Specialist  
Email: [a.bhamra@ucl.ac.uk](mailto:a.bhamra@ucl.ac.uk)

