

# Proteomics Capabilities

## Northeastern University



### SINGLE CELL SAMPLE PREP

- CellenONE – dispense, digest & TMT-label individual cells
- Tecan Uno – single cell dispenser for label-free
- LMD7 – laser microdissection for spatial proteomics

### INSTRUMENTATION

- AKTA Avant Systems
- Agilent 6545XT LC/Q-TOF · Mobilion
- Agilent 6560 LC/IM Q-TOF
- Agilent AssayMAP Bravo
- Bruker timsTOF Ultra 2, proteoElite nanoLC
- Bruker timsUltra AIP
- Bruker timsOmni
- Leica LMD7 laser microdissection
- Sciencen CellenONE cell dispenser & robot
- Tecan Uno cell dispenser & robot
- Thermo Altis triple quad · Agilent 1200
- Thermo Exploris 240 Orbitrap · Vanquish LC
- Thermo Exploris 480 Orbitrap · Vanquish LC
- Thermo Q Exactive Orbitrap · RSLC3000
- Thermo Q Exactive UHMR Orbitrap (MS)
- Vanquish UHPLC System
- Waters Xevo G2-S LC/Q-TOF

### RELATED CAPABILITIES

- Metabolomics (incl. low level)  
[nums.sites.northeastern.edu](https://nums.sites.northeastern.edu)
- Environmental Contaminants  
[tianlab.sites.northeastern.edu](https://tianlab.sites.northeastern.edu)
- Chemical Imaging of Living Systems  
[cils.northeastern.edu](https://cils.northeastern.edu)
- Entrepreneurship & Industry Partnerships  
[roux.northeastern.edu/partner-with-us](https://roux.northeastern.edu/partner-with-us)

### LOW-LEVEL / SINGLE CELL

- Label-free
- TMT multiplexing
- Developing micro-phosphoproteomics

### GENERAL PROTEOMICS

- Label-free proteomics
- Quantitative proteomics (TMT, SILAC)
- Phosphoproteomics
- PTM analysis (enriched or non-enriched)
  - Acetylation
  - Succinylation
- Interactomics (pull-down, IPs)
- Targeted proteomics
- Thermal proteome profiling
- Protein-protein interaction by crosslinking

### DATA ANALYSIS TOOLS

- MS Stats  
[msstats.org](https://msstats.org)
- Cardinal MSI  
[cardinalmsi.org](https://cardinalmsi.org)
- Biopragmatics  
[biopragmatics.github.io](https://biopragmatics.github.io)
- INDRA Biomedical Discovery Engine  
[discovery.indra.bio](https://discovery.indra.bio)
- XLSearch  
[github.com/COL-IU/XLSearch](https://github.com/COL-IU/XLSearch)
- AI-driven Methodologies  
[ai.northeastern.edu/life-sciences](https://ai.northeastern.edu/life-sciences)

### INSTITUTES, CORE FACILITIES, & LABS

#### Institutes

Barnett Institute for Chemical & Biological Analysis

[cos.northeastern.edu/barnett](https://cos.northeastern.edu/barnett)

Institute for Experiential AI

[ai.northeastern.edu](https://ai.northeastern.edu)

Dublin Innovation Institute

[dublininstitute.northeastern.edu](https://dublininstitute.northeastern.edu)

May Institute for Computational Proteomics & Mass Spec

[computationalproteomics.khoury.northeastern.edu](https://computationalproteomics.khoury.northeastern.edu)

#### Core Facilities

Mass Spectrometry Core

[nums.sites.northeastern.edu](https://nums.sites.northeastern.edu)

Single-Cell Proteomics Center

[center.single-cell.net](https://center.single-cell.net)

Biopharmaceutical Analysis & Training Lab (BATL)

[batl.cos.northeastern.edu](https://batl.cos.northeastern.edu)

Center for Bioinnovation

[cps.northeastern.edu/bioinnovation](https://cps.northeastern.edu/bioinnovation)

#### Labs

Slavov Lab & Parallel Squared Technology Institute

[slavovlab.net](https://slavovlab.net)

Vitek Lab

[olga-vitek-lab.khoury.northeastern.edu](https://olga-vitek-lab.khoury.northeastern.edu)

Ivanov Lab

[cos.northeastern.edu/people/alexander-ivanov](https://cos.northeastern.edu/people/alexander-ivanov)

Agar Lab

[cos.northeastern.edu/people/jeffrey-agar](https://cos.northeastern.edu/people/jeffrey-agar)

Skinner Lab

[skinnerlab.sites.northeastern.edu](https://skinnerlab.sites.northeastern.edu)

Gyori Lab

[gyorilab.github.io](https://gyorilab.github.io)

Jin Lab

[khoury.northeastern.edu/people/wengong-jin](https://khoury.northeastern.edu/people/wengong-jin)

Radiojoc Lab

[khoury.northeastern.edu/home/radiojoc](https://khoury.northeastern.edu/home/radiojoc)

Neural Dynamics Lab

[neuraldynamics.lab.ai.northeastern.edu](https://neuraldynamics.lab.ai.northeastern.edu)

17+

Mass spectrometers  
& sample prep robots

15+

Institutes, Core Facilities,  
& Labs in the  
US and Europe

5+

Proteomics modalities  
incl. single-cell

2027

AI-integrated  
wet-lab facilities