



3rd International Summer School: “PROTEOMICS – from Introduction to Clinical Applications”

Programme

Monday, 8th July 2019

Ferdinand Room /UAIC

- 16:00 – 17:00 **Registrations at Al. I. Cuza University of Iasi (main entrance)**
- 17:00 – 17:30 **Welcome & Opening Addresses**
Alina Petre
- 17:30 – 18:00 **Biomarker discovery by molecular profiling - the art of correlation**
Michael O. Glocker, Proteome Center Rostock, DE
- 18:00– 18:45 **Guided tour - “Hall of the Lost Footsteps” at "Al. I. Cuza" University of Iasi**
- 19.00 **Dinner at “Krud” restaurant**

Tuesday, 9th July 2019

Ferdinand Room /UAIC

- 09:00 – 10:45 **5 minutes talks – getting to know the students/ junior researchers and their area of research**
Alina Petre, UAIC/ TRANSCEND – IRO, Iasi, RO

- 10:45 – 11:00 *Networking with coffee, soda and sweets*

Session 1: **Introductory lectures in Proteomics and related methods** *Chair: Radu Iliescu*

- 11:00 – 11:30 **Tools for characterization of higher order structure of multi-domain proteins and protein interactions**
Michael Przybylski, Steinbeis Centre for Biopolymer Analysis, Rüsselsheim, DE
- 11:30 – 12:00 **2D Gel-based proteomics and application examples**
Michael O. Glocker, Proteome Center Rostock, DE



12:30 *Lunch at Gaudeamus student restaurant*

14:00 – 14:30 **Ionization techniques for protein mass spectrometry**
Michael O. Glocker, Proteome Center Rostock, DE

14:30 – 15:15 **Mass analyzers and fragmentation in MS**
*Alexey Kononikhin, Skolkovo Institute of Science and Technology,
Moscow, RU*

15:15 – 15:30 *Networking with coffee, soda and sweets*

15:30 – 16:00 **When every molecule counts - Introduction to single molecule count technology for ultrasensitive detection of protein biomarkers**
Paul Cretu, Merck Romania SRL, Bucharest, RO

16:00 **Guided Sightseeing Tour** – *followed by individual program/ dinner on your own*

Wednesday, 10th July 2019

Ferdinand Room /UAIC

Session 2: **Biomedical applications of Mass Spectrometry**
Chair: Michael Glocker

09:00 – 09:30 **DNA aptamers as antibody alternatives: MS epitope determination of aptamer complexes of the multi-domain protein C- Met**
*Michael Przybylski, Steinbeis Centre for Biopolymer Analysis,
Rüsselsheim, DE*

09:30 – 10:00 **Proteomics based plasma biomarkers for early detection of pancreatic cancer**
Maria Ilies, MedFuture Research Center for Advanced Medicine, Cluj-Napoca, RO

10:00 – 10:30 **Exhaled breath condensate proteome profiling for non-invasive lung cancer diagnostics**
*Alexey Kononikhin, Skolkovo Institute of Science and Technology,
Moscow, RU*



10:30 – 11:00 *Networking with coffee, soda and sweets*

11:00 – 11:30 **Comparison of High- and Low-Resolution MS Data for Direct Tissue Profiling on a way from Laboratory to Clinic**
Igor Popov, Moscow Institute of Physics and Technology, Moscow, RU

11:30 - 12:00 **Assessing protein dynamics and flexibility by molecular simulations**
Andrei Neamtu, TRANSCEND – IRO, Iasi, RO

12:30 *Lunch at Gaudeamus student restaurant*

Session 3: **Instrumental development and novel analytical concepts for protein analysis**
Chair: Michael Przybylski

14:00 – 14:30 **Different strategies and proteomic tools for high throughput LC-MS/MS data analysis**
Maria Indeykina, Emanuel Institute for Biochemical Physics RAS, Moscow, RU

14:30– 15:00 **Advanced analytical laboratory equipment from Ronexprim**
Cristian Macovei, Ronexprim, Bucharest, RO

15:00 – 15:30 **Proteomics analysis of breast milk for breast cancer detection**
Costel Darie, Clarkson University, Potsdam, NY, USA

15:30 – 16:00 *Networking with coffee, soda and sweets*

16:00 – 16:30 **Immunoanalytical Applications of Gas Phase Ion Separation Techniques Combined with Mass Spectrometry**
Michael O. Glocker, Proteome Center Rostock, DE

16:30 – 17:00 **HD- ex and FPOP approaches for Higher Order Structure Characterization**
Alina Petre, UAIC/ TRANSCEND – IRO, Iasi, RO

19:30 **Dinner – get together at Blue Aqua restaurant**



Thursday, 11th July 2019

Ferdinand Room / UAIC

Session 4:

New bioanalytical approaches to elucidate biomedical problems

Chair: Gabi Drochioiu

09:30 – 10:00

Mass spectrometric approaches for identifying biopolymer interactions

Michael Przybylski, Steinbeis Centre for Biopolymer Analysis, Rüsselsheim, DE

10:00 – 10:20

Molecular markers in colorectal cancer - NGS vs Reverse hybridisation

Loredana Dragos, TRANSCEND-IRO, Iasi, RO

10:20 – 10:40

Online TSPR-MS Epitope Analyzer for Antibody Epitope Characterization

Loredana Lupu, Steinbeis Centre for Biopolymer Analysis, Rüsselsheim, DE

10:40 – 11:00

Networking with coffee, soda and sweets

11:00 – 11:45

Clinical proteomics for improved precision medicine

Christoph Borchers, McGill University, Montreal, CA

11:45 – 12:00

Closing remarks

Alina Petre, UAIC/ TRANSCEND – IRO, Iasi, RO

12:30

Lunch at Gaudeamus student restaurant



Friday, 12th July 2019

TRANSCEND Centre

Practical part – work plan

08:45 Meeting point at TRANSCEND str. General Henry Mathias Berthlot nr. 2-4, Iasi

No.	Time	Molecular Biology	Proteomics	Cell culture	Flow cytometry
Team 1	09:00 – 10:30				
Team 2	09:00 – 10:30				
Team 3	09:00 – 10:30				
Team 4	09:00 – 10:30				
15 minute short refreshment break and exchange laboratory					
Team 1	10:45 – 12:15				
Team 2	10:45 – 12:15				
Team 3	10:45 – 12:15				
Team 4	10:45 – 12:15				
12:30 Lunch at Gaudeamus student restaurant					
Team 1	13:30 – 15:00				
Team 2	13:30 – 15:00				
Team 3	13:30 – 15:00				
Team 4	13:30 – 15:00				
15 minute short refreshment break and exchange laboratory					
Team 1	15:15 – 16:45				
Team 2	15:15 – 16:45				
Team 3	15:15 – 16:45				
Team 4	15:15 – 16:45				
Closing remarks					



Proteomics laboratory will provide demonstration of:

- I. Affinity – mass spectrometric approaches
- II. MALDI - Imaging experimental work flow;

Trainers: *Dr. A. Petre, Dr. R. Iliescu and Dr. L. Ion*

Molecular Biology - the functioning principle of molecular biology techniques:

- I. Work flow and interpretation of Sanger sequencing data
- II. Standard PCR and QF-PCR

Trainer: *Dr. Irina Trandafir*

Cell culture laboratory will provide demonstration of:

- I. 2D & 3D cell culture (handling procedure, preparation for future analysis)

Trainer: *Dr. Loredana Dragos*

Flow cytometry laboratory will provide demonstration of:

- I. Work flow of cell suspension samples in a patient diagnostic setup;
- II. Immune phenotype data analysis;

Trainer: *Florin Zugun*