ICGEB International Centre for Genetic Engineering and Biotechnology | Developing Knowledge

"PROTEOME ANALYSIS BY MASS SPECTROMETRY"

Montevideo, Uruguay
15 -23 OCTOBER, 2018

PROGRAMME

Monday, 15th October

08.00		***Pick up from Hotel Tryp***	
08.30		Course registration	*Reception of the Institut*
09.00		Introductory remarks	*Guillermo Dighiero´s Room* **Carlos Batthyany**
09.30		MS - based proteomics	**Rosario Durán,** Institut Pasteur de Montevideo, IIBCE, Uruguay
10.30 – 11:00		Coffee break	*Hall of the Institut Pasteur Mvd*
11.00		Mass spectrometers, ionization types, mass analyzers. Mass spectra.	**Andrés Pérez**. Centro Universitario Regional Este – UdeLaR, Uruguay
12.30 – 13:30		Lunch	Cafeteria, Ground Floor
13.30		**Afternoon Laboratory Sessions.-**	*AREA -Informatics Laboratory/Wet lab*
	1.	Introduction to nano-LC-ion trap and Q- orbitrap mass spectrometers. Acquisition of spectra, acquisition modes, mass calibration, spectra analysis: resolution, signal to noise ratio, etc.	**A. Lima, A Leyva, M. Portela, J. Rossello** Institut Pasteur de Montevideo
	2.	Shotgun comparative and quantitative proteomics experiment: discussion on the biological problem. Sample processing for proteomic analysis.	**A. Lima, A Leyva, M. Portela, J. Rossello** Institut Pasteur de Montevideo
17:00		Welcome Cocktail	
18: 00		***Bus to Hotel***	

Tuesday, 16th October

08.30	***Pick up from Hotel Tryp***	
09.00	"Protein analysis by shotgun/bottom-up proteomics"	**Ana Gisele da Costa Neves,** Instituto Oswaldo Cruz, Rio de Janeiro, Brazil
10.00 – 10:30	Coffee break	*Hall of the Institut Pasteur Mvd*
10.30	Top-down proteomics	**Mathieu Dupré,** , Institut Pasteur Paris, Francia
12.00	Lunch	*Cafeteria, Ground Floor*
13.30	**Afternoon Laboratory Sessions.-** Shotgun proteomics experiments cont.: Sample processing for shotgun analysis, peptide extractions & desalting. (Setting parameters, nanoLC conditions, DDA acquisition, dynamic exclusion list, etc). Sample injection: LTQ vs Q-exactive .	*AREA -Informatics Laboratory /Wet Lab* **A. Lima, A Leyva, M Portela, J Rossello -**Institut Pasteur de Montevideo
15.30 – 16.00	Coffee break	*Hall of the Institut Pasteur Mvd*
16:00	**Continuing Afternoon Laboratory Sessions.-**	
18.00	***Bus to hotel***	

Wednesday, 17th October

08.30	***Pick up from Hotel Tryp***	
09.00	Strategies for quantitative proteomic analysis	**Rosario Duran**, Institut Pasteur Montevideo, IIBCE, Montevideo, Uruguay
10.00 – 10.30	Coffee break	*Hall of the Institut Pasteur Mvd*
10.30	Looking under the hood of a search engine/ False Discovery Rate and dealing with redundancy in databases	**Paulo Carvalho.** Carlos Chagas Institute, Fiocruz, Paraná, Brazil
12.00	Lunch	*Cafeteria, Ground Floor*
13.30	**Laboratory & Bioinformatics laboratory session.**	
	1. Shotgun proteomics experiments cont; data acquisition on Q-exactive mass spectrometer, analysis of results (chromatograms, 2. spectra, etc). Protein identification by database search - search engines.	**Paulo Carvalho.** Carlos Chagas Institute, Fiocruz, Paraná, Brazil/**Diogo Borges Lima**, Institut Pasteur, Paris
15.30 – 16.00	Coffee break (in the middle of the laboratory session)	*Hall of the Institut Pasteur Mvd*
16.00	**Poster session A.** Detailed discussion of the students' work. Exploring opportunities for proteomics analysis on student's research activity.	
18.00	***Bus to hotel***	

Thursday, 18th October

08.30	***Pick up from Hotel Tryp***	
09.00	Software for performing label-free (spectral counting / XIC) quantitation. ITRAQ and TMT	**Paulo Carvalho.** Carlos Chagas Institute, Fiocruz, Paraná, Brazil
10.00 – 10.30	Coffee break	*Hall of the Institut Pasteur Mvd*
10.30	"DiagnoProt: a strategy for classifying proteomic profiles"	**Diogo Borges Lima.** Carlos Chagas Institute, Fiocruz, Paraná, Brazil
12.00	Lunch	*Cafeteria, Ground Floor*
13.30	**Bioinformatics laboratory session.-** Organizing and interpreting Search Engine Results. Comparative proteomics using Patternlab for Proteomics software. Venn diagram module, spectral counting, XIC	**Paulo Carvalho.** Carlos Chagas Institute, Fiocruz, Paraná, Brazil/**Diogo Borges Lima**, Institut Pasteur, Paris
15.30 – 16.00	Coffee break	*Hall of the Institut Pasteur Mvd*
16:00	**Continuing Afternoon Laboratory Sessions.-**	
18.00	***Bus to hotel***	

Friday, 19th October

08.30	***Pick up from Hotel Tryp***	
09.00	"Pushing the limits of basic and translational venomics"	**Juan José Calvette**, Instituto de Biomedicina de Valencia, España
10.00 – 10:30	Coffee break	*Hall of the Institut Pasteur Mvd*
10.30	"Molecular diversity of viperid toxins analyzed by LC-MS/MS"	**Ana Gisele da Costa Neves,** Instituto Oswaldo Cruz, Rio de Janeiro, Brazil
12.00	Lunch	*Cafeteria, Ground Floor*
13.30	**Bioinformatics laboratory session.-** Proteomics data analysis, examples provided by the organizers (PTMs, crosslinking). Data provided by the students	*AREA -Informatics Laboratory* **Paulo Carvalho.** Carlos Chagas Institute, Fiocruz, Paraná, Brazil/**Diogo Borges Lima**, Institut Pasteur, Paris
15.30 – 16.00	Coffee break	*Hall of the Institut Pasteur Mvd*
16:00	**Continuing Afternoon Laboratory Sessions.-**	
18.00	***Bus to hotel***	

Monday, 22nd October

08.30	***Pick up from Hotel Tryp***	
09.00	"Affinity-purification Mass spectrometry"	**Silvia Moreno**, Universidad de Buenos Aires, Buenos Aires, Argentina.
10.00 – 10.30	Coffee break	*Hall of the Institut Pasteur Mvd*
10.30	"Mass spectrometry based structural proteomics"	**Fabio Gozzo,** University of Campinas, Rio de Janeiro, Brazil
12.00	Lunch	*Cafeteria, Ground Floor*
13.30	**Bioinformatics laboratory session & General discussion –** SIM-XL: Identifying cross-linked peptides. Afternoon 2: Bioinformatics laboratory session& General discussion Analyzing cross-linking mass spectrometry data and data obtained during the course Comparison with data provided by the organizers. General discussion of the proteomic strategy and results.	*AREA -Informatics Laboratory* **Paulo Carvalho.** Carlos Chagas Institute, Fiocruz, Paraná, Brazil/**Diogo Borges Lima**, Institut Pasteur, Paris
15.30 – 16.00	Coffee break	*Hall of the Institut Pasteur Mvd*
16:00	**Poster session – B** - Detailed discussion of the students' work. Exploring opportunities for proteomics analysis on student's research activity.	
18.00	***Bus to hotel***	

Tuesday, 23rd October

08.30	***Pick up from Hotel Tryp***	
09.00	**Final Examination**	
10.30 – 12:30	**Final discussion:** Exploring opportunities for proteomics analysis on student's research activity	
12.30	***Lunch (Traditional meal – ASADO)***	*Cafeteria, Ground Floor*