PROGRAM

ISAC LETF

Prague Cytometry Workshop

2019

April 12 – 14, 2019
Prague, Czech Republic
www.csac.cz/en/isac-letf

ISAC
International Society for Advancement of Cytometry

CSAC
Czech Society for Analytical Cytometry

PARTNERS / SPONSORS

GENERAL INFORMATION

DATE & VENUE

PLENARY LECTURES

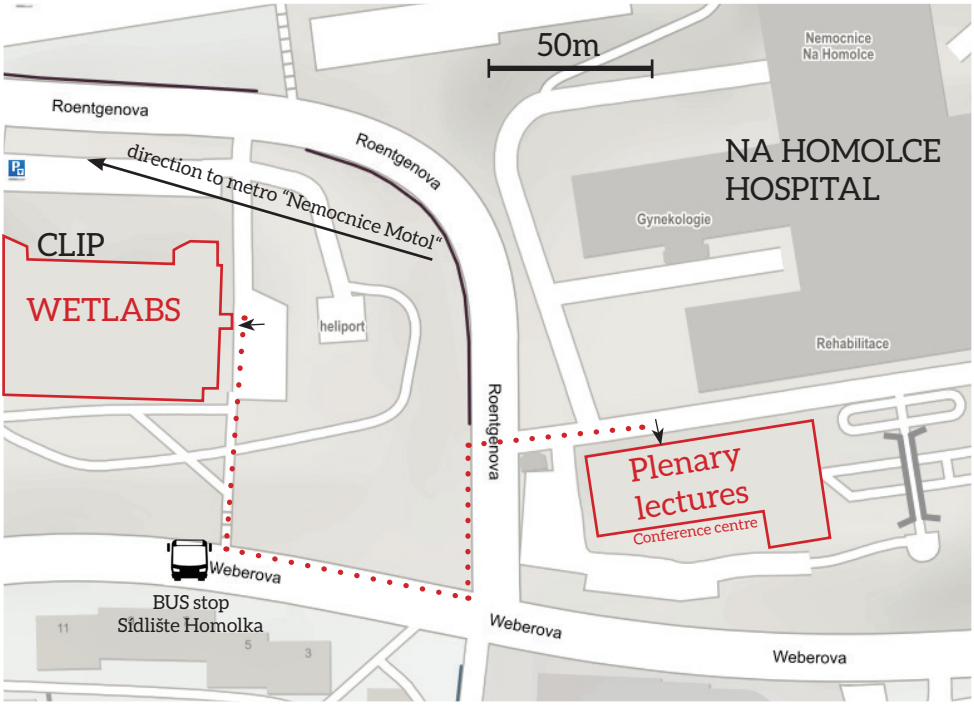
Friday, April 12, 2019

NA HOMOLCE HOSPITAL
Roentgenova 2, Prague 5
Conference centre

WETLABS & MINIWORKSHOPS

Saturday – Sunday, April 13 – 14, 2019

CLIP LABORATORIES
Department of Paediatric Haematology and Oncology
2nd Faculty of Medicine, Charles University and University Hospital Motol
Entrance from Roentgenova or Weberova street.



ACCOMPANYING PROGRAM

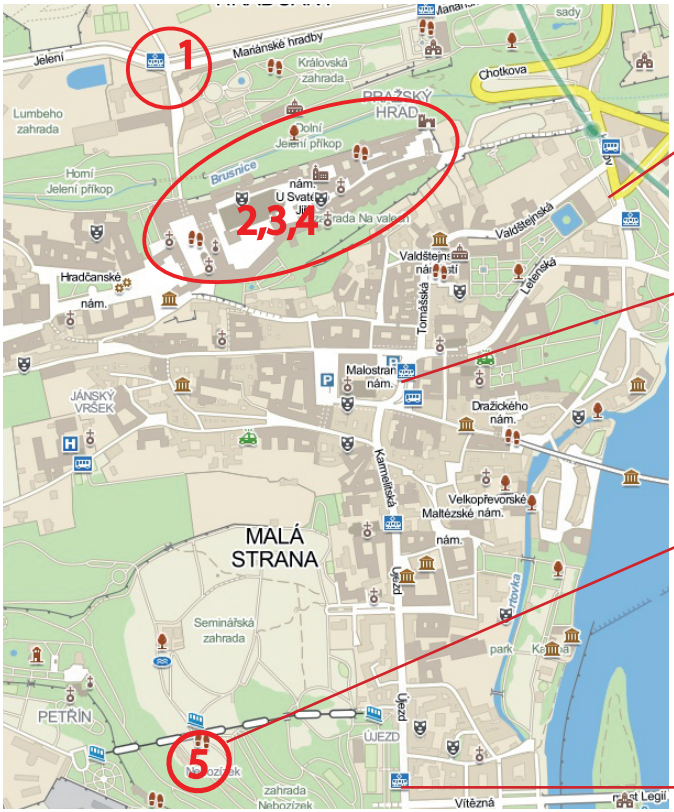
Saturday, April 13, 2019

Sightseeing Tour of Prague
walking tour with English speaking guides
&
Workshop Dinner

18.30 Departure from the workshop venue (CLIP).

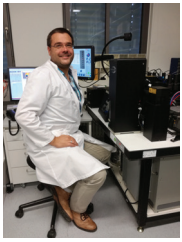
Places of interest:

1 - Prague castle stop - Start point of the tour (~19.00)
2 - Prague Castle
3 - South Gardens of the Prague Castle
4 - Cathedral of St. Vitus at Prague Castle
5 - Restaurant Nebozízek (~20.30)



FACULTY

Wetlab: Cell Sorting



Immanuel Andrä
Technische Universität München, Germany

Immanuel Andrä started as Biologist and is now a member of the Flow Cytometry FACS unit CyTUM-MIH at the Institute for Medical Microbiology, Immunology and Hygiene – Technische Universität München. He has been on the faculty at Klinikum rechts der Isar since 2011. His area of interest includes quality control and hardware modifications of commercial available flow cytometric analyzers and cell sorters for special immunological applications. The major focus of his PhD work was to visualize and identify cellular effects as well as cellular responses due to purification, especially by flow cytometry cell sorting. He also investigated the manipulation of cells during sample preparation for purification, and was using new technologies to minimize these effects. These studies were designed to increase our understanding whether the purification of cells manipulates their functionality. This knowledge is of special interest in basic research and adoptive immunotherapy, e.g. T cell mediated immunity in animal single cell transfer experiments and for cell therapy approaches. He also worked on methods to improve FACS drawbacks in rare event cell sorting with special pre-enrichment settings to cell sorter instruments. He recently also co-worked with another group to successfully establish a fluorescence labeled color barcode in *in vivo* single cell transfer experiments.

Relevant Literature:

Cossarizza, A., Chang, H.D., Radbruch, A., Akdis, M., **Andrä, I.**,…, *et al.* (2017). Guidelines for the use of flow cytometry and cell sorting in immunological studies. European journal of immunology *47*, 1584-1797.

Grassmann, S., Pachmayr L., **Andrä, I.**, …, Buchholz, V., *et.al.* (2019). Single-cell fate mapping reveals clonal dynamics of adaptive NK-cell responses. Accepted in Immunity.

Andrä, I., Ulrich, H., ..., Schiemann, M., *et al.* (2019). p38 MAPK is activated in T cells after flow cytometry cell sorting. Submitted to Cytometry A.

Wetlab: Rare Cells; Mitochondria

Sara de Biasi
University of Modena, Italy

Sara De Biasi obtained PhD in Clinical and Experimental Medicine (Immunology) from the University of Modena and Reggio Emilia, Italy in 2013. From mid 2013, she is carrying out post-doc research as senior scientist in the lab of Immunology directed by prof. Andrea Cossarizza. Most of her work focuses on the variability of adaptive immune response in HIV, autoimmune disease, and cancer.

In particular, she studied the role of rare cells such as iNKT cell and circulating endothelial cells (CEC). During the last two years, she is studying T cell metabolism with particular interest in mitochondria.
Dr. De Biasi is an International Society for Advancement of Cytometry (ISAC) Marylou Ingram Scholar and she is part of the Cyto U task force of the same society. Moreover, she was involved in the organization of Multiple Sclerosis workshops and flow cytometry workshop as teacher and as organizer.

Relevant Literature:

De Biasi S., Gibellini L., Cossarizza A. Uncompensated polychromatic analysis of mitochondrial membrane potential using JC-1 and multilaser excitation. Current Protocols in Cytometry 2015;7.32.1-7.32.11.

De Biasi S., Cerri S, Bianchini E, Gibellini L, Persiani E, Montanari G, Luppi F, Carbonelli CM, Zucchi L, Bocchino M, Zamparelli AS, Vancheri C, Sgalla G, Richeldi L, Cossarizza A. Levels of circulating endothelial cells are low in idiopathic pulmonary fibrosis and are further reduced by anti-fibrotic treatments. BMC Med. 2015 Nov 9;13:277.

De Biasi S., Bianchini E, Nasi M, Digaetano M, Gibellini L, Carnevale G, Borghi V, Guaraldi G, Pinti M, Mussini C, Cossarizza A. Th1 and Th17 pro-inflammatory profile characterizes iNKT cells in virologically suppressed HIV+ patients with low CD4/CD8 ratio. AIDS. 2016 Nov 13;30(17):2599-2610.

De Biasi S., Simone AM, Nasi M, Bianchini E, Ferraro D, Vitetta F, Gibellini L, Pinti M, Del Giovane C, Sola P, Cossarizza A. iNKT Cells in Secondary Progressive Multiple Sclerosis Patients Display Pro-inflammatory Profiles. Front Immunol. 2016 Nov 30;7:555.

Cossarizza A, **et. Al.** Guidelines for the use of flow cytometry and cell sorting in immunological studies. Eur J Immunol. 2017 Oct;47(10):1584-1797.

De Biasi S., Gibellini L, Feletti A, Pavesi G, Bianchini E, Lo Tartaro D, Pecorini S, De Gaetano A, Pullano R, Boraldi F, Nasi M, Pinti M, Cossarizza A. High speed flow cytometry

Wetlab: Cell Signaling

Sue Chow

University of Toronto and Princess Margaret Hospital, Toronto, Ontario

Sue Chow graduated in molecular biology from the University of Toronto, and developed a specialist interest in flow cytometry, joining David Hedley's lab as senior technician in 1990. David and Sue have published extensively in the area of flow cytometry applications, including the measurement of lipid peroxidation, antioxidant regulation, signal transduction analysis, and epigenetic targeting. Along with Vince Shankey, they have been teaching the annual research methods course held at Los Alamos and Bowdoin College for more than 10 years.

Wetlab: Cell Signaling

David Hedley

University of Toronto and Princess Margaret Hospital, Toronto, Ontario

David Hedley completed his higher specialist training in medical oncology, combined with a graduate program in tumour immunology, at the Royal Marsden Hospital, University of London. He was junior faculty at the University of Sydney, Australia, 1981-89 where he was responsible for the development of flow cytometry applications to cancer biology, including the technique for DNA content analysis using paraffin-embedded tissue that played a major role in the early development of clinical flow cytometry. Since 1990 he has been Senior Scientist/Senior Staff Physician at the Princess Margaret Hospital, and Professor of Medicine at the University of Toronto, Canada, with a major focus on pancreatic cancer. His laboratory makes extensive use of patient-derived xenografts that recapitulate the clinical spectrum of the disease, and develops flow cytometry techniques to study complex biological processes linked to experimental treatment development.

Relevant Literature:

Hedley, D.W., Friedlander, M.L., Taylor, I.W., Rugg, C.A. andMusgrove, E.A. 1983.

Method for analysis of cellular DNA content of paraffin-embedded pathological material using flow cytometry.J. Histochem. Cytochem. 31:1333-1335.

Hedley, D.W. and Chow, S. 1992. Flow cytometric measurement of lipid peroxidation in vital cells using parinaric acid. Cytometry 13:686-692.

Chow, S., Patel, H., and **Hedley, D.W.** 2001. Measurement of MAP kinase activation by flow cytometry using phospho-specific antibodies to MEK and ERK1/2; Potential for pharmacodynamic monitoring of signal transduction inhibitors in cancer patients. Cytometry B 46:72-78.

Watson M, Chow S, Barsyte D, Arrowsmith C, Minden M, and **Hedley, D.W.** The study of epigenetic mechanisms based on the analysis of histone modification patterns by flow cytometry. Cytometry A. 2014;85(1):78-87.

Wetlab: Data Analysis

Tomáš Kalina

CLIP Cytometry, Department of Pediatric Hematology and Oncology, Charles University, Prague, Czech Republic

Tomáš Kalina, MD. PhD, is currently Associated Professor at Department of Pediatric Hematology and Oncology, Charles University in Prague, 2nd Faculty of Medicine, Czech Republic. He graduated MD in 2000 from 2nd Medical School, Charles University Prague and started his research and diagnostic carrier in Prague (leukemia diagnostics and biology) and continued on a postdoctoral fellowship at Fred Hutchinson Cancer Research Center, Seattle, WA, USA (immune reconstitution post-BMT). He received PhD from Immunology

in 2005. He was awarded „ISAC Scholar" in 2010. He is currently a president of Czech Society for Analytical Cytometry. Throughout his career he has centered on working with various flow cytometry based techniques (leukemia phenotyping, minimal residual disease monitoring, immune monitoring, immunodeficiency, bead-based proteomics, algorithmic data analysis). He is a founding member of EuroFlow consortium where he is responsible for coordination of the technical aspects and design of flow cytometry procedures. At present, he is actively involved in EuroFlow Primary Immunodeficiency workpackage and EuroFlow proficiency testing.

Relevant Literature:

Kalina T., Flores-Montero J, Lecrevisse Q, Pedreira CE, van der Velden VHJ, Novakova M, Mejstrikova E, Hrusak O, Böttcher S, Karsch D, Sędek Ł, Trinquand A, Boeckx N, Caetano J, Asnafi V, Lucio P, Lima M, Helena Santos A, Bonaccorso P, van der Sluijs-Gelling AJ, Langerak AW, Martin-Ayuso M, Szczepański T, van Dongen JJM, Orfao A. Quality assessment program for EuroFlow protocols: Summary results of four-year (2010-2013) quality assurance rounds. **Cytometry A** 2015;87:145–156.

Kalina T., Stuchlý J, Janda A, Hrusák O, Růzicková S, Sedivá A, Litzman J, Vlková M. Profiling of polychromatic flow cytometry data on B-cells reveals patients' clusters in common variable immunodeficiency. **Cytometry A** 2009;75:902–9.

Kalina T., Flores-Montero J, van der Velden VHJ, Martin-Ayuso M, Böttcher S, Ritgen M, Almeida J, Lhermitte L, Asnafi V, Mendonça A, de Tute R, Cullen M, Sedek L, Vidriales MB, Pérez JJ, te Marvelde JG, Mejstrikova E, Hrusak O, Szczepański T, van Dongen JJM, Orfao A. EuroFlow standardization of flow cytometer instrument settings and immunophenotyping protocols. **Leukemia** 2012;26:1986–2010.

van Dongen JJM, Lhermitte L, Böttcher S, Almeida J, van der Velden VHJ, Flores-Montero J, Rawstron A, Asnafi V, Lécrevisse Q, Lucio P, Mejstrikova E, Szczepański T, **Kalina T.**, de Tute R, Brüggemann M, Sedek L, Cullen M, Langerak a W, Mendonça A, Macintyre E, Martin-Ayuso M, Hrusak O, Vidriales MB, Orfao A. EuroFlow antibody panels for standardized n-dimensional flow cytometric immunophenotyping of normal, reactive and malignant leukocytes. **Leukemia** 2012;26:1908–75.

Stuchlý J, Kanderová V, Fišer K, Cerná D, Holm A, Wu W, Hrušák O, Lund-Johansen F, **Kalina T.** An automated analysis of highly complex flow cytometry-based proteomic data. **Cytometry A** 2012;81:120–9.

Zosia Maciorowski
Curie Institute, Paris, France

Wetlab: Cytometry Basics

Zosia Maciorowski received her B.Sc. in Microbiology from McGill University in Montreal and M.A. in Biology from Wayne State University in Detroit. She has worked in many labs and countries over the years on a variety of different subjects, from the early days of tissue culture to small animal surgery, monoclonal antibody production and early

immunological and molecular biology techniques. In the 80's she specialized in solid tumor preparation for multicolor and cell cycle analysis. For the last 20 years she has been responsible for the Flow Cytometry Core Facility at the Curie Institute in Paris, France.
Zosia is Chair of the Education Committee of International Society for Advancement of Cytometry (ISAC) in which capacity she has led the education efforts in cytometry. She has participated in international flow cytometry workshops organized by the Live Education Task Force of ISAC in ASEAN Countries, China, India and the US.
In Zosia will be teaching phenotype analysis and issues of quality control in flow cytometry.

Relevant Literature:

Sharma S, Cabana R, Shariatmadar S, Krishan A. Cellular volume and marker expression in human peripheral blood apheresis stem cells. Cytometry A. 73A; 160-167, 2008.

Wetlab: Sample Preparation

Ondrej Pelak
BD Czechia, Prague, Czech Republic

Ondrej Pelak started his journey with flow cytometry in 2010, when he joined CLIP flow cytometry laboratories. He graduated in molecular biology and virology from the Charles University in Prague. His major fields of interests are virus specific T cells and various ways how to detect them, including direct staining through MHC-multimers or their production of cytokines in response to the viral stimulation. He was also involved in the clinical isolation of virus specific T cells for the purpose of adoptive transfer of these cells. His other favorite branches of flow cytometry are high parameter panel design and practical usage of high parameter data analysis. In 2018 Ondrej also joined BD Biosciences where he is employed as an application specialist.

Wetlab: Extracellular Vesicles

Andreas Spittler
Core Facility Flow Cytometry & Surgical Research Laboratories, Medical University of Vienna, Austria

Andreas Spittler received his Ph.D. in Pathophysiology at the Medical University of Vienna in 2001, where he worked at the Department of Surgery, Research Laboratories. He began his research career at the Department of Pathophysiology in 1991 and was appointed Associate Scientist at the Surgical Research Laboratories in 1998 where he worked with amino acids under monocyte immune regulation under cell culture conditions as well as in studies with surgical patients. His current position is Associate Professor for Pathophysiology. In 2008, he also became head of the Core Facility Flow Cytometry. He is currently President of the Austrian Society for Cytometry and President of the Austrian Society for Extracellular Vesicles. Since several years Dr. Spittler's main interest are extracellular vesicles, in particular the measurement and characterization of these particles by

flow cytometry and imaging flow cytometry. In addition, he is highly interested in the characterization of the neonatal immune system and the functional characterization of monocytes in inflammation and sepsis.

Relevant Literature:

Mushahary D., **Spittler A.** (2017) Isolation and characterization of human mesenchymal stem cells. Cytometry Part A, Oct 26. doi: 10.1002/cyto.a.23242. (Review)

Weiss R., **Spittler A.** (2017) Release and cellular origin of extracellular vesicles during circulation of whole blood over adsorbent polymers for lipid apheresis. Journal of Biomedical Materials Research, Part B – Applied Biomaterials, 105:636-6461.

Wisgrill L., **Spittler A.** (2016) Peripheral Blood Microvesicles Secretion is Influenced by Storage Time, Temperature and Anticoagulants. Cytometry Part A, 89:663-72.

Fendl B., **Spittler A.** (2016) Characterization of Extracellular Vesicles in Whole Blood: Influence of Pre-Analytical Parameters and Visualization of Vesicle-Cell Interactions Using Imaging Flow Cytometry. Biochemical and Biophysical Research Communications (BBRC), 478:168-173.

Sadeghi K., **Spittler A.** (2016) GM-CSF down-regulates TLR expression via the transcription factor PU.1 in human monocytes. PLoS One, 11:e0162667.

Bernardi M.H., **Spittler A.** (2016) Effect of hemoadsorption during cardiopulmonary bypass surgery – a blinded, randomized, controlled pilot study using a novel adsorbent. Crit Care, 20:96.

Wetlab: Leukemia Lymphoma; Proliferation and Cell Cycle

Paul Wallace
Roswell Park, Buffalo, New York, USA

Paul K. Wallace, PhD has served since 2003 as Director of the Flow and Image Cytometry Department and is Professor of Oncology at Roswell Park Cancer Institute (RPCI) in Buffalo, NY. He is also Associate Professor of Microbiology & Immunology, Dartmouth College, Hanover, NH and Associate Professor of Biotechnical and Clinical Laboratory Sciences, University at Buffalo, Buffalo, NY. Dr. Wallace is currently the International Society for Advancement of Cytometry President Elect, an International Clinical Cytometry Society councilor and Associate Editor of Clinical Cytometry B.

Under his direction, the Flow and Image Cytometry Department at Roswell Park offers a strong combination of both clinical and research missions. The department's clinical emphasis is on the diagnosis and monitoring of patients with leukemia and lymphoma. In addition, it serves as a core reference facility performing immunophenotyping and immune monitoring studies on samples from patients enrolled in clinical trials for several bio-tech and grant-funded organizations. The department's research focus is on myeloid cell biology and translational cancer research utilizing flow cytometry.

Before joining Roswell Park, Dr. Wallace was an Assistant Professor of Immunology at

Dartmouth Medical School, Hanover NH (1993-2003), a cofounder of Zynaxis Cell Science, Inc., Malvern PA (1988-1991), and the Supervisor of Flow Cytometry at SmithKline (now Quest) Clinical Laboratories King of Prussia, PA (SKCL; 1979-1988). He is internationally recognized for his commitment to flow cytometric education and has been a member of ISAC's Educational Task Force/Committee since its inception in 2006 and of the ICCS Education committee since 2003. He is a consultant with ASCP and CDC's PETFAR (U.S. President's Emergency Plan for AIDS Relief), for which he has developed and presented CD4 training programs in Nigeria, India, Mozambique and Vietnam. Since 1994 he has also been on the faculty of the Bowdoin/New Mexico Annual Course in Methods and Applications of Cytometry.

Relevant Literature:

Dextramer reagents are effective tools for quantifying CMV antigen-specific T cells from peripheral blood samples. Tario JD, Jr., and others. Cytometry B Clin Cytom 2015;88:6-20.

Reagents and Cell Staining for Immunophenotyping by Flow Cytometry. Tario Jr. JD, Wallace PK. In: McManus LM, Mitchell RN, editors. Pathobiology of Human Disease. San Diego: Elsevier; 2014. p 3678-3701.

Flow cytometry detection of minimal residual disease in multiple myeloma: Lessons learned at FDA-NCI Roundtable Symposium. Landgren O and others. Am J Hematol 2014.

Human ovarian tumor ascites fluids rapidly and reversibly inhibit T cell receptor-induced NF-kappaB and NFAT signaling in tumor-associated T cells. Simpson-Abelson MR and others. Cancer Immun 2013;13:14.

Optimized Staining and Proliferation Modeling Methods for Cell Division Monitoring using Cell Tracking Dyes. Tario JD, Jr. and others. J Vis Exp 2012.

Flow cytometry as a diagnostic tool in lymphomatous or leukemic meningitis: Ready for prime time? Ahluwalia MS and others. Cancer 2012;118:1747-1753.

PROGRAM | PLENARY SESSION

Na Homolce Hospital, Conference centre

9:45	Welcome | *T. Kalina, Z. Maciorowski*
10:00 – 10:45	**Cytometry Basics** *Z. Maciorowski | Institute Curie, Paris, France*
10:45 – 11:00	Coffee break
11:00 – 11:30	**Data Analysis** *T. Kalina | CLIP, Prague Czech Republic*
11:30 – 11:45	**Deep Diving into Flow – Solutions for High Dimensional Flow Cytometry from BD** *O. Pelák | Becton Dickinson Czechia*
11:45 – 12:30	**Cell Signaling** *D. Hedley | University of Toronto and Princess Margaret Hospital, Toronto, Ontario*
12:30 – 12:45	**ZE5 - The Fast and Flexible Flow Cytometer** *Sebastian Hedlund | Bio-Rad Laboratories AB*
12:45 – 13:45	Lunch break
13:45 – 14:00	**In Every Sense of the Word: Accelerating your Research With High-Speed Flow Cytometry** *John Hazin | Thermo Fisher Scientific*
14:00 – 14:15	**Advantages of Spectral Technology** *Mark Dessing | Sony Europe*
14:15 – 14:45	**Mitochondria** *S. de Biasi | University of Modena, Italy*
14:45 – 15:15	**QC&troubleshooting** *Z. Maciorowski | Institute Curie, Paris, France*
15:15 – 15:45	Coffee break
15:45 – 16:00	**Next Generation Flow** *J. A. Ramos Escudero | Cytognos SL*
16:00 – 16:15	**Pick your Platform-Broadest Spectrum of Flow Cytome Try Solutions, by Luminex** *M. Konieczny | Luminex B.V.*
16:15 – 16:45	**Proliferation and Cell Cycle** *P. Wallace | Roswell Park, Buffalo, New York, USA*
16:45 – 17:15	**Rare Cells** *S. de Biasi | University of Modena, Italy*

NOTES

PROGRAM | WETLABS

CLIP Laboratories

Wetlabs: 2nd floor

Coffee breaks & Lunch boxes: 4th floor

SATURDAY, APRIL 13, 2019

8:45 – 10:45 **Wetlab A**

- Cell Signaling
- Cytometry Basics
- Mitochondria
- Sample preparation

10:45 – 11:15 Coffee break

11:15 – 13:15 **Wetlab B**

- Cell Signaling
- Cytometry Basics
- Data Analysis
- Leukemia Lymphoma Phenotype and Minimal Residual Disease
- Multicolor Flow Cytometry
- Rare Cells

13:15 – 14:00 Lunch break

14:00 – 16:00 **Wetlab C**

- Cytometry Basics
- Data Analysis
- Extracellular Vesicles
- Proliferation and Cell Cycle
- Sample preparation

16:00 – 16:30 Coffee break

NOTES

PROGRAM | MINIWORKSHOPS

CLIP Laboratories

Wetlabs: 2nd floor

Coffee breaks & Lunch boxes: 4th floor

SATURDAY, APRIL 13, 2019

Miniworkshops are available in parallel on the 2nd floor from 16:30 to 18:00.

ZE5, Bio-Rad Laboratories AB, S. Hedlund

How to set the ZE5 up for small particle detection using the trigger plot and Small particle detector

Small particles are a hot focus in Flow Cytometry right now. Come and see how the features of the ZE5 can be implemented on this type of approach.
Traditionally, one would have to go through manual hardware adjustments and calibration,sheath purification and data manipulation. But by using the built-in capabilities of the ZE5 any lab can now obtain optimal sensitivity to identify exosomes and other small particles directly. In this workshop we will use the Megamix Plus FSC/SSC from BioCytex to setup the system for small particle detection using the SPD and trigger plot.

CytoFLEX LX, Beckman Coulter, R. Vlcek / E. Kralova

Performance Evaluation and Flexible Reconfiguration of CytoFLEX LX flow cytometer

BD FACS Lyric, Becton Dickinson Czechia, O. Pelák

The age of classical compensations is over

The BD FACSLyric™ system combines simplicity, speed and automation to ease the workflow and improve the productivity. One of its key features is the revolutionary way

of handling of the compensations. Forget about the classical and obsolete compensation controls for each set of voltages. With FACSLyric™ this is never more needed, visit our mini-workshop to see the modern way of dealing with the compensation.

SONY

SP6800, Sony, Mark Dessing/Vendula Sinkorova

Spectral Flow Cytometry: Explaining the differences!

In this workshop you will get an introduction to the exciting possibilities of spectral flow cytometry:

- Learn about filter-free full spectrum collection
- Determination of autofluorescence and its un mixing/correction
- Learn about Standardization to eliminate intra- and inter-unit variability and subjectivity and Use of Spectral Reference Libraries for lower controls usage
- Learn about visualization and analysis of raw spectral data

cytognos

Infinicyt software, Cytognos SL, J. A. Ramos Escudero

Automated data analysis of multiple myeloma mrd and acute leukemia samples

The recently released EuroFlow Databases aid clinicians in the decision-making process to diagnose hematological malignancies such as multiple myeloma, leukemia and lymphoma.
The Automated Gating & Identification tool allows the user to load a raw FCS file acquired in the cytometer and obtain an automated classification of all events in the sample into normal cell populations, improving and standardizing the identification of all cells (from MRD plasma cells to myeloid cells and other lymphocytes), in order to report MRD positivity (10-5-10-6).
Regarding acute leukemia, one of the Databases already available in Infinicyt™ 2.0 is the ALOT Database for the screening of acute leukemia and differentiation between T, B and Myeloid acute leukemias. This tool has been validated in more than 780 cases with more than 99% of cases being correctly classified for the next classification panel(s).
Come by to see Infinicyt™ 2.0 in action and learn how to implement Next Generation Flow data analysis in your lab!

Luminex

complexity simplified.

CellStream, Luminex B.V., M. Konieczny

Immunophenotyping Extracellular Vesicles using innovative flow cytometer CellStream

Only recently has the importance of extracellular vesicles (EVs) as key mediators of intercellular communication been appreciated. EVs are membrane derived structures

that include exosomes, microvesicles and apoptotic bodies. Exosomes have been shown to transfer molecules between cells and have the potential to transfer signals between cells. Quantifying and characterizing EVs in a reproducible and reliable manner has been difficult due to their small size (exosomes range from 30 – 100 nm in diameter). Attempts to analyze EVs using traditional PMT based flow cytometers has been hampered by the limit of detection of such small particles and low refractive index. To overcome these limitations we have employed Luminex's recently developed CellStreamTM flow cytometer. The CellStreamTM utilizes the Amnis® imaging technology, having the advantage of high throughput flow cytometry with higher sensitivity to small particles due to the time-delay-integration image capturing system. Join us during the workshop and discover the potential of flow cytometer that provides unparalleled flexibility and performance

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PROGRAM | WETLABS

CLIP Laboratories

Wetlabs: 2nd floor
Coffee breaks & Lunch boxes: 4th floor

SUNDAY, APRIL 14, 2019

8:45 – 10:45 **Wetlab D**

- Cell Sorting
- Multicolor Flow Cytometry
- Proliferation and Cell Cycle
- Rare Cells

10:45 – 11:00 Coffee break

11:00 – 13:00 **Wetlab E**

- Cell Signaling
- Cell Sorting
- Cytometry Basics
- Leukemia Lymphoma Phenotype and Minimal Residual Disease
- Multicolor Flow Cytometry
- Proliferation and Cell Cycle

13:10 Lunch break and farewell

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