FlowTex

Welcome to the FlowTex 2021 Virtual Cytometry Conference

Wednesday February 3, 2021

9:00 – 9:10	Opening Remarks
9:10 – 12:00	Clinical Cytometry Session
12:10 – 1:30	Sample Preparation Session

Thursday February 4, 2021

9:00 – 10:20	Panel Design Session
10:40 – 12:00	Data Analysis Session
12:10 – 1:00	Keynote Speaker
1:00 – 1:30	Closing Remarks & Raffle

Conference Sponsors

BD

Beckman Coulter

Berkeley Lights

BioLegend – Enabling Legendary Discovery

Bio-Rad

Cytek – Transcend the Conventional

cytognos – Flow Cytometry Solutions

De Novo Software – Turning Cytometry Data Into Results

Fluidigm

Immudex – Precision Immune Monitoring

MACS – Miltenyi Biotec

Nexcelom Bioscience

PROPELlabs

Sony

Stratedigm – Cytometry Without Compromise

ThermoFisher Scientific

Tonbo biosciences

Verity Software House

Welcome to the 14th Annual

FlowTex

Cytometry Conference

Wednesday February 3, 2021

Clinical Cytometry Session

9:00-9:10 Opening Remarks by Karla Moncada, FlowTex President

9:10-10:00 **Bruno Brando** *Flow Cytometric Immune Monitoring of Rituximab Treatment of Autoimmune Diseases*

10:00-10:40 **Francesco Buccisano** *Life in a flow cytometry lab in the COVID-19 era: New risks, new challenges*

10:40-11:00 Break & Raffle Prizes

11:00-12:00 **Special COVID-19 Webinar Part II hosted by *Science*** *Monitoring the immune system to fight COVID-19: Investigating lymphocyte subsets as surrogate biomarkers to prioritize patient care*
Francesco Buccisano, Marco Iannetta, and Maurice O'Gorman

12:00-12:10 Break

Sample Preparation Educational Roundtable

12:10-12:30 **Derek Davies** *To fix or not to fix, that is the question*

12:30-12:50 **Roy Leopold** *Sample Prep Best Practices for Flow Cytometry*

12:50-1:10 **Steve McClellan** *Tumor spheroids 101: Tips and tricks for growth, maintenance and assay development*

1:10-1:30 **Roundtable Discussion** & Raffle Prizes

Thursday February 4, 2021

Panel Design Educational Roundtable

9:00-9:20 **Rui Gardner** *Controls in multi-parameter flow cytometry*

9:20-9:40 **Yolanda Mahnke** *OMIP Anatomy*

9:40-10:00 **Herve Luche** *Dynamic Antigen Density of Murine Leukocytes: A crucial step toward rational panel design*

10:00-10:20 **Roundtable Discussion**

10:20-10:40 Break & Raffle Prizes

Data Analysis Educational Roundtable

10:40-11:00 **Diana Bonilla Escobar** *High Quality Data In, High Quality Analytics Out*

11:00-11:20 **Timothy Crawford** *Algorithms for Dimensionality Reduction and Clustering*

11:20-11:40 **Ryan Brinkman** *Data-driven cytometry*

11:40-12:00 **Roundtable Discussion**

12:00-12:10 Break

Keynote Speaker

12:10-1:00 **Florian Mair** *Defining the phenotype and function of antigen-presenting cells and T cells in the human tumor microenvironment using multi-omic single cell techniques*

1:00-1:30 Closing Remarks & Raffle Prizes

www.flowtex.org

FlowTex

Clinical Cytometry Session

Bruno Brando, MD, *Flow Cytometric Immune Monitoring of Rituximab Treatment of Autoimmune Diseases*

Dr. Bruno Brando is the Director of Hematology Laboratory and Transfusion Center at Ospedale Civile di Legnano (Milano. His area of practice and teaching include: Clinical Cell Analysis, with continuous translation of research applications into clinical diagnostics: cell phenotyping and counting, stem cell transplantation, hematological oncology, cytometric analysis of sepsis, feto-maternal hemorrhage, PNH, DNA analysis. He is the founding Member of European Working Group on Clinical Cell Analysis (EWGCCA)as well as the founding Member and former President of European Society for Clinical Cell Analysis (ESCCA). A Member of UKNEQAS Steering Committee for Leukocytes Immunophenotyping. Italian liaison specialist for UKNEQAS_LI and UKNEQAS _BLTP EQA schemes. Member of AffordCD4.com international consortium. Vice President of Italian Society for Clinical Cell Analysis (ISCCA). A former President of Italian Cytometry Society. Member of SIBIoC/FismeLab working group for biological samples transportation. Publons certified scientific reviewer (103 registered reviews). Associate editor for Cytometry Part B (Clinical Cytometry) journal. An author of more than 130 papers published in peer reviewed medical and scientific journals, H-index = 24 (Google Scholar).

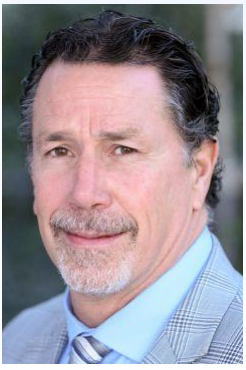
Francesco Buccisano, MD, *Science* hosted *Monitoring the Immune system to fight COVID-19: Investigating lymphocyte subsets as surrogate biomarkers to prioritize patient care*

Life in a flow cytometry lab in the COVID-19 era: New risks, new challenges

Dr. Francesco Buccisano is the Associate Professor of Hematology at the Department of Biomedicine and prevention, University of Rome "Tor Vergata". In charge of the “Molecular treatment of Acute Leukemia” Unit and of the Morphology and Flow cytometry section of the Hematology Laboratory directed by Prof. Francesco Lo Coco. His career has been focused on two major topics, treatment of hematological malignancies and development of multiparametric flow cytometry application in diagnosis and clinical research. In these twenty years, since he started his work, he has observed major changes in diagnosis, treatment and eventually outcome of hematological patients. Flow cytometry is a major contribution to this process, through the identification of markers that are suitable for drug delivery and monitoring of minimal residual disease in leukemia, lymphoma, and myeloma. His effort as a clinician and a flow cytometrist strengthens the link between academic research, pharmaceutical companies, and biotech industries in the search of new biomarkers and possible therapeutic targets.

Marco Iannetta, MD, PhD, *Science* hosted *Monitoring the Immune system to fight COVID-19: Investigating lymphocyte subsets as surrogate biomarkers to prioritize patient care*

Dr. Iannetta is an infectious disease specialist and faculty member in the Department of Systems Medicine at the University of Rome Tor Vergata. His clinical and research activities are mainly focused on the host–pathogen interaction and the immunopathogenesis of viral and bacterial infections. He is an expert in flow cytometry and its clinical application to infectious diseases. He received his medical degree from the Medical School of Sapienza University of Rome, Italy, where he completed a residency in infectious disease and obtained his Ph.D. in immunology. Dr. Iannetta completed a postdoctoral fellowship investigating the immunopathogenesis of HIV-1 and HIV-2 infection with the Dendritic Cell Biology Team of INSERM’s Department of Infection, Immunity and Inflammation in Paris, France. He also worked in the Lazzaro Spallanzani National Institute for Infectious Diseases (INMI) in Rome, Italy, conducting clinical and research activities on emerging and reemerging infectious diseases.



Maurice O’Gorman, PhD, MBA, (D)ABMLI, *Science* hosted *Monitoring the Immune system to fight COVID-19: Investigating lymphocyte subsets as surrogate biomarkers to prioritize patient care*

Dr. O’Gorman earned his Master’s and Ph.D. at the University of British Columbia before completing a postdoctoral fellowship at the University of North Carolina at Chapel Hill. He spent the next 21 years as a professor of Pathology and Pediatrics at the Feinberg School of Medicine at Northwestern University, during which time he earned his MBA from Northwestern’s Kellogg School of Management and served as vice chair of Pathology and Laboratory Medicine and director of Diagnostic Immunology and Flow Cytometry at Children’s Memorial Hospital in Chicago. He is currently chief of laboratory medicine, as well as director of the Clinical Lab and the Diagnostic Immunology and Flow Cytometry Laboratory at Children’s Hospital Los Angeles, and a professor of pathology and pediatrics at the Keck School of Medicine of the University of Southern California. Dr. O’Gorman’s research interests include the discovery of biomarkers related to the immunopathogenesis of immune system–related disorders and the development of diagnostic laboratory tests for the latter. Additionally, he has written over one hundred peer-reviewed publications and several book chapters, served as president of the Association of Medical Laboratory Immunologists, and held numerous other leadership positions.

Sample Preparation Session

Derek Davies, PhD, *To fix or not to fix, that is the question*

Dr. Derek Davies has been involved in Core Facility management since 1990 and ran the Core Flow Cytometry Facility at the London Research Institute (London, UK) from 1996. In 2015, he oversaw the move of the facility into the newly built Francis Crick Institute which meant merging two large flow facilities. In 2019 he moved to a newly created role to look after training in all the Core Facilities at the Crick. He has many years practical experience in flow cytometry and in training users, as well as helping them to optimize experiments. He is the Chair of flowcytometry UK, a member of the Executive Council of the CTLS (Core Technologies for Life Sciences) and a former ISAC councilor. In his present role he aims to provide high quality education in flow cytometry and other technologies both within and outside the Institute.

Roy Leopold, *Sample Prep Best Practices for Flow cytometry*

Roy was born and raised in Houston and studied microbiology at UT Austin. He has worked in academic research, in QA labs and GMP manufacturing at Abbott Labs, and has held technical sales positions with industry-leading innovators such as Cellestis, Eppendorf, and as of 2020, Miltenyi Biotec. Roy currently lives in Houston, enjoys time with his wife and 2-year-old daughter, playing music, and getting outdoors and into nature as much as possible.

Steve McClellan BS, MT, SCYM (ASCP)CM, *Tumor spheroids 101: Tips and tricks for growth, maintenance, and assay development*

Steve is a life science professional with over 30 years of experience in advanced flow cytometry. He has worked in basic and clinical research, as well as clinical cytometry labs. He has research expertise in the areas of cancer biology, stem cell therapy, transplant immunology and xenotransplantation. He is currently Manager of Basic & Translational Research Operations at the University of South Alabama Mitchell Cancer Institute, where he also serves as Chief of the Flow Cytometry SRL and manages clinical flow cytometry at the hospital lab. For the past 15 years, his research lab has been studying cancer stem cells (CSC) and circulating tumor cells (CTC); working to develop better methods of purification, culture, and analysis at both genetic and functional levels, as well as using CSC in HTS drug discovery. Exosomes are the latest addition to the lab's research efforts, working primarily with patient samples to measure response to therapy and to look for early diagnostic biomarkers. A founding member, Steve serves as Treasurer of the Southeast Flow Cytometry Interest Group (www.sefcig.org).

Panel Design Session

Rui Gardner, PhD, *Controls in multi-parameter flow cytometry*

Dr. Rui Gardner started his career in science as a mathematical biologist, working in the lab of Dr. Michael Savageau in the University of Michigan, work that led to his PhD in Biomedicine in 2004 for the University of Porto in Portugal. In 2007, he became Head of the Flow Cytometry Core Facility at Instituto Gulbenkian de Ciência in Portugal. Serving more than 40 research groups in many diverse fields including immunology, inflammation, stem-cell biology, microbiology, virology, plant biology, among others, resulting in comprehensive experience in many flow cytometry techniques. In 2016 he was hired to lead the Flow Cytometry Core Facility at Memorial Sloan Kettering Cancer Center in New York. Dr. Gardner is passionate about science and technology, his background in mathematics, physics, and biology has allowed him to bridge the gap between the operational and technical details in flow cytometry and the science within flow applications. For the past 15 years, he has lectured countless courses in flow cytometry and cell sorting around the world, as well as been involved in organizing various international and regional workshops or scientific meetings on flow cytometry and core management both in Europe and the US. Councilor for the International Society for Advancement of Cytometry (ISAC) from 2012-2016 and the Iberian Cytometry Society (SIC) from 2015-2017, he has served in many committees and led the efforts to introduce the first ISAC SRL leadership programs that have benefitted many young leaders of our community.

Yolanda Mahnke, PhD, *OMIP Anatomy*

Dr. Yolanda Mahnke was first introduced to flow cytometry by Klaus Hexel during her PhD years at the German Cancer Research Center where she studied T-cell memory in murine models, her research career quickly became very flow cytometry heavy. She co-developed a highly sensitive flow cytometry-based cytotoxicity assay while working with Prof. Pedro Romero at the Ludwig Institute for Cancer Research in Lausanne, and developed many multi-parameter panels to study clinical trial samples to investigate the immune system in health (twins) and disease (infectious diseases and oncology, including CART-cells) while working with Dr. Mario Roederer at the NIH's Vaccine Research Center and later with Prof. Carl June at the University of Pennsylvania. The effort required to establish a reliable multi-color immunofluorescence panel from scratch led her to develop a clear methodology that she published and lectured on extensively. In 2010, together with colleagues at the VRC and in close collaboration with Cytometry Part A, she developed a novel publication platform to encourage the sharing of optimized multicolor immunofluorescence panels (OMIPs). She was awarded the Marylou Ingram Scholarship from the International Society for the Advancement of Cytometry (ISAC) in 2014 and remains an active member in ISAC's committees. She founded FlowKnowHow LLC, and is now a flow cytometry consultant with a focus on immunology and clinical trials, as well as an Associate Editor for Cytometry Part A.

Herve Luche, PhD, *Dynamic Antigen Density of Murine Leukocytes: A crucial step toward rational panel design*

Dr. Herve Luche is Scientific Director of the Immuno-phenotyping module at the Centre for Immunophenomics – CIPHE (Inserm-CNRS-AMU) in Marseille, France. Dr. Luche and his team are interested in the characterization of genes and their role in immune response. Dr. Luche is also involved with the DYADEM project, which aims to gain insights into the markers expressed in the immune system components of mice and their functions in immune response. Flow cytometry instruments, reagents and advanced data analysis tools developed by BD are an important part of Dr. Luche's work.

Data Analysis Session

Diana Bonilla Escobar, PhD, *High Quality Data in, High Quality Analytics Out*

Dr. Diana Bonilla Escobar is an Immunologist, with a Ph.D. from Texas A&M University, a postdoctoral degree from Baylor College of Medicine and an ASCP-accreditation as a cytometry specialist. She has more than 20 years of experience as a biomedical scientist for a variety of applications, including infectious diseases and cancer at MD Anderson Cancer Center. She was one of the ISAC SRL emerging leaders and is highly involved in ISAC educational activities and task forces. She currently works as an application specialist for Cytek Biosciences.

Timothy Crawford, PhD, *Algorithms for Dimensionality Reduction and Clustering*

Dr. Timothy Crawford received his PhD in Molecular and Cellular Biology from the University of Washington, Seattle, studying developmental genetics, stem cell biology and cell signaling mechanisms. He gained additional training and experience in HIV biology, viral immunology, and cytometric data analysis as a member of the UCSF Core Immunology Labs, then joined the Hawaii Center for AIDS as a staff scientist, where he worked to evaluate the phenotype and function of T cells, NK cells and monocytes in HIV infected persons. Currently, as an Application Scientist with BD Life Sciences Informatics, Tim provides training and assistance to scientists across the globe on single cell data analysis approaches and techniques.

Ryan Brinkman PhD, *Data Driven Cytometry*

Dr. Ryan Brinkman's research is focused on developing and applying flow cytometry bioinformatics approaches to advance our understanding of human health and disease. Early work centered on creating the required data standards (as Chair of ISAC's Data Standards Task Force), and a free, open-source computational infrastructure in R now widely used to support high throughput computational statistical analysis of flow data. Recent efforts have concentrated around developing complete analysis pipelines that cover all the steps from flow cytometry data pre-processing to automated gating and biomarker discovery. Dr. Brinkman is also applying these methodologies as part of collaborative projects, primarily in immunoncology clinical trials. Dr. Brinkman is also active in the community and leadership of Flow Repository and FlowCAP efforts. Dr. Brinkman was the 2018 ISAC Distinguished Service Awardee.

FlowTex

Keynote Speaker

Florian Mair MSc, PhD, *Defining the phenotype and function of antigen-presenting cells and T cells in the human tumor microenvironment using multi-omic single cell techniques*

Dr. Florian Mair obtained his MSc from the University of Vienna (Austria) in 2008 and his PhD from the University of Zurich (Switzerland) in 2014. Currently, he is working as an immunologist at the Fred Hutchinson Cancer Research Center in Seattle (USA), where his main interest is dissecting the phenotype and function of human immune cells in non-lymphoid tissues during steady state and disease. He focuses specifically on myeloid cells, and in 2018 published one of the first 30-parameter OMIPs for the phenotyping of human dendritic cells (DCs).

Over the past decade, Dr. Florian Mair has been working extensively with different advanced cytometry platforms (conventional, spectral, and mass cytometry) and recently developed an interest in single cell sequencing technologies. Since 2017 he is an ISAC Marylou scholar and has been actively engaged in teaching flow cytometry courses, in particular systematic panel design and analysis of high-dimensional cytometry experiments.