LUNCH WORKSHOPS (hall 112)

SUNDAY, 12:40

Cytek full spectrum flow cytometry: check out how complexity became simple
Michal Maj, Application Scientist, Cytek Biosciences

Over the years, researchers in the realm of flow cytometry have striven to extract increasingly comprehensive information from a single sample. This pursuit of a deeper understanding of samples and their underlying biology has driven the evolution of multicolor panels. Transitioning from utilizing 1 to 5 colors, expanding to 10 to 20, or even pushing the boundaries to 40 or more colors is a transformative journey that necessitates both time and experience. Cytek specialists are here to guide you through this progression, making the process as streamlined and effortless as possible, all while harnessing the power of our spectral technology. The aim is to illustrate how you can simplify this intricate journey and make it more accessible, regardless of your level of expertise. By joining our workshop, your scientific aspirations can be realized more effectively than ever before, and we invite you to embark on this transformative experience with us.

MONDAY, 12:50

Discover WOLF: the simple, benchtop, gentle cell sorter
Michał Bonar, Ph.D., NanoCellect Biomedical

The WOLF was designed and created by a team of scientists and engineers who wanted to solve a classic challenge in biological research: how to sort cells of high quality effectively and easily. NanoCellect has created an entirely new type of microfluidic cell sorter that extends modern flow cytometry methods. By using proven detection technologies, NanoCellect focuses on innovative cartridge technology (commonly known as a "microfluidic chip") and accessible, intuitive software that makes the operation simple and safe for researchers and their samples. The WOLF benchtop flow cytometry cell sorter allows for the gentle separation of cell types in bulk sorting and the isolation and dispensing of individual cells into plates. Single-cell sorting is completed in 96- or 384-well plates when using the WOLF with the N1 Single Cell Dispenser. This flexibility and

performance allow users to complete sorting experiments across different research fields and application areas like single-cell genomics, cell line development, gene editing, antibody discovery, stem cell cloning, genomic sample prep, and more.

MINI-WORKSHOPS (hall 112)

SUNDAY, 14:35

Increase fragile cells clonal outgrowth with WOLF gentle sorter and single-cell dispenser
Michał Bonar, Ph.D., NanoCellect Biomedical

Generating cell lines has often been inefficient and affected by inaccurate limited dilution methods or the shear stress caused by conventional flow cytometer and traditional high-pressure cell sorters. NanoCellect Biomedical provides cell sorting solutions that allow to sort cells and establish stable cell lines using gentle low-pressure microfluidics. The WOLF's ability to protect cell viability after sorting makes it an integral part of any cell line development workflow such as: Recombinant protein production in CHO Cells, Sorting stem cell cultures and Antibody discovery. Contaminate and biohazard–free, the WOLF cell sorter's rapidly exchangeable cartridge and tubing set eliminates carryover between samples and allows for quick and easy cleanup.

MONDAY, 9:00

Cytek multi-autofluorescence extraction tool: shed what slows you down
Michal Maj, Application Scientist, Cytek Biosciences

Autofluorescence is an inherent factor in every flow cytometry experiment. Each individual cell, including yeast, bacteria, and algae, possesses its own distinct autofluorescence signature that can impact the quality of both extra- and intracellular staining. Navigating around autofluorescence issues and its potential interference with your staining requires experience, time, and a solid understanding of your sample's fluorescent characteristics. Difficulties in accurately identifying subpopulations and interpreting data

can arise, particularly in heterogeneous samples with multiple autofluorescence signatures. To address this challenge, at Cytek we have developed an autofluorescence extraction workflow with the new SpectroFlo software version. The update includes multi-autofluorescence extraction tool, designed to enhance the reliability and accuracy of your results. We invite you to join our workshop, where you can become acquainted with the data analysis pipeline that will guide you toward achieving the best possible outcomes.

MONDAY, 9:40

Seamlessly transition from cell sorter to single cell library preparation with the WOLF cell sorter

Michał Bonar, Ph.D., NanoCellect Biomedical

Single cell RNA-Sequencing has led to many novel discoveries such as the detection of rare cell populations, microbial populations and cancer mutations. The WOLF Cell Sorter and N1 Single Cell Dispenser, developed by NanoCellect, is a novel microfluidic-based cell sorter compatible with several RNA-sequencing platforms. At less than 2 psi, the WOLF is more gentle than any other conventional cell sorter, enabling healthier cells post sort and higher RNA integrity. Low stress during cell sorting avoids potential gene expression changes induced by traditional sorters. In addition, the WOLF excels at excluding dead cells and debris; therefore, maximizing the data generated per dollar spent on sequencing reagents and analysis time.

MONDAY, 10:20

The importance of spectral flow cytometry for extracellular vesicles research

Michal Maj, Application Scientist, Cytek Biosciences

There is a great deal of interest in characterizing small particles such as bacteria, extracellular vesicles, and viruses by flow cytometry. The common availability, as well as the multiparameter and high throughput capabilities of flow cytometry, make this technology attractive for measuring small particles. However, many of the flow cytometers currently being used are not able to detect biological particles smaller than 200nm. This lack of sensitivity has led to a bias in the literature toward larger particles, which in

the case of extracellular vesicles, represent the smallest percentage of particles. Cytek has developed an Enhanced Small Particle (ESP) detection option for the already popular Aurora and Northern Lights flow cytometers capable of fully resolving above the background particles ranging 70–80nm. Moreover, the extracellular vesicles autofluorescence profiles can be determined thanks to Cytek Full Spectrum Profiling.

MONDAY, 11:30

Resolving the complexity of tissue immune response with Orion high-dimensional imaging

Mickael Meyrand, Field Application Scientist, RareCyte, Inc.

High-dimensional imaging allows identification of immune cell sub-types for investigation of cell number, density, proximity, and activation state. The breakthrough Orion platform generates same-day whole-slide images with sub-cellular imaging resolution in a single stain, single scan workflow with customizable staining panels. We are going to review together a whole-slide tissue section of an invasive colorectal adenocarcinoma stained with a 17-plex immuno-oncology biomarker panel and imaged with the Orion system in a single staining and scanning process.

MONDAY, 12:10

Look at your sample. Why would you consider imaging flow cytometry?

Michal Maj, Application Scientist, Cytek Biosciences

Despite having been available to researchers for over a decade, Imaging Flow Cytometry remains an underexplored and underutilized technology in many research laboratories. The remarkable capabilities of Cytek® Amnis® technology enable the collection of up to 60,000 cell images per second, with optical magnification of up to 60x across 10 fluorescent channels. What does this mean for your research? You can visually confirm the existence of rare events as actual cells, confidently eliminate potential artifacts from your analysis, and accurately pinpoint the source of cellular fluorescence. Furthermore, you gain access to intricate morphological features of your cells, surpassing the capabilities of simple FSC/SSC analysis alone. Additionally, our sophisticated software incorporates Machine Learning (ML)

and Artificial Intelligence (AI), offering advanced analytical tools at your disposal. Join us for an educational workshop where we will present the benefits and advantages of our technology, and demonstrate how you can optimize its application for your research.

MONDAY, 15:00

Unlock spatial biology with Orion technology: explore the possibilities for research and clinical applications
Mickael Meyrand, Field Application Scientist, RareCyte, Inc.

Orion is a novel spatial biology platform enabling whole-slide immunofluorescence and same-section H&E imaging results for up to 20 biomarkers in a single-round tissue staining step. Orion imaging is achieved in less than 2 hours per sample, making the approach suitable for translational and clinical research. We are going to review together a recent paper from Harvard Medical University (published in Nature Cancer) describing how spatial biomarkers of high prognostic value can be identified using biomarker quantitation and traditional histology of the same tissue section. Using a cohort of 74 colorectal cancer resections, the authors have demonstrated that immunofluorescence and H&E images provide human experts and machine learning algorithms with complementary information that can be used to generate interpretable, multiplexed image-based models predictive of progression-free survival invasive colorectal adenocarcinoma stained with a 17-plex immuno-oncology biomarker panel and imaged with the Orion system in a single staining and scanning process.

MONDAY, 15:40

Unrevealed power of spectral cell sorting: meet the Cytek Aurora CS
Michal Maj, Application Scientist, Cytek Biosciences

Like Cytek Aurora, the Aurora CS (Cell Sorter), provides the benefits of full spectrum profiling (FSP™) technology. Its optical design and unmixing algorithm provide scientists increased flexibility, enabling the use of a wide array of new fluorochrome combinations without reconfiguring the system for each application. The result is a system that delivers high resolution at the single cell level to resolve the most challenging cell populations, such as

cells with high autofluorescence or low levels of expression of key. Welcome to a new world where the assays optimized on the Aurora can also be run on the Aurora CS for sorting. As a sorter, the CS offers the flexibility required to meet various biological and sorting conditions. With up to 6-way sorting, customizable nozzle settings and sort modes, automated drop delay and sort stream monitoring, the CS offers the flexibility required to meet various application needs from smaller to larger cells. Join us for a workshop where we will discuss best practices and common mistakes that can occur during the cell sorting process. Discover how Cytek Aurora CS can simplify your workflow and help you achieve better results.

MONDAY, 16:20

Spatial biology with RareCyte Orion, custom panel design and workflow

Mickael Meyrand, Field Application Scientist, RareCyte, Inc.

Orion Precision Spatial Biology platform provides a bridge from discovery to utility by delivering data that's reproducible across whole slides at subcellular resolution without tissue damage. Agile assay development – validation in weeks not months – and rapid sample processing – studies in days not weeks – along with same-section bright-field imaging makes this the platform of choice for bringing spatial biology to clinical decision making. Together, we are going to review the entire Orion workflow including the antibody panel design. Orion reagents are optimized and validated for use on the Orion multiplex imaging instrument and provide flexible panel design and customization.

TUESDAY, 9:40

MARS technology: a revolutionary solution for cell separation and enrichment

Bill Staffopoulos, Applied Cells, Inc.

Applied Cells, Inc. was founded to create revolutionary solution to complete the workflow of cell separation and enrichment products. During this workshop you will learn more about MARS system, combining Acoustic modules for sample washing and concentration with the magnetic module for positive or negative cell selection. The proprietary methods present

a unique advantage in enrichment of target cells, including tumor cells and immune cells, from whole blood and from tissues, with high recovery, high purity and high reproducibility. The products are valuable alternatives for cell therapy and clinical labs to achieve SOP through full automation and programmable process flow.

TUESDAY, 10:20

Combine imaging & impedance in real-time inside your incubator with xCELLigence eSight

Riccardo Pasculli, Field Application Specialist, accela s.r.o.

The xCELLigence RTCA eSight enables comprehensive insight into cell health, cell behavior, cell function and cell biology processes using live, simultaneous, and real time biosensor impedance-based and image-based measurements. The eSight system combines the label-free xCELLigence RTCA technology with live cell imaging in 3 colors (red, green, and blue). This combination allows for informative live cell analysis and increased insight into cell health. Fulfill all image analysis needs with dedicated application modules: 3D Spheroids, Immunotherapy, Dilution cloning, Wound healing migration and invasion, Cell-by-cell analysis. Join the workshop to see how eSight system can revolutionize your cell culture facility.