Industry-Sponsored Workshop Descriptions

Monday, January 25; 12:30 – 2 pm

Room: Smoketree C, Palm Springs Convention Center

Agilent Technologies Inc. (Booth 327); Wilmington, Delaware; www.agilent.com/automation

Implementing Assays With VWorks Automation Control Software: A Practical Approach

Speaker: Eric Nordby, Pfizer Animal Health
Come and see a practical discussion of how to implement assays using VWorks, Agilent's automation control software.

Monday, January 25; 12:30 – 2 pm

Room: Andreas, Renaissance Palm Springs Hotel

Artel (Booth 451); Westbrook, Maine; www.artel-usa.com

and **Hamilton Company (Booth 405)**; Reno, Nevada; www.hamiltoncompany.com

New Validation and Optimization for the Hamilton NIMBUS and STAR Liquid Handling Platforms Using the Artel MVS Multichannel Verification System

Users of automated liquid handlers need to ensure the accuracy and precision performance of their equipment in order to satisfy their quality system and regulatory requirements. However, for many users, QC testing procedures are time consuming, tedious and not well standardized. The Artel MVS Multichannel Verification System provides an automated, commercially available tool that significantly reduces the time needed to verify and optimize liquid handler performance. Together with the Hamilton Company, Artel demonstrates the use of the MVS technology as a tool for validating the performance of Hamilton liquid handlers. In addition, detailed methods for quality testing of the NIMBUS and STAR liquid handling platforms are discussed. Workshop participants learn about the latest capabilities of the Artel MVS technology as well as the capabilities of the NIMBUS and STAR liquid handlers including procedures for optimizing accuracy and precision.

Monday, January 25; 12:30 – 2 pm

Room: Pueblo AB, Renaissance Palm Springs Hotel

Beckman Coulter, Inc. (Booth 215); Brea, California; www.beckmancoulter.com

Automated Cell Cultivation and Cellular Analysis

Part 1: Therapeutic Human Antibody Discovery and Lab Automation
Speaker: Qimin Chao, Lead Discovery, Morphotek Inc.
Morphotek Inc. has developed human MORHODOMA and Libradoma technologies for the discovery of human antibodies against desired target antigens. The technology involves ex vivo immunization of purified naive human B lymphocytes or purification of antigen-primed B cell from disease patients. These B lymphocytes were then fused and plated in single cell in 96-well format. Culture and screening of these plates were handled with lab automation to facilitate the cell culture process and to identify the desired human antibodies. The application of the process has resulted in several therapeutic human antibodies against cancer, infectious disease and growth factors.

Part 2: Automated Isolation and Intracellular Staining of Peripheral Blood Mononuclear Cells
Speaker: Carlos Aparicio, Beckman Coulter, Inc.
This discussion focuses on the automated sample preparation of whole blood and peripheral blood mononuclear cells (PBMC) for flow cytometry analysis in 96-well plates. It covers the hardware setup and methodology using the Biomek NX^{P} for PBMC isolation, immunophenotyping, and intracellular cytokine staining. Correlation results are presented based on cell yields, vaibility, and percentage positive populations for manual and automated methods using PBMC and whole blood.

Monday, January 25; 12:30 – 2 pm

Room: Mesquite B, Palm Springs Convention Center

BMG Labtech, Inc. (Booth 230); Cary, North Carolina; www.bmglabtech.com

Minimize Common Errors Associated With High-Throughput Screening Detection—The New PHERAstar FS is the Next Generation Multidetection HTS Instrument

Each component in a high-throughput screening pipeline contributes error to the final outputted data. Recently more sensitive and precise techniques have arisen that greatly limit error in liquid handling and HTS assays. Now with BMG LABTECH's new PHERAstar FS multidetection microplate reader, error due to HTS detection has been dramatically reduced or eliminated. Most multidetection instruments have to compromise in sensitivity, speed and/or features to work in all modes, causing data error. Learn how the PHERAstar FS uses the newest of technologies to meet ALL HTS needs with no compromises. The benefits to assay platforms such as HTRF®, HTPlex™, AlphaScreen®, LanthaScreen®, GeneBLAzer®, Transcreener®, Fluo-4 Direct™ calcium, and many others are discussed in detail.

Monday, January 25; 12:30 – 2 pm

Room: Santa Rosa, Renaissance Palm Springs Hotel

Corning Life Sciences (Booth 337); Lowell, Massachusetts; www.corning.com/lifesciences

Automated High-Throughput Screening With Corning Epic: Real World Examples

The Corning Epic system is designed to be integrated into automated high-throughput platforms for outputs of ~40,000 data points per eight hour day. This session describes the results of several high-throughput screens performed in both biochemical and cell based assay formats with directed compound libraries ranging from 20,000 to 150,000 compounds. Assay development, results and performance is described.

Monday, January 25; 12:30 – 2 pm

Room: Smoketree F, Palm Springs Convention Center

Eppendorf North America (Booth 551); Hauppauge, New York; www.eppendorfna.com

Automation of Standardized Cytocompatibility Testing of Biomaterials

This workshop demonstrates that the multiplexed format of viability, cytotoxicity and apoptosis cell based assays in a 96-well microtiter plate format is adaptable to a robotic workstation and to exemplify that improving cell based high-throughput screening platforms for use in preclinical trials for tissue engineering through the use of robotic liquid handling systems helps to provide consistency of procedures, which improves reproducibility while minimizing errors and freeing human resources for other tasks.

Monday, January 25; 12:30 – 2 pm

Room: Smoketree DE, Palm Springs Convention Center

Hamilton Company (Booth 405); Reno, Nevada; www.hamiltoncompany.com

and **Global Cell Solutions (Booth 628)**; Charlottesville, Virginia; www.globalcellsolutions.com

3D Cell Culture

Hamilton Company and Global Cell Solution (GCS) invite you to a lunch workshop on 3D cell culture and cell-based assays. You learn how a new magnetically-controlled microcarrier, the GEM™, can expand even the most demanding primary and stem cells while reducing costs. Lastly, the complete automated solution for 3D cell culture, the 3D-CellHOSTTM is presented. This clever cell culture automation platform impresses with its ease-of-use, affordability and simplified cell culture workflow.

Monday, January 25; 12:30 – 2 pm

Room: San Jacinto, Renaissance Palm Springs Hotel

Tecan (Booth 305); Durham, North Carolina; www.tecan.com

The Art of Automated Liquid Handling

Automation of manual liquid handling procedures can be time consuming and challenging, requiring careful development of automated processes to ensure precise and reliable pipetting. So where better to learn about laboratory automation than from Tecan, market leaders in this field. In this interactive workshop, Tecan liquid handling experts covers the major factors influencing reliable automation of laboratory workflows, from the basic requirements of liquid handling and robotics, through to software and validation, and regulatory and marketing considerations. Take this opportunity to learn from the experts and transform your manual protocols into reliable automated solutions.

Monday, January 25; 12:30 – 2 pm

Room: Mesquite C, Palm Springs Convention Center

Thermo Scientific (Booth 119); Waltham, Massachusetts; www.thermo.com

Momentum Automation Software—Stories From the Field

Speakers: Per Nielsen, Novo Nordisk and Paul Taylor, Boehringer Ingelheim

Fast, Flexible, Robust, Productive
Per Nielsen and Paul Taylor discuss their experiences with Momentum automation software applied to medium and high-throughput workflow systems.

Learn about:
- Momentum's simple interface enabling walk up addition of samples from a number of assays with reliable and efficient results
- Systems designed for flexibility, user access (turntables, docking positions, external access), speed (setup and throughput), and increased uptime & recovery options for overall robustness
- Our dynamic scheduler's ability to predict system and assay behavior, while avoiding deadlock situations
- The broad range of Momentum 2.0 capabilities

Monday, January 25; 12:30 – 2 pm

Room: Smoketree AB, Palm Springs Convention Center

Waters Corporation (Booth 279); Milford, Massachusetts; www.waters.com

Using Electronic Forms to Stream-Line the QC Documentation Process

Speaker: Chris Stumpf, Senior Product Marketing Manager, Informatics

Regulatory agencies require that pharmaceutical QC testing laboratories document testing procedures. However, documenting the QC testing operation represents a significant bottleneck in releasing drugs in a timely manner due to the inherent inefficiencies of creating and maintaining paper records. Informatics solutions such as LIMS address some of the challenges with the documentation process, but gaps still exist as most QC testing labs print and maintain paper records despite utilizing electronic systems. This workshop introduces an electronic documentation and workflow system that stream-lines the documentation of routine QC tests such as identify, assay, content uniformity, and dissolution. This approach allows for faster document creation, better document searching & retrieval, and faster review & sign-off – the ultimate result is safer drugs that are delivered in less time.

Tuesday, January 26; 12:30 – 2 pm

Room: Santa Rosa, Renaissance Palm Springs Hotel

Agilent Technologies Inc. (Booth 327); Wilmington, Delaware; www.agilent.com/automation

Identification of Multi-Target Mechanisms Using Combination High-Throughput Screening

Speaker: Glenn Short, Director of Discovery Biology, CombinatoRx, Inc.
Review some of the best topics from this year's Agilent Automation User Meeting in NYC.

Tuesday, January 26; 12:30 – 2 pm

Room: Pueblo AB, Renaissance Palm Springs Hotel

Beckman Coulter, Inc. (Booth 215); Brea, California; www.beckmancoulter.com

Automating Next Generation Sequencing Sample Preparation

Speaker: John Colbourne, Genomics Director, Center for Genomics and Bioinformatics, Indiana University
Applications in Next Generation Sequencing enable a researcher to investigate RNA and DNA profiles in a manner not experienced before. While this technology is bringing revolutionary approaches to experimental questions, it also brings challenges with respect to sample preparation. Library construction for such studies can be difficult due to the number of steps required: when this is multiplied by the number of libraries needed for large studies such as population genomics, automating sample preparation is required.

This workshop discusses automating processes for next generation sequencing and how the Biomek® FXP Dual Multi-channel Span 8 liquid handler is being utilized in the research projects ongoing at the Center.

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Room: Smoketree AB, Palm Springs Convention Center

BioTek Instruments, Inc. (Booth 151); Winooski, Vermont; www.biotek.com

Automated Workflows for Luminex xMAP Assays

Speaker: Peter Banks, BioTek Instruments, Inc.
Bead-based, multiplexing assays such as those provided by the Luminex xMAP technology, have proven to be highly useful for biomarker identification and quantification from cells, tissues and body fluids. Applications include biological research, drug discovery and clinical diagnostics. The original technology based on the use of polystyrene microspheres tends to have arduous, manual work flows prone to cumulative systematic and random error that can lead to problematic precision for quantification. Here we demonstrate improvements in precision and ease-of-use through the use of BioTek microplate washers for both polystyrene and magnetic microsperes. Automation of work flows for partially-full microplates to full 96- and 384-well microplates can be performed.

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Room: Mesquite B, Palm Springs Convention Center

BMG Labtech Inc. (Booth 230); Cary, North Carolina; www.bmglabtech.com
and **HighRes Biosolutions Inc. (Booth 105)**; Woburn, Massachusetts; www.highresbio.com

Faster, Simpler, More Precise High-Throughput Screening

High-throughput screening is a timely and costly endeavor that requires the precise coordination of many timely events to work flawlessly. HTS researchers need to balance three variables – time, sensitivity and precision. A compromise on any can lead to false positive 'hits' that are inherent artifacts or errors due to a limiting component in the HTS system. Learn about new HTS tools from BMG Labtech and HighRes Biosolutions that have made high-throughput screening faster, easier, and more precise at places such as the Burnham Institute in San Diego, California.

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Room: Smoketree C, Palm Springs Convention Center

Labcyte Inc. (Booth 256); Sunnyvale, California; www.labcyte.com

Beyond DMSO—New Frontiers in Acoustic Droplet Ejection for Nanoliter Transfer of Multiple Fluid Types

Imagine preparing assay plates for siRNA screening, compound screening with biochemical and cell-based assays, PCR reactions and more all on your Labcyte Echo® acoustic liquid handler! Join us to learn how you can now bring the superior performance of acoustic droplet ejection (ADE) to all your low-volume liquid handling applications. We will introduce new capabilities for the Echo liquid handler, including new consumables developments, that enable you to transfer a wide range of fluid types on a single instrument, with precision and accuracy comparable to established performance with DMSO. New fluid types include common biological buffers, protein and nucleic acid solutions, and surfactants. This expanded flexibility enables assay miniaturization with better results, greater throughput and reduced costs for all your liquid handling applications. Lunch is provided.

Tuesday, January 26; 12:30 – 2 pm

Room: Smoketree DE, Palm Springs Convention Center

RTS Life Science (Booth 644); Manchester, United Kingdom; www.rtslifescience.com
and **Microsonic Systems (Booth 167)**; San Jose, California; www.microsonics.com

See and Hear How Vision and Acoustic Technology Could Save $$$ in Your Screening and Library Collection

Compound solubility and the tendency for compounds to precipitate out of solution can result in samples being screened at the wrong concentration resulting in wasted screening effort, significant costs and potentially false negatives. This workshop highlights two complementary technologies used to minimize poor quality screening, and improve results by showing how to find and correct solubility issues within compound libraries.

RTS vision technology determines the volume of sample and presence of precipitate in source tubes. Microsonics has harnessed ultrasonic energy to re-solubilize compounds, isothermal thaw and mix, assuring proper concentrations. Jointly these technologies can make a dramatic improvement in the quality of your library!

Tuesday, January 26; 12:30 – 2 pm

Room: Smoketree F, Palm Springs Convention Center

TharSFC, a Waters Company (Booth 278); Pittsburgh, Pennsylvania; www.tharsfc.com

Automated Methods Development and Purification of Small Molecule Compounds in Drug Discovery Labs

In the past decade, SFC has continued to gain momentum in the pharmaceutical industry as a viable chromatographic technique on both analytical and preparative scales. Due to the higher diffusivity and lower viscosity of high pressure CO2, SFC often provides a 3~8 fold faster separation than normal-phase HPLC. Chiral SFC has become the most widely used technique for obtaining mg to multi-grams of pure enantiomers in drug discovery. For lab scale purification, SFC also offers significant cost savings by reducing organic solvent usage and removal as well as the time and energy required post-purification.

Despite the many advantages SFC offered to users, method development and implementation of SFC in a similar fashion to HPLC, including mass spec-triggered open-bed collection and commonly accepted software packages, remained two major "bottlenecks" for SFC growth until very recently. Due to the lack of a universal stationary phase for both chiral and achiral separations, 'trial-and-error' screening of a set of stationary phases remained the predominant approach to SFC method development.

Currently, most commercial instruments employ automated column and solvent switching to facilitate this screening process. However, it is time-consuming because each combination of column and mobile phase has to be tested individually in a temporal manner. The ability to collect a single fraction per injection in an open-bed format from a sequence of complex matrix purifications is standard for high throughput library applications. Historically, open-bed collection has been problematic for SFC due to aerosol formation caused by depressurization of CO2, particularly at high flow rates.

This workshop demonstrates two recent solutions from TharSFC, the Method Station X5™ and Resolution X5™ multi-channel SFC systems and the SFC MS Prep 100™ purification platform, specifically designed to address the aforementioned issues. Additionally, the working principles and innovative approaches to some historical challenges are explained. Examples from both the achiral and chiral arena, of a streamlined workflow from method development to purifications are demonstrated.

Tuesday, January 26; 12:30 – 2 pm

Room: Andreas, Renaissance Palm Springs Hotel

Yole Développement (Booth 266); Lyon, France; www.yole.fr

Microfluidics, A Technology & Market Update: What Are The Key Trends in Microfluidics for the Next 5 Years?

Microfluidic technology is considered an essential tool today to achieve cost reduction in pharmaceutical research and in-vitro diagnostics. Indeed, microsystems skills, associated materials and processes are often of great interest to achieve new steps towards: automation, reduced cost by lowering sample volume and reagents use, parallel processing of samples (Multiplexing), lower response time, better environment control and higher sensitivity. Today, there are many applications of microfluidics in this rapidly growing market, ranging from ancillary components (dispensing heads, mircopumps, sensors, valves...) to microfluidic disposable devices for cell based assays. The Market Briefing provides an overview of the microfluidic technologies for laboratory automation. The main technical and economic trends and drivers through real life examples are addressed.