

Time Slot	Edison Room	Woodbridge Room
1:00 – 3:00	SBS Microplate Standards Development Committee	Briefing & Workshop: Optimizing Microplate Management and Preserving Compound Integrity – TekCel
3:00 – 3:30		<p>Homogeneous Dual Luciferase Reporters for High Throughput Screening Erika Hawkins, MSc -Promega Corporation</p> <p>Promega’s new homogeneous dual-reporter assay system, the Dual-Glo™ Luciferase Assay System, elicits sequential signals from firefly and Renilla luciferases, so that two reporters may be monitored from the same samples of 96 and 384 well plates. Monitoring two reporter genes permits the discrimination of a decrease in a specific promoter activity from non-specific effects like cell death. Normalizing the activities of the two reporters can also minimize variability from cell number or transfection efficiency (for transiently expressed proteins) and subsequently increase the Z’-factor. Promega’s new Dual-Glo™ Luciferase Assay System efficiently and sensitively monitors changes in experimental reporter gene activity and it also monitors a second reporter gene activity to provide context for those changes.</p>
3:30 – 4:00	<p>Caliper Technologies LabChip® Devices for High Throughput Screening Applications Abbie Esterman, Ph.D. - Caliper Technologies</p> <p>Caliper Technologies Corp. has developed the Caliper 250 High Throughput Screening (HTS) system for drug-screening applications. The Caliper 250 is the first commercial HTS instrument based on lab-on-a-chip technology. Key aspects of the microfluidic-based system are assays, which are miniaturized, integrated and automated. Reaction volumes of assays performed on the chip are typically 10 nL, which results in target and substrate savings of several orders of magnitude. Applications include biochemical assays such as fluorogenic and mobility shift assays. Electrophoretic mobility shift assays are enabled by the ability to apply an electrical field to a precise region of the chip. Product and substrate are separated based on a difference in charge / mass ratio. An example of a mobility</p>	<p>High-Throughput Solutions for DNA Purification Using MagneSil Paramagnetic Particles Paul Otto - Promega Corporation</p> <p>Promega has developed a family of ‘silica-paramagnetic’ particles (MagneSil™) that provide the basis for rapid and efficient purification of a variety of nucleic acids:</p> <ul style="list-style-type: none"> BigDye Terminator sequencing reactions. PCR products and Restriction fragments. Plasmid DNA. Genomic DNA from plant seed and leaf material and blood. Limiting capture of defined quantities of DNA. <p>Each purification method uses a combination of MagneSil particle types that eliminate the need for centrifugation and</p>

	<p>shift assay is a serine/threonine kinase assay in which the substrate is a fluorescently labeled peptide. After phosphorylation of the peptide substrate, the product and substrate are separated. The many advantages of the mobility shift assays are: 1) direct detection of product and substrate; 2) simple assay development; and 3) elimination of antibodies, expensive proprietary reagents and/or radioactivity.</p> <p>To date, greater than one million compounds have been tested in large validation screens employing both fluorogenic and non-fluorogenic assay formats. Typical results from a fluorogenic assay with a Caliper 250 HTS system demonstrated a 97% reproducibility rate in hit identification and exceptionally high sensitivity. For example, our system can detect compounds with an inhibition threshold of only 10% with 95% accuracy; 20% inhibitors are detected virtually 100% of the time. The total target consumption for a million compound screen was only one microgram. The reagent consumption, system noise, and control and compound inhibition reproducibility from validation screens using both assay formats will be presented.</p> <p>Recently, cell-based assays measuring calcium flux were released. The microfluidic format of these assays is also characterized by low cell usage and high data quality. As future applications are added, the new functionality is contained on the chip. Thus various applications utilize the same instrument and large capital expenditures for specialized applications are eliminated.</p>	<p>vacuum steps required by other formats. This allows for complete automation of the purification process using common liquid handling instruments.</p>
<p>4:00 – 4:30</p>	<p>Horizon introduces Decapping/Capping Machine for Screw Cap Tube for R & D Vince Comfort- Horizon Technology, Inc.</p> <p>The purpose of this machine is to provide an automated method of removing and replacing the screw on caps on tubes used in the lab. The machines small size will allow placing the unit under many standard fume/exhaust hoods. The tube rack and cap storage plates are removable from the moving table to allow as many racks of tubes to be processed as needed.</p> <p>This machine as presently configured will remove and replace the caps on NUNC Cryo tubes. The rack holds 48 tubes and cycles through the rack removing or replacing the caps in approx. 70 seconds per rack.</p>	<p>Breaking Drug Discovery Bottlenecks: The Use of Surface Plasmon Resonance (SPR) Biosensor Technology Kenneth Miller, Ph.D. - Biacore</p> <p>This presentation will focus on Biacore S51, which is a chip-based surface plasmon resonance (SPR) biosensor developed by Biacore International AB for drug discovery and development. A chip-based SPR biosensor approach for investigating molecular interactions has the advantage that the measurements are label-free and in real-time. Since Biacore S51 monitors binding in real-time, kinetic and affinity information can be obtained from a single experiment.</p> <p>A description of how an SPR detector, proprietary microfluidics and sensor chip surfaces are integrated in Biacore S51 will be</p>

	The present unit removes/replaces four (4) caps at a time, but other configurations with one to four grippers are possible.	presented. Application examples will be discussed in order to demonstrate the utility of Biacore S51 in four pivotal stages of the drug discovery and development process.
4:30 – 5:00		<p>Saving Money and Saving Lives: Preventing the Degradation of Your HTS Library W. Steven Fillers, Ph.D. - TekCel, Inc</p> <p>The corporate chemical library represents one of the largest capital investments in most pharma and biotech HTS operations yet the very use of these assets compromises the lifetime of the samples. Extending the lifetime of the compound library increases the efficiency of screening operations and decreases the likelihood of false negative results due to chemical breakdown. The agents that cause this degradation have been identified for some time, however, practical technology that limits these effects has only recently become available. Continued screening of compromised chemical libraries increases the odds of not finding an active structure. While the monetary value of false negatives can be debated, there is little doubt that the event lengthens the discovery process. This talk will present data that defines the magnitude of sample storage issues, it will review past and present storage handling practices and it will discuss fully-automated solutions for chemical compound storage and retrieval that significantly extend the life of this valuable asset.</p>
5:00 – 5:30		
5:30 – 6:00		
6:00 – 6:30	<p>The BIOPHILE Sample Management System Automated Sample Access at Ultra Low Temperatures Sean Graves, Ph.D.- BIOPHILE, Inc.</p> <p>This presentation will describe the BIOPHILE automated –80C storage system and explain how it fits into the context of larger automation systems. The genomics, DNA forensics, proteomics, clinical, and drug discovery laboratories have a growing need to maintain valuable samples at ultra-low (-80C) temperatures in a validated, secure environment. Automated sample processing systems have until now required manual (off-line) storage of samples at -80C, reducing system reliability and speed. Both of these important needs are addressed by the</p>	<p>ORIGEN® Technology: A highly sensitive electrochemiluminescence detection technology providing an effective format for a variety of assay applications Irene Griff, Ph.D., Applications Manager - IGEN International, Inc.</p> <p>IGEN's ORIGEN® Technology has been adopted by a number of research and bioanalytical laboratories because of the technology's sensitivity, precision, wide dynamic range, and flexibility in formatting a wide variety of applications. ORIGEN Technology is based on a revolutionary process that uses labels designed to emit light when electrochemically</p>

	<p>Sample Management System being introduced by BIOPHILE Inc.</p>	<p>stimulated. These labels, together with IGEN's M-SERIES M8 Analyzer, provide a universal platform for biological measurements. This seminar will focus on several applications currently used in drug discovery including immunoassays and enzymatic assays, with a particular focus on kinase assays.</p>
<p>6:30 – 7:00</p>	<p>A Novel Homogeneous Time-Resolved Fluorescent Caspase-3 Assay Albert Ge, Ph.D. - PerkinElmer Life Sciences</p> <p>Caspases are important players in cell apoptosis, and could be important targets for drug discovery. We have developed a highly sensitive homogeneous assay for caspases using Ln chelate. Because of the employment of time-resolved fluorescence the assay enables sensitive, robust and homogeneous measurement of caspase activity. The assay can be developed with either purified caspases, apoptotic cell lysates (fresh or frozen) or whole cells and is amenable for high throughput screen.</p>	<p>Fluorescent HTS Methods for Dissecting Steroid Hormone Signal Transduction Robert G. Lowery, Kerry Ervin, Cale Halbleib, Mary S. Ozers, Mohammed Shekani, and Thomas J. Burke - PANVERA</p> <p>To enable development of more selective nuclear receptor modulators, we are developing fluorescence based biochemical assays for detection of ligand and coregulator protein interactions with androgen receptor, progesterone receptor, glucocorticoid receptor, and estrogen receptors. These assays allow direct and quantitative measurement of true equilibrium binding reactions in solution without the use of antibodies, immobilization or other potentially disruptive modifications. Together, this suite of assays provides a comprehensive, two-tiered approach for the discovery of novel selective NR modulators. Competition assays with fluorescent steroids are first used for identification of novel NR ligands among large collections of diverse chemicals. For the second tier, fluorescent LXXLL peptides or larger NR coregulator protein domains are used to characterize the likely in vivo effects of hits from the HTS ligand screen. In combination these assays provide the means to molecularly dissect the key events in the ligand dependent activation of nuclear receptors.</p>
<p>7:00 – 7:30</p>	<p>Using integrated data visualization techniques and analysis tools in genomics research Philip J. Monroe, Ph.D.- OMNIVIZ INC.</p> <p>The genomics researcher is confronted with the task of analyzing large volumes of data (which are often obtained in different formats from multiple sources), as well as integrating this analysis with information contained in current knowledgebases. Furthermore, the analysis must be presented in a way a biologist can readily understand the results. One</p>	<p>Maximizing High Throughput Screening Operations Thomas J. Russell- SciQuest Inc.</p> <p>This presentation examines the challenges facing HTS laboratories and the approaches that leading research organizations are taking to:</p> <ul style="list-style-type: none"> Maximize HTS productivity Maximize the quality of HTS operations Manage the complexities of HTS logistics within

	<p>approach to solving this dilemma is through the use of data visualization techniques. Examples of different visualization techniques that can be used to analyze data commonly encountered by the genomics researcher will be presented. The utility of the integration of the results with information obtained from other knowledgebases will also be discussed with respect to facilitating a more informed scientific and business decision making process.</p>	<p>global companies</p> <p>In addressing these issues, this presentation also explores the relationships between researchers and dispensary operations groups, discusses current and emerging best practices for compound and plate management logistics, and provides examples of how companies are leveraging their HTS assets in support of global research operations.</p>
<p>7:30 – 8:00</p>	<p>A New Technique for High-Throughput Solubility Measurements Cynthia Berger PhD.- PION, Inc</p> <p>Compare two new, high speed, UV spectroscopy methods for drug solubility determination to two current methods: Saturation Shake-Flask and the 'gold standard' pSOL-3 potentiometric titration. Demonstrate a new way of extracting aqueous intrinsic solubilities of drug molecules from data distorted by DMSO-drug binding or self aggregation reactions. Present an improved method for determining concentration by UV spectrophotometry. Suggest a QC-scheme for the high speed methods centered around a set of standard drugs. Show how pH-mapping can be used to create solubility-pH profiles.</p>	<p>Pyrosequencing™ – A Novel Method for High Throughput Mutation Analysis and Short-Read DNA Sequencing Deborah Litman– Pyrosequencing</p> <p>Recent advances in Genomic studies have changed the focus of applied scientific areas such as pharmacogenomics, bacterial and viral identification and resistance typing. At the same time, reliable data for use in association studies and genotype-phenotype correlation studies are still of high importance. High throughput Mutation Analysis and Short Read DNA Sequencing has become increasingly important for these fields of research. Existing technologies for DNA sequence analysis are not ideal for these applications. Pyrosequencing is a novel technique based on real-time sequencing by synthesis that is able, as a single technology, to address all of these needs. Pyrosequencing employs an enzyme cascade system to monitor the release of inorganic pyrophosphate (PPi) during nucleotide incorporation. This talk will review the principles and practice of this new high throughput mutation analysis and short read DNA sequencing technology.</p>
<p>8:00 – 8:30</p>	<p>Dimension 4: New Automation Approach Simon Fogarty- CRS Robotics Corp.</p> <p>This talk will cover three new key areas. Firstly, a new plate mover technology termed High Speed Distributed Motion (HSDM). This technology is based on the concept of parallel plate processing. Secondly, the new release of POLARA, V2.0, enables the full scheduling of the new HSDM movers. Finally, describing how both the new mover technology and POLARA software is combined with the existing robots and automation</p>	<p>IMAP: A New Homogeneous Assay Platform for Kinases, Phosphatases, & Phosphodiesterases. Richard Sportsman, Ph.D. - Molecular Devices Corporation</p> <p>The important signal transduction targets that comprise the title of this talk can now be assayed by the IMAP principle, based on phospho-specific interactions with nanoparticulate trivalent metal cations. IMAP allows rapid assay development, especially important for ser/thr kinases, because there is no antibody</p>

	peripherals to build systems that combine a building block approach with a new concept in modularity.	needed and virtually any substrate may be used. Since fluorescence polarization is used for quantification, IMAP has the benefits of FP's homogeneous single-label format and high speed. Since the assay is direct rather than competitive, high concentrations of fluorescence are used, overwhelming most compound interferences.
8:30 – 9:00	<p>Current Trends in Laboratory Automation Systems Auro Nair, Ph.D & Edward M. Alderman, Ph.D.- (Zymark Corporation)</p> <p>The pressure to perform increasing numbers of analytical and preparative methods while reducing costs has forced the scientists to become more efficient – to identify and eliminate non-value-added time, to miniaturize methods in order to minimize reagent and consumables costs, to acquire, organize, and route data efficiently, and to automate the laboratory thoroughly but flexibly. Here we will discuss with specific examples, the impact of modular design (equipment and methods), scalable technology, and advanced controlling software on system component selection and integration.</p>	