August's SBI[2] Special Issue of *SLAS Discovery* Now Available

Oak Brook, IL – The August special issue of *SLAS Discovery* "High-Content Imaging and Informatics" features a special collection of original research and perspectives curated by guest editors Myles Fennell, Ph.D. and Paul A. Johnston, Ph.D of The Society of Biomolecular Imaging and Informatics (SBI[2]).

This SBI[2] special issue contains a perspective summarizing the discussion at the 2019 HCS/HCA Data and Informatics Special Interest Group (SIG) held at the SLAS2019 International Conference and Exhibition. Two androgen receptor HCS assays are presented, one to test for endocrine disrupting chemicals, and another used to identify androgenic activity associated with drugs, chemicals, or environmental samples. Four manuscripts describe HCS applications to more physiologically relevant three-dimensional cell culture models compatible with drug discovery. Three manuscripts describe image-based multiplexed cell painting HCS assays that extract numerous morphological features from cells that can be organized into profiles that correspond to distinct cellular phenotypes. Cellular phenotypes were used to characterize the biological activity and toxicology of environmental chemicals, to identify selectively active novel leads or drugs for repurposing for esophageal adenocarcinoma, and to provide insight into mechanisms of cell death ranging from apoptosis to necrosis. An application note describes software for deep learning-based image analysis to process large volumes of complex image data at a quality and speed compatible with phenotypic HCS. An HCS assay compares image segmentation to machine learning image analysis methods to quantify aggresomes, the perinuclear structures on microtubules where misfolded proteins accumulate.

Articles of original research in the special issue include:

- High-Content Phenotypic Profiling in Oesophageal Adenocarcinoma Identifies Selectively Active Classes of Compounds for Repurposing and Chemical Starting Points for Novel Drug Discovery.
- Advanced High-Throughput Imaging Applications of Clonogenicity in Cancer
- A High-Throughput Image Cytometry Method for the Formation, Morphometric, and Viability Analysis of Drug-Treated Mammospheres
- High-Throughput Image Screening to Find Cell Aggresome Modulators
- A Framework for Optimized High-Content Imaging of 3D models for Drug Discovery

- A Selective HCA Assay Using Chimeric Androgen Receptor That Rapidly Characterizes Androgenic Chemicals
- Single Cell Analysis of AR Levels by High-Throughput Microscopy: Development of Quality Control Pipelines and Endocrine Disruptor Chemicals Testing
- Comparison of Cell and Organoid-Level Analysis of Patient-Derived 3D Organoids to Evaluate Tumor Cell Growth Dynamics and Drug Response
- Phenotypic Profiling of Reference Chemicals Across Biologically Diverse Cell Types Using the Cell Painting Assay
- Computational Determination of Genes to Control Axon Growth

Additional articles and reviews within the August special issue include:

- HighVia: An Inexpensive and Flexible Live-cell High Content Screening Pipeline to Assess Cellular Toxicity
- Expanding our Understanding of Multicellular Systems: High Content Imaging Meets Computational Modeling
- Deep Learning-Based HCS Image Analysis for the Enterprise

Access to August's *SLAS Discovery* issue is available at https://journals.sagepub.com/toc/jbxb/25/7 through September 20. For more information about SLAS and its journals, visit www.slas.org/journals. Access a "behind the scenes" look at the latest issue with SLAS Discovery Author Insights podcast. Tune in by visiting https://www.buzzsprout.com/1099559.

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SLAS (Society for Laboratory Automation and Screening) is an international community of 16,000 professionals and students dedicated to life sciences discovery and technology. The SLAS mission is to bring together researchers in academia, industry and government to advance life sciences discovery and technology via education, knowledge exchange and global community building.

SLAS Discovery: Advancing the Science of Drug Discovery, *2019 Impact Factor 2.195. Editor-in-Chief Robert M. Campbell, Ph.D., Eli Lilly and Company, Indianapolis, IN (USA).*

SLAS Technology: Translating Life Sciences Innovation, *2019 Impact Factor 2.174. Editor-in-Chief Edward Kai-Hua Chow, Ph.D., National University of Singapore (Singapore).*

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