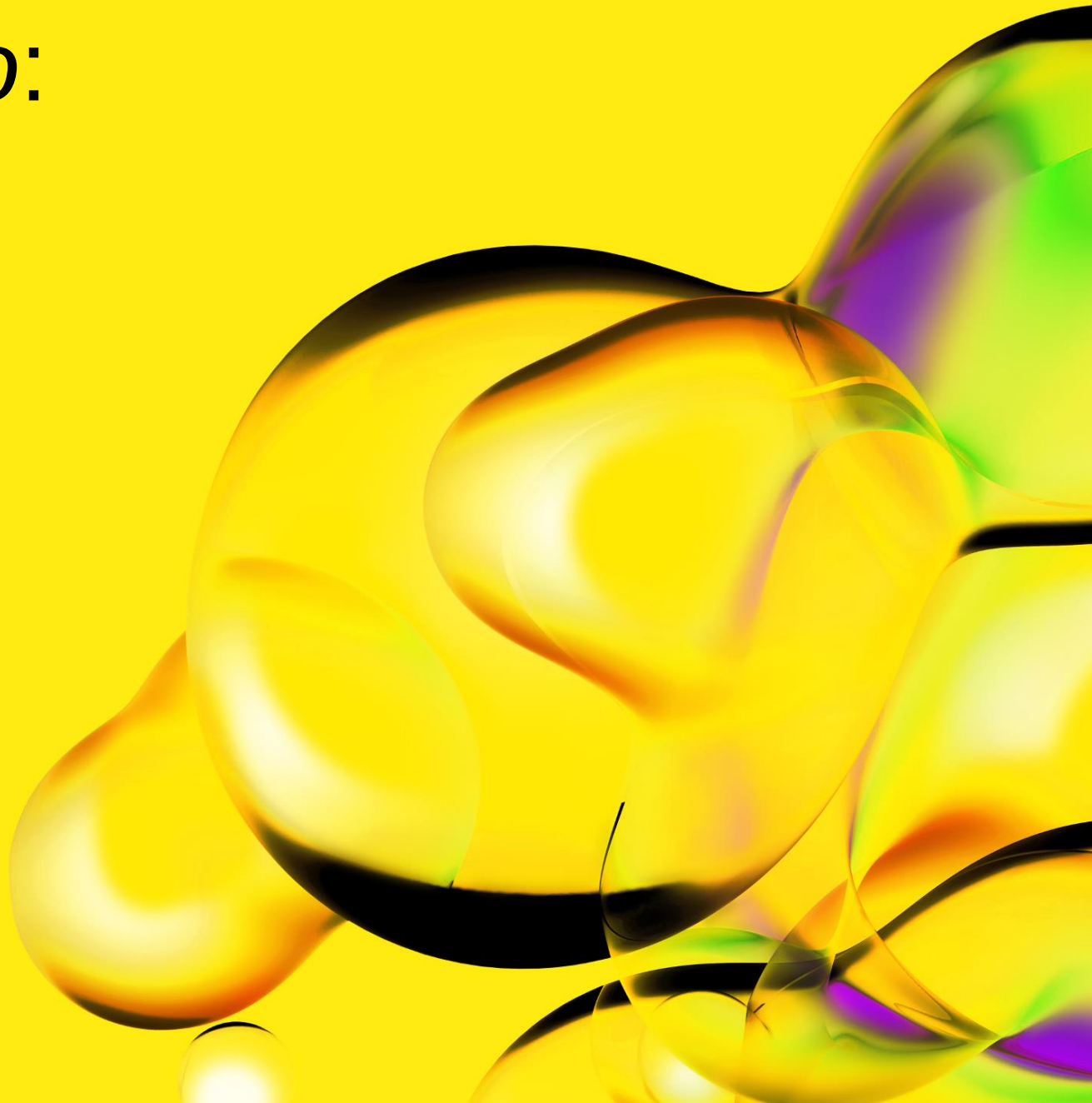
3D cell models *in vitro*: going further

Solutions for more relevant & robust data from complex *in vitro* biological models



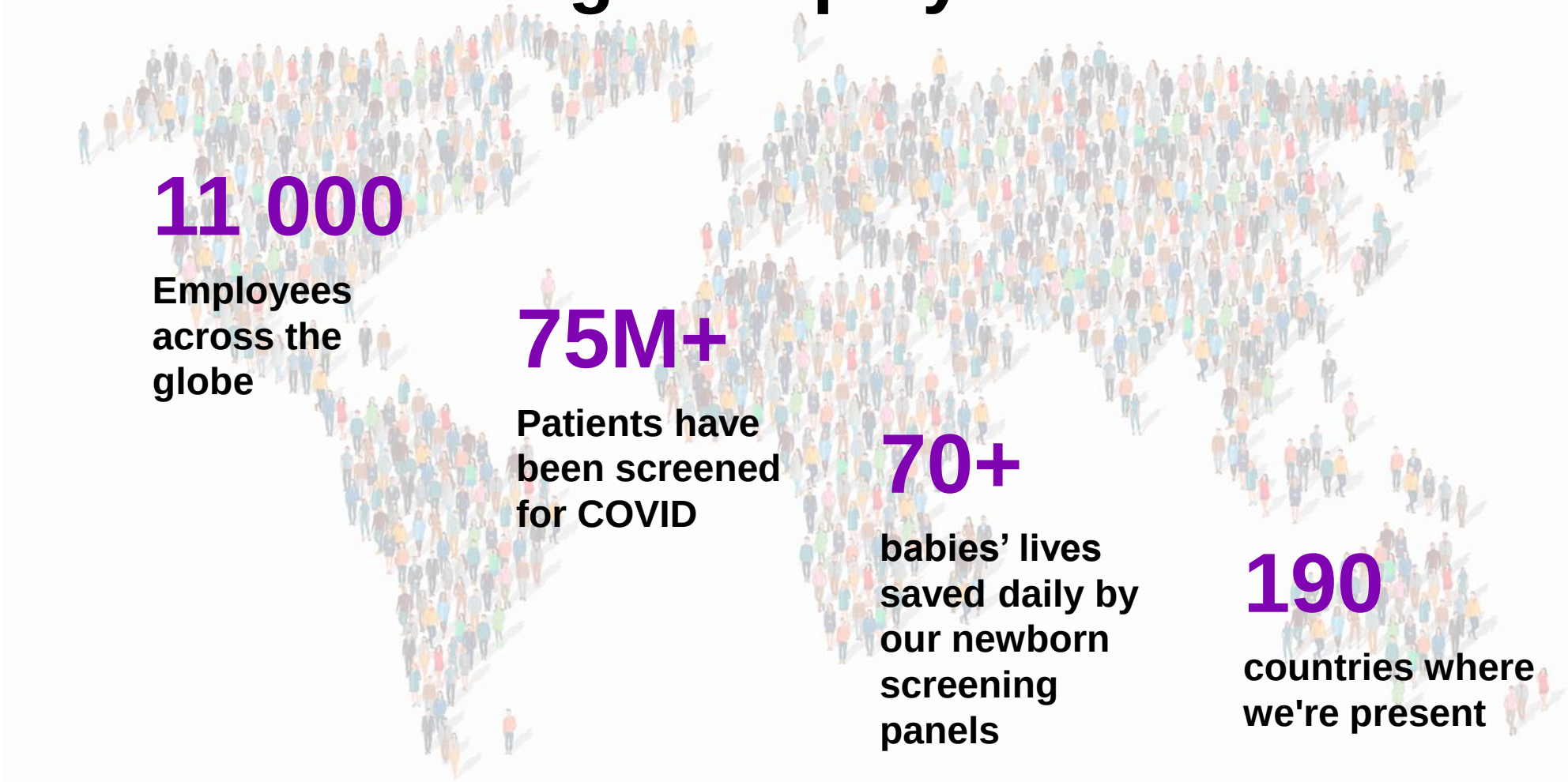
June 6 & 7, 2023

revvity
?

PerkinElmer®
For the Better

- Life Sciences
- Diagnostic
- Informatics
- Industrial & Food Analysis
- Asset management

A global player



11 000

Employees across the globe

75M+

Patients have been screened for COVID

70+

babies' lives saved daily by our newborn screening panels

190

countries where we're present

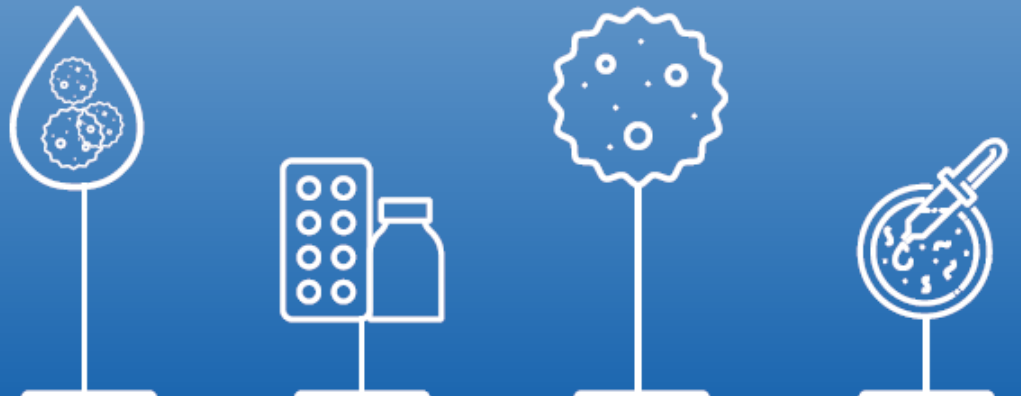
3D cell models *in vitro*: going further

Solutions for more relevant & robust data
from complex *in vitro* biological models

Bring individual solutions…

& make them work together

SAMPLE PREP



SEED → TREAT → GROW → STAIN

Cell Counters
- Nexcelom Cellaca
- Nexcelom Celigo
- Nexcelom Cellometer

Cell models
- Horizon Ready-to-Go Cell Lines
- Horizon Custom Cell Line

Microplates
- PhenoPlate
- ViewPlate
- CellCarrier Spheroid ULA

3D Gels
- GrowDex® Hydrogels

siRNAs
- Dharmacon ON-TARGETplus
- Dharmacon Accell
- Dharmacon siGENOME
- Dharmacon Lincode
- Dharmacon RNAi libraries
- Dharmacon shRNA

CRISPR
- Dharmacon Edit-R
- Dharmacon CRISPRmod
- Dharmacon CRISPR libraries

Chemistry

Compounds

Fluorescent Antibodies
- PhenoVue Secondary Antibodies
- BioLegend Primary and Secondary Antibodies

Fluorescent Dyes
- PhenoVue Organelle and Compartment Stains
- PhenoVue Cell Painting Kits
- PhenoVue Cell Function Indicators

IMAGING

AUTOMATION

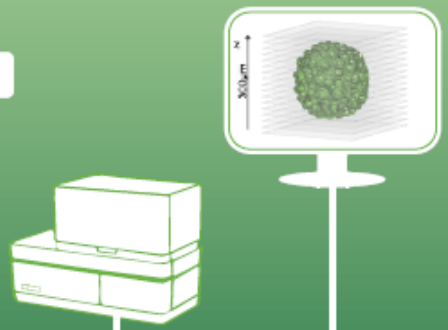


IMAGE → ANALYSIS

High-Content Imaging
- Operetta CLS HCA System
- Opera Phenix Plus HCS System

Live-Cell Imaging
- MuviCyte Live-Cell Imaging System

Automation and Liquid Handling
- explorer G3 Workstation
- JANUS G3 Automated Liquid Handling Workstation
- plate::works Scheduling Software

ANALYSIS

DATA ANALYSIS

Image Analysis
- Harmony HCA Software
- Signals Image Artist Image Analysis and Management Platform

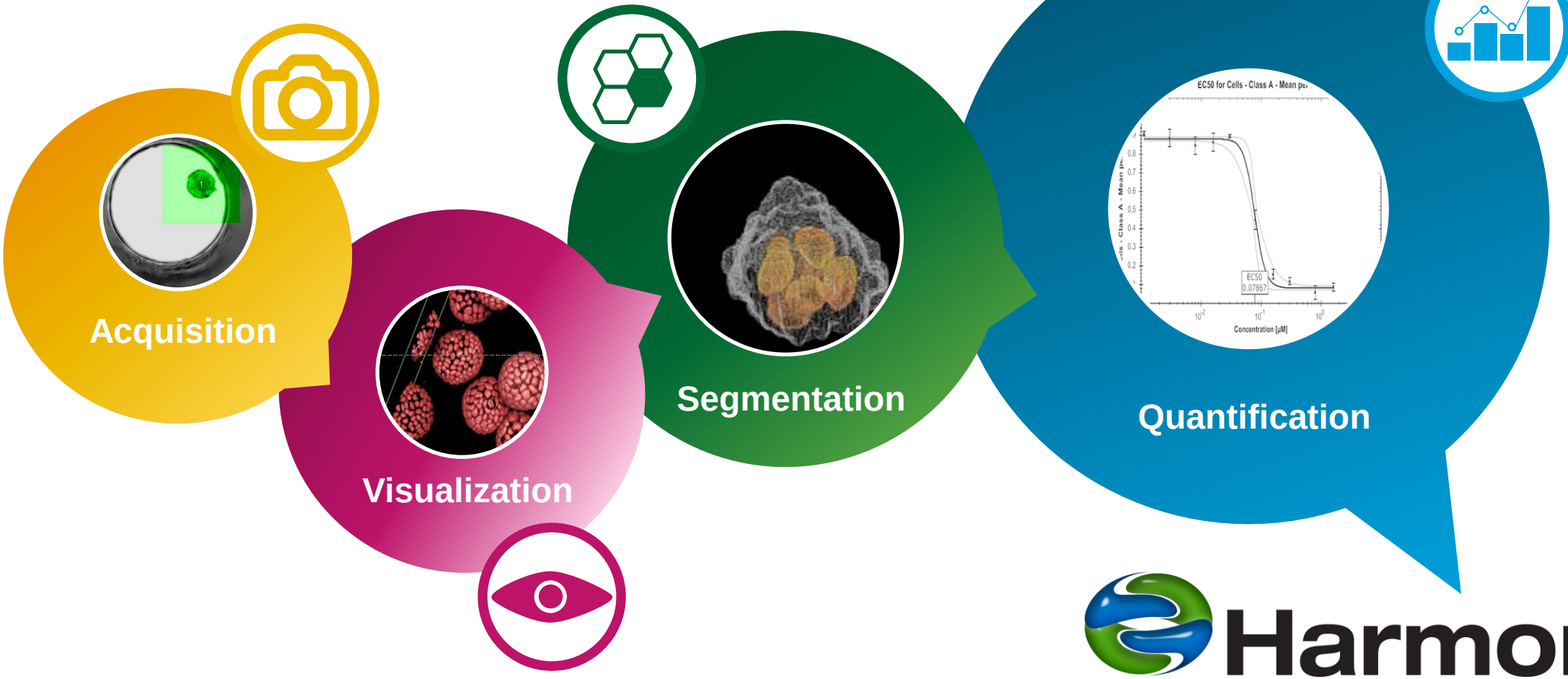
Machine Learning

Data Management
- Signals Image Artist
- Signals VitroVivo Lab Data Management and Analysis Platform

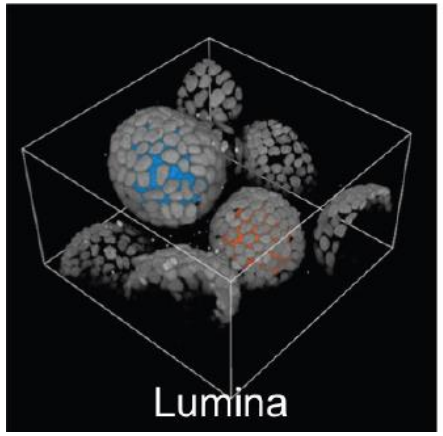
Statistics
- Signals VitroVivo

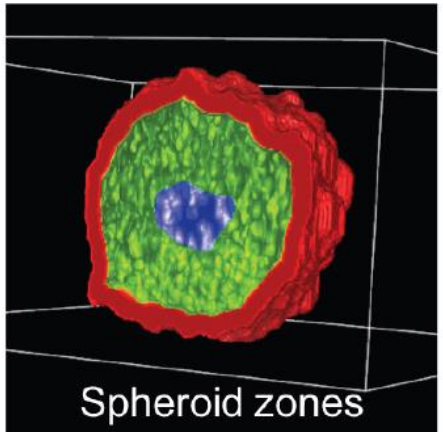
High Content Imaging & 3D samples ?

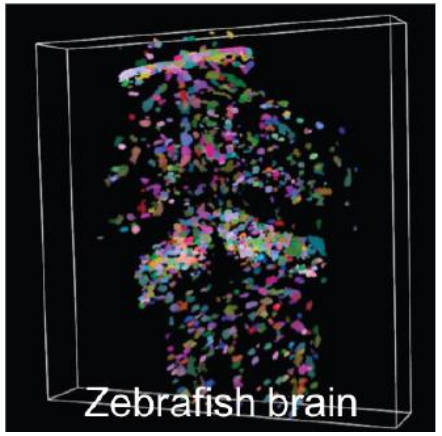
Operetta CLS
Opera Phenix Plus

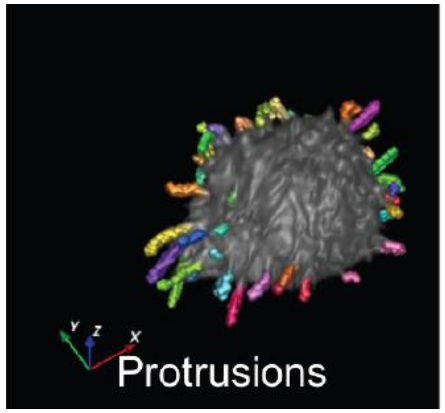


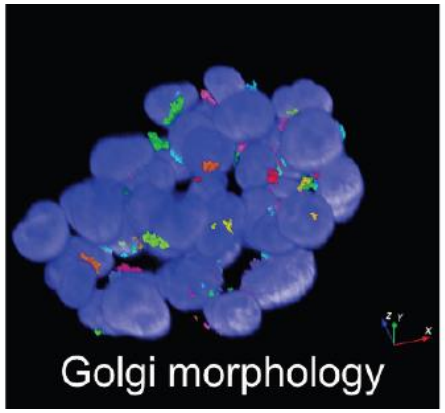
Harmony®

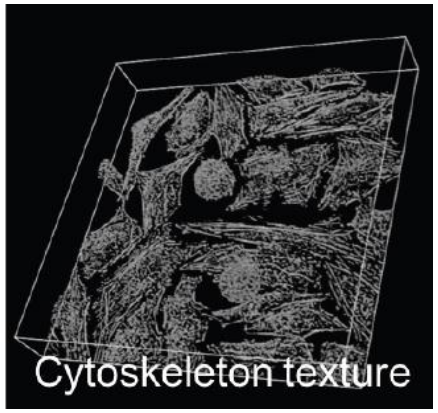


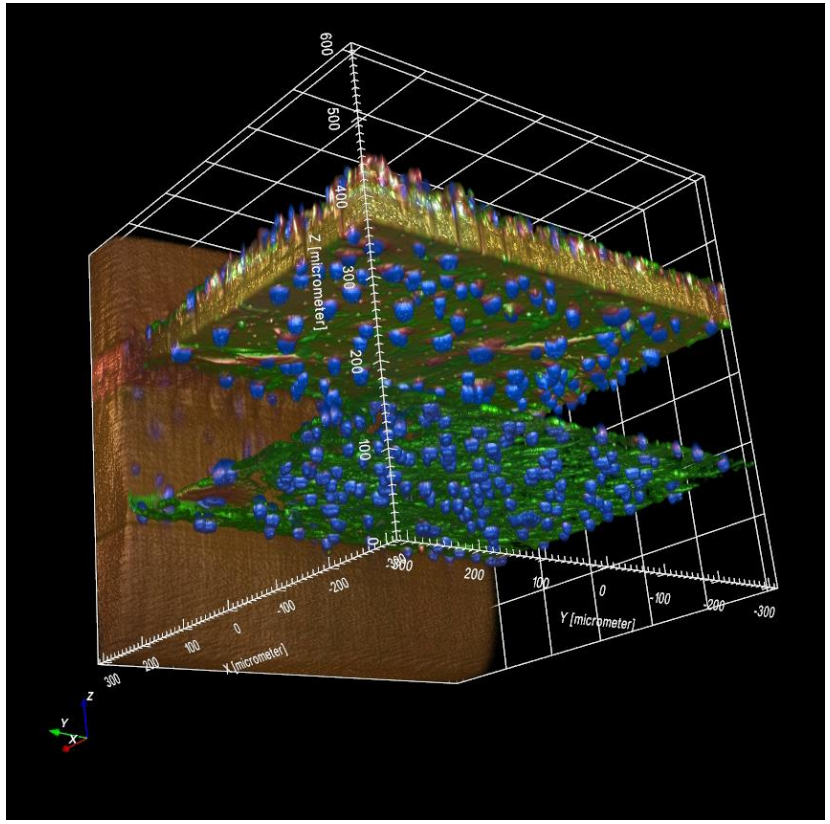












Liver model in a microfluidic device (Emulate)

explorer G3™ workstation

Custom, Modular, Scalable Workflow Automation Solutions for HCS

explorer™ G3 workstation **iX15**

(EXAMPLE CONFIGURATION)

- Designed to Run24/7
- Modular & Scalable
- Compact, Space Saving Design
- Real-Time Decision Making
- >150 Instrument Drivers Available
- Expertise In Both Instruments & Integrations

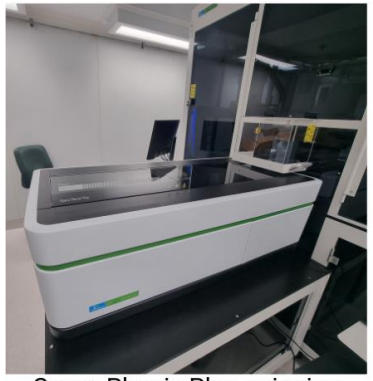
explorer™ G3 workstation **iX40+**

(EXAMPLE CONFIGURATION with optional enclosure)

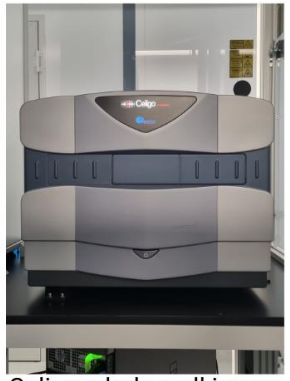
Australian Organoid Facility (AOF)

"We use state of the art automation technologies to produce organoids at low cost."

- High throughput multi-tissue organoid production.
- Organoid model, optimisation and upscaling services.
- High throughput functional/drug screening.
- High content imaging and analysis.
- High throughput nucleic acid extraction.
- Collaborative development of new and innovative organoid models.

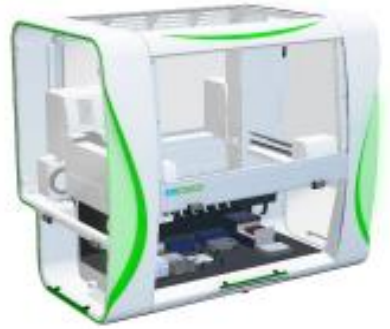


Opera Phenix Plus spinning disk confocal system



Celigo whole-well image cytometer

Cell Explorer G3 Workstation (PerkinElmer)



Janus automated liquid handler

Chemagic 360 automated nucleic acid purification

Leveraging Functional Genomics for Precision Oncology:

Automated screening of patient derived organoid models to identify effective therapeutics

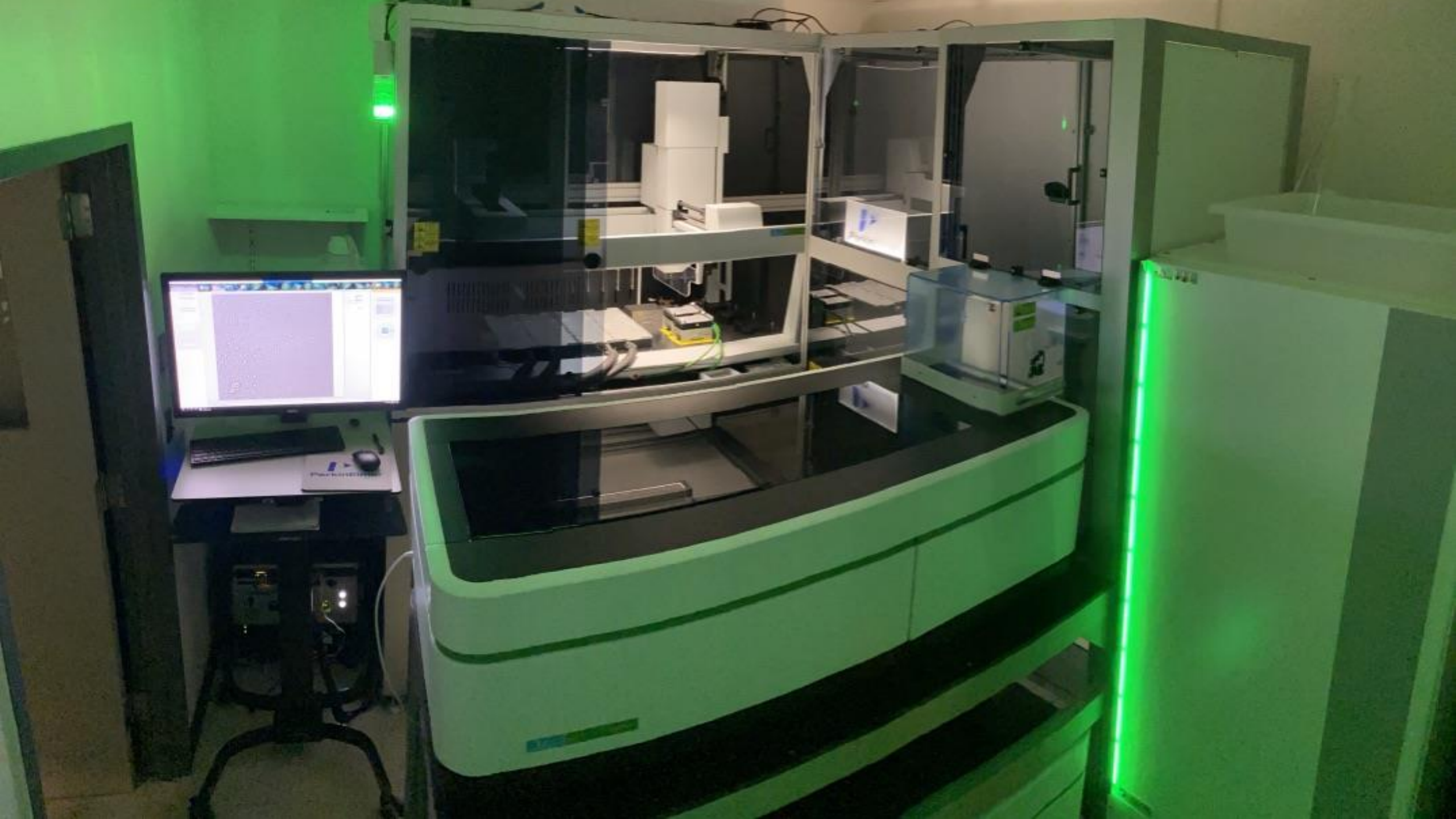
Benjamin D. Hopkins, PhD

Assistant Professor

Department of Oncological Sciences &

Department of Genetics and Genomic Sciences

Icahn School of Medicine at Mount Sinai



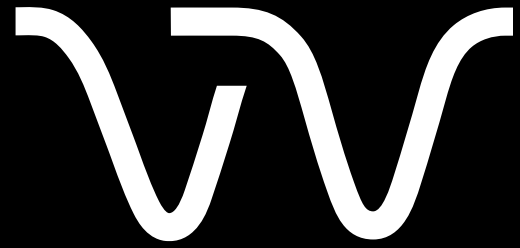
explorer™ G3 workstation
HIGH CONTENT SCREENING

Seeding of cells embeded into matrigel
+ medium addition:

15 plates (96 or 384 wells) in 20 minutes

Workstation Format	custom
Application	High Content Screening
Installation Date	2019
Internal Reference	CXP74

THANK YOU!



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