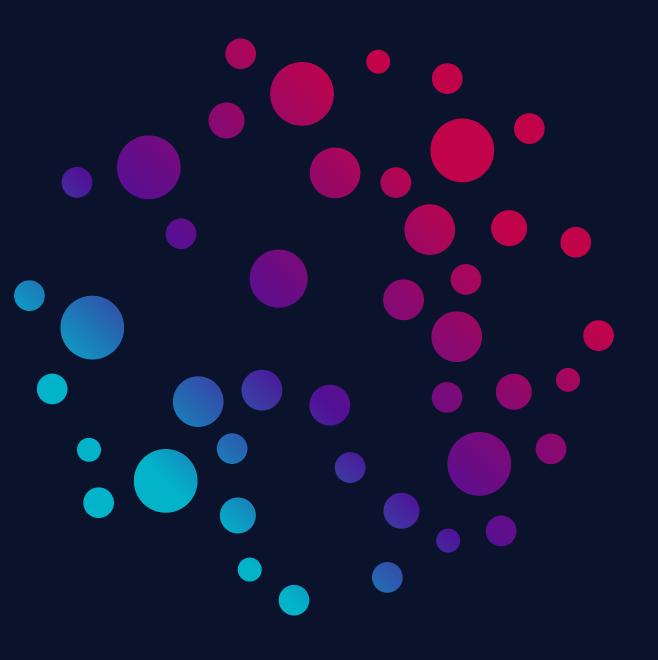


The Spatial Biology Company

Akoya's 2nd Annual Spatial Day

December 15, 2022



Disclaimer

Cautionary Note Regarding Forward-Looking Statements

This presentation includes express and implied "forward-looking statements." In some cases, you can identify forward-looking statements by terms such as " anticipate," "estimate," "expect,"" intend,"" may,"" might,"" plan,"" project,"" will,"" would,"" should,"" could," "can,"" predict,"" potential,"" or the negative of these terms, and similar expressions intended to identify forward-looking statements However, not all forward-looking statements contain these identifying words These statements may relate to our strategic plans or objectives, revenues or earnings projections, or other financial items. By their nature, these statements are subject to numerous uncertainties, including factors beyond our control, that could cause actual results, performance or achievement to differ materially and adversely from those anticipated or implied in the statements You should not rely upon forward-looking statements as predictions of future events. Although our management believes that the expectations reflected in our statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur. Moreover, neither we, nor any other person, assumes responsibility for the accuracy and completeness of these statements are made and should not be construed as statements of fact. We undertake no obligation to update these forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of unanticipated events.

Market Industry Data

Projections, estimates, industry data and information contained in this presentation, including the Company's general expectations and market position and market opportunity, are based on information from third-party sources and management estimates Although the Company believes that its third-party sources are reliable, the Company cannot guarantee the accuracy or completeness of its sources. The Company's estimates are derived from third-party sources, publicly available information, the Company's knowledge of its industry and assumptions based on such information and knowledge. The Company's estimates have not been verified by any independent source All of the projections, estimates, market data and industry information used in this presentation involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such information. In addition, projections, estimates and assumptions relating to the Company's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including, but not limited to, those described above, that could cause future performance to differ materially from the Company's expressed projections, estimates and assumptions or those provided by third parties.

Welcome & Introduction



Brian McKelligon

CEO, Akoya Biosciences





Spatial Day Agenda

Welcome & Introduction	Brian McKelligon, Akoya Biosciences
	Niro Ramachandran, Ph.D., Akoya Biosciences
New Products in Discovery & Translational Spatial Biology	Oliver Braubach, Ph.D., Akoya Biosciences
	Guest Speakers:
	Elizabeth Neumann, Ph.D., UC Davis
	Arutha Kulasinghe, Ph.D., University of Queensland
	<u>Q&A Roundtable</u> Hosted by Niro Ramachandran
Akoya's Clinical Vision	Gavin Gordon, Ph.D., Akoya Biosciences
	Guest Speakers:
	Laura Esserman, M.D., M.B.A., UCSF
	Scott Rodig, M.D., Ph.D., Dana-Farber, Brigham & Women's & Harvard
	Manuel Salto-Tellez, M.D., Queen's University Belfast & ICR
	<u>Q&A Roundtable</u> Hosted by Gavin Gordon
Closing Remarks	Brian McKelligon, Akoya Biosciences



4

Akoya is Leading the Spatial Biology Revolution

Transforming Discovery to Diagnostics



Best-in-class platform requirements

Fastest, multiomic, single-cell imaging with subcellular resolution on whole slide



Complete end-to-end solutions

Instruments, reagents, software & services



Established market leader with largest installed base 860+ instruments installed worldwide

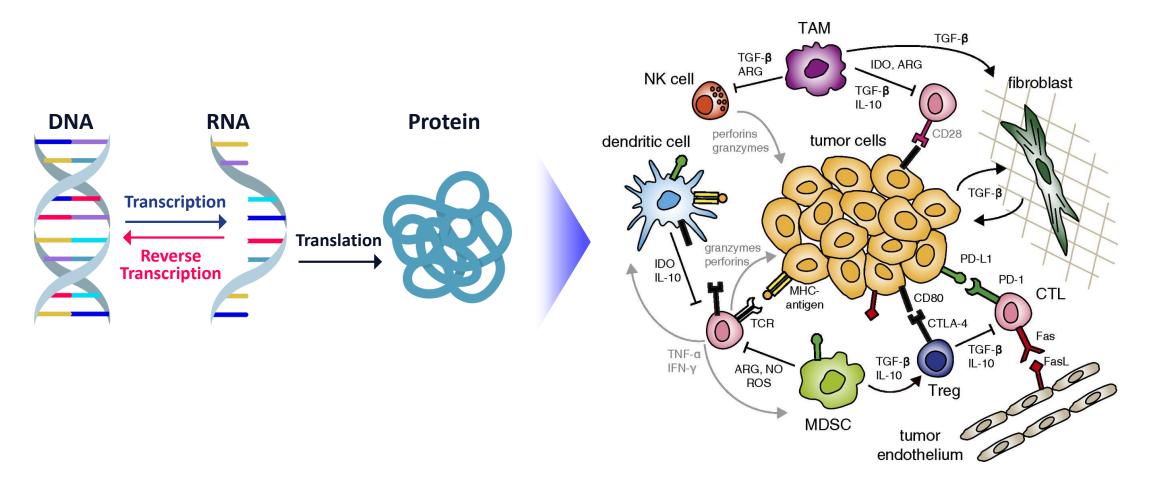


Greatest number of high-impact publications 690+ total publications



Driving Towards a Deeper Understanding of Biology

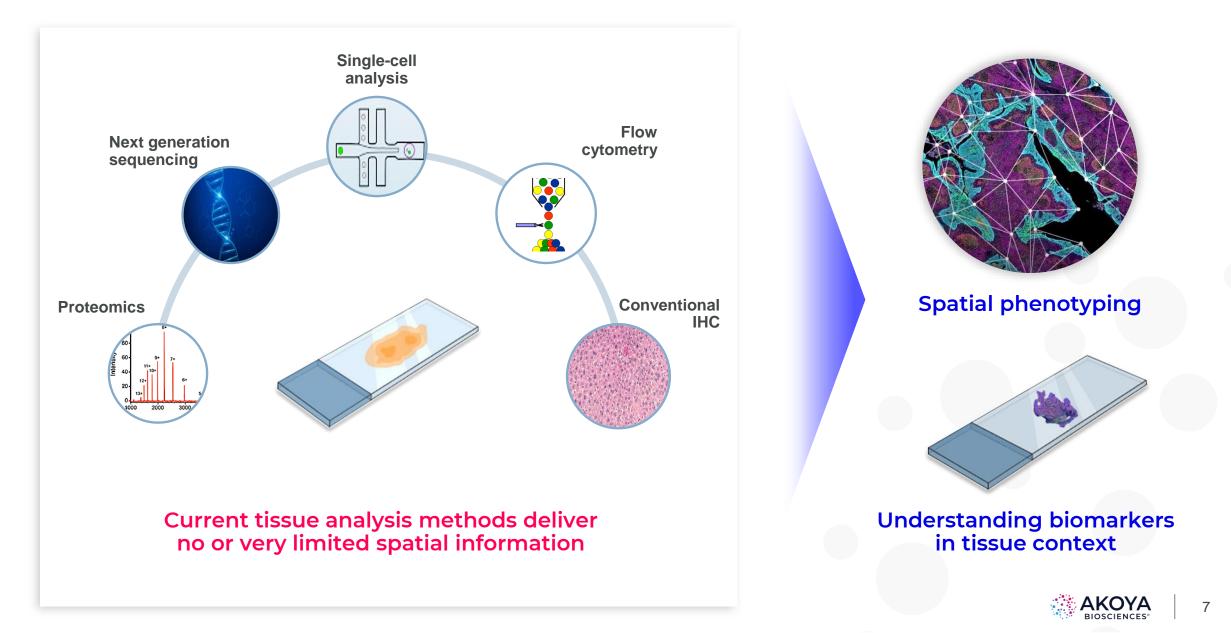
Advancing Next Generation Tissue Analysis



Understanding disease progression & response to therapy requires <u>UNBIASED</u> mapping of tissue architecture

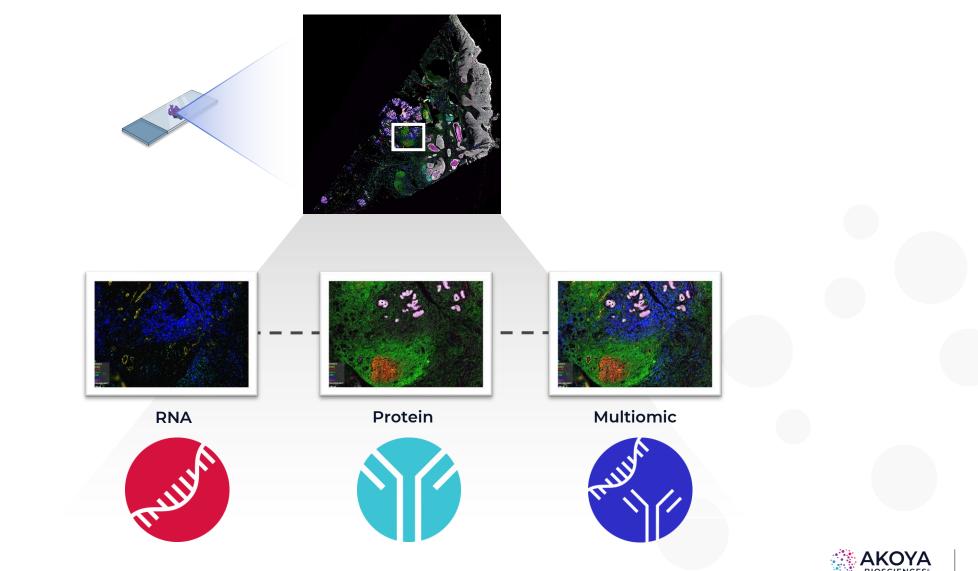


Current Tissue Analysis Methods Migrate to Spatial



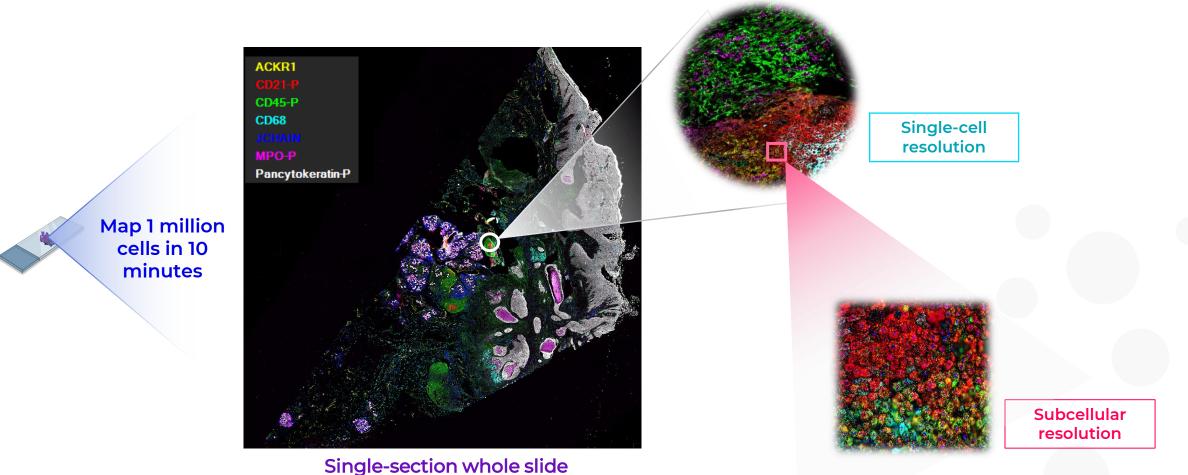
Akoya's Industry Leading Spatial Platform

High-plex and High-throughput Protein & RNA Analysis



Akoya is Transforming Tissue Analysis

Mapping Whole Tissue Unlocks an Understanding of Disease Progression & Response to Therapy



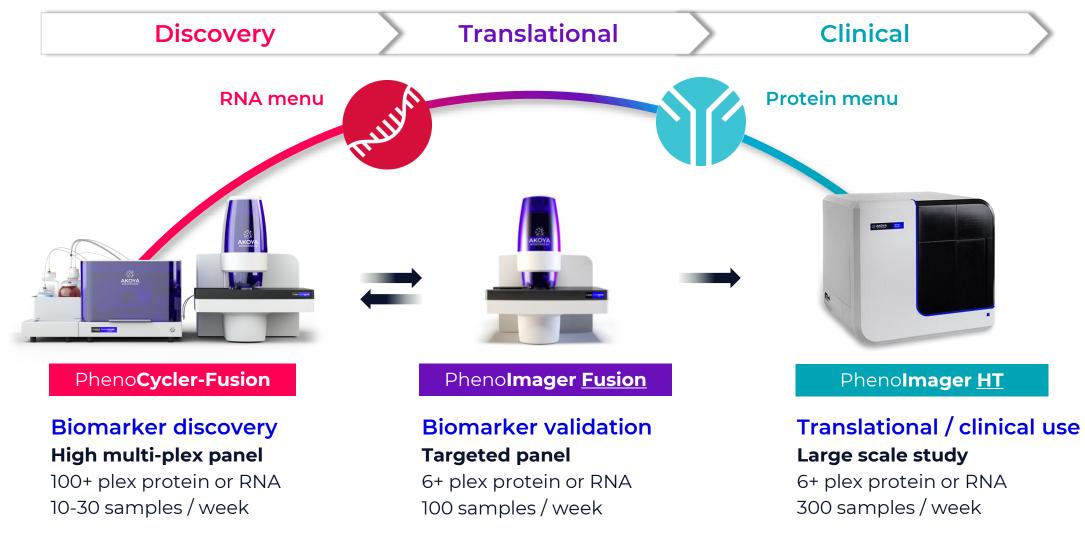
Single Section Whole Side

The LOCATION of key cell types, proteins & transcripts drives tumor activity & immune response



Complete Solutions – From Discovery to Validation to Clinical

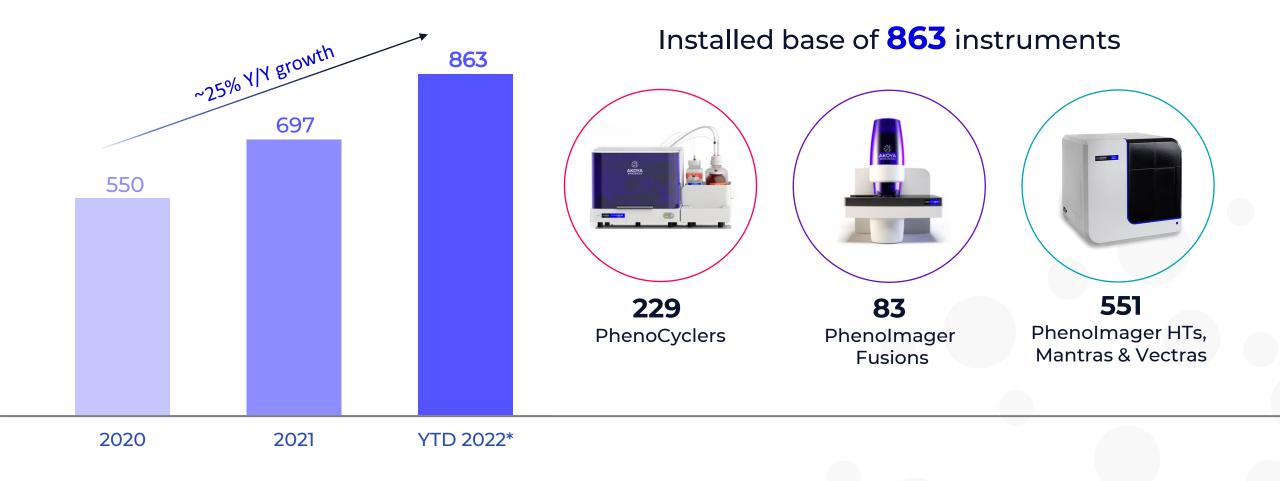
Driving Application Expansion & System Utilization





Largest & Rapidly Growing Installed Base

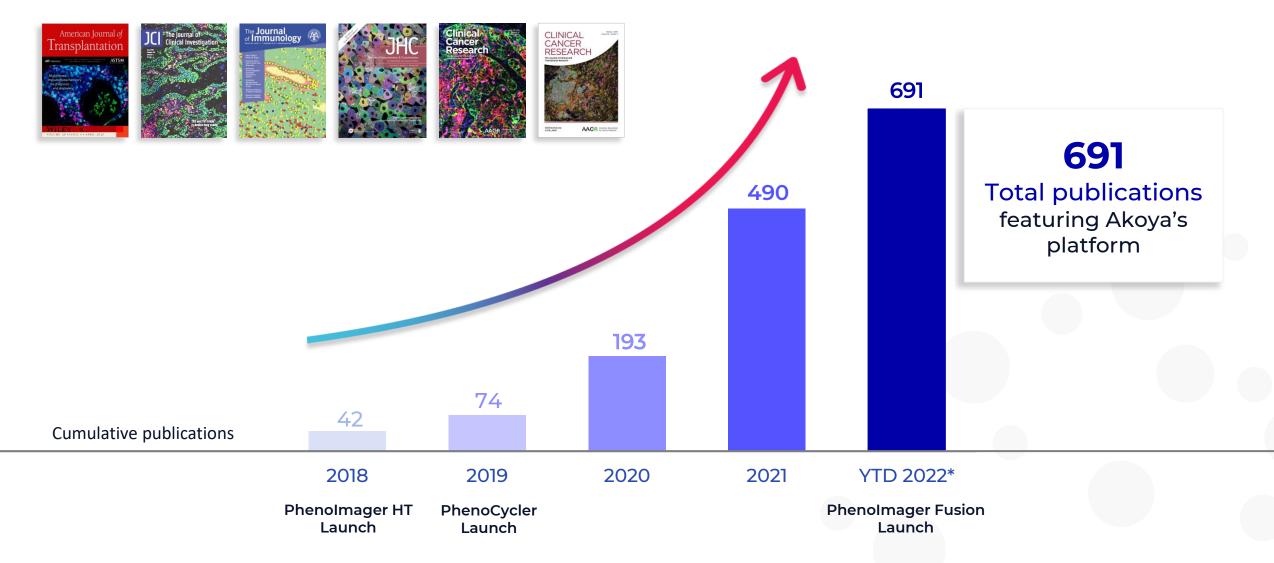
Adoption Across Discovery, Translational & Clinical Markets





Accelerating & Market Leading Publication Volume

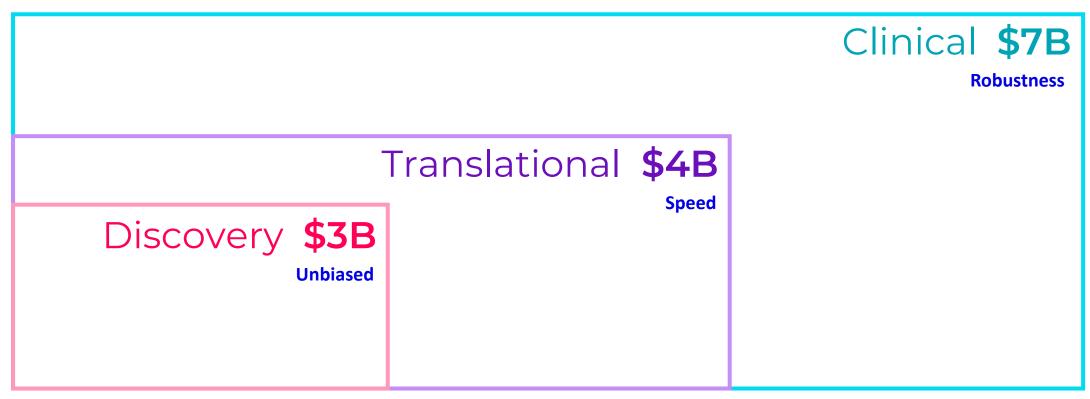
Spatial Biology is Driving Major Discoveries Across Multiple Therapeutic Areas





Immediate Opportunity in Discovery & Translational Markets with Clinical Rapidly Emerging

Estimated Total Addressable Market (TAM) ~ \$14B



Akoya is meeting customer & market segment requirements to drive market expansion



Drivers of Spatial Biology Market Growth Over Next 5 Years

DeciBio Projects < 10% of TAM to be Realized by 2027*

Spatial Biology Market Trends

\$M CAGR \$1.500 \$1,200M 30% \$160M >100%* Spatial biology market will grow 30% annually in the next 5 years \$1,000 Translational & clinical research to make \$360M 24% \$730M up the largest market segment Routine clinical dx expected to be the fastest growing market segment \$500 \$320M Multi-plex immunofluorescence (mIF) a \$680M 29% key technology growth driver \$0 2022 2025 2027

■ Routine Clinical Dx ■ Basic Research ■ Translational & Clinical Research

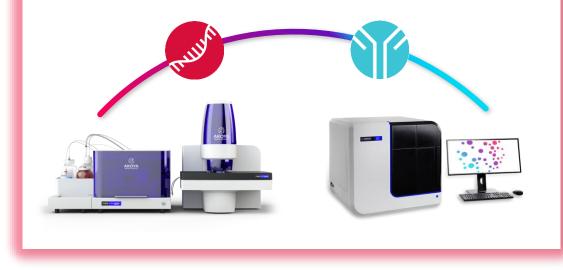
Akoya's Strategic Priorities

Drive Workflow Improvements & Success in Translational Market Drives Clinical Success

(7)

Accelerate Pull Through

- Expand menu of applications
- Platform improvements drive throughput
- Streamline data analysis & time to answer





Accelerate Clinical Journey

- Drive translational adoption Advanced Biopharma Solutions (ABS) CLIA Lab
- Deliver on the Acrivon CDx
- Expand & deliver on high value partnerships





New Product Introductions



Niro Ramachandran, Ph.D.

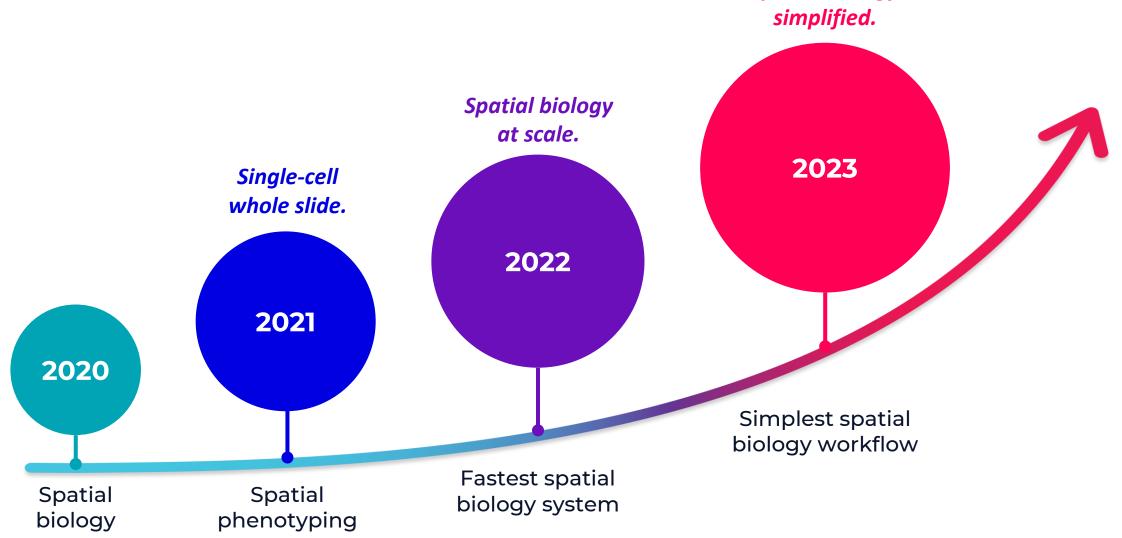
CBO, Akoya Biosciences





Evolution of Customer Needs in Spatial Biology

Emerging Need for Simplicity



Spatial biology



Path Towards Simplest Spatial Biology Solutions



Rapid menu expansion enabling more ready to use assays



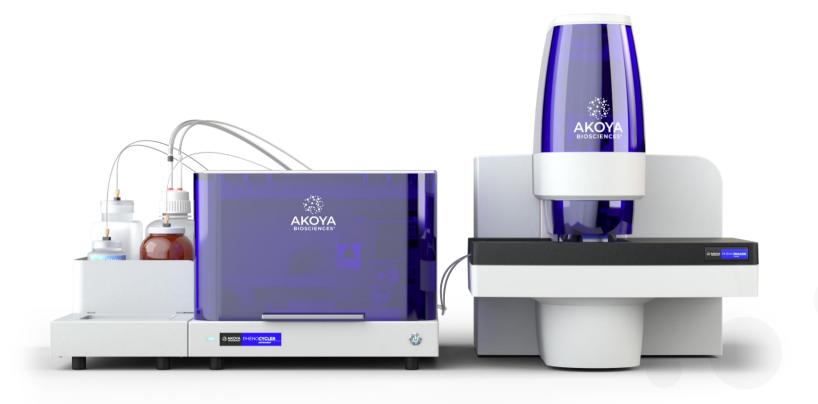
Faster workflows to meet project needs



Flexible data analysis to serve every user need



PhenoCycler-Fusion



2.0



Upgrading to the PhenoCycler-Fusion 2.0

	PhenoCycler-Fusion 1.0	PhenoCycler-Fusion 2.0
Content Menu	A-la-carte proteins	Panel-based protein & RNA
Panel Design	Optimization required	Ready-to-use
Throughput	~10 samples / week	~20 samples / week
Analysis	Real-time data compression, Akoya-provided	Data compression & rapidly growing ecosystem

PhenoCycler-Fusion 2.0 enables menu expansion, faster workflow, scaled experiments & improved analysis



20

RNAscope HiPlex v2 on PhenoCycler-Fusion 2.0

Extending Our RNA Solution Portfolio Through a Strategic Partnership with ACD



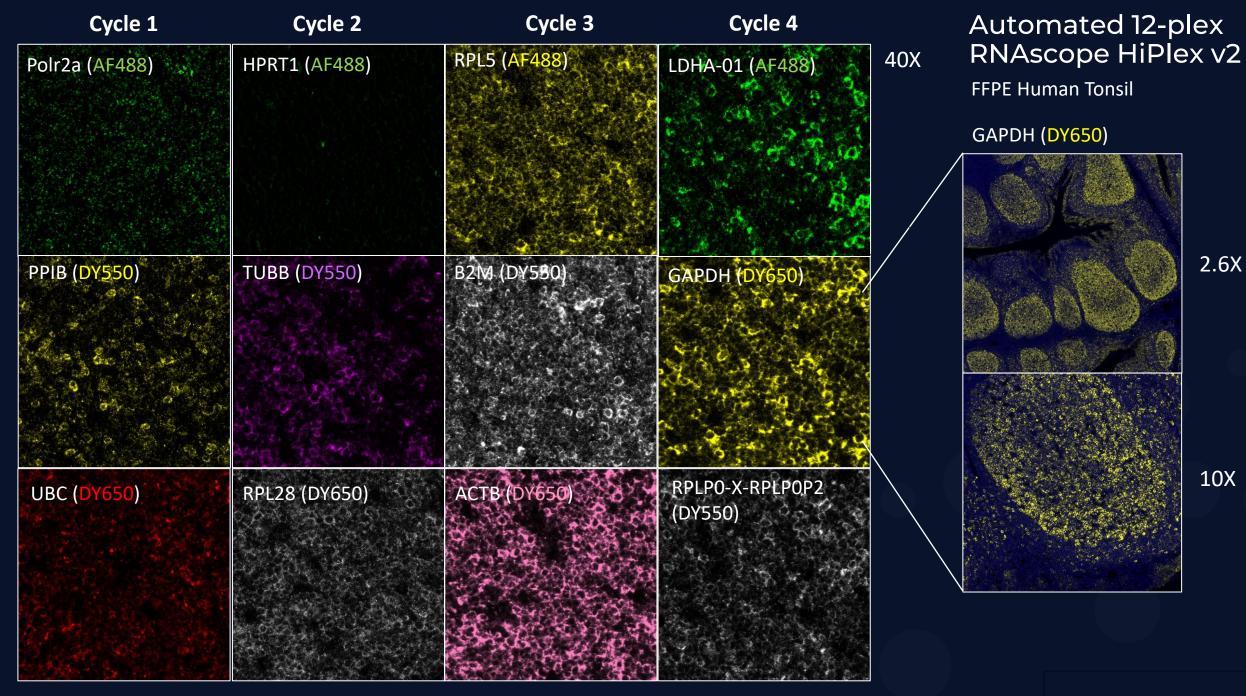
The leader in single-cell spatial proteomics with whole-slide imaging at single cell resolution



The **gold standard in low to mid-plex spatial** *in situ* **assays** based on proven RNAscope[™] technology

- RNAscope HiPlex v2
- complements Akoya's solution & empowers our customers with:
- A direct RNA detection technology
- Automated 12-plex RNA configuration
- Sample-to-data within 24 hours
- Expansion into new research areas
- Custom and/or defined panel flexibility



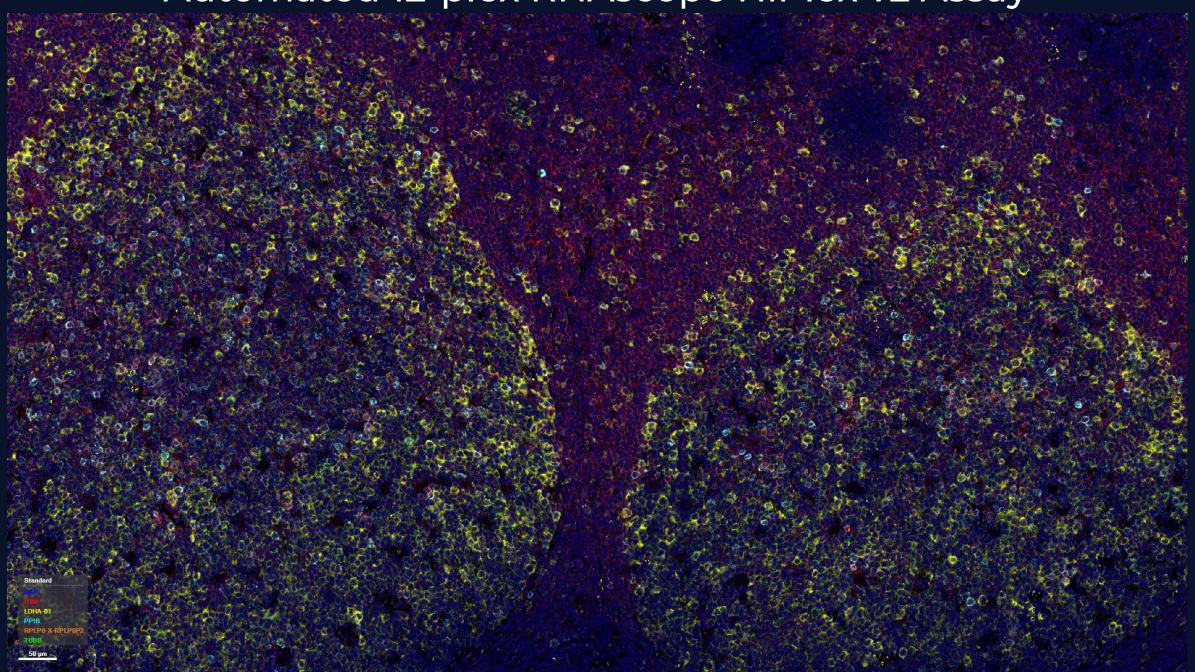


2.6X

10X

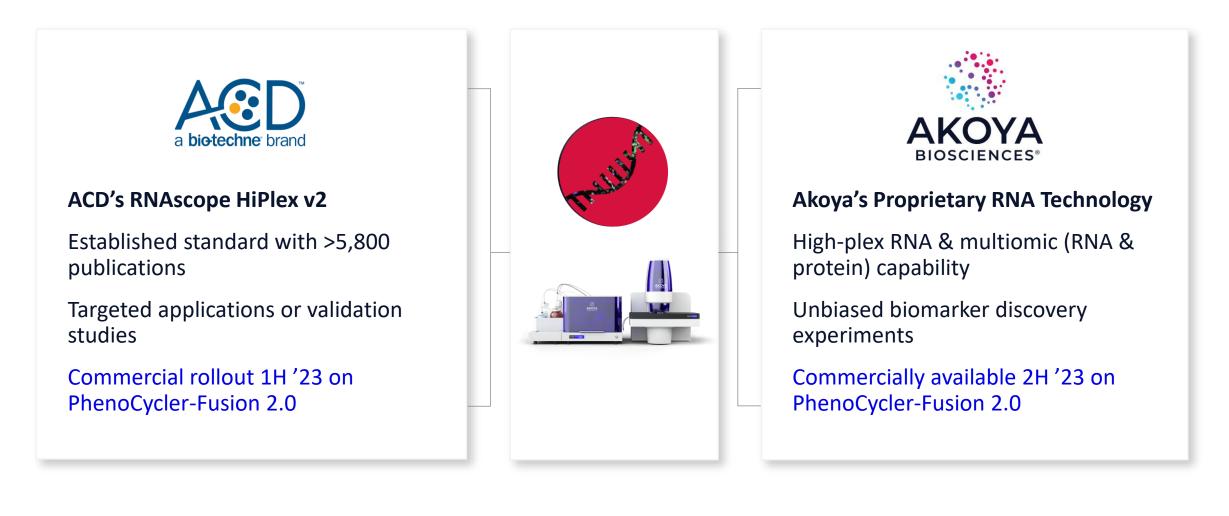
*For Research Use Only. Product Not Yet Commercially Available, Subject to Change

Automated 12-plex RNAscope HiPlex v2 Assay



A Suite of RNA Solutions with PhenoCycler-Fusion 2.0

Leveraging In Situ Cycling to Deliver a Growing Suite of Transcriptomics Solutions





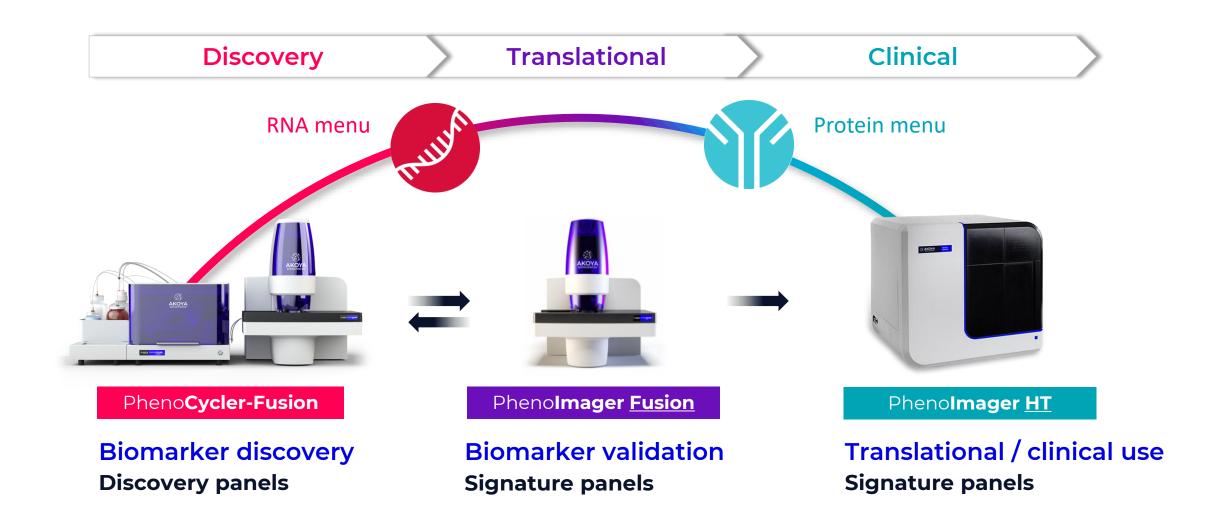
RNA or Protein? Discovery or Signatures?

> PD-1, PD-L1, FoxP3, CD3, CD8, CD4, CD20, CD68, CD163, PanCK, SOX10, S100

Introducing PhenoCode

A Premier Brand of Spatial Phenotyping Panels & Assays

Simplifying Solutions – Discovery to Validation to Clinical





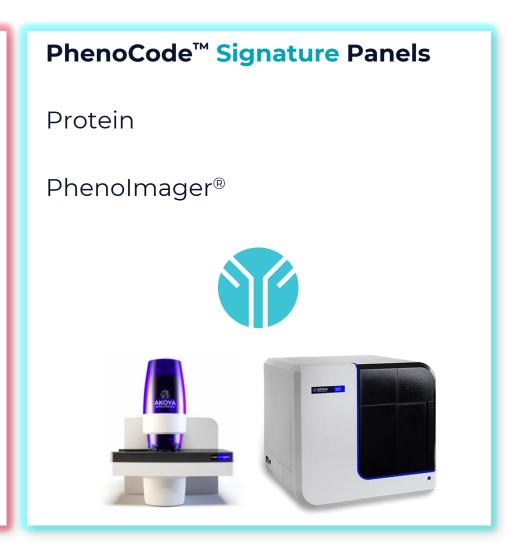
PhenoCode[™] Panels

Product

Chemistry

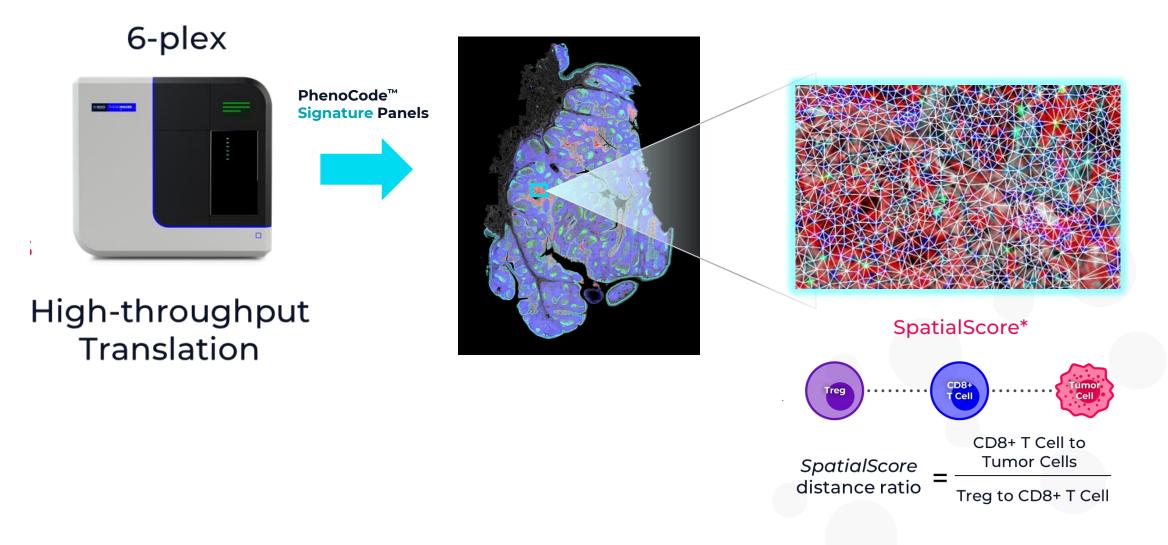
Workflow

PhenoCode[™] Discovery Panels Protein, RNA, or Multiomic PhenoCycler[®]



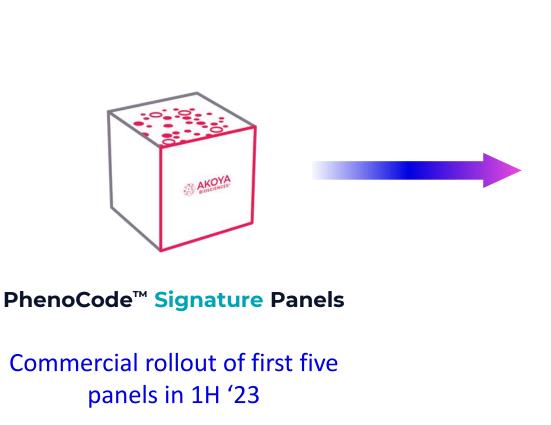


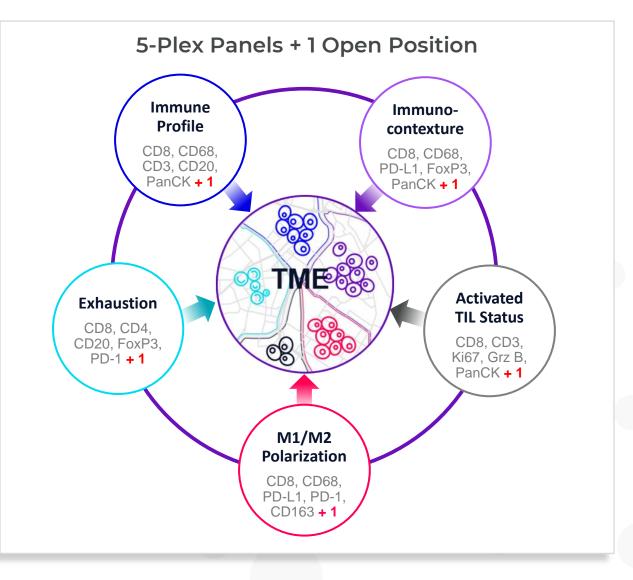
What is a Spatial Signature?





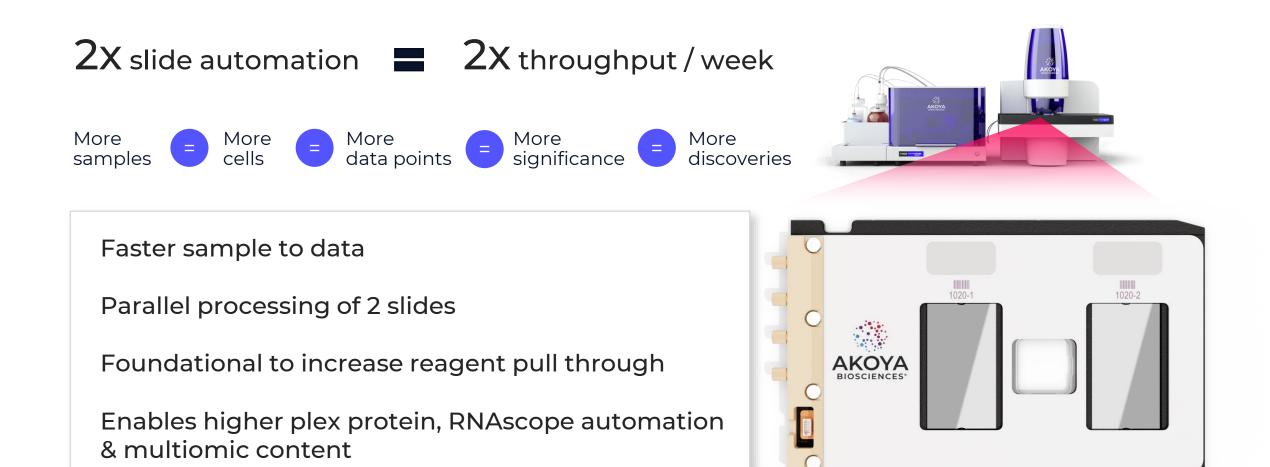
Enabling Panel-Based Immuno-Oncology Spatial Solutions







Dual-Slide Capability with PhenoCycler-Fusion 2.0



Commercial rollout through field upgrades beginning 1H '23



PhenoCycler-Fusion 2.0 slide carrier

Framework for Comprehensive Spatial Phenotyping

3

Spatial Functional State

Reveal functional spatial biology with multiomic RNA & protein expression mapping

Rare-cell discovery

2

Every cell matters. Discover novel phenotypes / contextual phenotypes across the whole slide

1

Phenotyping

Identify cells in-situ with single cell resolution

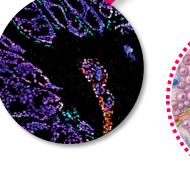
Spatial neighborhoods

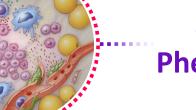
Discover how spatial neighbors self-organize to drive tissue biology

5

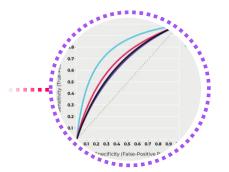
Spatial Signatures

Signature spatial events that correlate with clinical outcomes



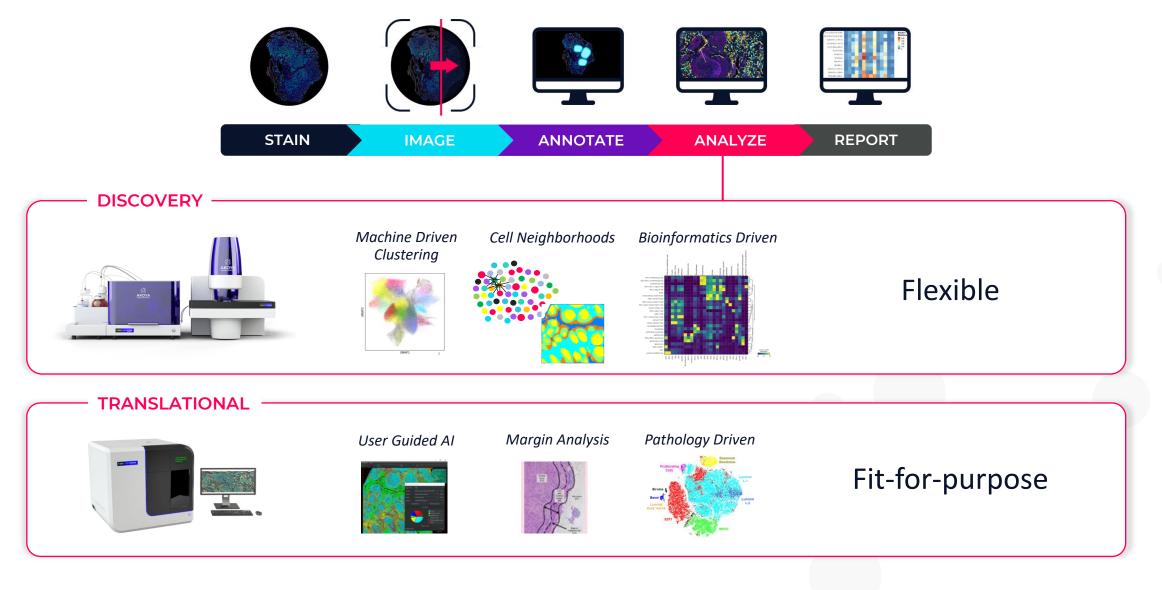


Spatial Phenotyping





Powerful Tools Required for Diverse Image Analysis Needs





Terabyte Size Files Prohibitive for Flexible Data Management

11000010 10100001011000100101110001110

1 TB

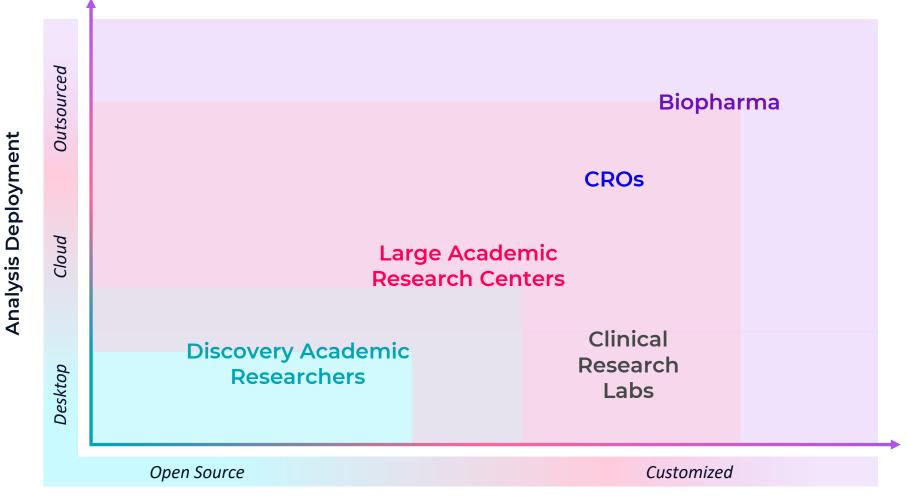


Few GBs

Akoya's proprietary file compression algorithm



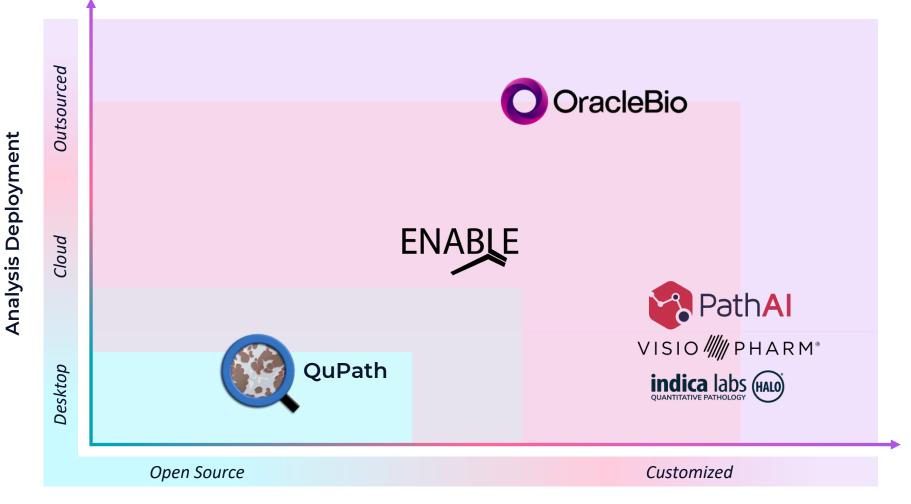
Software Adoption Depends on Flexible Data Analysis



Flexibility of Workflow



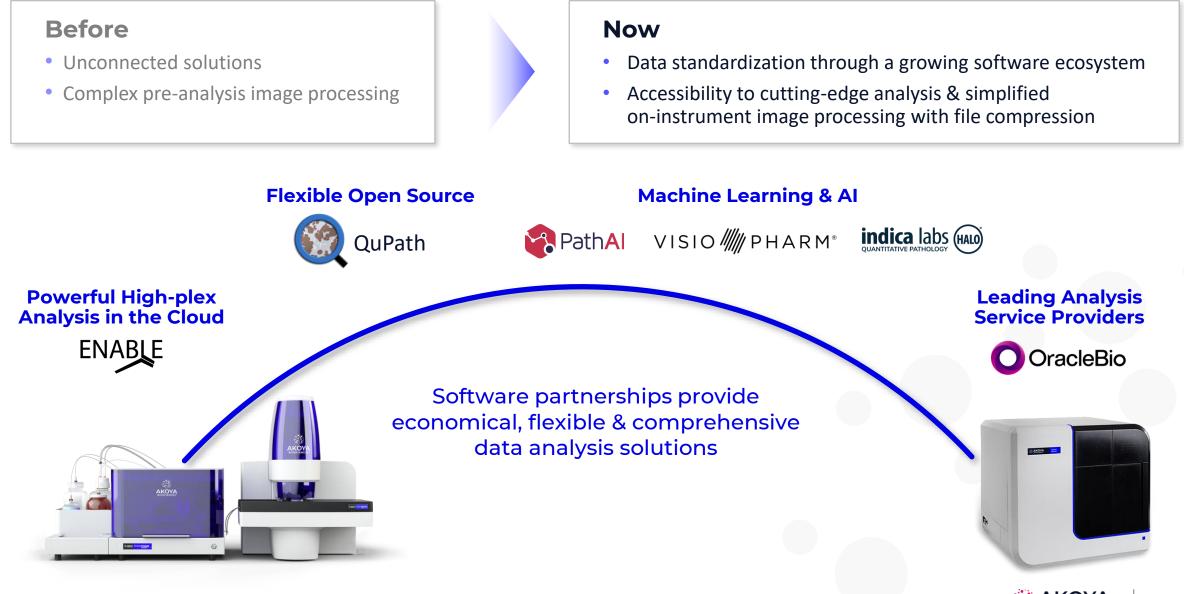
Software Adoption Depends on Flexible Data Analysis



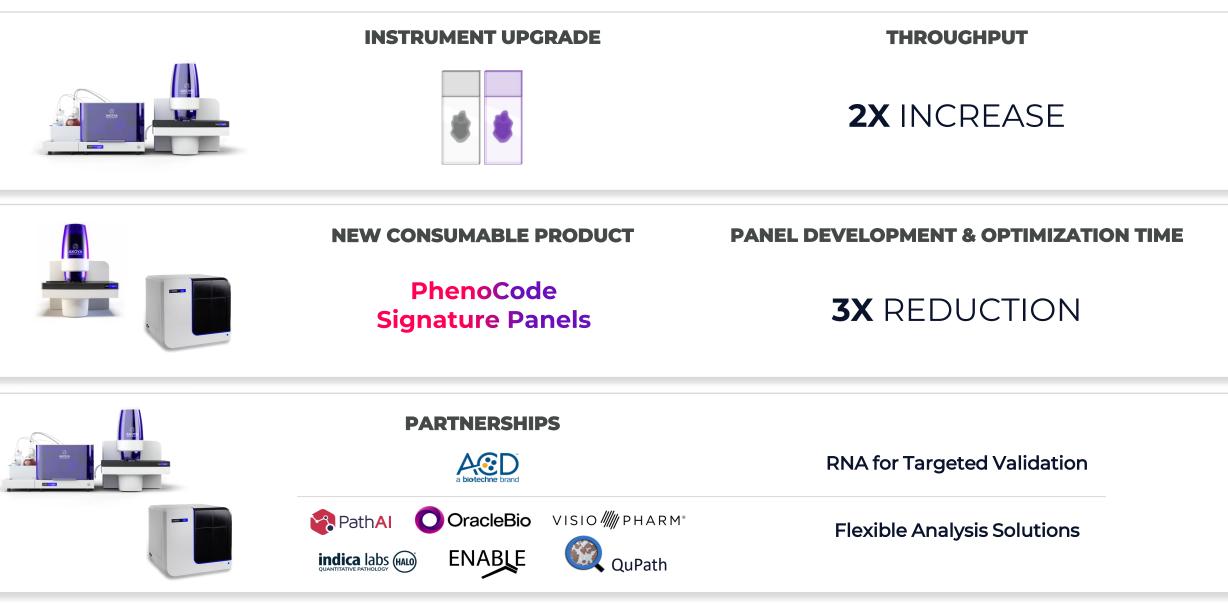
Flexibility of Workflow



Data Ecosystem Expansion Across Akoya's Workflows



Faster, Scalable & Flexible Workflow to Drive Pull Through



PhenoCode[™] Signature Panels



Oliver Braubach, Ph.D.

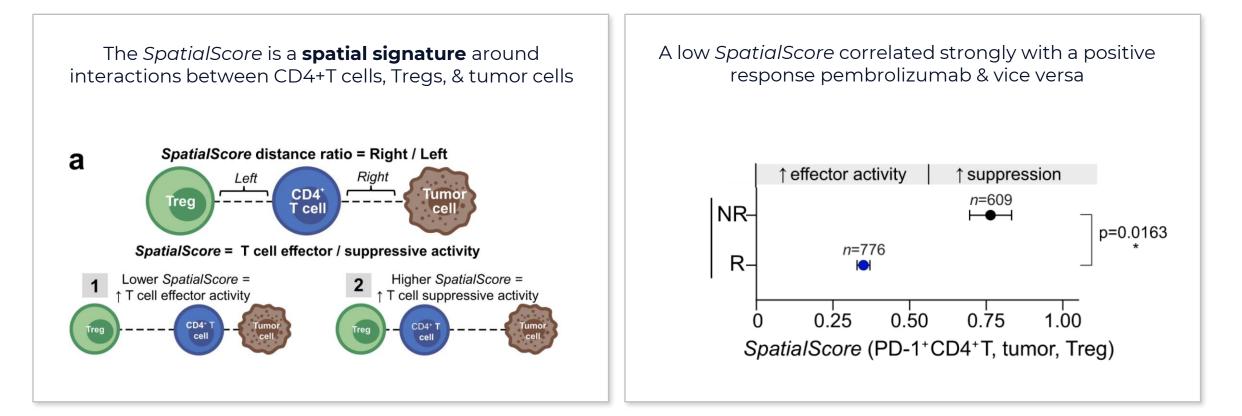
Director of Applications, Akoya Biosciences





Spatial Phenotyping & the Era of Spatial Biomarkers

"Spatial Biomarkers" Harbor Enormous Potential for Immunotherapy Patient Stratification

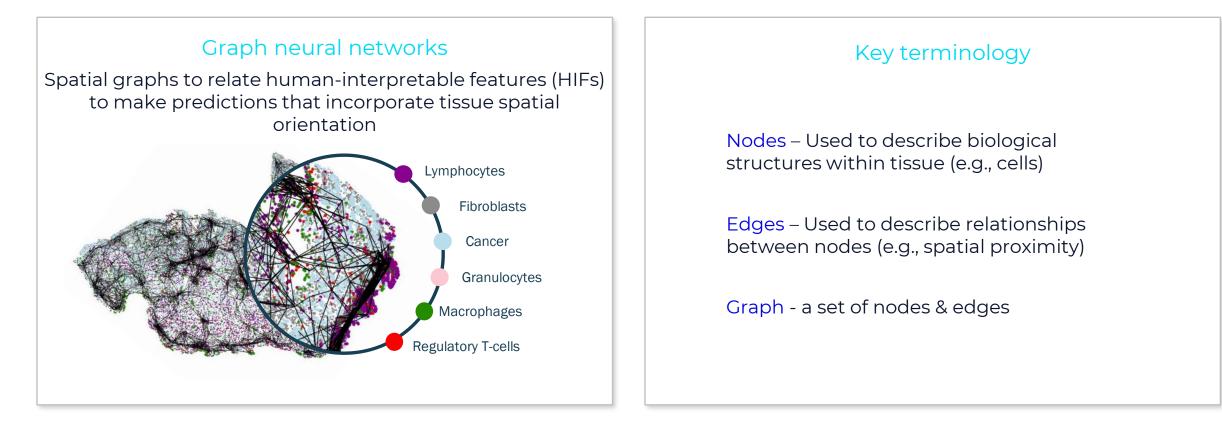


Mining multiplex data informs about tumor biology & mechanisms of immune & clinical response that can guide drug development & patient stratification

39

Graph Neural Network (GNN) Models to Capture Complex Spatial Relationships





Predictions are qualitatively traceable to biologically relevant spatial structures

Ability to analyze & correlate hundreds of markers simultaneously, in contrast to a 'permarker' analysis

Requires tissue & cell segmentation & specification but learns from spatial organization May be susceptible to bias & errors in underlying tissue & cell identification model

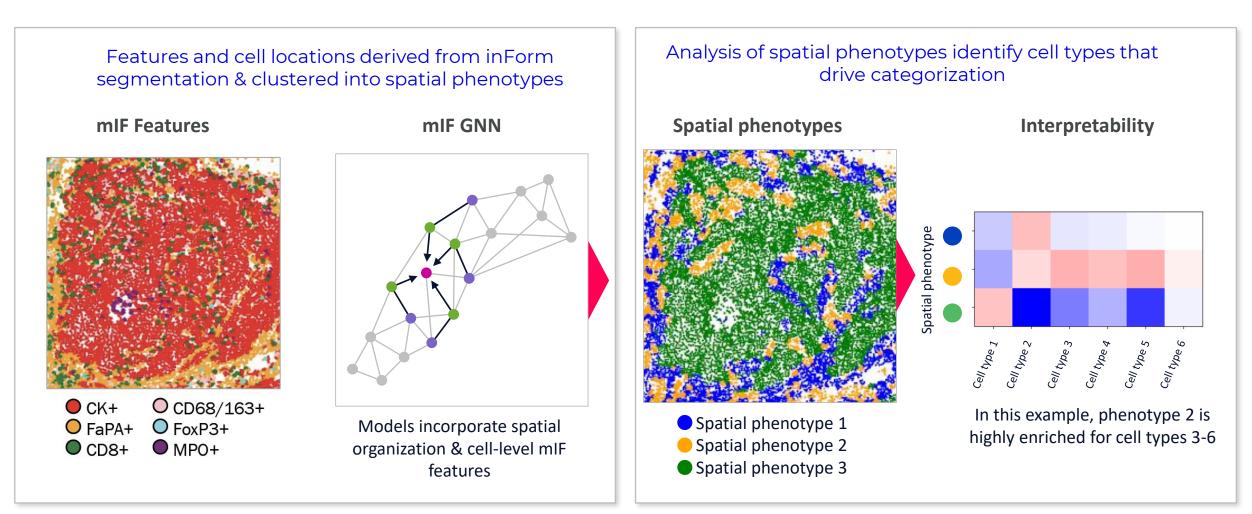


40

Example - Spatial Phenotypes & Clusters



Unbiased Identification of Spatial Phenotypes Defined by Cell Type Composition & Spatial Arrangement

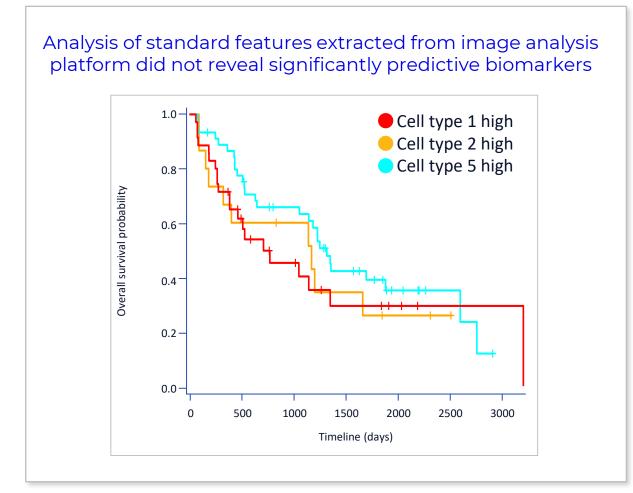




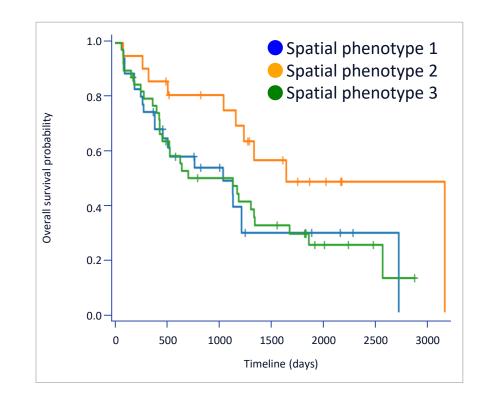
Example – Unsupervised Predictive Analytics



Statistical Correlation of Spatial Signatures to Outcomes or Other Clinically Relevant Features



Whereas PathAI's GNN-derived stratification identified signatures with predictive value



PhenoCode[™] Signature Panels

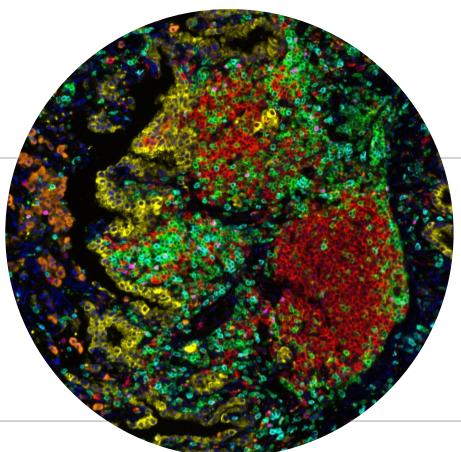
Decode the Science of Response to Combination Therapy



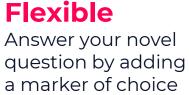
Relevant Answer the most pertinent questions to interrogate the TME



Fast Speed up Spatial Signature development by 3X







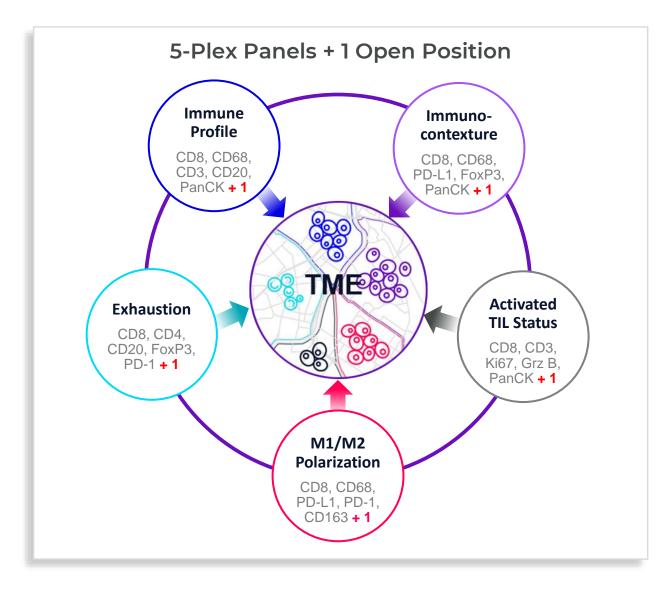


Scalable Seamlessly translate discoveries into predictive biomarkers



Flexible Panels

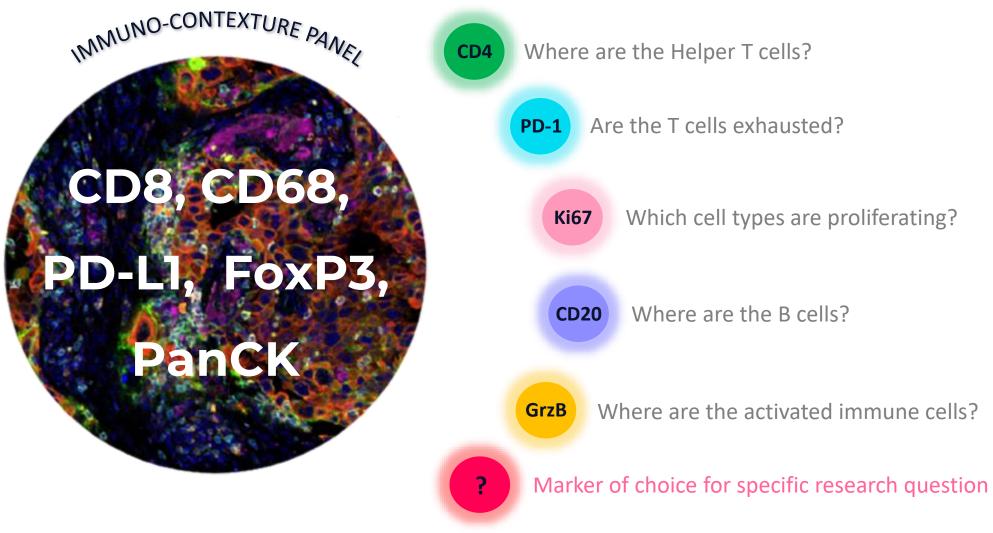
Providing the Flexibility to Ask Your Specific Question





Flexibility to Answer a Myriad of Questions

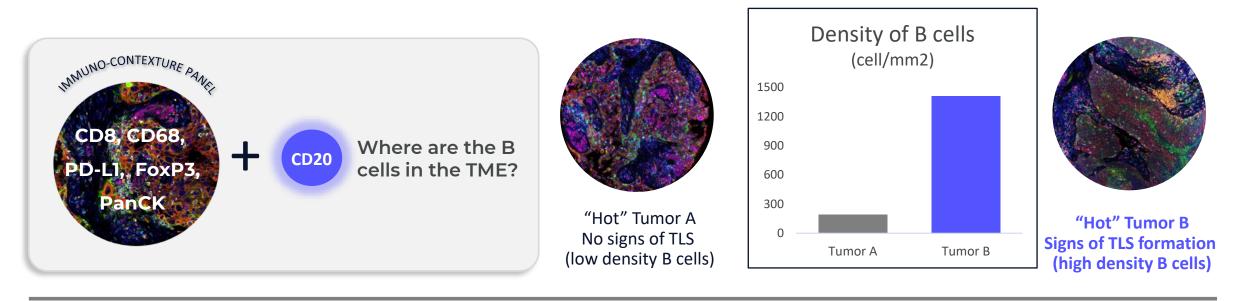
Map Additional Phenotypes





Answer More Questions Quickly

Flexibility Allows for Easy Integration of One Additional Marker

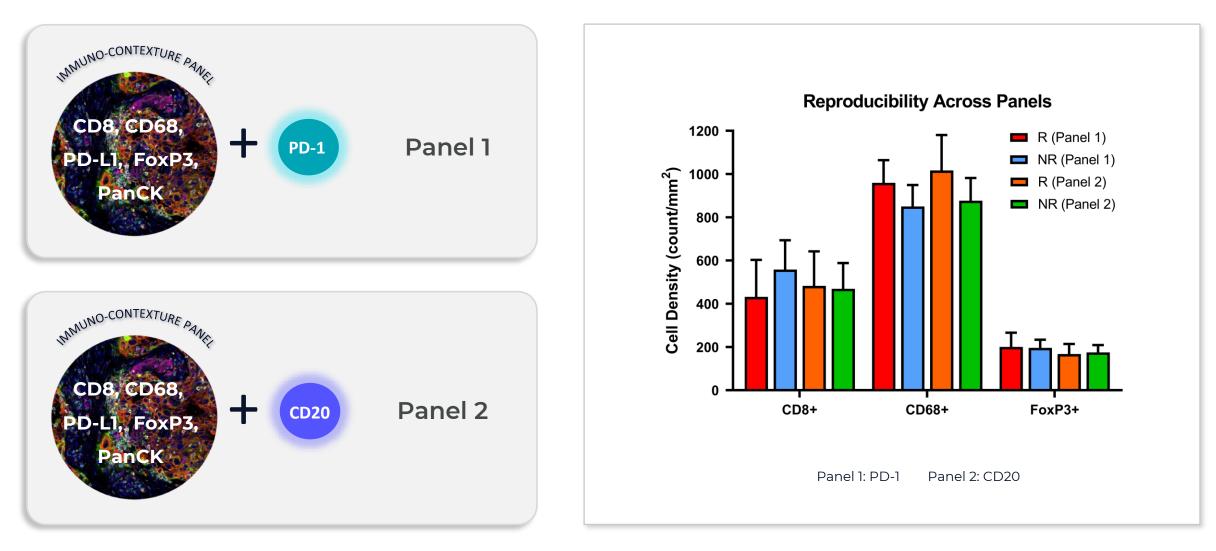




BIOSCIENCES[®]

PhenoCode[™] Signature Panels Offer Excellent Reproducibility

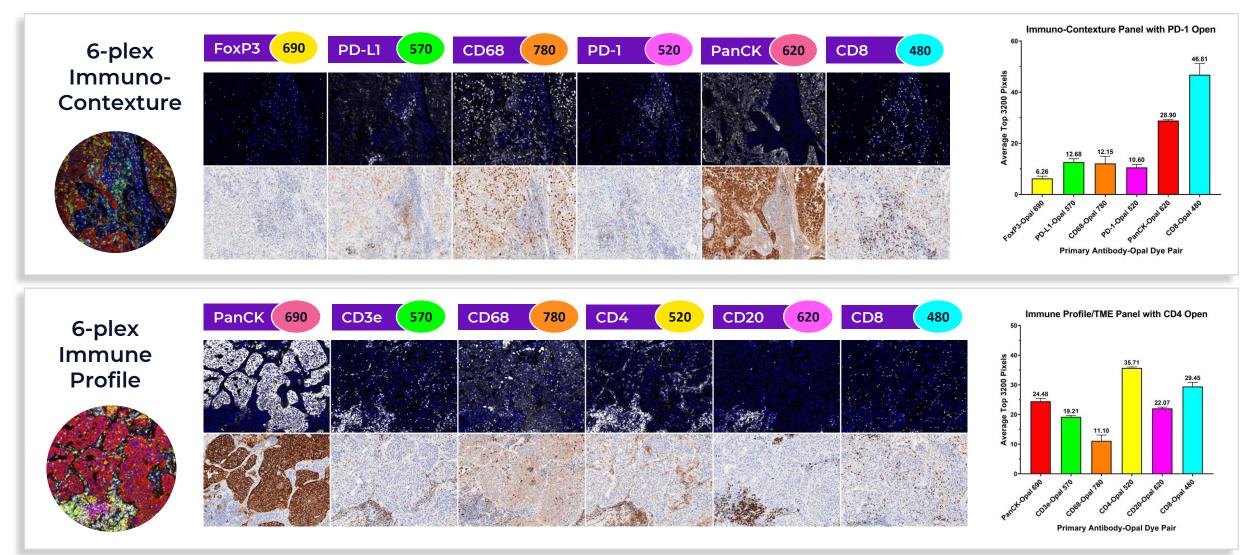
Integration of Different Markers Does Not Impact Reproducibility





PhenoCode[™] Signature Panels Benchmarking

Workflow Efficiency with Gold-standard Performance

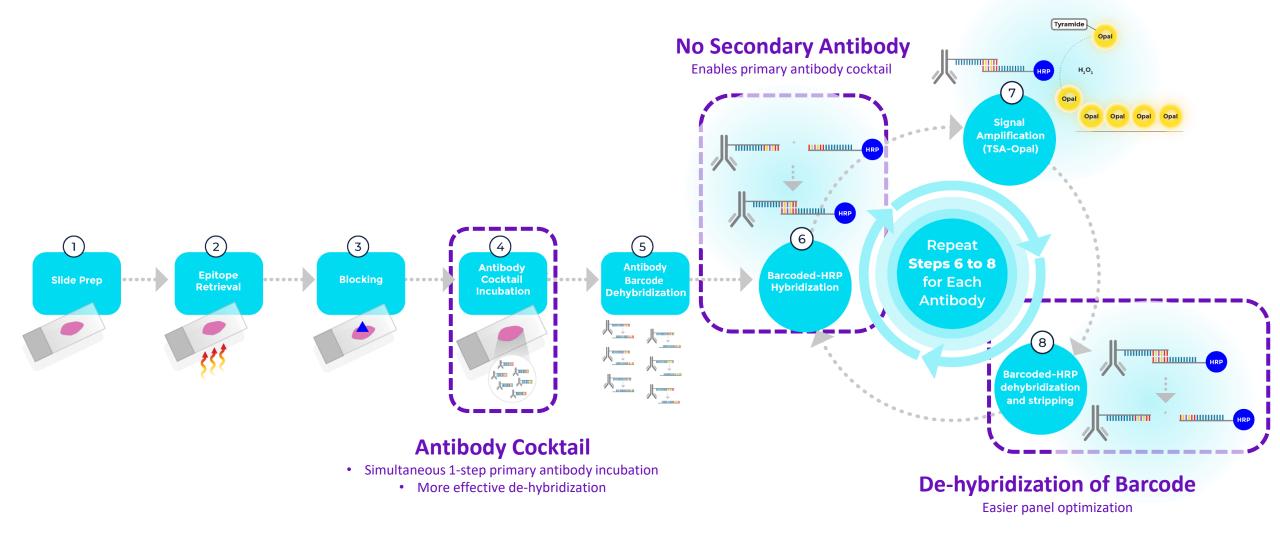




Key Benefits: PhenoCode[™] Signature Workflow

Tyramide Signal Amplification

Provides Strong Signal Intensity







Elizabeth Neumann, Ph.D.

Assistant Professor of Chemistry







Arutha Kulasinghe, Ph.D.

NHMRC Research Fellow and Group Leader University of Queensland Diamantina Institute





Q&A Roundtable



Niro Ramachandran, Ph.D.

CBO, Akoya Biosciences



Elizbeth Neumann, Ph.D.

Assistance Professor of Chemistry University of California Davis



Arutha Kulasinghe, Ph.D.

NHMRC Research Fellow and Group Leader University of Queensland Diamantina Institute



Akoya's Clinical Vision



Gavin Gordon, Ph.D.

VP of Clinical Market Development, Akoya Biosciences





Akoya's Clinical Vision

Establish the standard for clinical protein multiplexing applications

Evolving to Realize Our Clinical Aspirations

Commercial



Market



From life sciences tools company to a medical company

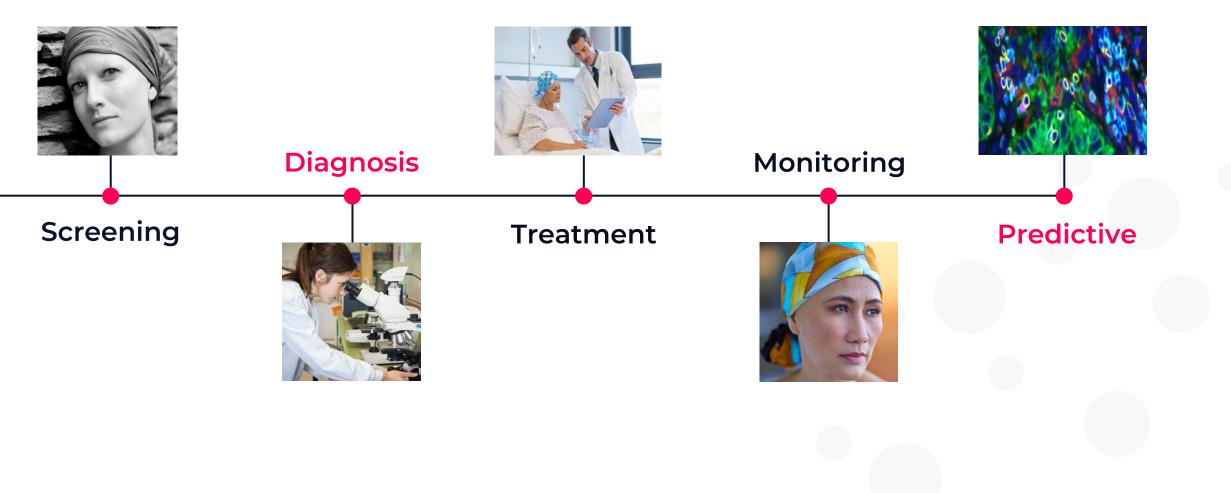
From imaging platform to diagnostic platform

From scientist to clinician

55

Akoya's Contribution to the Patient Journey

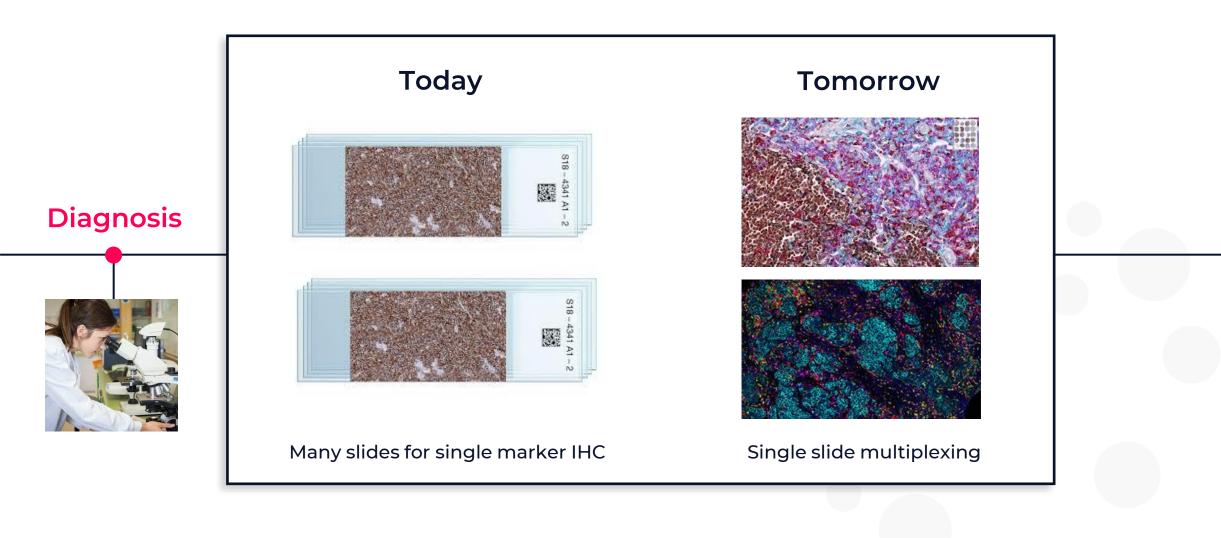
Key Opportunities Are in Diagnostic Pathology & Predictive Testing





The Opportunity in Diagnostic Pathology

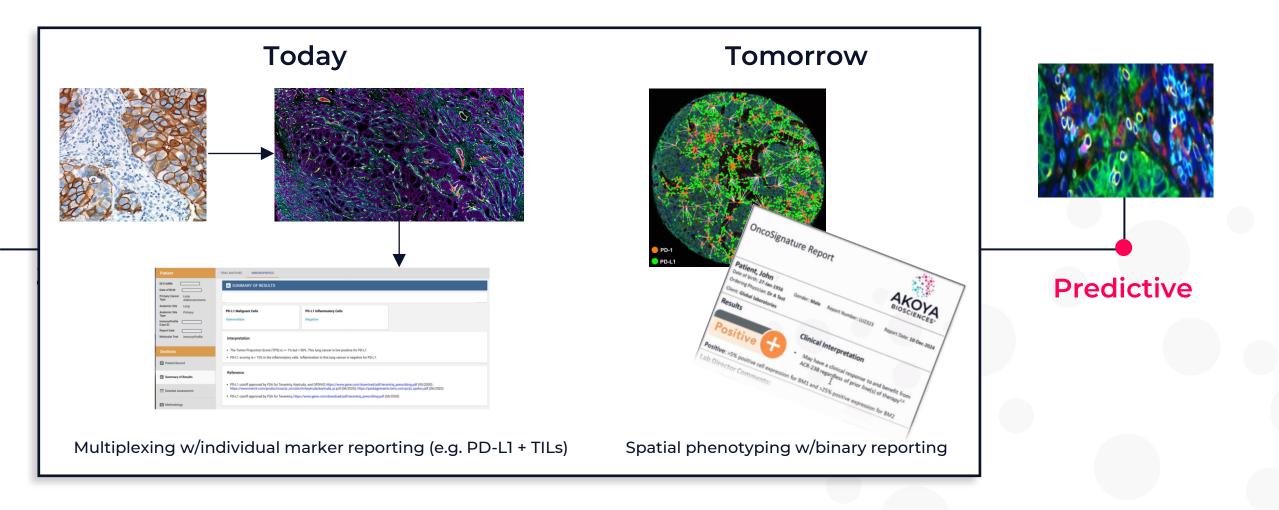
Multiplexing Preserves Tissue, Improves Diagnostic Accuracy & Improves Workflow Efficiency





The Opportunity in Predictive Testing

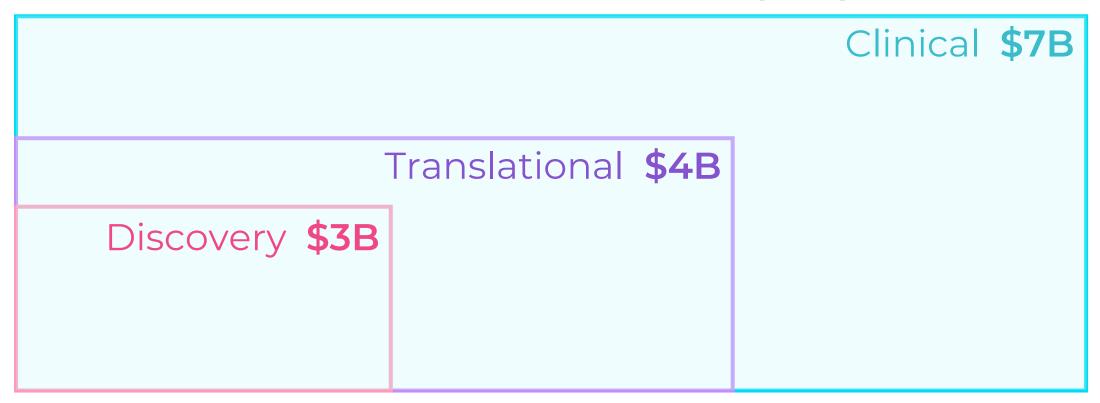
Next-gen Spatial Signatures for Therapy Selection Will Improve Patient Outcomes





Clinical Market Rapidly Emerging

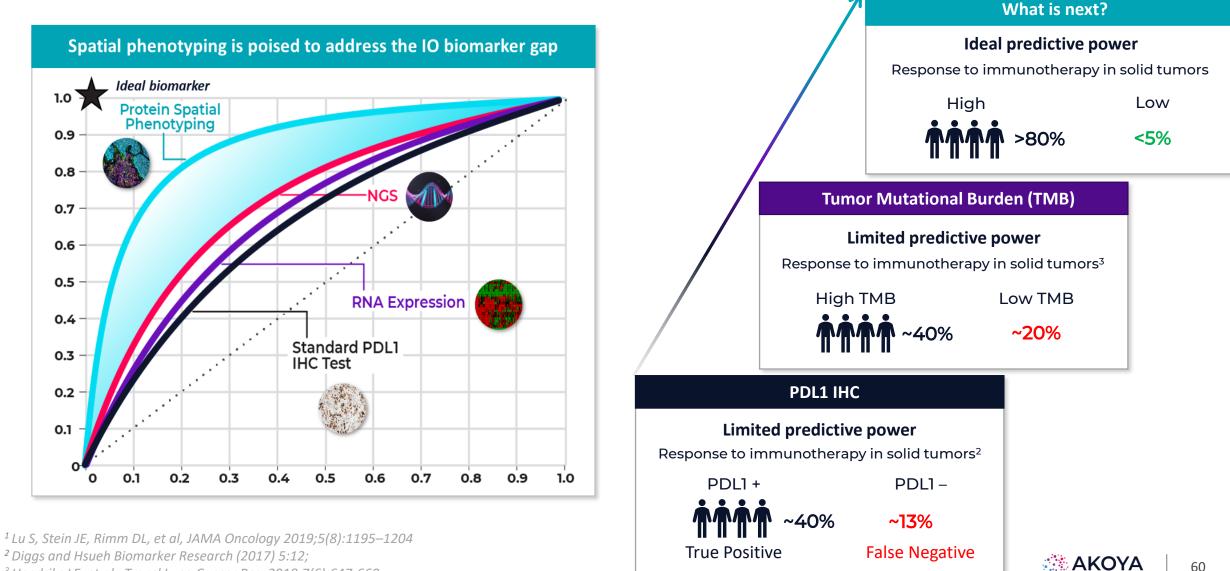
Estimated Total Addressable Market (TAM) ~ \$14B





Significant Unmet Medical Need in Immunotherapy

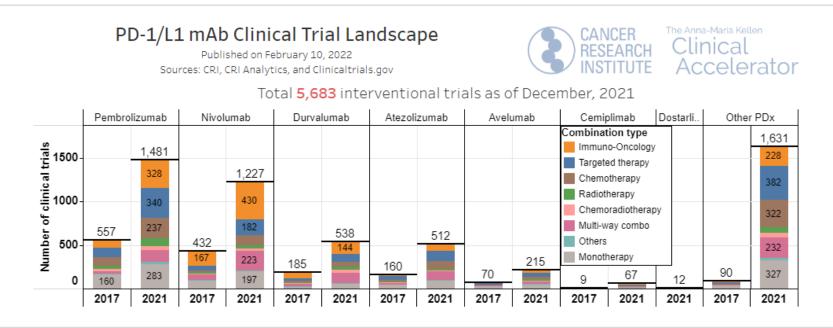
JAMA Publication Highlights Spatial Phenotyping as a Superior Approach¹



³ Hendriks LE, et.al.. Transl Lung Cancer Res. 2018;7(6):647-660

Pharma Partnerships Key to Developing Clinical Market

Engage Immunotherapy Developers to Support Translational & Clinical Research in Oncology



Explosion of PD-1/L1 combination trials since 2017, but approval rate remains low (~1%)

- Pharma shifting focus to combination therapies in I/O
- Significant unmet need for biomarkers to stratify patients

Akoya's platforms and CLIA lab services support development of clinically validated biomarker signatures that enrich for patient response



CLIA-Certified Advanced Biopharma Solutions (ABS) Lab



CLIA-certified Laboratory for Scalable & Flexible Development

- Multidisciplinary team for each stage of CDx development
 - Scientists, pathologists, bioinformatics, regulatory experts, program managers & operations
- Biomarker discovery & validation
- Assay development, validation & deployment
- Designed to meet analytical & clinical performance criteria
- Early phase assay transfer: IHC or IF to IVD-ready platforms
- Clinical trial site in combination with our network of CRO partners



62

The Future is Now: Spatial Precision Medicine is HERE

Akoya announces partnership:

First-in-class spatial signature CDx



Akoya Biosciences to Partner with Acrivon Therapeutics for the Clinical Development of Acrivon's Proprietary OncoSignature® Test into a Companion Diagnostic

June 28, 2022

The OncoSignature[®] test developed based on Acrivon's AP3 platform is a first-of-its-kind spatial signature assay to identify patients most likely to respond to ACR-368, an advanced Phase 2 targeted oncology agent for solid cancers

The OncoSignature[®] test will run on Akoya's PhenoImager™ Solution

06.22.2022

Acrivon Therapeutics Receives FDA Clearance for Innovative Phase 2 Trial to Treat Ovarian, Endometrial and Urothelial Cancer Patients Based on Predicted Sensitivity to ACR-368

--Pioneering trial will be using a first-of-its-kind OncoSignature® companion diagnostic to identify and treat patients that are predicted most likely to benefit from treatment—

--OncoSignature®-positive patients will receive ACR-368 monotherapy in a single-arm Phase 2 study and OncoSignature®negative patients will receive ACR-368 in combination with low-dose gemcitabine in a concurrent Phase 1b/2 study—

--ACR-368 is a DNA Damage Response (DDR) inhibitor that will be evaluated at the recommended Phase 2 dose based on extensive clinical safety and efficacy data, including previously demonstrated durable single-agent activity and complete responses in platinum-resistant ovarian cancer, as well as other high unmet need solid tumors—

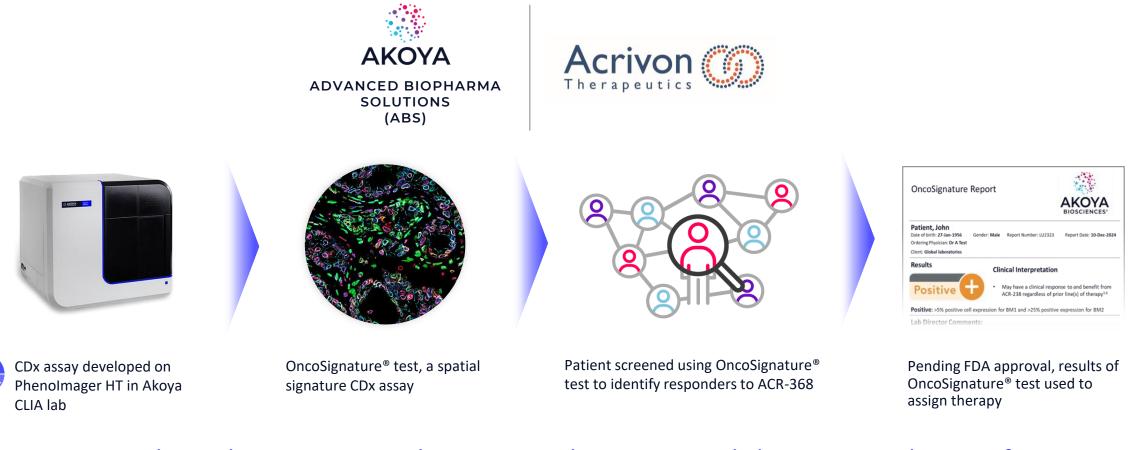






OncoSignature[®] CDx - New Era of Precision Medicine

First-of-its-kind Spatial Signature CDx Assay to Identify Patients for a Targeted Oncology Agent



Akoya & Acrivon will co-develop, validate & exclusively commercialize the OncoSignature® test

64

Spatial Phenotyping Through Akoya ABS Lab Services

Biopharma Partnerships Drive Translational Market Growth & Clinical Market Entry

Standardized on PhenoImager HT for immuno-oncology biomarkers

Rapid expansion of work through ABS







Advancing Akoya's First Mover Advantage

Translating Discoveries to the Clinic & Building the Foundations for Diagnostics





Laura Esserman, M.D., M.B.A.

Director of Carol Franc Buck Breast Care Center Surgeon & Breast Cancer Oncology Specialist

University of California San Francisco





Scott Rodig, M.D., Ph.D.

Director of the Tissue Biomarker Laboratory of the Center for Immuno-Oncology at Dana-Farber Cancer Institute

Diagnostic Pathologist, Brigham & Women's Hospital

Professor of Pathology, Harvard Medical School











Manuel Salto-Tellez, M.D.

Chair of Molecular Pathology at Queen's University Belfast Professor on Integrative Pathology at the Institute for Cancer Research



CR The Institute of Cancer Research



Q&A Roundtable



Gavin Gordon, Ph.D.

VP of Clinical Market Development, Akoya Biosciences



Laura Esserman, M.D., M.B.A.

Surgeon & Breast Cancer Oncology Specialist, UCSF



Scott Rodig, M.D., Ph.D.

Investigational & Diagnostic Pathologist, Dana-Farber & Brigham & Women's; Professor of Pathology, Harvard



Manuel Salto-Tellez, M.D.

Chair & Professor of Molecular Pathology, Queen's University Belfast & ICR



Closing Remarks



Brian McKelligon

CEO, Akoya Biosciences





Catalyzing Discovery and Improving Patient Care



