



D **DANAHER**

Enabling
science at scale

Vanessa Almendro

PhD, MBA, Vice President,
Science and Technology,
Head of Innovation





Our family of leading brands in Life Sciences and Diagnostics





Danaher's commitment to Human Health Outcomes

Apply the power of **science and technology** to uniquely engineer **high impact solutions** that **improve health outcomes** through a proprietary combination of our **people, capital, and DBS (DanaHER Business System)**

Danaher Companies

On the Frontlines of Biomanufacturing and Diagnostics

COVID-19



Cepheid gold standard point-of-care molecular test was the first-to-market COVID-19 diagnostic test in April 2020. The company has since launched their 4-in-1 Xpert® Xpress SARS-CoV-2/Flu/RSV



IDT was the first company in the US to have their primer and probe kits approved by the CDC for use as a key component in testing for COVID-19.



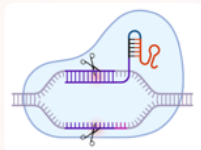
Cytiva, Pall, Beckman Coulter Life Sciences and Molecular Devices supported COVID-19 vaccine and therapeutics development. Danaher companies are involved in the majority of >400 COVID-19 vaccine and therapeutic projects globally, including all of the Operation Warp Speed candidates.

Genomic Medicines



GMP pDNA

Supported >100 CGT clinical programs, including 4 of the 6 CAR-T therapies on the market



GMP SpyFi™ Cas9

1st off-the-shelf GMP SpyFi™ Cas9 for therapeutic use (licensed from IDT who created HiFi Cas9)



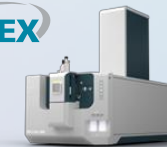
Xuri Cell Expansion System W25

Helped bring 80% of the currently approved CAR-T therapies to market



iCELLis® Bioreactor

Used in multiple clinical trials, and helped bring Zolgensma to FDA approval



ZenoTOF 7600 System

High-resolution mass spectrometry solution for multiple modalities



Optima Analytical Ultra Centrifuge

Characterizes AAV particles as empty or full

Danaher's Scientific Leadership



JC Gutiérrez-Ramos
CSO, Danaher Corporation

abbvie

GSK

Pfizer

Takeda

REPERTOIRE[™]
Immune medicines



Sadik Kassim
CTO, Genomic Medicines

VOR

NOVARTIS

MUSTANGBIO[™]

Kite
A GILEAD Company



William Blaaque
CTO, Human Based R&D

SHERLOCK
BIOSCIENCES

PEARL BIO[®]

GreenLight
BIOSCIENCES[™]

WYSS INSTITUTE



Vanessa Almendro
VP, Head of Innovation
Danaher Corporation

VERTEX

Eisai

Dana-Farber
Cancer Institute

REPERTOIRE[™]
Immune medicines



Beate Mueller-Tiemann
VP, Head of Innovation
Danaher Corporation

BAYER

SANOFI



Rob Monroe
CSO, Molecular Oncology

EURO BIOIMAGING

OncoMed
PHARMACEUTICALS

veracyte.



Ephraim Tsalik
CSO, Infectious Disease, R&D

Duke
UNIVERSITY

predigen



Akhil Saklecha
CSO, Acute Care

Cleveland Clinic

AULTMAN

Danaher Life Sciences

Our Vision

We aim to reduce time-to-market of life-saving therapies by 50%.

Our Strategy

Be the indispensable partner to biopharma by owning the critical path to the IND/BLA*, increasing the pipeline yield, and delivering a 50% reduction in time and cost.



*FDA: IND = Investigational New Drug; BLA = Biologics License Application

Our Portfolio of Analytical Solutions

Plate Reader, Microscopy and Imaging Solutions



Microscopy



Automated Imaging



Microplate Readers



High Content Screening (HCS)

Mass Spectrometry Solutions



Nominal MS



Accurate MS



Acoustic Ejection MS (AEMS)



Capillary Electrophoresis (CE)

Particle / Cellular Analysis: Cytometry, Cell Health



Vi-CELL BLU Cell Viability Analyzer



CytoFLEX Flow Cytometer



HIAC 9703+ Pharmaceutical Particle Counter



TOC Analysis systems

Automation: Liquid Handling / Integration



Biomek i-Series Automated Workstation



Biomek NGenius NGS Library Prep System



Echo Acoustic Liquid Handler



Robotic Integrations

Separation Techniques and Reagents: HPLC / ...



Optima AUC Analytical Ultracentrifuge



HPLC and GC columns



Sample preparation



Accessories



Reference standards

Data Science: Data Analysis / ELN / LIMS / BPLM



Image Analysis



Data Analysis



AI-Powered Data Analysis



Cytobank Flow Cytometry Analysis



Kaluza Analysis Software

Biopharma Lifecycle Management

Services:

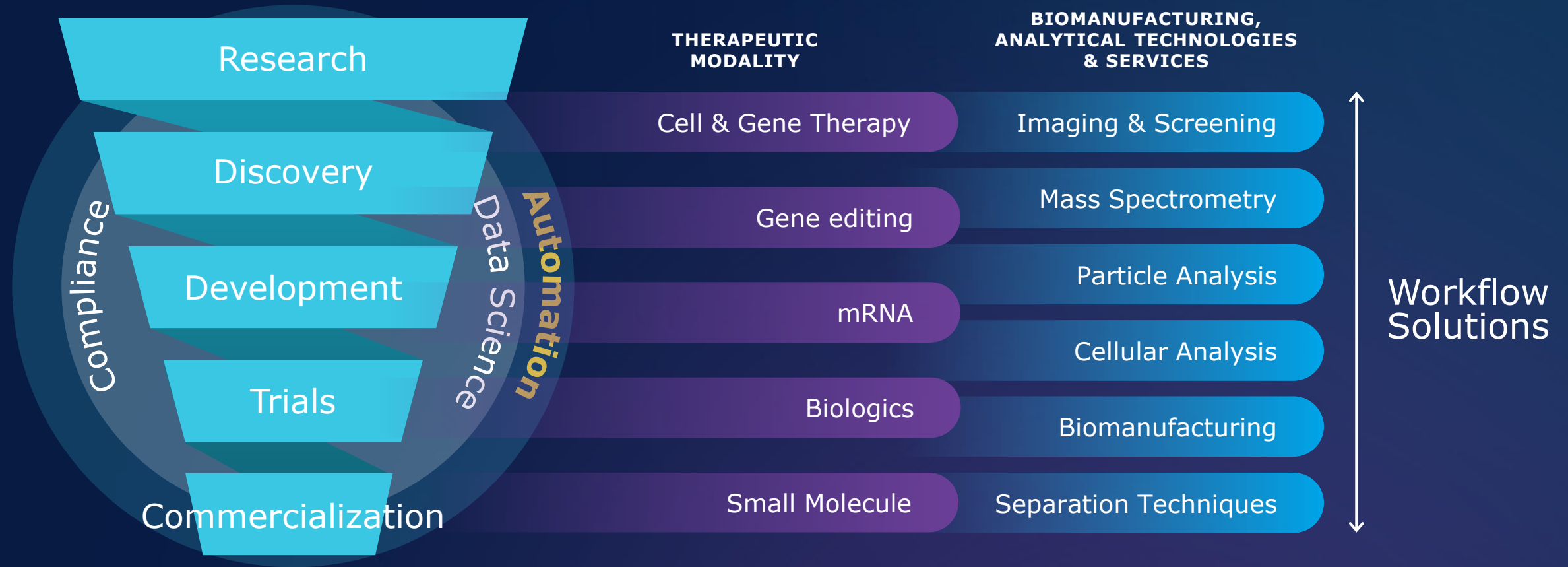
Raw materials and drug product production



Our Brands:



Our Portfolio of Products offers Workflow Solutions for all Therapeutic Modalities and Development Phases



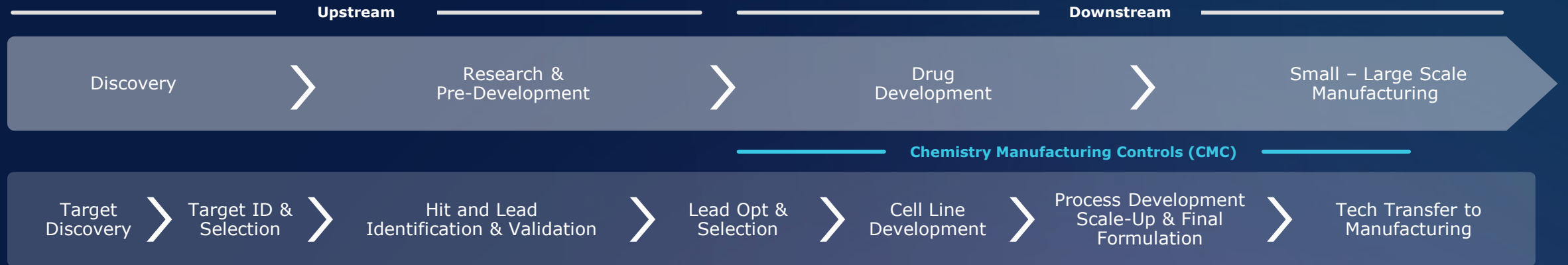
A man with dark, curly hair and safety glasses is focused on a pipette in his right hand. He is wearing a white lab coat over a light blue collared shirt. A woman with blonde hair tied back, also wearing safety glasses and a white lab coat, is pointing her right index finger towards the pipette. The background is a blurred laboratory setting with other people and equipment.

We are your

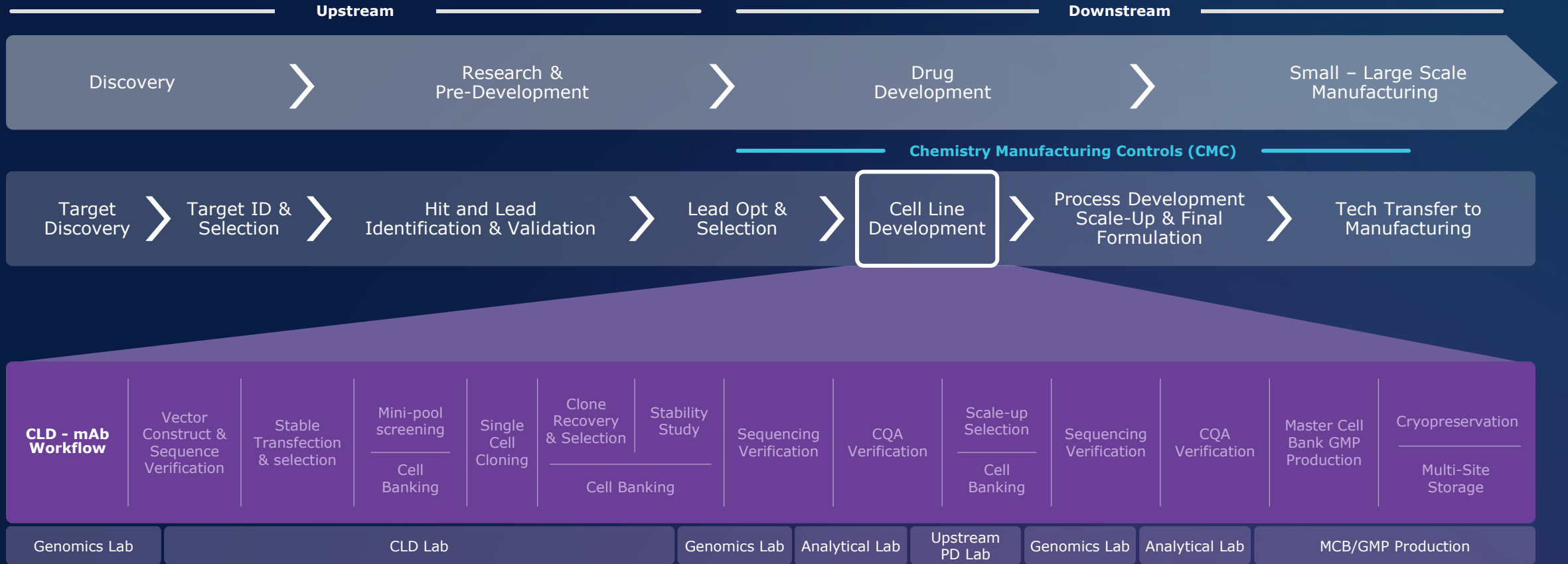
partner

for workflow innovation
and end-to-end solutions

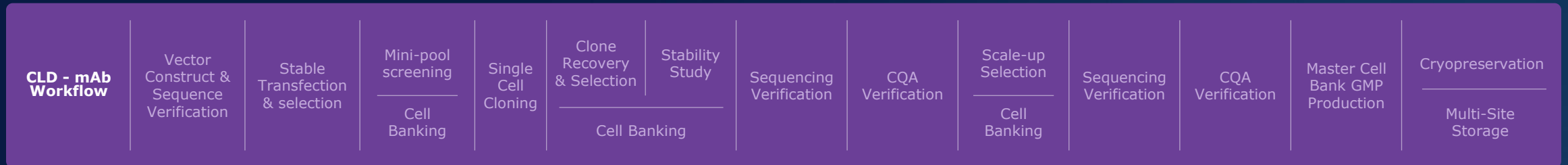
"Connecting the Dots" to Accelerate Cell Line Development - mAb Workflow



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“Connecting the Dots” to Accelerate Cell Line Development - mAb Workflow



Increased demand for higher **PRODUCTIVITY** due to increased # of projects and complex antibody molecules while number of FTEs remain constant

Need to achieve higher expression levels – screen high-producer cell lines **FASTER**

STABILITY, **IMMUNOGENICITY**, and **SCALABILITY** assessment: eliminating unstable cell lines that are not scalable early-on

Getting critical CQAs insights **FASTER**

Significant amount of time spend on **MANUAL DATA PROCESSING** using spreadsheets

Need for **TRACKING** and **TRACEABILITY** (data, lot numbers, SOPs, processes, etc)

"Connecting the Dots" to Accelerate Cell Line Development - mAb Workflow



Beckman Coulter Life Sciences

ValitaTiter Assay for low-high throughput IgG quantification with crude samples in <15 Minutes

SCIEX

Intabio ZT couples icIEF separation and UV detection with HRMS* with a single accessible dataset containing the required information to make the right decisions in minutes

* HRM: high resolution mass spectrometry

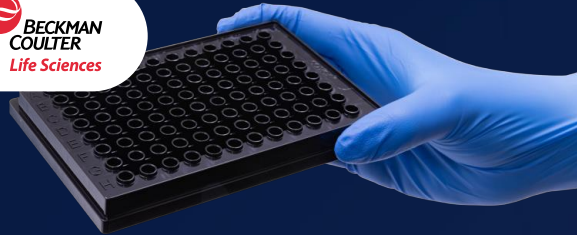
Beckman Coulter Life Sciences ChemStress

Media & clone phenotypic profiling assays to measure functional performance data in a small scale and low volume earlier in the process

IDBS Polar Biopharma Lifecycle Management SW Platform for Execution of the Processes, Data Curation, Tracking, In-Process Design, Optimization, Scale-up and Technology Transfer

IDBS E-Workbook Electronic Lab Notebook for data capture and analysis tools, job requesting and management and inventory management

Leveraging Data Science to Improve & Speed-up Cell Line Development



Innovation:

ValitaTiter & ChemStress Assays

Value Proposition:

Assays that bring complex analytical methods into CLD lab and cut time* to data

Intabio ZT system

Disruptive approach for characterization of mAb charge variants by imaged capillary isoelectric focusing (icIEF)-UV/MS

Polar Biopharma Lifecycle Management Software

Digital solutions for bioprocessing that help manage complex datasets

We see a way to:

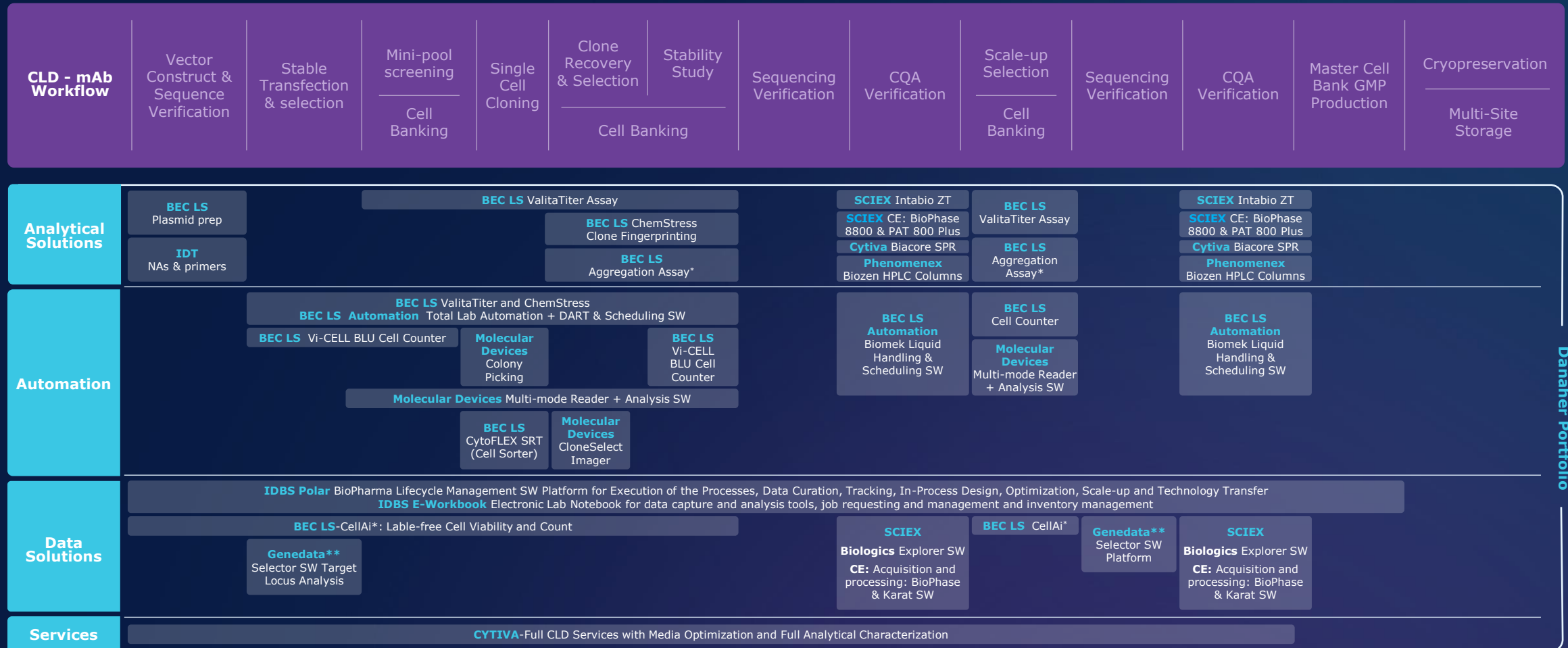
Identify high producing cell lines in <15 minutes*

Access multidimensional data in minutes instead of weeks

Save over 14,000 hours of manual data handling time per year in a CLD Department**

"Connecting the Dots" to Accelerate Cell Line Development - mAb Workflow

* In Development ** Strategic Partner



DanaHER Portfolio

Our Brands:





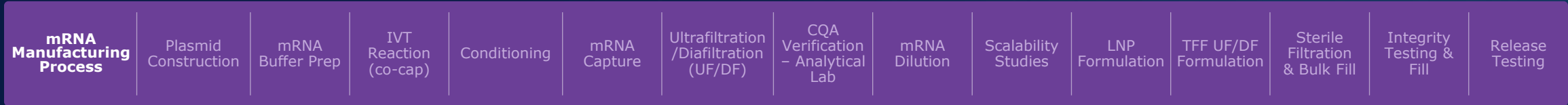
Enabling science

at scale

 **DANAHER**

What are the main Pain-Points in mRNA Workflows?

Pre-IND Submission > Process Development & Verification



SUPPLY CHAIN INSTABILITIES can prolong development timelines and delay securing high quality raw materials like pDNA, Plasmids, and IVT enzymes

Ensuring mRNA CQAs
(ie 5' **CAPPING** and Poly A tail **DEGRADATION**)

mRNA CQAs

Analyzing encapsulation **EFFICIENCY**

End-to-end data **CURATION**, **TRACKING** and **TRACEABILITY**

Significant amount of time spend on **MANUAL DATA PROCESSING** using spreadsheets

What are the main Pain-Points in mRNA Workflows?

Pre-IND Submission > Process Development & Verification



Aldevron mRNA & IVT Enzyme Manufacturing including a full suite of services from plasmid production all the way through release testing

SCIEX LCMS
ZenoTOF 7600 +
Molecule Profiler
SW CQAs assessment

SCIEX CE
BioPhase 8800 +
BioPhase SW for
mRNA-LNP analysis

SCIEX CE BioPhase 8800 + BioPhase SW for mRNA analysis

Phenomenex Biozen™ Oligo HPLC columns for
high resolution mass spectrometry to assess mRNA CQAs

IDBS E-Workbook Electronic Lab Notebook for data capture and analysis tools, job requesting & management, and inventory management

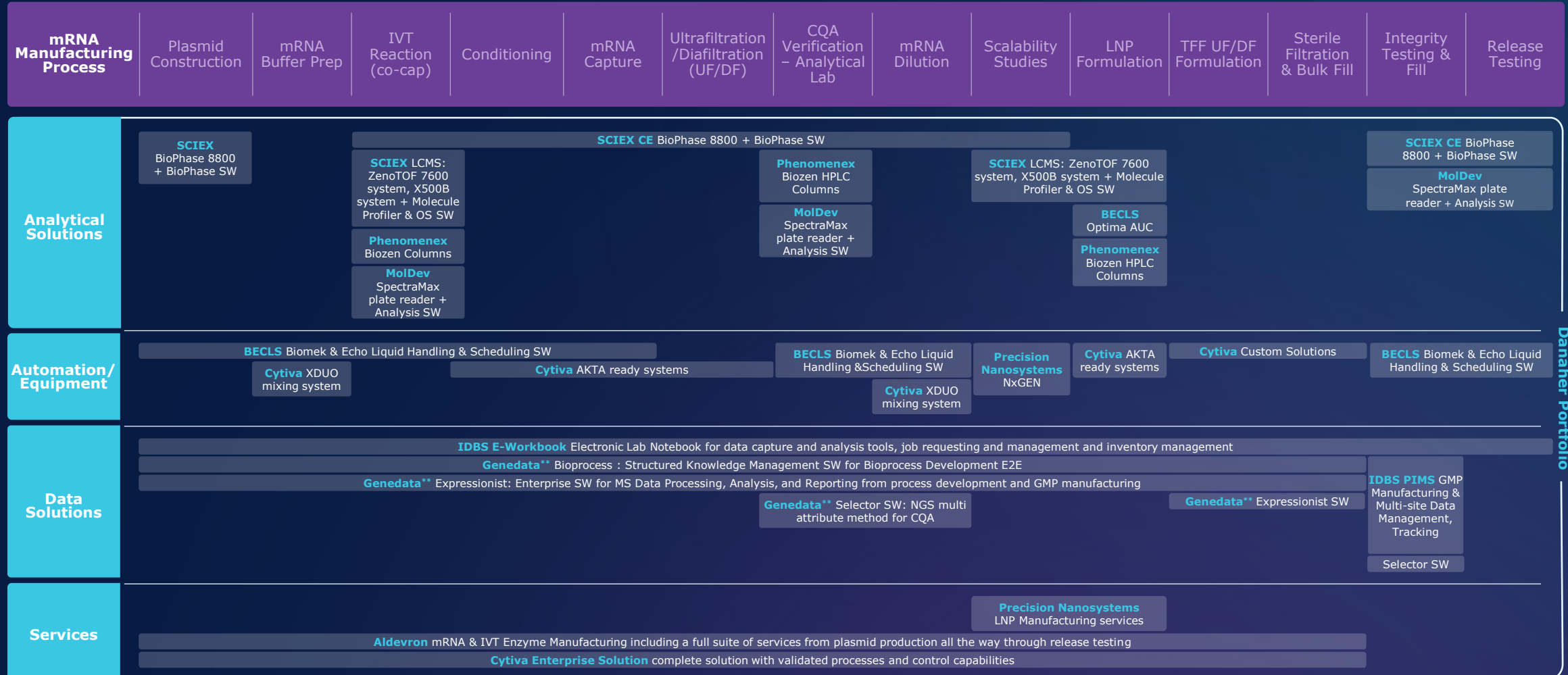
Genedata** Expressionist: Enterprise SW for MS Data Processing, Analysis,
and Reporting from process development and GMP manufacturing

Genedata**
Selector SW: NGS
multi attribute method
for CQA

“Connecting the Dots” to Accelerate mRNA Workflow

Pre-IND Submission > Process Development & Verification

* In Development ** Strategic Partner



DanaHER Portfolio

Our Brands:



Our Goal

Improving Health Outcomes

Human Systems R&D

More Therapies Discovered and Commercialized Faster

Genomic Medicine

Enable Novel Genomic Therapies That Deliver Cures

Early Diagnosis, Value Based Precision Medicine

Novel Diagnostics to Treat the Right Patient at the Right Time

Nextgen Biomanufacturing

Improve Quality, Cost and Yield of Biologic Therapies

Data Sciences and Deep Learning

Accelerate Data Integration to Improve Healthcare Outcomes and Cost

Learn more.

[DHRLS.co](https://www.dhrls.co)