Erudio Bio

Erudio Bio: Revolutionizing Biological Assays with Precision and Scale

Unleashing the Power of Molecular Interaction Data

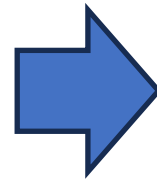# Biological Assays Struggle with Scale and Accuracy

Data is expensive, so we make decisions with an **incomplete picture**

Limited, small-scale testing confirms diagnosis

Outcome only as good as the doctor's ability to deduce which tests to run, limiting the picture.

Cross Reactivity prevents larger scale testing

Comprehensive, large-scale testing will drive diagnosis without assumptions

Increased scale enables comprehensive testing and enhanced scientific discovery, leading to better patient care, reduced time to diagnosis, and cost reduction.

Erudio Bio

Starting the Revolution

More data

- Comprehensive data from a single biological sample
- Multiplexed analysis of nucleic acid, protein, cells and more
- MULTI-OMIC PLATFORM
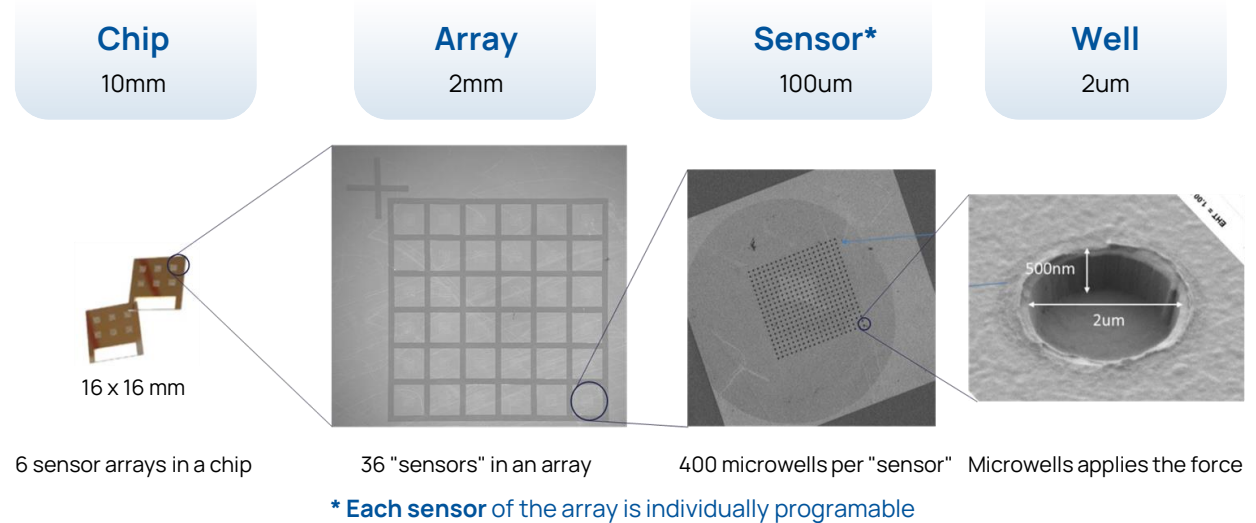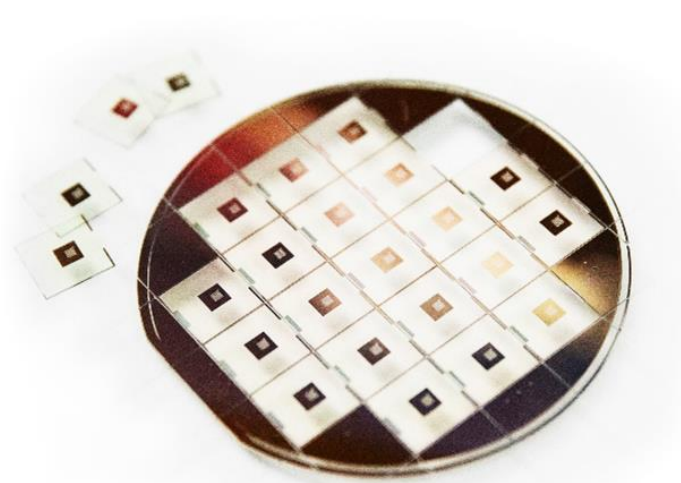
Actionable data

- Combined quality score from all data sources for comprehensive and conclusive assessment

Earlier data

- Complete data early to drive accurate decision making

Erudio Bio

Versatile Smart Assay (VSA) Platform

Chip	Array	Sensor*	Well
10mm	2mm	100um	2um

16 x 16 mm

6 sensor arrays in a chip   36 "sensors" in an array   400 microwells per "sensor"   Microwells applies the force

500nm

2um

* Each sensor of the array is individually programable

- VSA platform generates 1000x more data than the prevailing technology
  - Scalable **multi-omic** microarray sensor

- VSA platform indicates how good the data is in real time
  - Patented **dynamic force spectroscopy** and powerful Bayesian inference method gives our data **a quality score** to know their accuracy for actionable data
  - Quality score enables filtering of noise that enables accurate **multiplexing**

- VSA AI software extracts a detailed, interpretable picture for quick diagnosis
  - Can be combined with AI feature extraction
  - Leads to AI knowledge discovery
  - Results in data-driven diagnosis rather than diagnosis by deductions

Erudio Bio

Enabling Comprehensive Data Acquisition

Antibodies: Versatile Tools in Biology

- We can engineer to target (stick to) virtually anything we want
- But antibody also evolved to interact with many things

Problem:
- **The potential of indiscriminate interactions severely limits use of antibodies in multiplex formats**
- **Error-prone results due to non-specific binding**

Comprehensive Data with Force Spectroscopy

Solution:
- Force Spectroscopy gets comprehensive binding strength – a score to distinguish specific and non-specific binding
- This quality score discerns noise from useful data to enable multiplexing*

*Juncker et al., Current Opinion in Chemical Biology 2014,18, 29-37

Erudio Bio

Joint Development for Rare Sample Application

Shanghai General Hospital's National Clinical Research Center for Eye Diseases
- JDA in draft stage for
  - Multiplexed eye disease dx – low sample volume and NSB ridden
  - Current multiplexing solution on incumbent platform not satisfactory

Hospital part of large medical care system
- 45 Mega hospitals in Shanghai with **83M** patient visits per year
- Leading the smaller hospitals in Shanghai for subsequent 280M patient visits

Globally unique partner, a customer so large that it is a market by itself

Erudio Bio

Erudio Key Milestones

IP developed at Stanford School of Medicine under mentorship by father of microarrays: Dr. Ronald Davis

Data vetted by $115B Market Cap Semi-Company Analog Devices and Harvard Medical School/Mass Gen by multiplexed detection of cytokines in human serum

Resulted in commercial partnership with Analog Devices to manufacture at scale

Establishing an ongoing pilot program with the Shanghai General Hospital's National Clinical Research Center for Eye Diseases: a customer with a specific use case for Erudio platform. (Pilot customer contributing equivalent $1MM to develop)

Goal of adoption at high scale with the hospital operator (83M annual outpatient visits) - Integrate into their high throughput assay workflow: Roboticized laboratory

Erudio Bio

Taking Biological AI to the Next Level

With Erudio's scale, we will generate Data

Scaling up with a hospital with 83M patient visits results in massive amounts of data – resolving the data readiness in today's medical AI

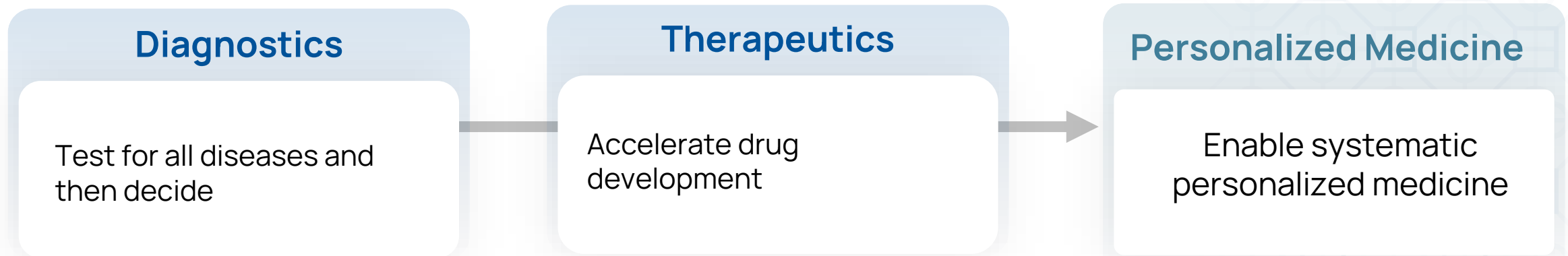## Erudio AI improves outcomes – Feature extraction

Curate new data to fit existing workflow and recognize actionable features from new data for optimal use of managerial, physician or scientist time and infrastructures.

AI to dominate the future – Knowledge discovery

Analyze and extract the hidden patterns and information from the massive biological data for knowledge discovery

Erudio Bio

The Real Prize: Personalized Medicine Needs Concurrent Path

Diagnostics

Test for all diseases and then decide

Therapeutics

Accelerate drug development

Personalized Medicine

Enable systematic personalized medicine

Paving the path to personalized medicine drives Erudio's go-to-market strategy

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5873736/

Erudio Bio

Erudio's Business Model
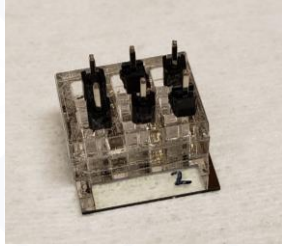
Consumable chip & flowcell

Instrument

Notional

Consumable reagent kit
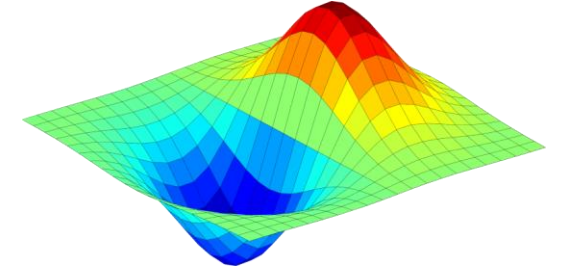
Software AI/ML & SaaS

VSA platform

Instrument: Recurring revenue with high margin (70%*) razor/blade:

- Single use consumable + Reader

Modular licensable software: AI based data interpretation and feature extraction
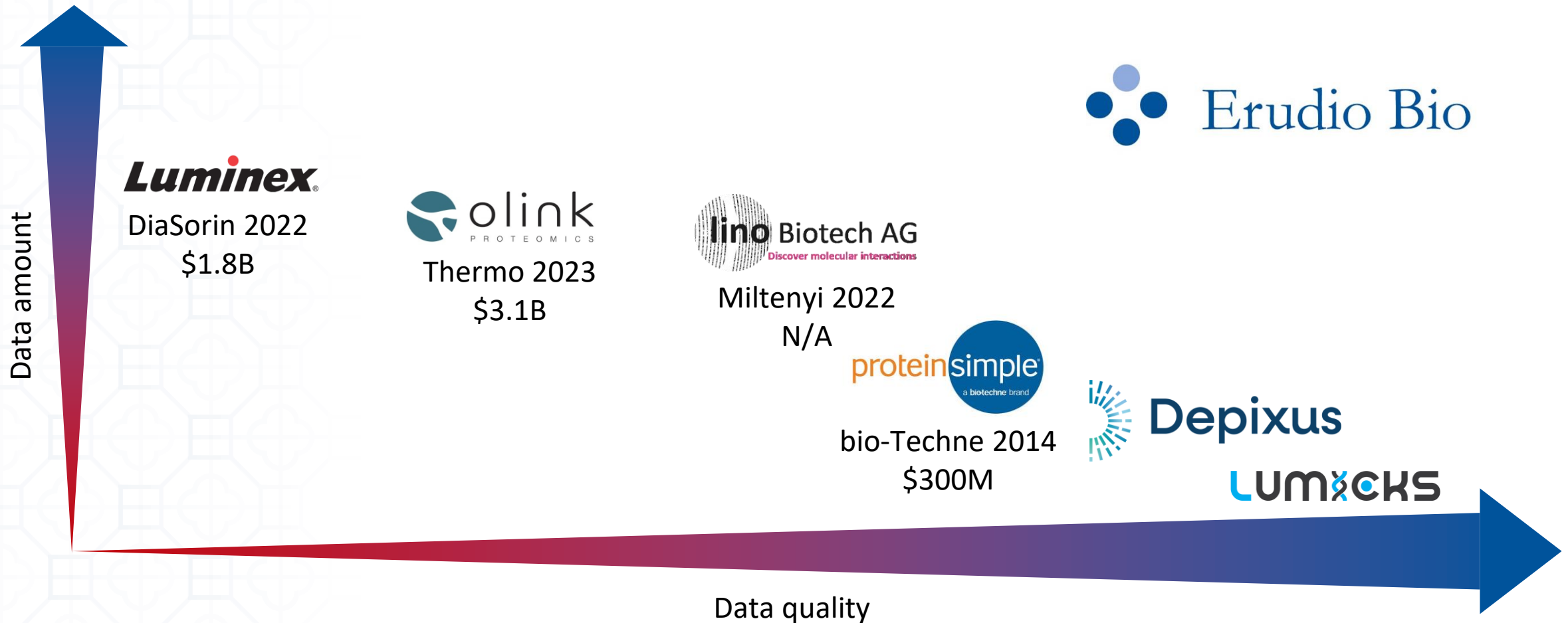
SaaS

Subscription based pre-validation of reagent database

AI Knowledge discovery

Erudio Bio

Competitive Landscape

Data amount (vertical axis)

Data quality (horizontal axis)

Luminex — DiaSorin 2022 $1.8B

olink PROTEOMICS — Thermo 2023 $3.1B

lino Biotech AG — Discover molecular interactions — Miltenyi 2022 N/A

proteinsimple a biotechne brand — bio-Techne 2014 $300M

Depixus

LUMICKS

Erudio Bio

Erudio's VSA platform is the only one that provides both high quality data and large data output. Efficient workflow integration facilitates customer adoption

Team

Kee-Hyun Paik, Ph.D.
Chip, Microfluidics and Instrumentation

Susanne Baumhueter, Ph.D.
Biology, Immunology and project management

Sunghee Yun, Ph.D.
Artificial Intelligence, optimization and Software

Leon Chen, MBA, CFA
Business Development, Product, and Operations

Advisory Board

Michael Cola
CEO AEVI Genomic Medicine, President of Shire plc. ($62B sale to Takeda)

Tim Germann
CCO Carterra Bio

Karyn Eliot
Retired CIA Sr. Executive

Ronald W. Davis
Prof. Biochemistry and Genetics, Director Stanford Genome Tech Center $15B+ exits

William J. Greenleaf
Prof. Genetics and Applied Physics, Stanford University

Erudio Bio

Seed Round

Erudio Keystones

Technology already works

Identified a pilot customer willing to joint develop product

Partner in place ready to scale

Raising Seed Capital to finance build out of pilot program with Shanghai General Hospital

Pilot program use case highlights Erudio's strengths

Significantly faster than other seed stage startups with clear, well defined execution path

Capital Efficient

Erudio Bio