

aws

# HPC Sales Play Training

BIO Diagnostics and Pharma R&D



Identify



Engage



Differentiate

Presenter Name:

**Sujaya Srinivasan**

Title:

**Principal Genomics and Research Specialist**

# Agenda

**01**

## **Overview**

What are the workloads?

**02**

## **Customer Pain Points**

Biopharma vs. Diagnostics challenges

**03**

## **Discovery and Key Talking Points**

Tailored messaging by maturity & segment

**04**

## **Resources**

FCD, objection handling, specialists

**05**

## **Call to Action**

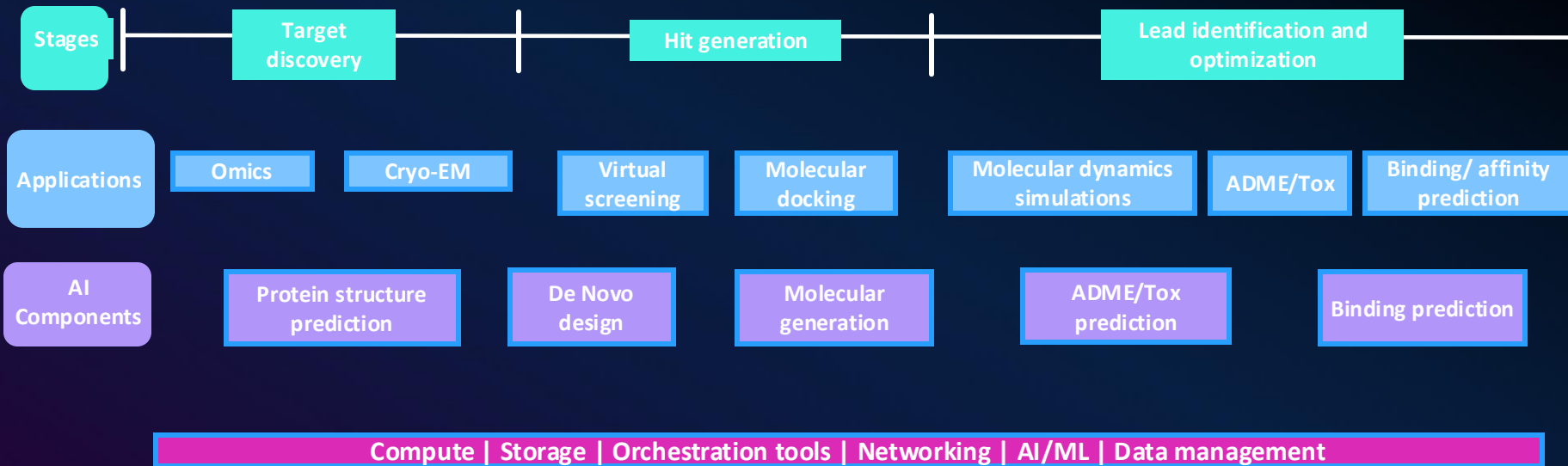
Next steps and engagement framework



# Overview

---

# Drug discovery stages and applications



# Vertex Pharmaceuticals reduces costs of cryo-EM data storage and processing by 50% using AWS

Research

## Challenge:

Vertex needed to make its cryo-EM infrastructure more scalable and performant to keep up with its rapidly growing data and compute demands. The company's on-premises data transfer, storage, and processing was inefficient and costly to maintain.

## Solution:

Vertex migrated its cryo-EM data storage and processing to AWS, using services like Amazon S3, Amazon FSx for Lustre, and AWS ParallelCluster. This allowed Vertex to scale storage and compute as needed, optimize costs, and improve processing performance.

## Results:

- Vertex achieved over 50% reduction in storage and compute costs
- 2x improvement in performance for cryo-EM data processing
- Data processing time improved from several weeks to under one week
- The company gained enhanced scalability and productivity for its scientists



# Genentech accelerates drug discovery with AI research agents

Research



## Challenge:

The drug discovery process faces enormous complexity, dealing with thousands of different cell types, 20,000 genes in the genome, approximately  $10^{60}$  possible small molecules with medicine-like properties, and around  $20^{32}$  possible antibodies with therapeutic-like properties. There is limited human capacity to explore all possibilities and a need to democratize computational tools for non-technical scientists.

## Solution:

Custom research agent built on Amazon Bedrock for integration with scientific databases, automated workflow capabilities, AI-powered analysis tools, and cloud-based data and computational resources.

## Results:

- Democratized access to computational tools
- Enhanced scientist productivity: Scientists + AI agents outperform scientists working alone
- Accelerated research processes
- Faster identification of drug targets
- More efficient study design
- Streamlined path to getting medicines to patients

[Case Study Link](#)



# Natera scales clinical diagnostic testing using AWS HealthOmics

## Diagnostics



### Challenge:

Natera needed to scale their fast-growing oncology test (Signatera) without sacrificing turnaround time, while unifying fragmented lab and analytics workflows and combining genomic with clinical data under governed, cost-predictable, petabyte-scale infrastructure.

### Solution:

Built a digitally connected “Lab X” on AWS using reusable assays and AWS HealthOmics workflows (standardized on WDL, containerized) and a governed analytics data mesh, enabling one-call scalable runs and zero-ETL querying to deliver near real-time, multimodal insights.

### Results:

- Scaled to process +54K tests and 60K pipelines weekly across two labs
- Generate ~1.6 PB of data per week while maintaining fast turnaround times
- Detect disease recurrence up to nine months earlier than standard imaging





2

# Customer Pain Points

Understanding what keeps R&D and Diagnostics leaders up at night

---

# BioPharma (R&D) Pain Points



## Research Delays

Queue times delay research progress and limit experimental scale



## Limited hardware capabilities

Hardware limitations to explore more complex data and scientific questions



## Collaboration Barriers

Distributed research teams can't access shared HPC resources



## Data Storage and Management

Petabytes from CryoEM, genomics needs to be stored securely and cost-effectively



## Innovation Pressure

Need to integrate AI/ML for pattern discovery and acceleration



## Data silos

Difficulty in finding relevant datasets for analysis due to data silos and lack of reproducibility and metadata tracking

# Diagnostics Pain Points



## Clinical Turnaround Time

Fixed capacity leads to SLOWER REPORTS to patients/clinicians (time-critical)



## Revenue Impact

Can't scale business without suffering turnaround time degradation



## Regulatory Overhead

Validated workflows (CAP/CLIA/FDA) create migration friction



## Data Monetization

Siloed data prevents insights generation and biopharma partnerships



## Reproducibility

Need standardized environments for analytical validation



## Operational Focus

Less about exploration, more about consistent, fast processing



3

# Discovery and key talking points

Assess customer maturity level to tailor your approach

---

# Assessing Customer Maturity



## Level 0-1

### On-Premises Dominant

Running HPC workloads primarily on-prem. May be exploring cloud but haven't moved significant workloads yet.



## Level 2

### Growing Cloud Users

Some workloads in cloud but not optimized. Need to integrate services, reduce costs, and expand cloud footprint.



## Level 3

### Cloud-Mature / AI-Ready

Established cloud presence. Ready to leverage AI/ML integration, data monetization, and advanced capabilities.

# Key Talking Points – Drug Discovery (R&D)

R&D

## Level 0-1 Migration

- Eliminate queue times, scale experiments beyond on-prem limits
- Hybrid approach: burst to cloud for peak capacity
- Shift CapEx to OpEx and redirect capital to R&D
- Familiar job schedulers minimize learning curve
- Access new generations of hardware that are not available through on-prem cluster
- Migrate large datasets and use storage tiering cost effectively

## Level 2 Optimization

- Match workloads to right instances (GPUs for AI, HPC for MD)
- Use more managed services (AWS PCS/Healthomics) for reduced operational overhead
- Build a FAIR data foundation to enable downstream AI/ML
- Standardize environments for reproducibility

## Level 3 Acceleration

- Integrate AI/ML to accelerate target ID and candidate selection
- Access latest bioFMs to reduce wet lab costs
- Create unified platforms for knowledge reuse
- Enable global collaboration on unified datasets

# Key Talking Points – Diagnostics

## Diagnostics

### Level 0-1 Migration

- Maintain turnaround times during peaks without over-provisioning
- Pilot new tests on cloud using managed services like AWS Healthomics without impacting validated workflows
- Migration support through analytical validation

### Level 2 Optimization

- Automate end-to-end sample-to-report workflows to reduce operational overhead
- Build FAIR data foundation, so data can be repurposed for research and gaining new insights
- Optimize cost-per-sample through right-sizing
- Implement user-friendly interfaces for monitoring, observability and cost tracking

### Level 3 Acceleration

- Migrate more complex workflows that need GxP or other stringent validation
- Use AI in clinical reporting to accelerate timelines
- Monetize aggregated data for research and partnerships
- Integrate multi-modal data for new revenue streams
- Cloud-native AI enables new tests without infrastructure investment



4

# Resources available

---

# Objection Handling

---

Use the “feel-felt-found” method for objection handling

**Example: We don’t want to revalidate regulated workflows if we move to the cloud.**

## Feel

That is a very relevant concern. We understand that you feel the regulatory burden is high and the risk isn't worth it.

## Felt

Other diagnostics customers have felt the same way, especially with CAP/CLIA and FDA approved workflows.

## Found

However, what they found is that migration doesn't need to start with regulated production workflows. You could start with non-regulated or adjacent workloads, prove value, then only take on validation where the upside justifies the effort.

Use the [HPC Life Sciences Advisor Quick Chat agent](#)

# First call Deck

Customize the first call deck with relevant customer stories for your customer's use case



## Level 0-1

### On-Premises Dominant

Use slides talking about why AWS  
for HPC



## Level 2

### Growing Cloud Users

Talk about modernizing and optimizing  
their workloads using more managed  
services (PCS, Healthomics)



## Level 3

### Cloud-Mature / AI-Ready

Use the AI in drug discovery section



5

# Call to Action

Next steps for engaging customers at every maturity level

---

# Call to Action Framework

FOR ALL CUSTOMERS

1



## Identify & Assess

Identify customer and assess maturity level using discovery questions



2



## Customize Deck

Customize First Call Deck to their maturity level with relevant customer stories



3



## Schedule Meeting

Schedule meeting with appropriate stakeholders



4



## Engage Specialists

Engage specialist team based on interest area

Use the [HPC Life Sciences Advisor Quick Chat agent](#) to assist

# Who you can reach out to

- Specialists
  - Sujaya Srinivasan, Marissa Powers, Juan Perin, Ariella Sasson
- BD
  - GTM Lead – Sally Peck
  - Exec Healthcare advisors – Hinel Karia, Firas Wehbe
- Partners
  - Olivia Choudhury, Gavin Philips
- Proserv
  - Jim Makris

# Useful links

[Highspot page](#)

[HPC for Biopharma and Diagnostics FCD](#)

[HPC Life Sciences Advisor chat agent](#)

[Biopharma Sales Assistant chat agent](#)





R&D



Diagnostics



AI-Ready

# Thank You

Know your customer. Assess their maturity.  
Tailor the conversation. Drive outcomes.