



# Quantum-Si

Investor Update

May 2022

# Disclaimer

This presentation includes “forward-looking statements” within the meaning of the “safe harbor” provisions of the United States Private Securities Litigation Reform Act of 1995. Actual results of Quantum-Si Incorporated (the “Company”) may differ from its expectations, estimates, and projections and, consequently, you should not rely on these forward-looking statements as predictions of future events. Words such as “expect,” “estimate,” “project,” “budget,” “forecast,” “anticipate,” “intend,” “plan,” “may,” “will,” “could,” “should,” “believes,” “predicts,” “potential,” “continue,” and similar expressions (or the negative versions of such words or expressions) are intended to identify such forward-looking statements. These forward-looking statements include, without limitation, the Company’s expectations with respect to future performance, development of products and services, potential regulatory approvals, the size and potential growth of current or future markets for the Company’s future products and services, or the Company’s plans expectations or future operations, financial position, revenues, costs or expenses. These forward-looking statements involve significant risks and uncertainties that could cause the actual results to differ materially from those discussed in the forward-looking statements. Most of these factors are outside the Company’s control and are difficult to predict. Factors that may cause such differences include, but are not limited to: the impact of COVID-19 on the Company’s business; the inability to maintain the listing of the Company’s shares of Class A common stock on The Nasdaq Stock Market; the ability to recognize the anticipated benefits of the Company’s recently-completed business combination, which may be affected by, among other things, competition and the ability of the Company to grow and manage growth profitably and retain its key employees; changes in applicable laws or regulations; the Company’s ability to raise financing in the future; the success, cost and timing of the Company’s product development activities; the potential attributes and benefits of the Company’s products and services; the Company’s ability to obtain and maintain regulatory approval for its products, and any related restrictions and limitations of any approved product; the Company’s ability to identify, in-license or acquire additional technology; the Company’s ability to maintain its existing lease, license, manufacture and supply agreements; the Company’s ability to compete with other companies currently marketing or engaged in the development of products and services that the Company is developing; the size and growth potential of the markets for the Company’s future products and services, and its ability to serve those markets, either alone or in partnership with others; the pricing of the Company’s products and services following anticipated commercial launch; the Company’s estimates regarding future expenses, future revenue, capital requirements and needs for additional financing; the Company’s financial performance; and other risks and uncertainties indicated from time to time in the Company’s filings with the U.S. Securities and Exchange Commission. The Company cautions that the foregoing list of factors is not exclusive. The Company cautions readers not to place undue reliance upon any forward-looking statements, which speak only as of the date made. The Company does not undertake or accept any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements to reflect any change in its expectations or any change in events, conditions, or circumstances on which any such statement is based.

# Quantum-Si | Enabling Next Generation Protein Sequencing

## Company Overview:

- Founded by Dr. Jonathan Rothberg in 2013
- Publicly traded on the NASDAQ (QSI) in June-2021
- ~\$435M in cash (as of the end of 1Q22)
- >900 patents issued & applications pending
- Established sites in Guilford, CT and San Diego, CA
- Focused on launching the first **Next Generation Protein Sequencing** instrument to interrogate proteins at amino acid resolution

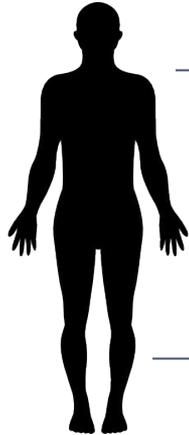
The power of semiconductor chip technology...



...enables massively-parallel, single molecule protein sequencing

We harness the power of  
semiconductor technology for  
Simplicity Speed Scale





20,000 Genes  
(DNA)

A blueprint of "what could be"

1,000,000+ Proteoforms  
(Protein)

A view of "what is happening"

*Proteins are the main structural and functional components of cells and they are extremely diverse*

**\$50B Market**

# 90%

of FDA-approved drugs target a protein<sup>1</sup>

85% of the **human proteome** is currently undrugged<sup>2</sup>, potential for game changing drug development.

**Protein modifications** are real-time indicators of health and disease, making them ideal markers for disease, drug response and health.

Source(s):

1. The Human Proteome Tissue Atlas - Druggable Proteome, 2015, The Human Protein Atlas Project
2. A Quest to Drug the Undruggable, June 2018, Chemical & Engineering News

# 150,000

research papers found

thousands of protein biomarkers

yet less than

# 100

are used routinely today<sup>1</sup>

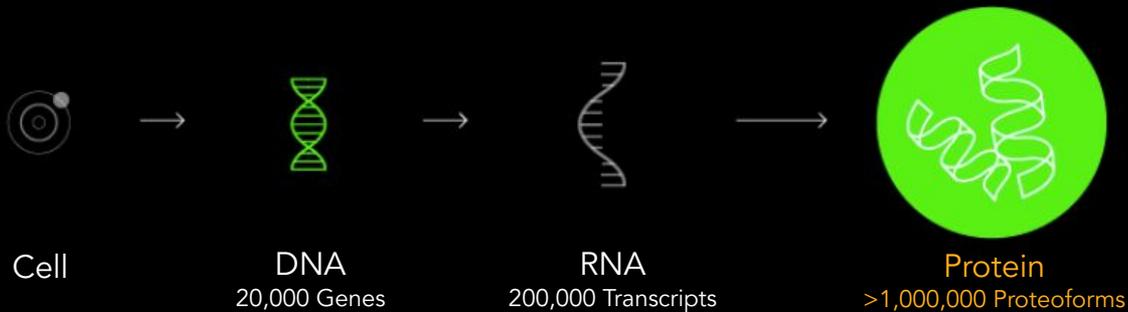
Source:

1. <https://www.technologynetworks.com/proteomics/blog/using-protein-biomarkers-increases-the-chances-of-success-in-clinical-trials-329018>

Current tools limit the use of **protein biomarkers**. Routine tests for Serum & Cerebrospinal Fluid (CSF) are constrained by number of analytes they can look at, sensitivity, and specificity.

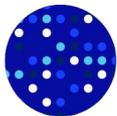


# Digital Technologies Transform Markets – We've Seen This Before

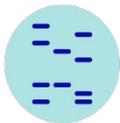


*Analog*  
Microarrays

*DNA (Genomics)*



Affinity Arrays



*Proteins (Proteomics)*



Analog → Digital transition creates new market opportunities.

*Digital*

DNA sequencing



Protein Sequencing



# Approaches to Proteomics

## Digital Sequencing-based Approaches

Decode Novel Sequences

### Quantum-Si

Direct Kinetic  
Real-Time

### Encodia

Binding +  
Degradation with  
NGS readout

### Erisyon

Labeling +  
Degradation  
with scanning

### SomaLogic / Olink / Nautilus

Antibodies / Aptamers

Detection Method

Instrument/Run Costs

AA Sequencing

Read Length Scaling

PTM Detection

Notes

Kinetics for  
amino acids &  
PTMs

\$\$ - \$\$\$

LIMITED

LOW

?

NGS erases  
quantitative  
information

Harsh acidic  
environment  
limits utility

\$ - \$\$\$

NO

N/A

?(Affinity Reagent)

\*Need to create proteoform specific  
affinity reagent



# Quantum-Si unique solution

## Next Generation Protein Sequencing

**END-TO-END  
BENCHTOP SYSTEM**

Decentralization by enabling the scientific and clinical community

**TIME DOMAIN  
SEQUENCING™**

Novel sequencing method that provides interrogation at the amino acid level

**SINGLE MOLECULE  
RESOLUTION**

Absolute (versus relative) measurement of unbiased biology providing novel insights into variant and modifications



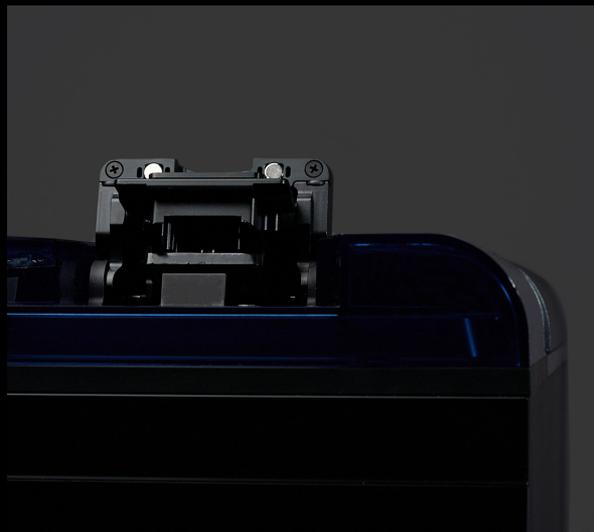
# Quantum-Si's End-to-End Benchtop Proteomics Solution



## Sample Prep

CARBON: \$20,000

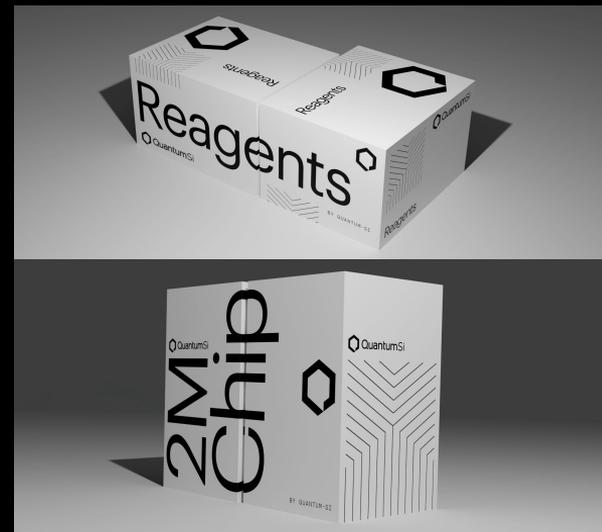
Universal cartridge based sample preparation and automation



## Sequencing & Cloud Analysis

PLATINUM: \$70,000

Real-Time, Massively Parallel, Single Molecule Detection



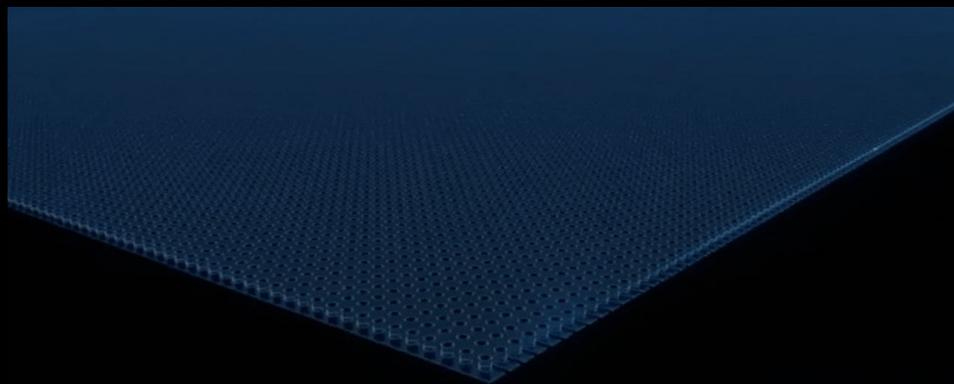
## Reagents & Chips

CONSUMABLES: \$1,000/each

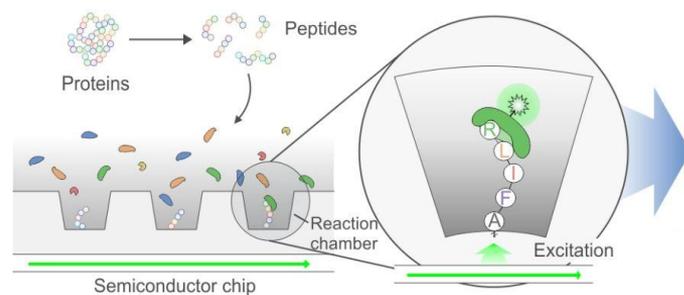
Library Prep & Protein Sequencing



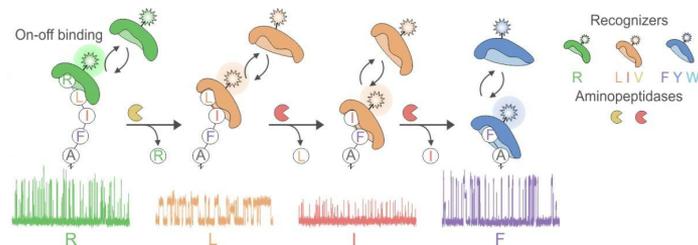
# Time Domain Sequencing™



## Library Preparation and Loading



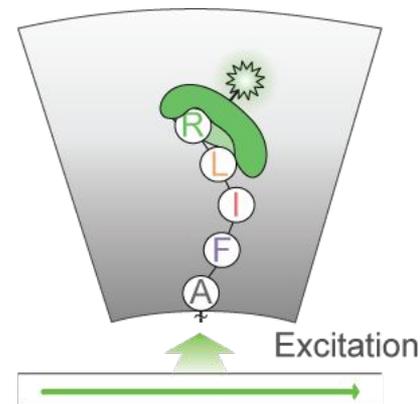
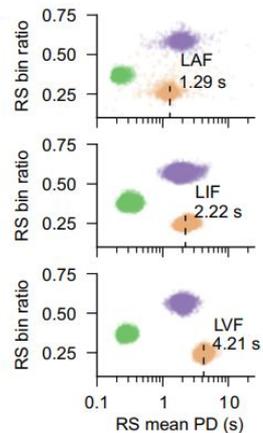
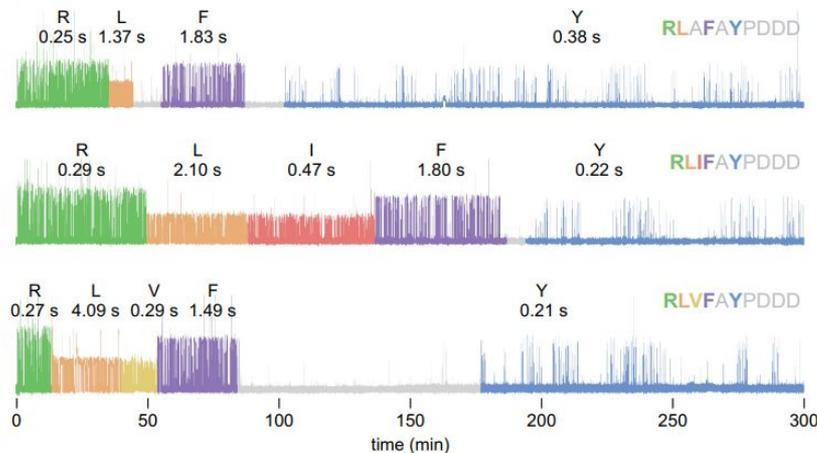
## Protein Sequencing



Additional details are available in our preprint on [bioRxiv](#) and foundational whitepaper [online](#)

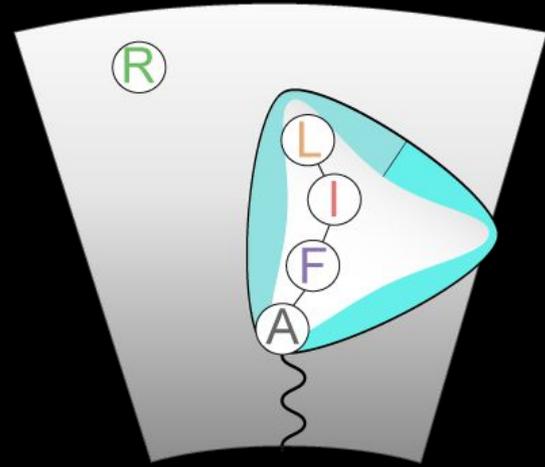
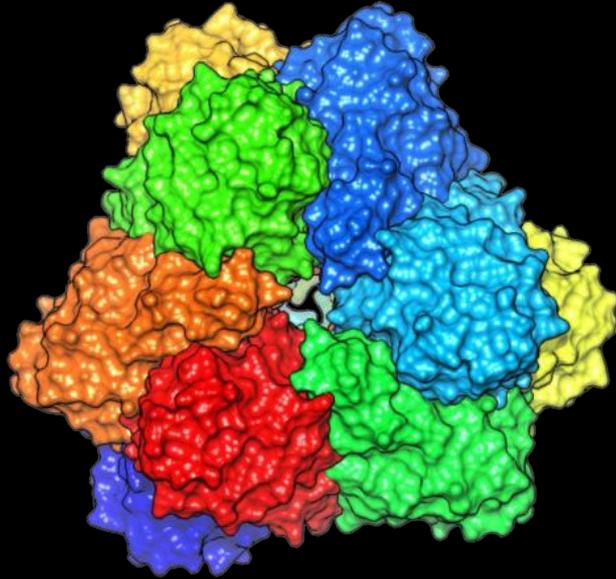


# Sequencing Peptides to Decode Proteins and Modifications



Quantum-Si's recognizers interrogate more than just the N-terminal amino acid

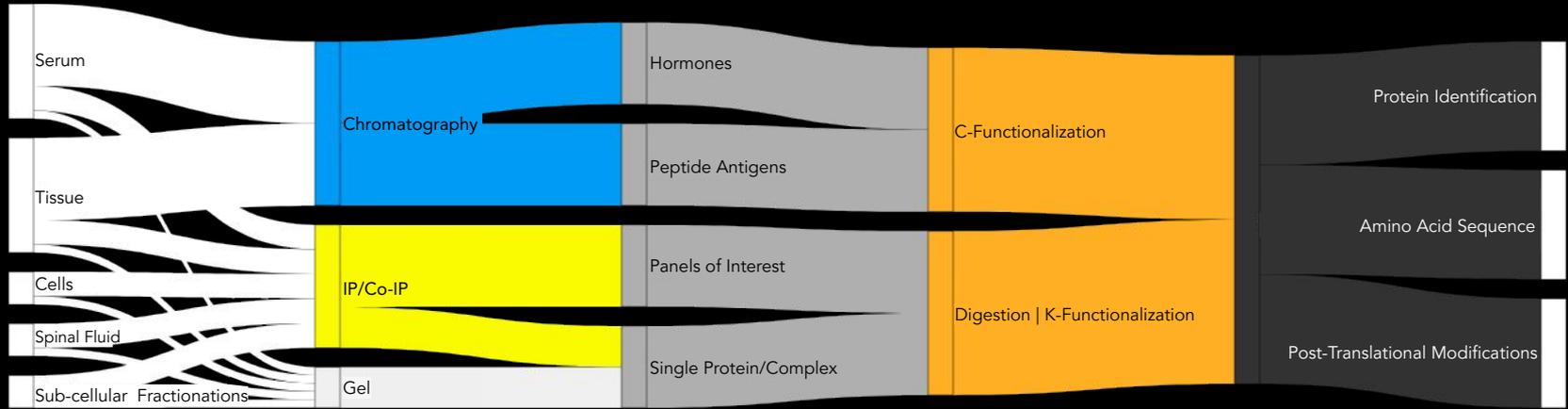
# The Magic Enabling Broad Coverage of the Proteome



While each protein is unique, the enzyme machines we engineer (aminopeptidases) have evolved to make all peptides behave the same in our system!



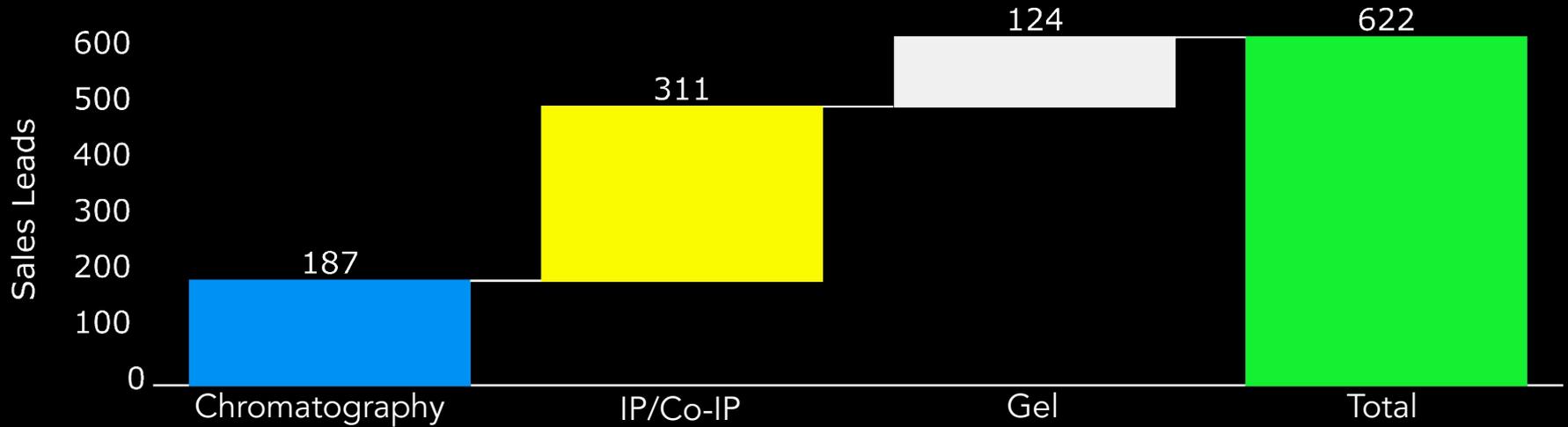
# Universal Process for Protein Sequencing



Fits into existing proteomic workflow.



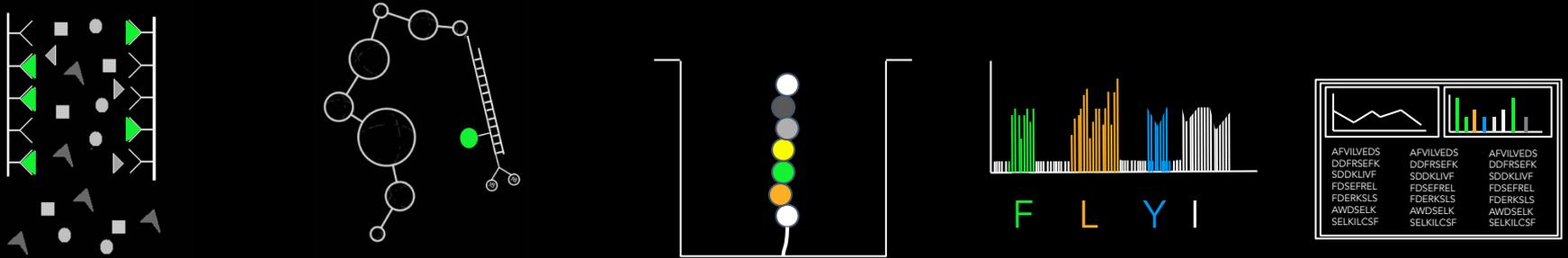
# 500+ Advanced Leads by Workflow



Estimates based on 50% IP/Co-IP, 30% Chromatography, and 20% Gel of 500+ advanced leads



# Workflow for Quantum-Si's Next-Gen Protein Sequencing™



Enrichment

Library Prep

Loading

Sequencing

Results

Enrich proteins of interest

Digest and add Linker for loading (multiple samples or single cell proteomics)

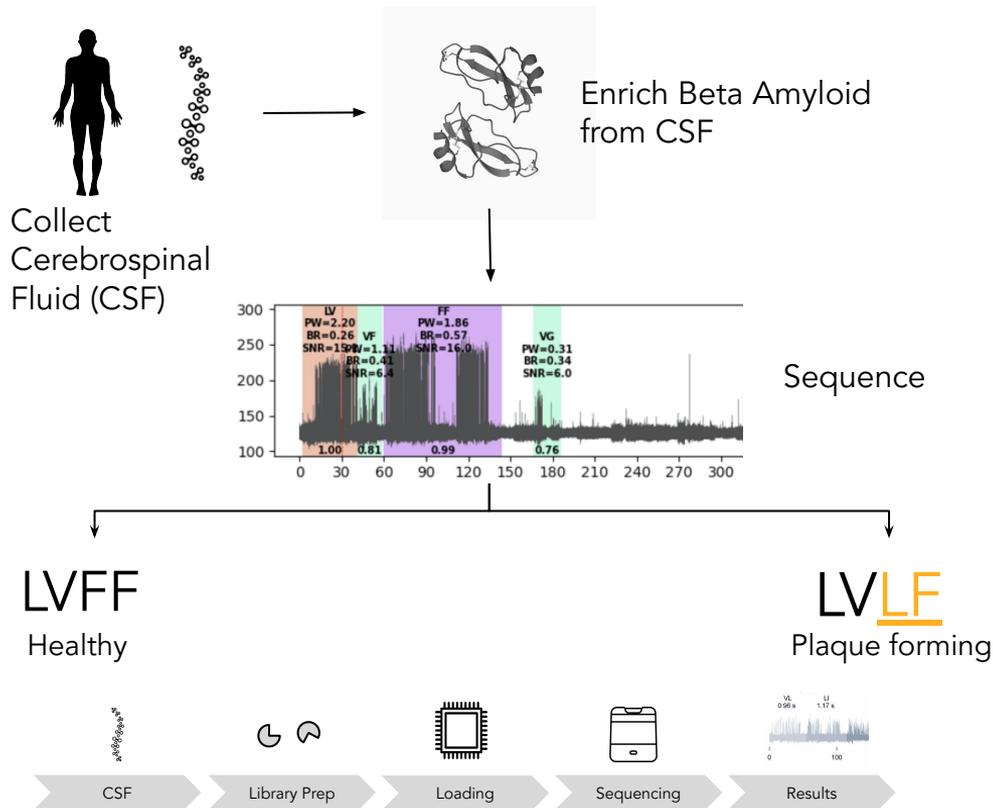
Immobilize peptides in wells (2 Million wells per chip)

Sequence by recognizing the amino acids at the end, removing it, and recognizing the next ones

Analyze sequence to discover new proteins, decode amino acid sequence & post-translational modifications



# Alzheimer's Risk Assessment



## How Can You Test for Early Onset Disease?

### Biological & Clinical Challenge:

- Less than 1% of Alzheimer's caused by an inherited single gene.
- Somatic mutations - mutations accumulated over a lifetime.

### Technical Challenge:

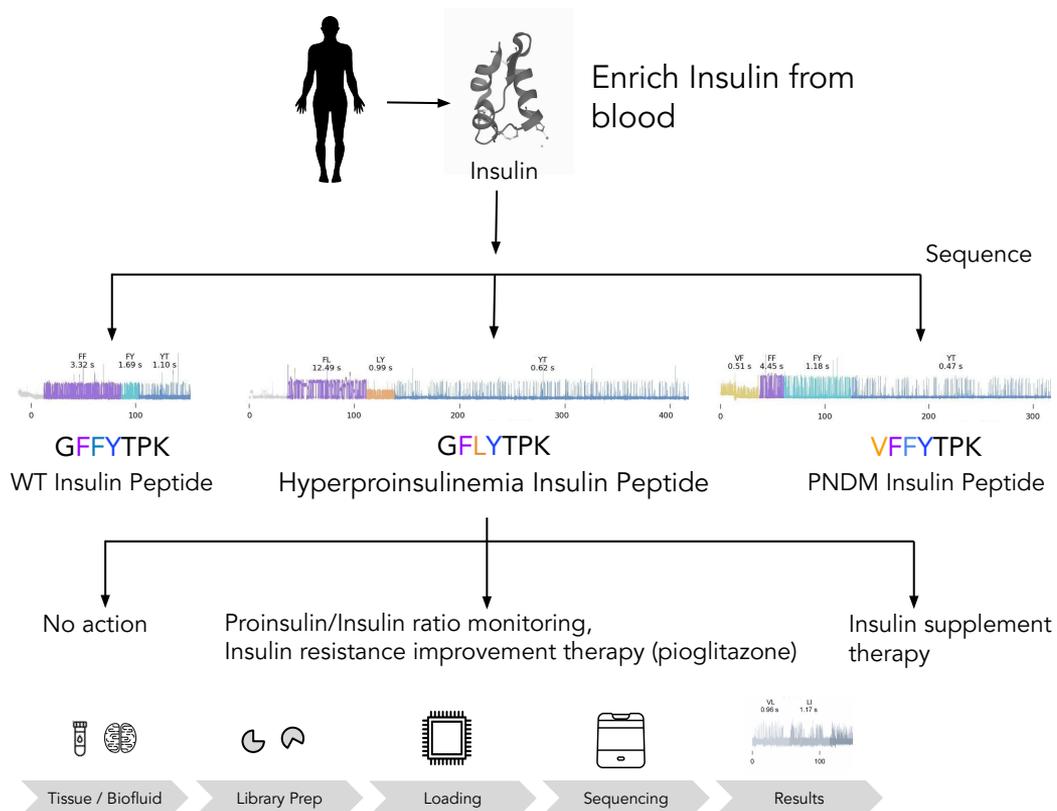
- Source of mutation not known.
- Mass spec is expensive, inconsistent, and often not sensitive enough.

### Solution:

- Sequencing of the peptides to identify changes in amino acid sequence.
- See our beta-amyloid protein sequencing application note [online](#).



# Metabolic Disease



## How Can You Identify Modification of Critical Peptide Hormones?

### Biological & Clinical Challenge:

- Heterogeneous populations of variants.

### Technical Challenge:

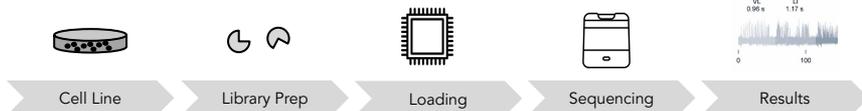
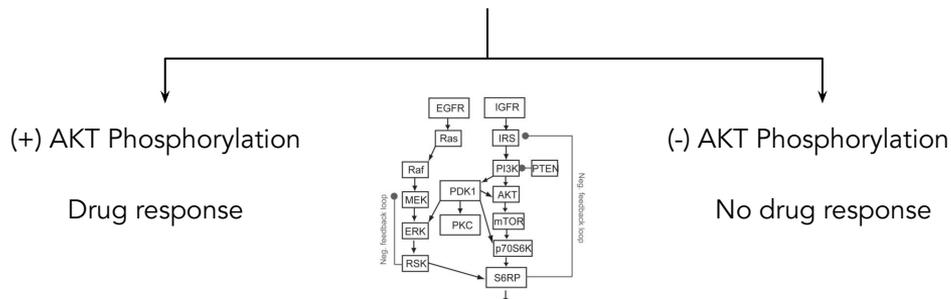
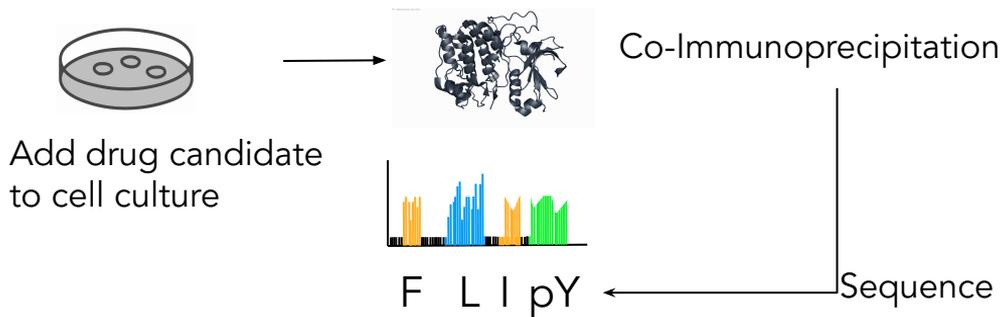
- Mass spec is expensive and inconsistent.
- Sensitivity challenging for less abundant modifications.

### Solution:

- Immunoprecipitation and Sequencing of the peptides to identify point mutations.



# Drug Development



How Do You Identify Proteins that Interact with Target Proteins of Interest?

## Biological & Clinical Challenge:

- New proteins in my pathway?
- How does the complex change in disease?

## Technical Challenge:

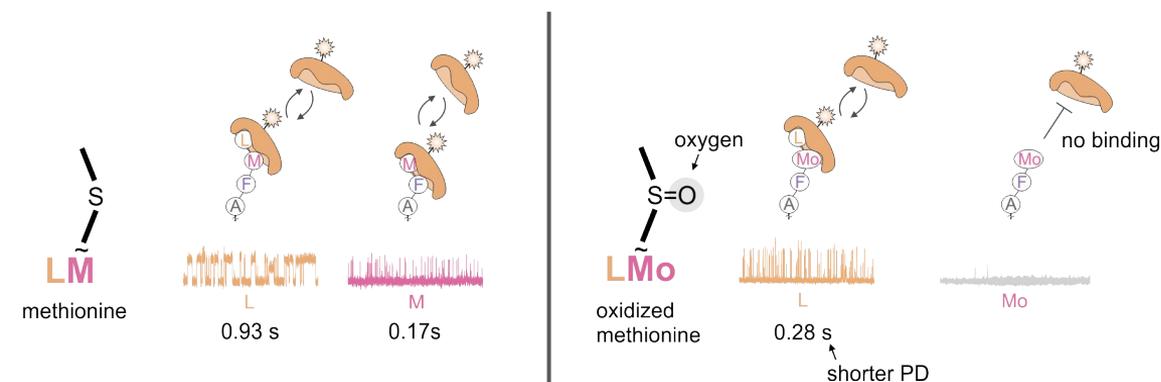
- Routine, robust, scalable, sensitive tools to discover new proteins and post-translational modifications.

## Solution:

- Peptide sequencing to discover new proteins.
- Comparisons between samples to identify new post-translational modifications.



# Single Molecule, Single Atom Detection



No *a priori* knowledge needed to detect new biological markers.

The oxidation of the penultimate residue is detected by a reduction in the average pulse duration of the N-terminal recognizer (as well as by the blocking of recognition of methionine when it becomes the N-terminal amino acid, as sequencing proceeds).

1,000,000+ Protein Variations!

## Biological & Clinical Challenge:

- A protein's modifications determine its function.
- What biomarkers can we discover?

## Technical Challenge:

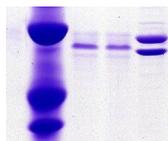
- Impossible technical challenge to generate affinity reagents to ALL PTMs in context (over 1 million).

## Solution:

- Q-Si detects modifications without a *priori* knowledge.
- Powerful new method for comparing disease & treatment states to find biomarkers.
- Kinetics enable the detection of post-translational modifications; oxidation, phosphorylation, glycosylation (in the penultimate amino acids).



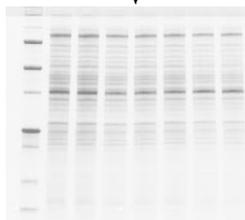
# Proteomics Core on Your Benchtop



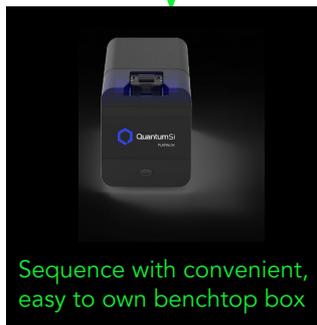
Gel purified protein  
What is the second band?



Buy \$200k benchtop MALDI?  
Send out sample to Mass Spec core?



Can do a Western.  
But no Antibody identifies it or explains the difference.



## Sequence Proteins like We Sequence DNA

### Biological & Clinical Challenge:

- What is this protein?
- How is it modified?

### Technical Challenge:

- Weeks waiting for answers from a mass spec core facility.
- Antibodies don't provide new insights.

### Solution:

- Discover new proteins of interest.
- Identify new protein variations and post-translational modification.



Gel Band



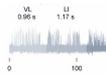
Library Prep



Loading



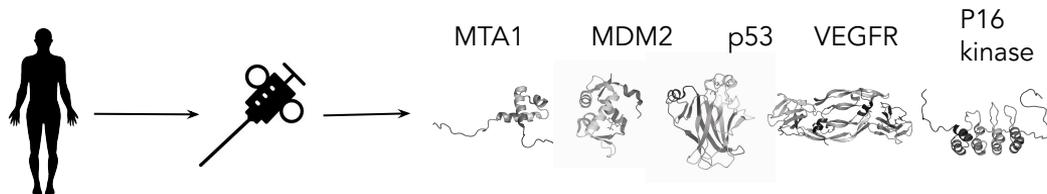
Sequencing



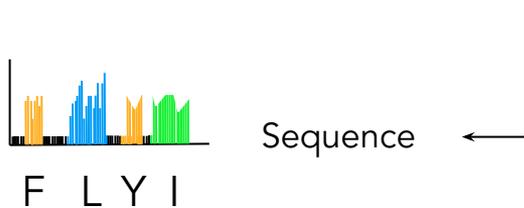
Results



# Future of Therapy Selection

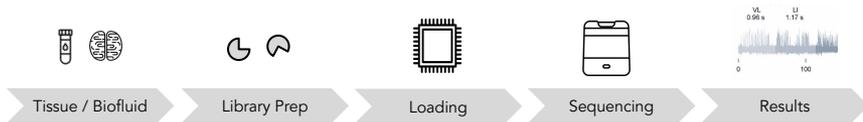


Immunoprecipitate 5-10 proteins from biopsy



Radiation therapy

Chemotherapy



## Profiling Cancers to Guide Therapy

### Clinical Challenge:

- Survival depends on early correct therapy selection and modifications of treatment regimens.

### Technical Challenge:

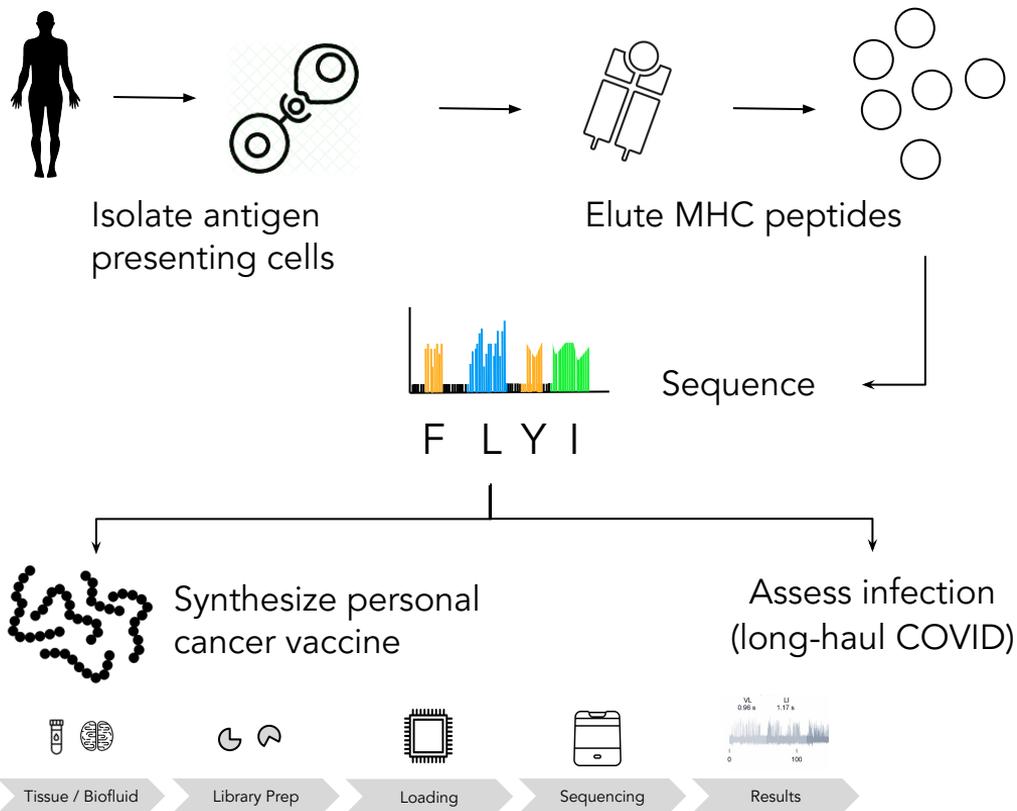
- Genetic tests detect chromosomal aberrations, not protein alterations.
- Disease instability requires frequent testing & new understanding.

### Solution:

- Quantum-Si sequencing enables biomarkers select therapy.



# Enabling Personalized Medicine



## Identify Antigens for Personalized Immunotherapy or to Understand Infection

### Clinical Challenge:

- Highly diverse peptides of unknown origin.
- Need to identify modifications.

### Technical Challenge:

- Peptides missed by mass spec
- Relevant neoantigens or antigenic pathogens relatively low abundant.

### Solution:

- Quantum-Si sequencing to identify antigen targets.
- Understanding of new Covid variants.



# Goals for Commercial Launch

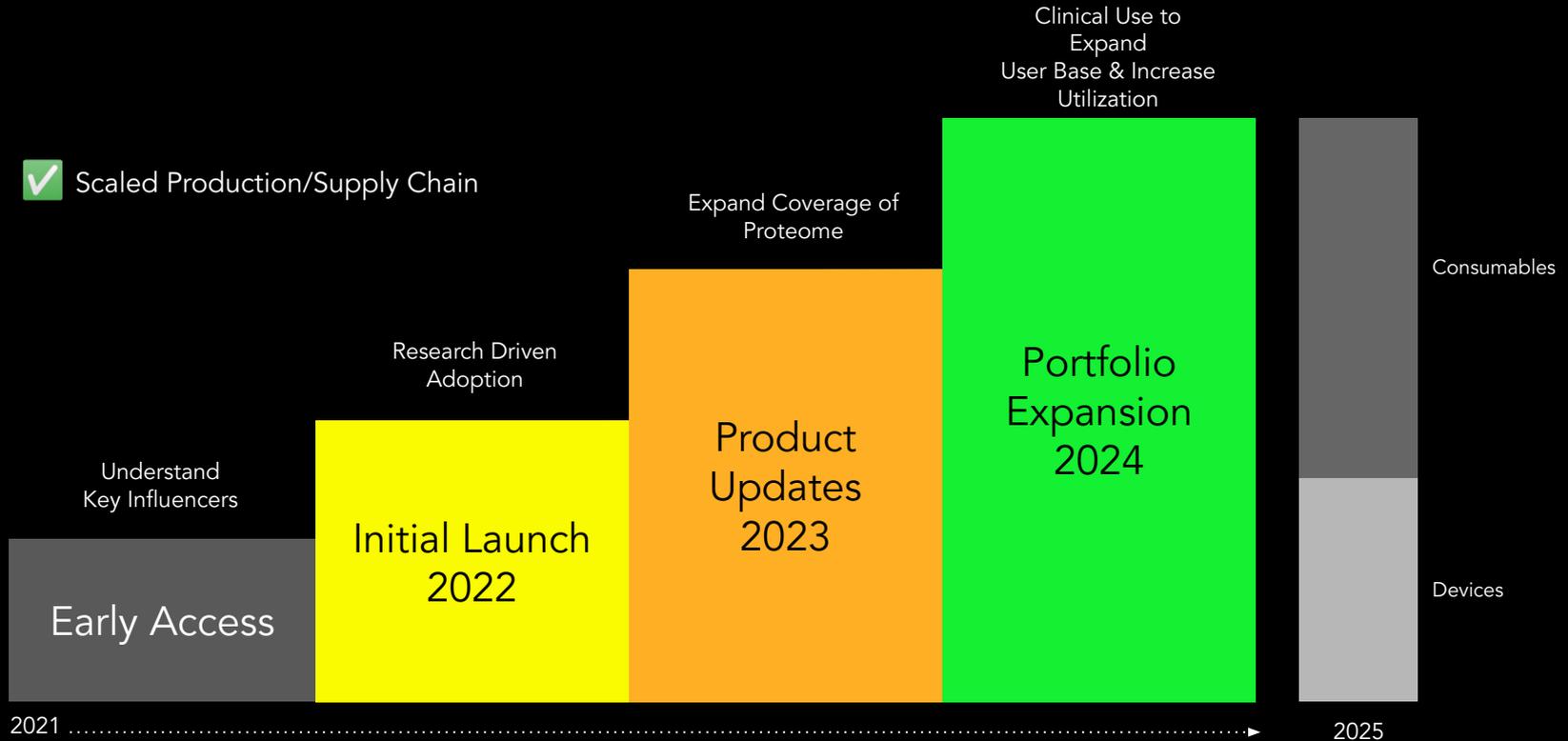
**~70%** loading of proteome after library prep into **5 to 25 amino acid** long peptides

**200,000+** reads per run, with **10 to 20 reads** for each high confidence call

**5 to 50+** proteins over **3 or 4 logs** concentration range



# Roadmap for Customer Adoption & Growth



# ~\$435 M

to fund work through 2024

## Experienced

team of

# 175+

With team members that invented and commercialized the first Next Generation DNA Sequencing and put DNA sequencing on a Semiconductor chip, we are well positioned to launch the World's First Next Generation Protein Sequencing



# Strategic Focus for 2022



## 2022 Focus:

1. Launch in 2H 2022
2. Deliver Product Development and Application Pipeline
3. Establish Market Leadership in Next Generation Protein Sequencing



Thank You