



Quanterix : GBSC meeting presentation  
July 11<sup>th</sup>, 2014 :  
Andreas Jeromin, PhD:

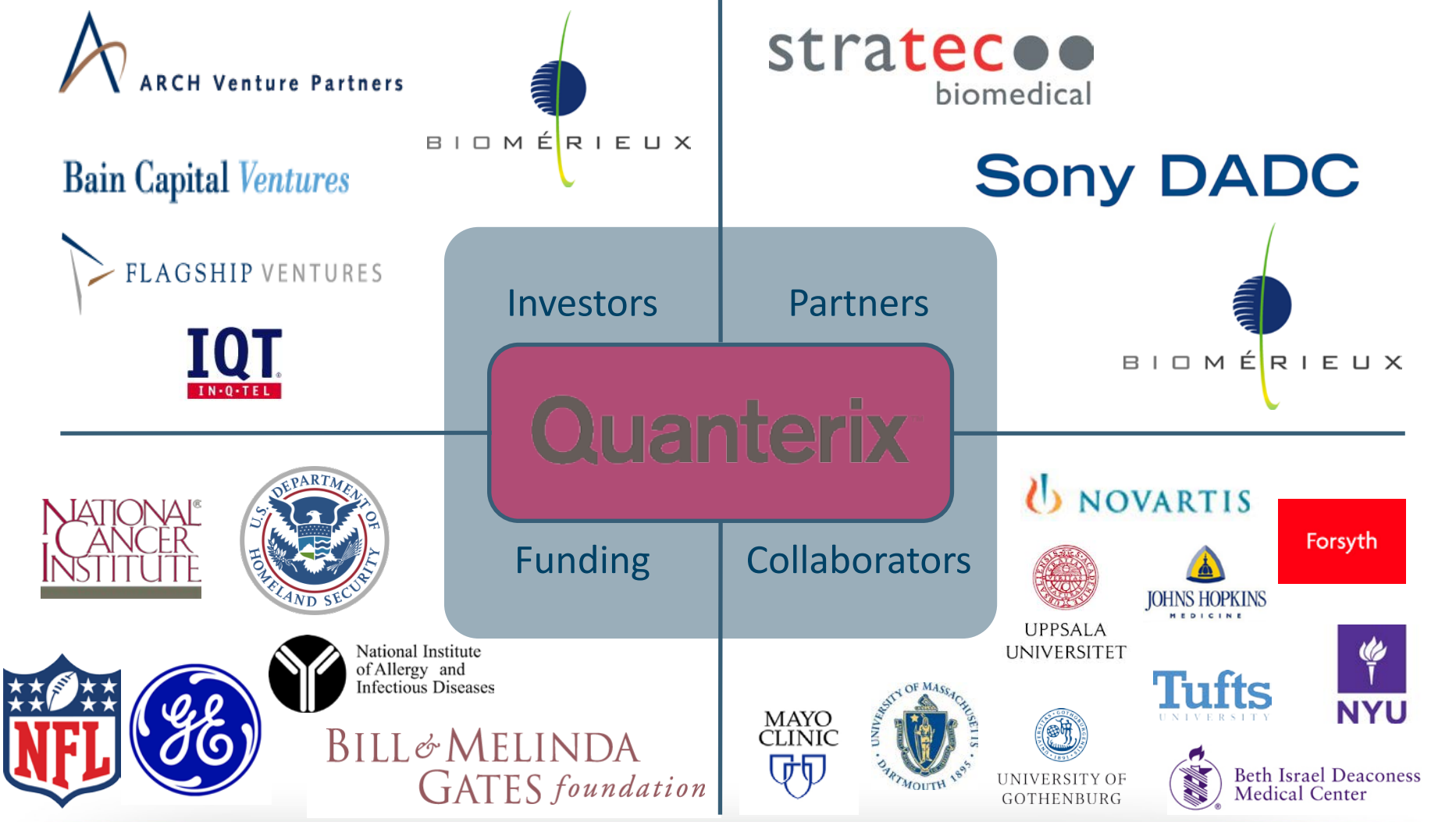
# Corporate Overview

- Founded 2007 by David Walt (founder of Illumina) and Nicholas Naclerio
- Exclusive licensee of patent portfolio developed by David Walt at Tufts University
- ~ 50 employees, 15 Ph.D's
- Expanded to state-of-the-art 20,000 sq. ft. facility April 2012 in Lexington, MA
- Venture-backed by leading life science investors and strategic partners
- Cumulative \$47M Raised in Series A, B, C



Simoa HD-1 Analyzer

# Quanterix is supported by and working with leading organizations around the world



# The Quanterix (Simoa) Value Proposition

Serum Concentration	Total Number of Serum Proteins
$1 \times 10^{-3}$ M to $1 \times 10^{-12}$ M	325 <sup>1</sup>

171 FDA Approved Tests<sup>3</sup>

Clinical Chemistry

ELISA

How many proteins  
Are below  $1 \times 10^{-12}$  M?

Potential is Large:

- Human Proteome = 20,243 genes<sup>1</sup>
- Secreted Proteins >4,000<sup>2</sup>



<sup>1</sup> Peptide Atlas 2012

<sup>2</sup> Cui *et al.* Bioinformatics (2008) 24 (20): 2370-2375

<sup>3</sup> Anderson, N.L. 2010. Clinical Chemistry February 2010 vol. 56 no. 2 177-185

Digital ELISA detects proteins in the fg/mL range →  
Sensitivity improvement typically 100's to 1000's X

Protein	Simoa LOD (pg/mL)	Gold Standard Assay LOD (pg/mL)		Sensitivity Fold Increase
Aβ42	0.020	50	Innotest	2500x
Tau	0.020	60	Innotest	3000x
p-Tau 181	0.10	60	Innotest	600x
TNF-a	0.003	0.60	R&D Systems	200x
C-peptide	0.020	30	ALPCO	1500x
GLP-1	0.033	11	Luminex	333x
INF-a	0.030	2.9	Millipore	100x
IL-17A	0.001	0.5	Genentech	500x
PSA	0.028	10	Roche/Siemens	333x
Troponin I	0.017	3	Abbott Architect (HS)	176x
p24	0.005	15	Ortho	3000x
IL-1β	0.001	0.057	R&D Systems	57x
IL-1α	0.024	1	R&D Systems	42x
AVG				<b>949X</b>

# Quanterix Instrument Workflow

## Step 1. Load Consumables

- Kits (singleplex or multiplex)
- Cuvettes and disposable tips
- Simoa discs



## Step 2. Menu Setup

- Select assay
- Calibrators and controls

## Step 3. Load Samples

- 96 well plates or tubes

## Step 4. Run Samples

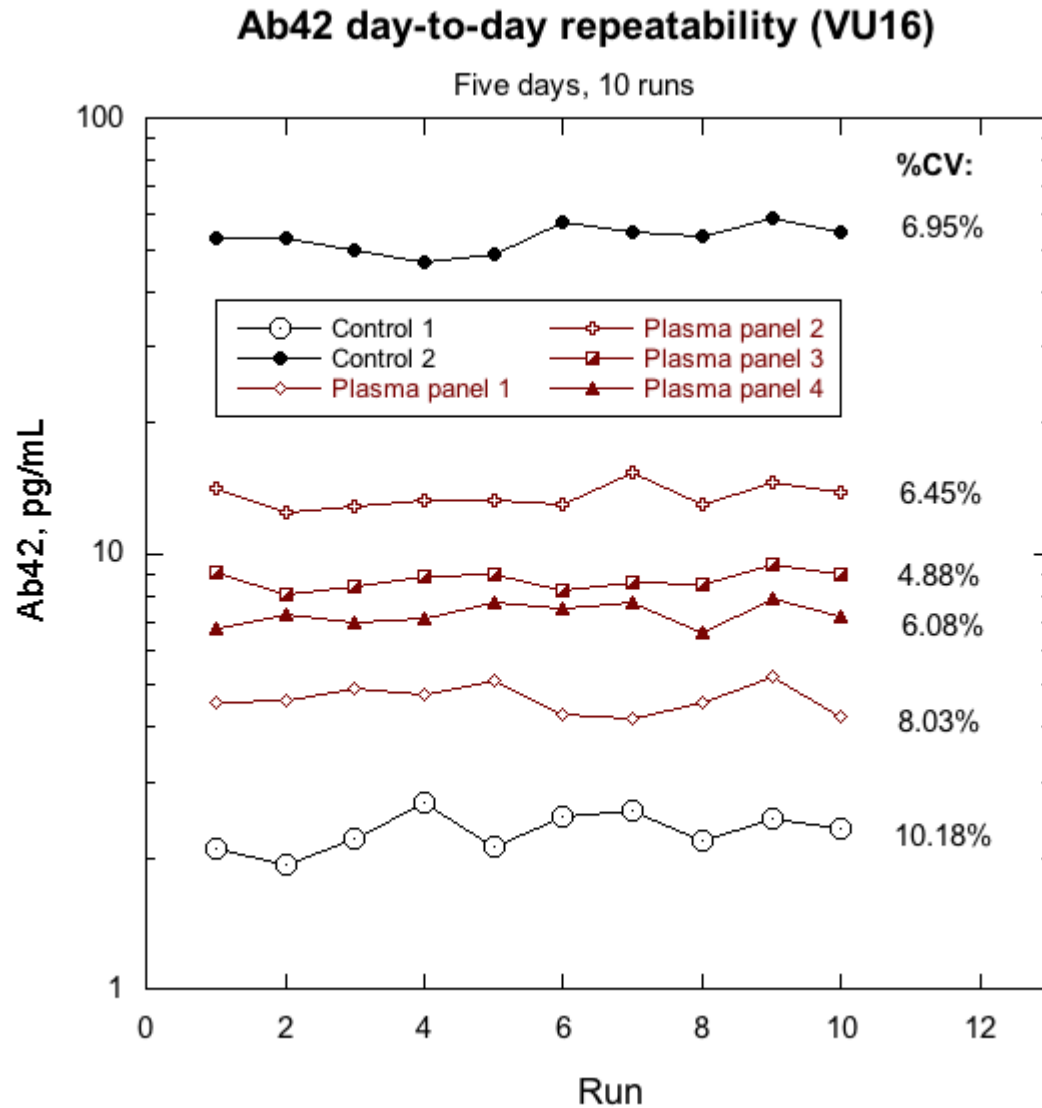
- First result in 75 min

## Step 5. Data analysis



Simoa HD-1 Analyzer

# Assay performance with software v1.1



Each data point mean of 2 reps, no outliers omitted.

# RUO Launch Menu : Strategic focus in CNS

## Metabolic



Adiponectin  
C-peptide  
Ghrelin  
GLP-1, total  
Glucagon  
Insulin  
Leptin

## Neurology



A $\beta$ 38  
A $\beta$ 40  
A $\beta$ 42  
Tau  
p-tau-181/231

## Inflammation



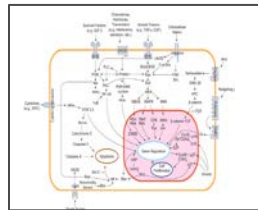
Eotaxin	IL-15
GM-CSF	IL-17a
IL-1 $\alpha$	IL-17f
IL-1 $\beta$	IL-18
IL-2	IFN- $\alpha$
IL-4	IFN- $\beta$
IL-5	IFN- $\gamma$
IL-6	IP-10
IL-7	MCP-1
IL-8	TGF- $\alpha$
IL-10	TNF- $\alpha$
IL-12 (p70)	TNF- $\beta$
IL-13	TRAIL

## Infectious Disease



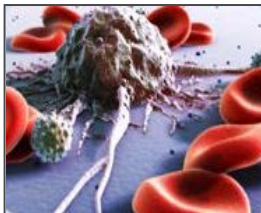
Anti-HIV 1  
Anti-HIV 2  
HCV Ag  
p24

## Signal Transduction



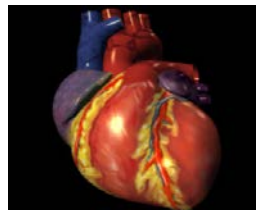
Akt, total  
Caspase-3  
EGFR, total  
ERK1/2 total  
VEGF

## Oncology



PSA

## Cardiac



Troponin I

## HomeBrew



Prioritized assays in **green** to be validated on the instrument first



# Why Simoa™?



## Current Offerings:

- Current technologies lack sufficient sensitivity for many biomarkers
- Limited dynamic range
- Time consuming manual process (3-5 hrs.)
- High imprecision of results, especially in multiplexing
- Large sample size (25-50 microliters)
- Acceptable cost/sample
- Limited path to Laboratory Developed Tests (LDT) and IVD

## Simoa

- ~ 1000x sensitivity improvement (femtomolar,  $10^{-15}$ )
- > 4 logs of dynamic range
- Fully automated system – sample in, result out, save on FTE cost and manual errors
- < 10% CVs thanks to digital approach
- Use smaller samples: As little as 1 microliter (with dilution)
- Similar costs to current approach, using conventional reagents
- Simoa is very amenable to LDT. Partner in IVD is BioMerieux
- Open to custom assay development (Homebrew)

# Quanterix Value Map in the Biomedical Industry

Research Use Only (RUO)

**Quanterix**  
high definition diagnostics



Exclusive Partner

Clinical IVD

Academic Research

Pharma & BioPharma - Clinical

CRO

Novel Markers

Blood Screening

LDTs

cDx

POC

Food Safety, Biothreat, etc.

Quanterix or Co-Exclusive

Differentiated Value  
Sensitivity – Efficiency – Precision – Multiplexing - Value

- Quanterix Revenue Streams
- Simoa HD-1 Analyzer
  - Assay Kits
  - Homebrew
  - Service
  - Boutique Testing & Custom Assay Dev.



Thank you ! Questions ?  
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