AI-Powered Personalized Heart Health

Genomix AI

Alok Jha, MS, PhD
Founder

Jennifer Kwan, MD, PhD
Co-Founder

Founders

Alok Jha, MS, PhD
Co-Founder

- Former AI Adviser to AiCare
- Successfully demonstrated impact of genetics in Alzheimer's disease and Type 2 Diabetes
- Experience in AI modelling of genetics, imaging and drug repurposing.
- Research experience in Impacts of Ageing and Genetics based outcome
- Data scientist at Weill Cornell Medicine

Beth Israel Deaconess Medical Center

Weill Cornell Medicine

Jennifer Kwan, MD, PhD
Co-Founder

- Experienced in personalized medicine
- Experience in genetics of cardiovascular medicine
- Research focus on genetics, ageing and imaging features
- Experience in genetics based clinical trails.
- Physician scientist at Yale University

Berkeley

Yale University

UIC UNIVERSITY OF ILLINOIS CHICAGO

Heart Failure — Key Data Points

6.5M

heart failure patients

1M

new cases per year

50%

of heart failure diagnoses can be linked to genetics and infections

CDC, HFSA

Heart Failure — The Cost of Inaction

Patient **presents with symptoms** of heart failure

Patient (diagnostic) **testing oftentimes is inconclusive or not actionable.** Treatment is not personalized

Uncontrolled HF leads to significant **additional testing and hospitalizations** for HF

Continued **trial and error to figure out** which combination of medications is effective and tolerated

For many patients, this journey can take YEARS

$15k
Delayed diagnosis

$25k
HF hospitalization

$125k +
Lifetime lost productivity

$31 Billion/year burden on the healthcare system

Pharmacoeconomics. 2020 Aug 19;38(11):1219–1236

Heart Failure — The Cost of Inaction

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Our goal is to provide actionable insights faster

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Heart Failure — Lengthy Diagnosis Processes and Non-Personalized Treatments

Genetic profiling offers better prevention, treatment, and management, but:

Complexity

Genomics variants are difficult to interpret

Broad Parameters

Too many variables make it hard for physicians to decide on the best course

Time-Consuming

Current process takes **2+ years** to get actionable results

Genomix AI

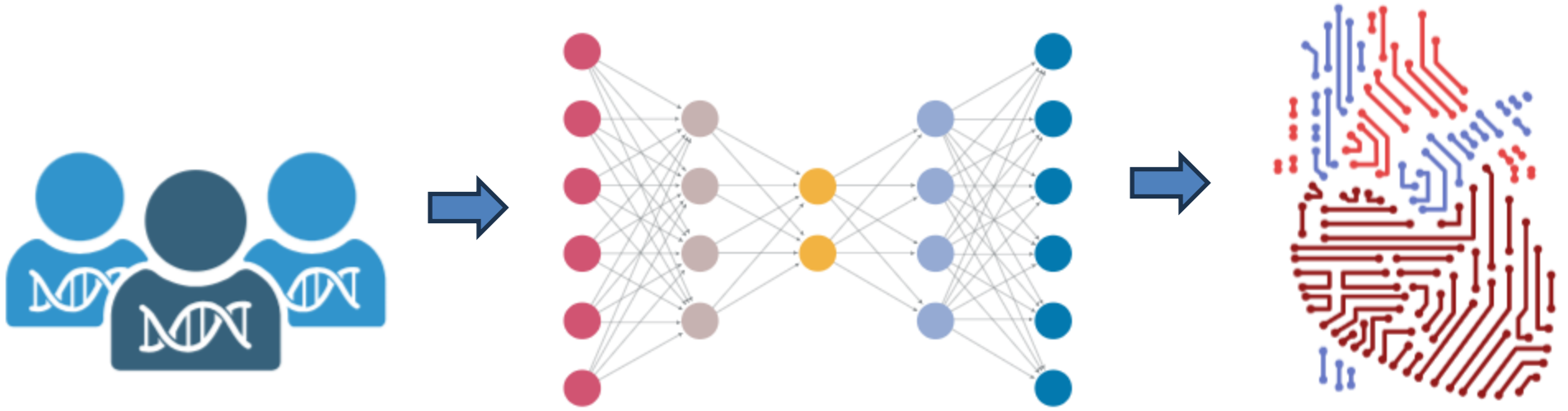
Genetics in Medicine 2021
PMID: 30487145

Why Now?

UKB, TOPMED, Yale curated cohorts
Extensive feature engineering, knowhow

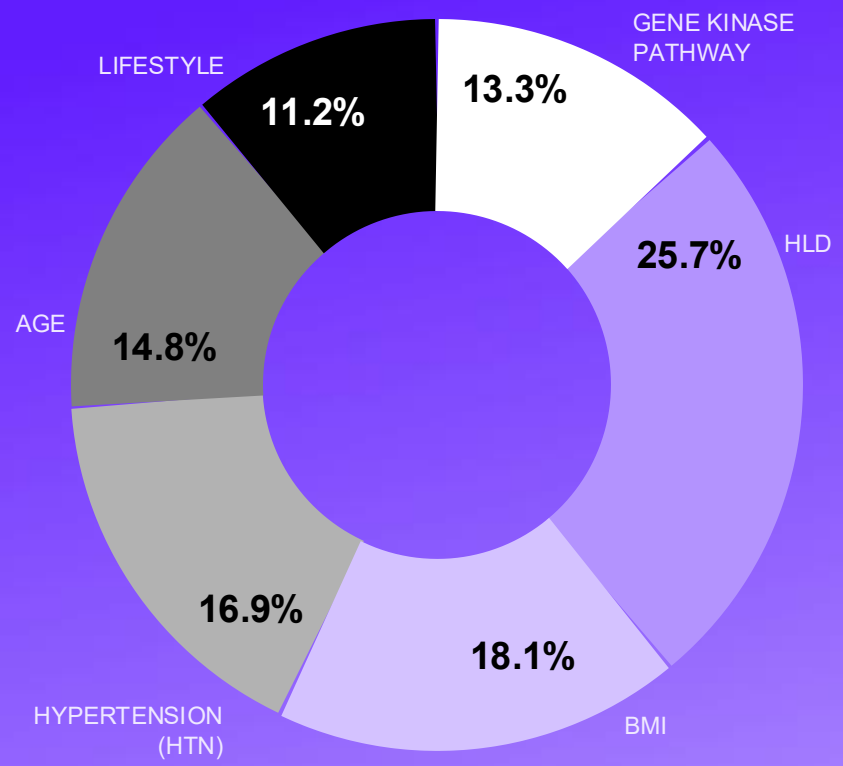
Resources:
Large scale genomics datasets

Technology:
Deep learning AI tools can handle genomic data at scale → with heart failure insights



Introducing

RxScore



Genomix AI

Rapid AI-driven personalized risk assessment and treatment insights

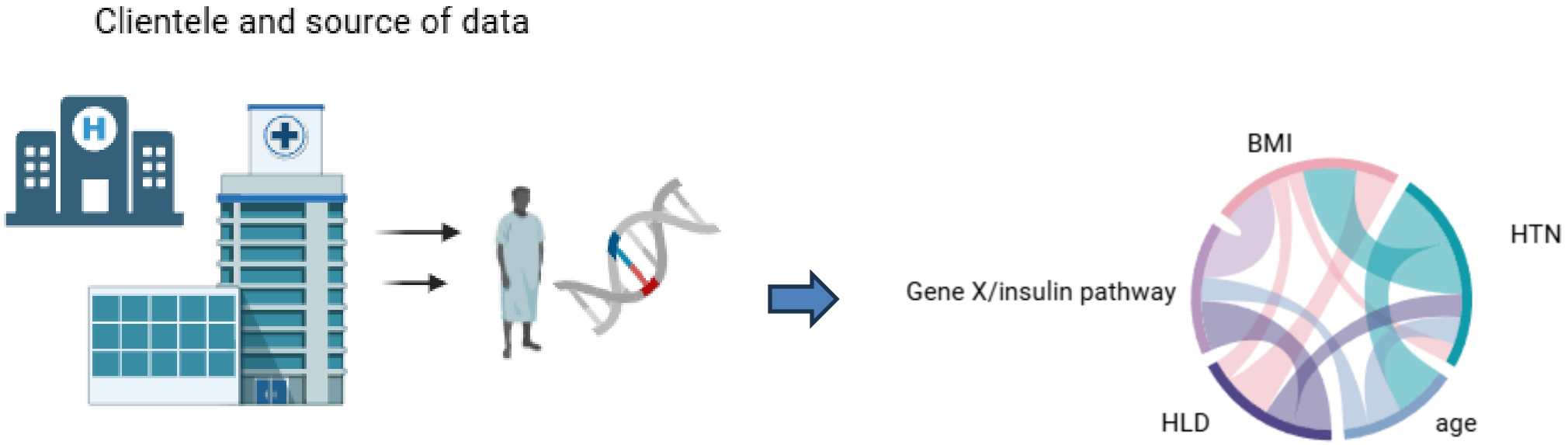
- Personalized Disease Risk Forecasting
- Novel Treatment Combinations for Existing Diseases
- Disease Maintenance via Personalized Risk Management
- Preventive Measures and Actionable Suggestions
- Novel Drug Combinations from Approved Medications
- Personalized Food Allergy and Drug Response
- Similarity Index for Planning Future Therapy in Specific Populations

Metrics: #HF exacerbation, # medication switches, ED visits; Improved function

Revenue sources

Out of pocket executive health analysis

CPT code exists for reanalysis of existing genetic data $500-1k



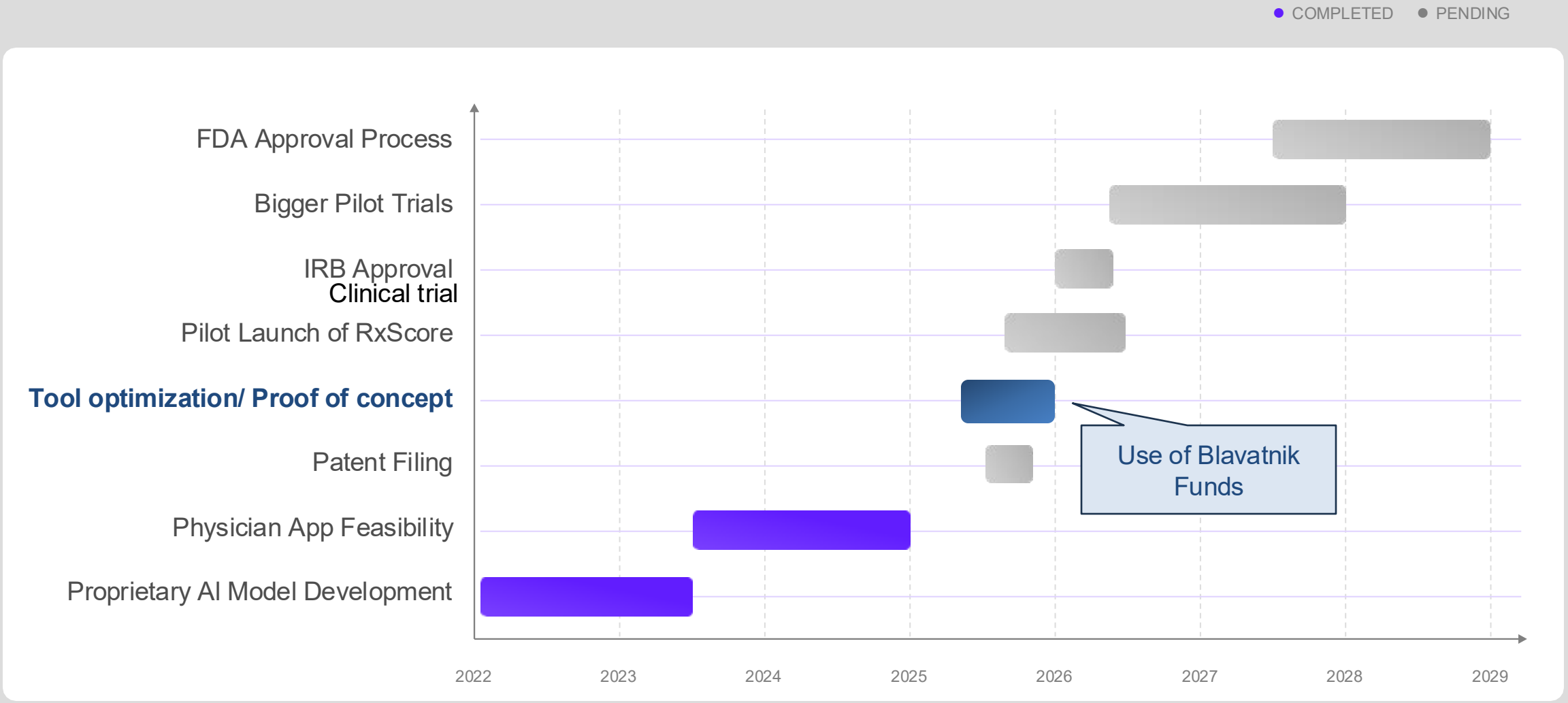
Individuals, Pharma (patient selection), insurance companies, hospitals/clinics

Competition

Sequencing Variant calling **interpretability** **Clinical reporting/insights**

	Genomix	Azenta	Blueprint Genetics	Gene Dx	Current standard of care
Time to actionable insight	Days	Weeks to Months	Weeks to Months	Months	2-3 years
Adaptable/allows continual updating	✓	x	x	x	x
Provides insights on molecular pathway targets for drug discovery/repurposing	✓	x	x	x	x
Identifies specific targetable/actionable factors enabling personalized approach to health	✓	x	x	x	x
Turnaround time impact	High	Medium	Medium	Low	Low
Patient Outcomes	Fast & Actionable	Moderate	Moderate	Slow	Slow

Objectives & Timeline

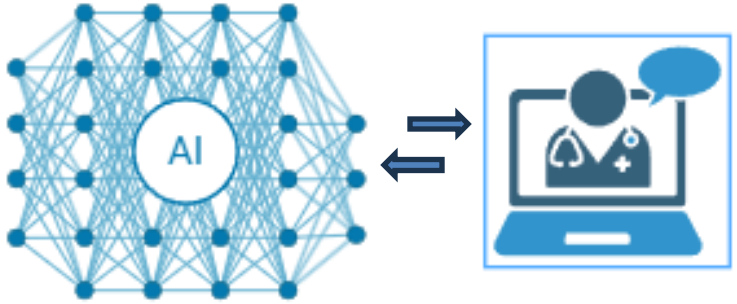


Genomix AI

Blavatnik funds will optimize a patentable tool & provide proof of concept

(100s of thousands of patients, extensive feature engineering and expertise, in process of filing patent)

20k: Algorithm automation & integration



10k: Testing: personalized score for 20 patients

(IRB already approved)

Application of older tech

- **75% improved outcomes** in Stanford Diabetes clinic
- New therapies for Alzheimer's → Phase I clinical trials

Metrics

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