

Sama
THERAPEUTICS



Revolutionizing Brain Health

AI-Powered Precision Neuropsychiatry



**The problem:
Patient needs outpace
clinical innovation**

~1B mental health patients worldwide

- \$2.5T cost to economy (\$16T by 2030)
- 30+% of healthcare spending is waste
- Trial & error is standard of care
- 30-40% of patients are treatment-resistant

Therapy development is inefficient

- R&D costs \$2-3B
- Takes 12-18 years
- 25-35% clinical trial participant attrition rate
- 8% success rate

Neuropsychiatric clinical trials have the highest cost, time to market, and failure rate of all disciplines

AI/Precision Biomarker return on investment

Precision oncology proves feasibility

2X

Probability of clinical trial
success with biomarkers

25%

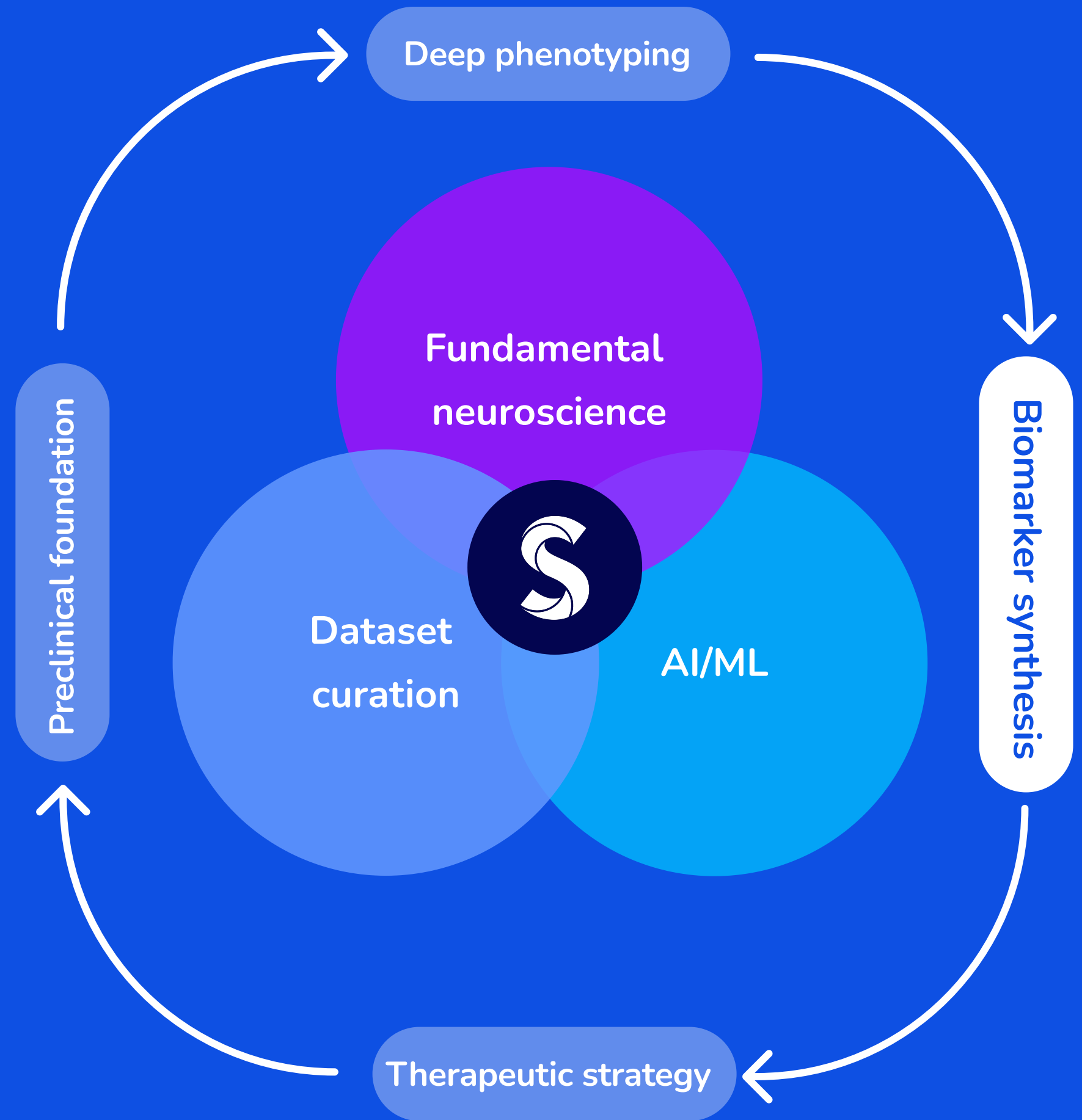
Decreased cancer trial mortality
using AI prediction models (1)

27%

Increase in overall ROI (2) on
clinical pipeline & IP portfolio



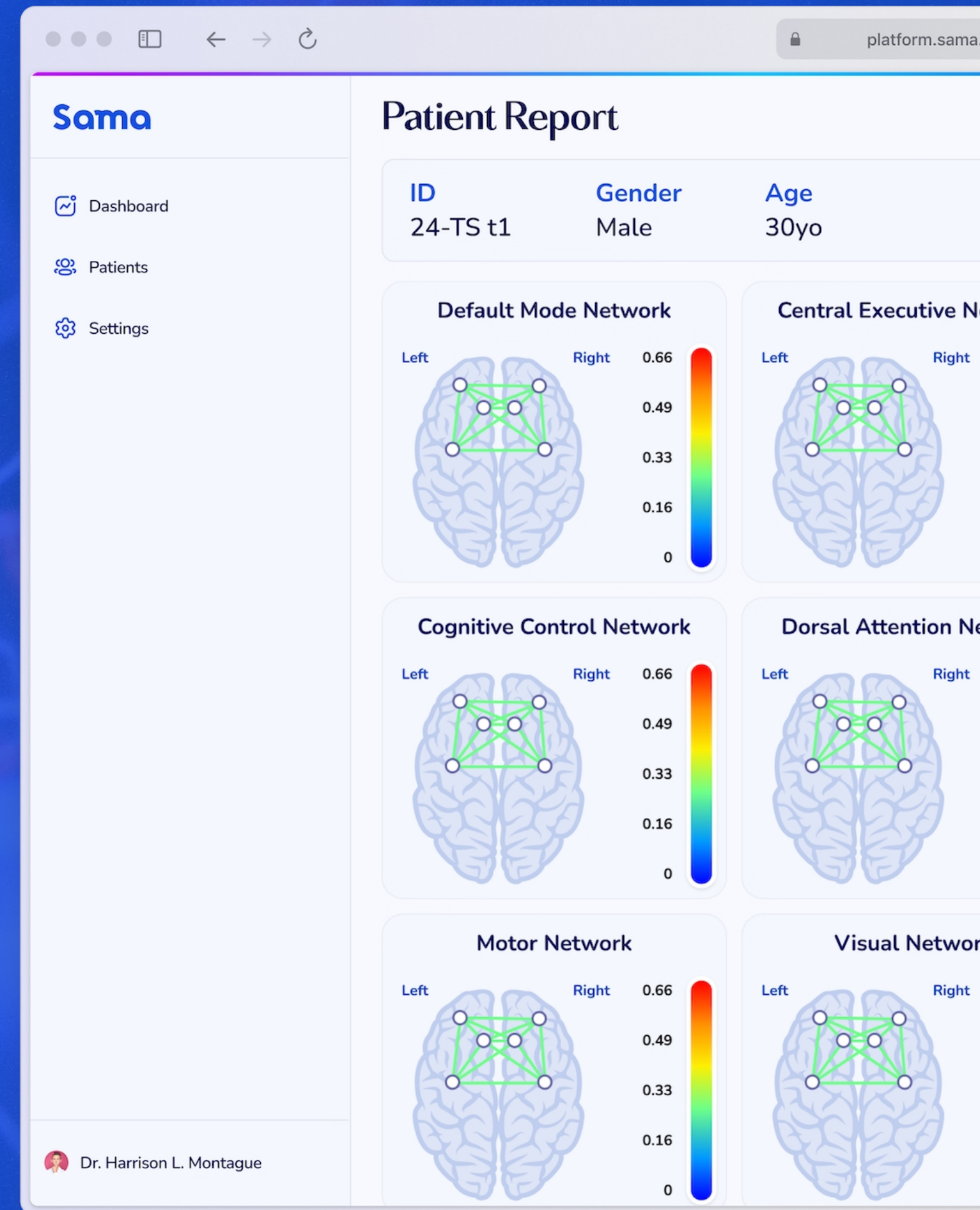
The solution: Bringing precision to neuropsychiatry



Sama fuses generative AI with computational neuroscience

Extensive intellectual property portfolio and *software as medical device* regulatory pathway:

- **First “transprognostic” algorithms** optimize treatment of major psychiatric disorders ~**50% better** than standard of care
- **Rigorous independent replications: #1 team** on the Brainclinics Foundation international biomarker prediction challenge (3)
- **Structure-function deep learning** foundation models trained on >15,000 patients for classification & digital twins
- **Accuracy of our iMAGiNE™** precision neuropsychiatry platform ranks alongside billion dollar incumbents in the space
- **Diverse, curated data:** reduce bias, ↑ positive predictive value



Biomarker session report

Individual baseline → ketamine infusion

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ID
24-TS t1
Gender
Male
Age
30yo



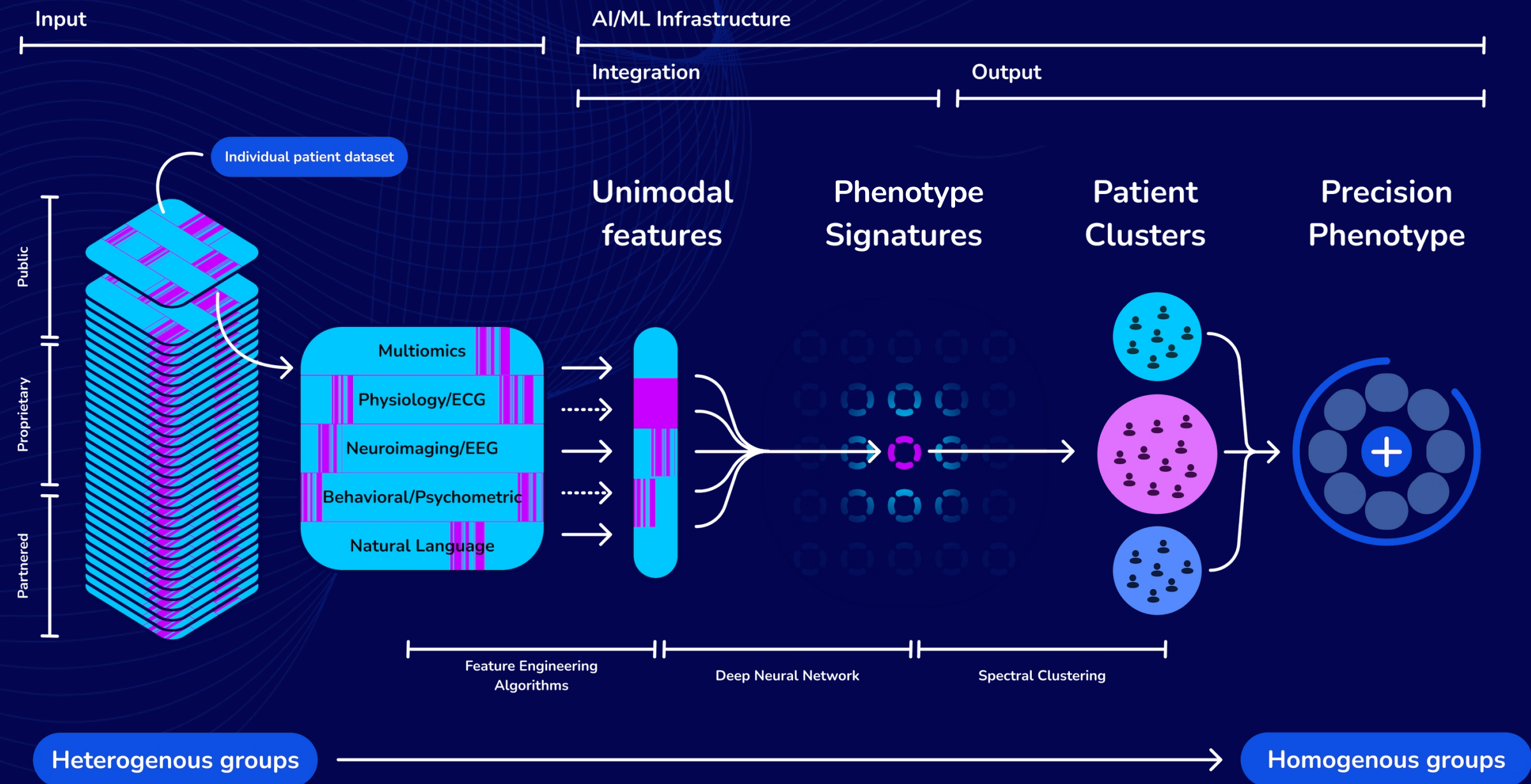
Session Report
Resting State Network Connectivity

ID
24-TS t1
Gender
Male
Age
30yo



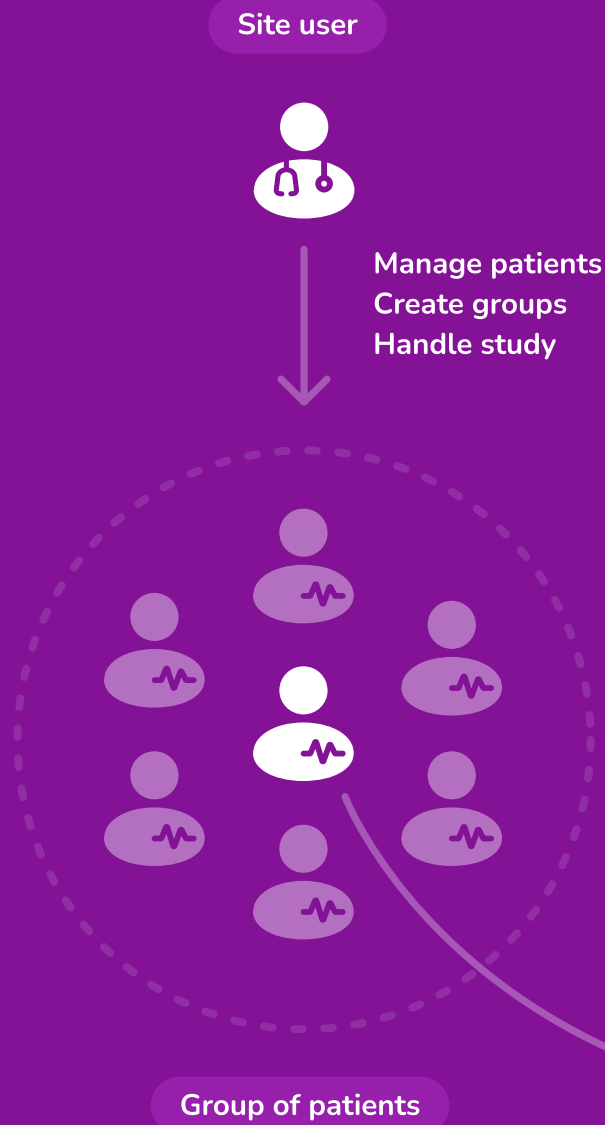
Our mission: eliminate trial-and-error in neuropsychiatry

- **10 patents pending:** cross-validated, harmonized, longitudinal & clinical datasets are feature engineered for multimodal AI/ML and deep learning
- **Phenotype signatures:** precision platform generates compact, high-dimensional embeddings which systematically uncover *clinically-actionable* biomarkers
- **Normative baselines:** clustering patients reduces heterogeneity for treatment matching, placebo models & digital twins



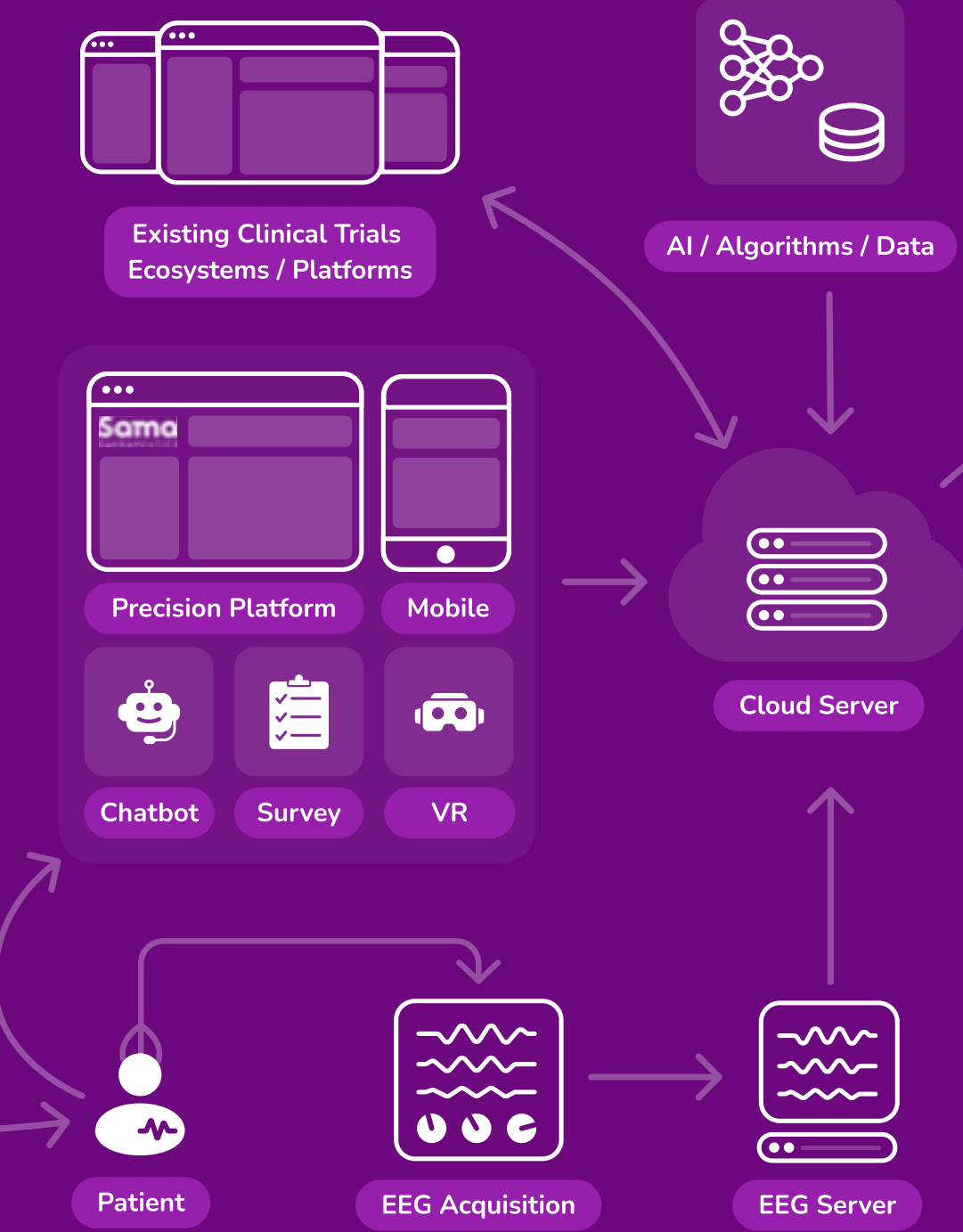
Protocol, Screening, Recruitment

Prior to the trial, sponsors use our platform to create protocols using precision biomarker-driven subgroups, modeling placebo neuroscience, digital twins, etc with fully encrypted HIPAA compliance.



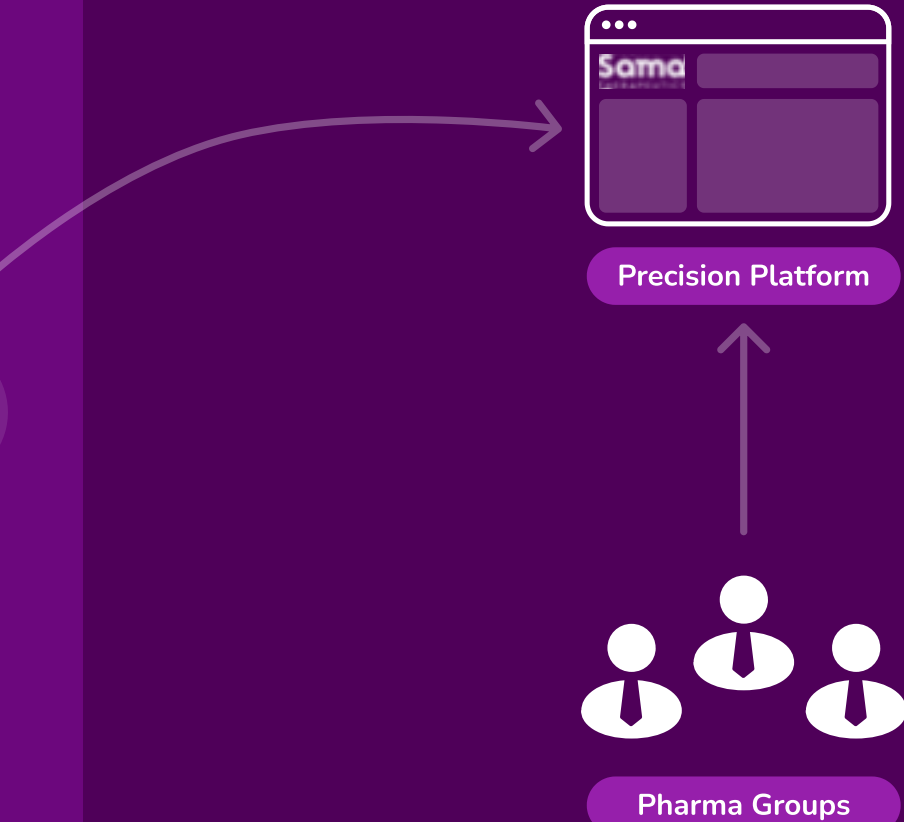
Decentralized Operations

In this phase, interim analytics are delivered as patients interact with mobile neurotechnology, chatbots, telemedicine, home nursing, and virtual reality interfaces through the precision platform.



Clinical Trial Readout

The final phase hinges on intensive platform analytics for Go/No-Go decisions. Cohorts are processed through *interactive* AI and biostatistics algorithms on the cloud for stakeholders to review.





We maximize success *at each step* in clinical development

Sama's precision platform can help:

- ✓ **Guide clinical discovery & development strategy**
 - Lead optimization: bridge animal models and human trials
 - Benchmark therapy effects and safety/adverse events
 - Demonstrate brain penetration, molecular target engagement
 - Visualize brain network effects and extract biomarkers
 - Establish dose-response relationship, PK/PD profiling
- ✓ **Maximize success through patient stratification**
 - Disease progression, severity, and placebo responsiveness
 - Digital twins, baseline likelihood of response to treatment
 - Realtime, state-based response and relapse predictors during and after dosing

Sama redefines and de-risks treatment discovery

Conventional drug discovery

AI-powered drug development

Duration

12-18 years

5-10 years

Cost

\$2-3B

\$1B

Success rate

8%

40%

Case Study

Closing the translational gap for new pharma asset classes

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DAMONA
PHARMACEUTICALS

Background

- A customer needed efficacy signal (GABAA- α 5 receptor)
- **Undiscoverable via conventional hypothesis-driven techniques**
- Quick \$15K pilot: our data-driven AI/ML platform discovered dose-responsive EEG/EMG signals missed by major CROs
- Won ~\$50K/month platform deal to license our multimodal precision analytics (\$10M Phase 1 from Q1 2024)

Projected Revenue

- 2024 ○ **Phase 1:** \$50K/month platform licensing + \$500K success milestones
- 2025-2027 ○ **Phase 2/3:** \$200K/month platform, digital twins + \$1M milestone payment per phase
- 2028 ○ **FDA Approval:** \$2M milestone payment
- 2028-2030 ○ **Phase 4:** \$300K/month companion diagnostics, post-market surveillance

2024 ARR
\$1.1M

Royalties
5-10%

Depending on total sales

LTV of customer
\$18.5M

Before royalties

Precision brain health is a growing market

Sama's revenue projections

TAM

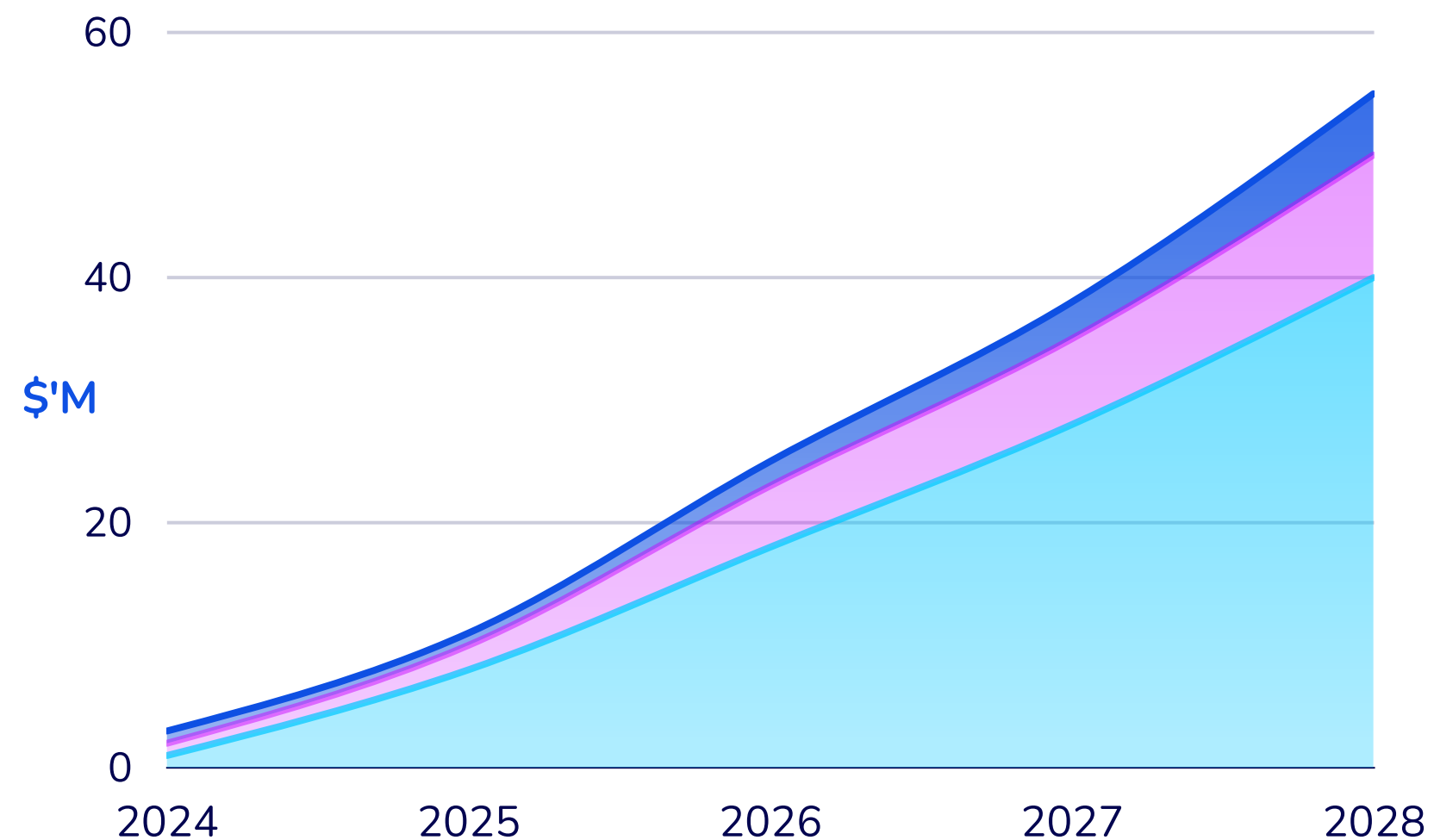
\$123B

Global CNS Therapeutics Market (\$205B by 2030)

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\$2.91B

Global Mental Health Clinical Trials Market (\$5.1B by 2030)



- Royalties**
Deal Size: 5-10% of \$10-50M, 4x/year
- Milestone payments**
\$15K per successful pilot
\$500K-1M per successful phase
\$2M with FDA Approval
- Licensing**
\$50,000/month SaaS (Phase 1)
\$200,000/month SaaS (Phase 2/3)

Roadmap

Go-to-market & phased regulatory entry



Competitive landscape: clinical trial optimization

	Sama THERAPEUTICS	UNLEARN.ai	Beacon Biosignals Cumulus Neuroscience	DeepPsy & iMedSync	Firefly Neuroscience ANT-NeuroGuide	Alto Neuroscience Neumora Therapeutics
Generative AI (digital twins, chatbot, etc)	✓	✓				
Preclinical Platform	✓		✓			✓
Traditional RCTs (Ketamine, TMS)	✓	✓	✓	✓	✓	Proprietary compounds
Schedule 1 Trials (LSD, DMT, etc)	✓			✓		
Biosensing (ECG, EMG, Oculometrics, etc)	✓		✓	✓		✓
Neural Recording (EEG, fMRI, etc)	✓		✓	✓	✓	✓
Cognitive Assessment	✓	✓	✓		✓	✓
Omics (RNAseq, etc)	✓	✓				✓

Executive and computational team

Academic/industry hybrid: clinical, regulatory, AI/ML & psychedelics expertise



Shobi Ahmed, MD PhD*
Chief Executive Officer
Founder



Kristel Carrington, MD
Chief Medical Officer
Co-Founder



Adam Teed, PhD*
Chief Operating Officer
Co-Founder



Tyler Moore, PhD
Chief Development Advisor



Alan Tucholka, PhD*
Chief Technology Officer



Elias Mouchlianitis, PhD
Chief Scientific Officer



Russell Hanson, PhD
Chief Innovation Officer



Mollie Fleury
Chief of Staff



Franz Hell, PhD
Chief AI Officer



Karim El Kanbi, PhD*
Head of AI/ML

**4 full-time employees, remainder fractional*

Consulting and operational team

Academic/industry hybrid: clinical, regulatory, AI/ML & psychedelics expertise



**Mario de la Fuente
Revenga, PharmD PhD**
Clinical Pharmacology, GONOGO



Andrew Cutler, PhD
Generative AI Engineering,
Psychometrics & Cognition



Eric Lin, MD
Natural Language Processing
Psychiatrist, Stanford / VA



Marijn "Ryan" Lijffijt, PhD
Translational Biomarker Medicine,
Digital Twins (ex-Sage, Baylor)



Kelly Kennedy
Psychometrics & Business
Development



Sivan Kinreich, PhD
Asst. Professor of Psychiatry,
SUNY Downstate Medical Center



Koene van Dijk, PhD
Digital Sciences & Translational
Imaging, KVD (ex-Pfizer)



Priyal Sheth, MSc
VP Business Development



Brock Pluimer, PhD (c)
Neuroimaging AI/ML
& Scientific Operations

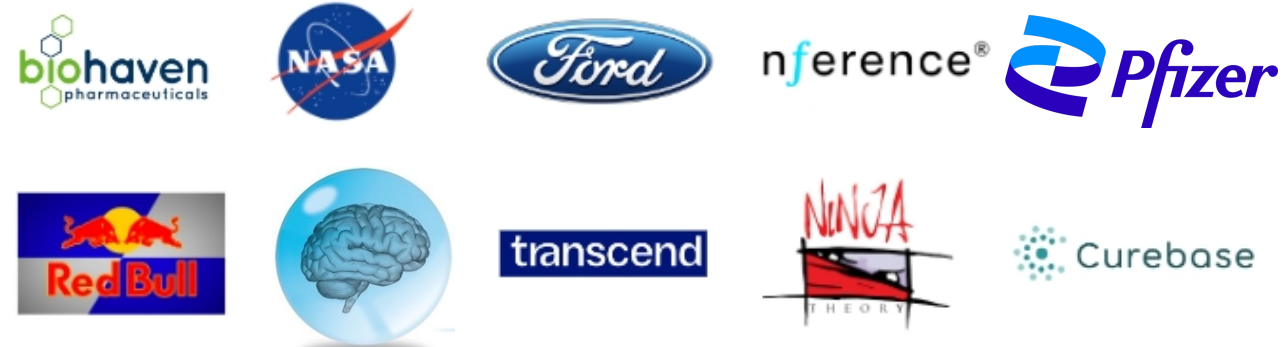


Derek Hill, PhD
Regulatory Affairs,
Panoramic Digital Health

Team's track record

More than 200 combined years of industry achievements & 45 PhD/MD/JDs

Industry / Federal / Nonprofit



World-class experimental psychiatrists:
NASA missions, International Space Station, Antarctic base

#1 in precision psychiatry challenge: top 4 places on the Brainclinics leaderboard & hackathons

AI/ML key contributions: "gold standard" toolboxes, high dimensional modeling, open science pioneers

~1000s of high impact papers: 100,000+ cited, with patents & licensing across our tech stack

10 FDA 510k / de novo device technology approvals: Class 2/3, ISO, IEC, CE mark

Raised over \$1.6B at previous companies: pre-seed to acquisition / IPO

Clinical / Academia



Scientific advisory board

Extraordinarily interdisciplinary platform oversight



Diego Pizzagalli, PhD

Professor, Psychiatry
Harvard Medical School



Laura Bevilacqua, MD PhD

Psychiatrist & Professor, Mt. Sinai
School of Medicine



Konrad Kording, PhD

Professor, PIK, University of
Pennsylvania



John Allen, PhD

Distinguished Professor,
Psychology, University of Arizona



Martijn Arns, PhD

Professor, Cognitive Neuroscience,
Maastricht; Director, Brainclinics



Stephen Morse, JD PhD

Professor of Law in
Psychiatry, Penn



Adam Safron, PhD

Founding Chief Scientific
Officer, Postdoc, JHU



Rex Jung, PhD

Professor of Neurosurgery, University
of New Mexico

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<https://sama.ac>

Samā' (שמים שָׁמַיִם , Proto-Semitic šamāy)
Of the heavens, divinity, ascension, ego-dissolution

Śāma (सम, Sanskrit)
Tranquility of mind, equanimity, season

Therapeutikós (θεραπευτικός, Ancient Greek)
Obliging, curative; to attend, do service