



MedInsights

**Leveraging AI
for Strategic Guidance in
Healthcare**



About MedInsights

Confidential

Medical Expertise Meets Cutting-Edge AI



Founded in **2022** in Paris, France –
built by scientists, for Medical
Affairs, BD & R&D

Our Mission

Revolutionize treatment development through patient-centric disease understanding

Our Foundation

Core Expertise: Systems biology, graph theory, health economics, computational medicine

Proven Technology: NEXUS-Rx platform validated in 5+ peer-reviewed publications

Real-World Success: 4 completed pharma/biotech implementations

Our Unique Advantage



Deep Clinical Partnerships with leading
metabolic disease research centers & hospitals:

**Karolinska University Hospital, Karolinska
Institutet, APHP Paris, Institut Necker, CHU
Saint Etienne**

Privileged Data Access to rare metabolic
disease patient datasets : multi-morbidity in
cardiometabolic diseases, anorexia, ALS, etc.



BARIATEK



Our Core Expertise:



Cardiometabolism



Neurometabolism



Rare diseases



Executive and Team

President – Directeur Général – CEO



Experience:

- MedInsights (2022– Present)
- HTW Berlin – Visiting Lecturer (2024 – Present)
- IPSEN Pharmaceuticals (2021– 2023)
- Institut Pasteur (2014–2020)

Education:

- Ph.D. in Systems Neuroscience (Sorbonne Université)
- Princeton University : Advanced Neuroscience
- M2; Neuroscience – UPMC IV
- Masters of Science – NISER, Bhubaneswar, India



Soham SAHA, Ph.D.
CEO/ Chief Architect



R&D Core Team

Dimitrije MILUNOV, Ph.D.
Data Engineer and Clinical Scientist

Bérénice GANDIT, Ph.D.
Research Scientist
Laboratory Manager

BD and Strategy Team

Manish SARKAR
Business Developer & Intelligence
Molecular & Structural biology

Daria KRASAVINA
Product Strategist - Intern
Business development

AI/ML & software Team

Moutayam KHADDOUR
Data Engineer, Software Engineer





Scientific Advisors

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**Prof. Serge
LUQUET**



Professor/researcher at the University Paris Cité (CNRS) who specializes in the brain's control over energy balance and metabolism..



**Dr. Franck
OURY**



Neurobiologist at INEM specializing in research of bone-derived hormone osteocalcin and its influence on brain function and memory.



**Prof. Paolo
PARINI**



Professor at the Karolinska Institute, specializing in molecular basis of cardiometabolic diseases, including cholesterol and lipoprotein metabolism.



**Dr. Marcelo
PAEZ-PEREDA**



Molecular biologist specializing in R&D strategy, leading teams to develop innovative treatments from discovery to regulatory approval. (Ex-IPSEN).



**Dr. Kingsley
URAKPO**



UK-certified pharmaceutical physician with extensive experience in drug development, medical affairs, and business development across diverse therapeutic areas.



**Dr. Sandra
JERNSTROM**



Serial entrepreneur and biotech co-founder developing innovative, high-risk cancer diagnostics and therapeutics and involved in deeptech venture advisory roles.



Our Vision: “From data to direction: Enabling precision decision-making in a complex healthcare environment”

We work with curated, trusted datasets to deliver insights that our partners can rely on



We adhere to data privacy regulations, and ensure ethical handling of sensitive information



We apply cutting-edge AI tools and analytics to transform large-scale datasets into actionable insights, revealing hidden patterns and strategic opportunities

Information merging methods allows us to resolve inconsistencies, reduce bias, and strengthen the analytical value of fragmented datasets



Our accessible data sources in healthcare



Proprietary data access in indications	Source institute	Specifications
Anorexia nervosa	ch saint-étienne	Peptidomics data from ~1500 index patients
Amyotrophic lateral sclerosis (ALS)	Hôpital Pitié-Salpêtrière AP-HP	Transcriptomics data from patient muscle biopsies
Cardiometabolic diseases with multi-morbidity	KAROLINSKA UNIVERSITETSSJUKHUSET	~2 Million indexed patients data with EHR, metabolic laboratory data and socio-economic information



AI applications in healthcare



Healthcare professionals

- Health systems capacity
- Reduce Nursery and hosting costs
- Remote patients monitoring



Service providers

- Value based contracts
- Derisk clinical development plans
- Detect Reimbursement policies



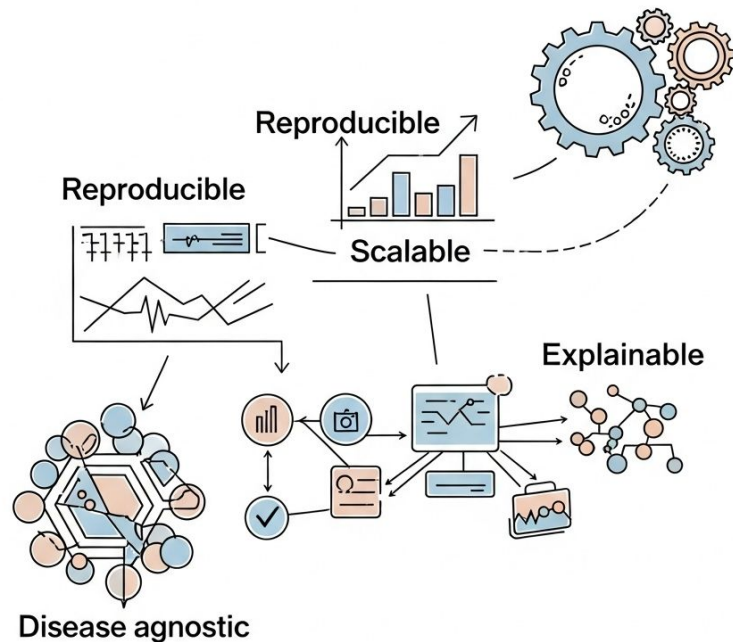
Pharma/ Biotech

- Drug discovery
- Disease prioritization
- Biomarkers Discovery
- Clinical development
- Value and access



How can we design an AI pipeline relevant to healthcare?

- ✓ **Reproducible**
- ✓ **Scalable**
- ✓ **Explainable**
- ✓ **Indication agnostic**





How we do it – Molecular Twin using Nexus-Rx

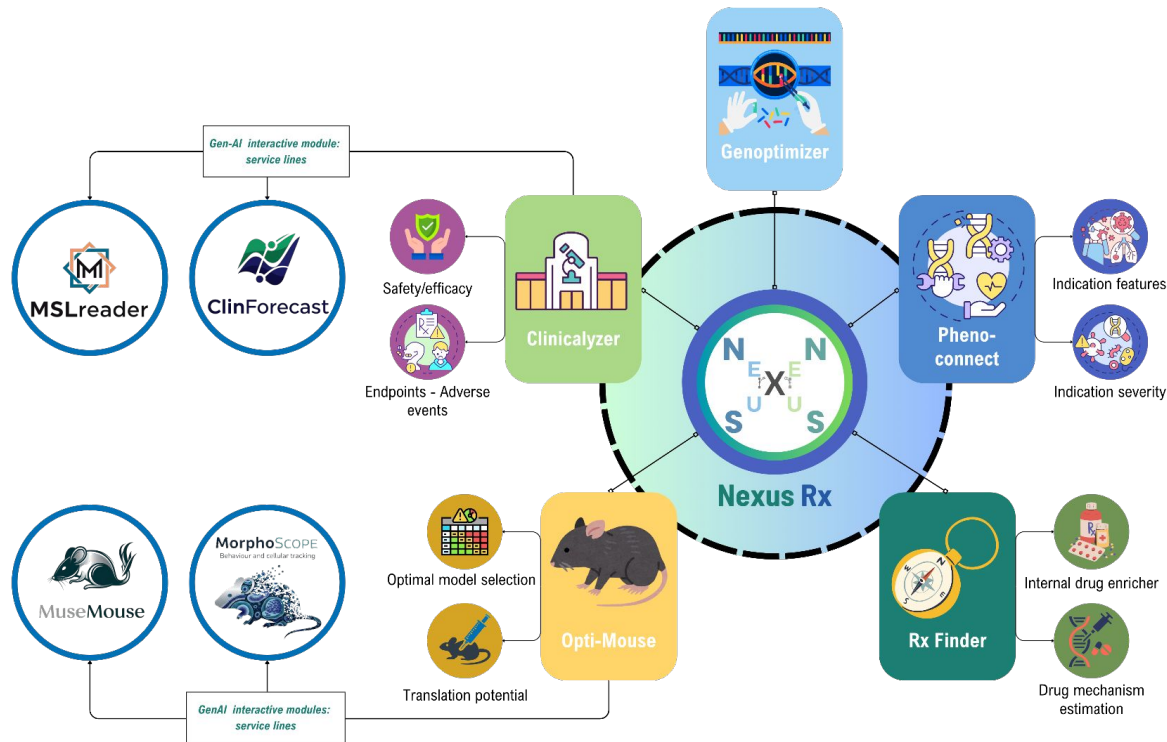
Graph theory & GenAI Approach to assist in Drug Discovery and Development

State of the Art Technology Foundation

- ✓ Advanced digital twin modeling of **metabolic systems** and their **disease interactions**
- ✓ Integrates **graph theory, thermodynamics, game theory, perturbations** and **centrality analysis**
- ✓ Creates **virtual replicas of metabolic pathways** for in silico experimentation across diseases

Key Outputs

1. **Novel Target Identification**
2. **Indication Expansion**
3. **Mechanism Prediction**
4. **Novel Application Discovery**
5. **Biomarker Discovery**



Development Status:

Fully functional framework, leveraged for **7 clients (2 pharma, 1 biotech, 2 hospitals & 2 academia)**, validated by **>5 publications**



What sets us apart?

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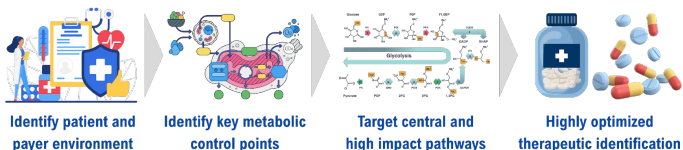
Patient-Driven Drug Identification, Optimization and Derisking

Differentiator in approaches

Traditional Approach



MedInsights Approach



What Sets Us Apart

- **Patient-first methodology** that works backward from unmet needs
- **Metabolic systems perspective** connecting pathways across multiple diseases
- **RWE integration** from the beginning of the discovery process
- **Centrality-driven analysis** identifying targets with maximum system-wide impact
- Internal curated drug database with **~60000 drugs** and **>4.5M drug target combinations**
- **Digital twin model** to simulate interventions before costly clinical testing

For Partners



- **Pharma:** Higher probability targets with built-in explainable AI



- **Biotech:** Strategic focus on metabolic control points with multi-disease applications



- **Academia:** Translational pathway from metabolic research to clinical impact



Our Unique Differentiation

Differentiation Factors

- ✓ Deep roots in academic and clinical institutions, forging discoveries and continuous data integration
- ✓ Access to rare, valuable patient datasets encompassing multi-omics, EHR, metabolites, etc.
- ✓ Peer-reviewed validation in high-impact journals

Technological Uniqueness

- ✓ Only platform combining graph theory, thermodynamics, and explainable AI for drug identification and optimization
- ✓ Proprietary Algorithms: Custom-developed centrality metrics, custom designed for unique biological networks
- ✓ Unbiased Analysis Factor

Competitive Advantage

- ✓ 70% higher success rate in identifying viable drug/target opportunities compared to traditional methods
- ✓ Combined scientific and economic validation studies
- ✓ Explainable results that meet regulatory requirements

Selected Publications

- [A primary cilia-autophagy axis in hippocampal neurons is essential to maintain cognitive resilience | Nature Aging](#)
- [Slc20a1 and Slc20a2 regulate neuronal plasticity and cognition independently of their phosphate transport ability | Cell Death & Disease](#)
- [A novel computational framework to identify translational potential of genetic mouse models in rare genetic obesity | bioRxiv](#)
- [Clinical Efficacy Landscaping in Genetic Obesity: A Meta-analysis in Prader-Willi Syndrome \(PWS\) – Drug Repurposing Central](#)
- [Frontiers | Quantifying hope: an EU perspective of rare disease therapeutic space and market dynamics](#)



Who We Work With?

Our list of clients demonstrating high renewal and faith on our workflows

Clients	2023	2024	2025	2026
 Innovation for patient care				
				
 Advanced Bariatric Solutions				
 Repurposing for Life				IP discussion and profit sharing
 Institut Necker Enfants Malades			Joint call on non dilutive funding	
				500k € grant on anorexia nervosa
			250k € EU grant on CardioTwin	5-7M € EU grant on CardioTwin- GenAI expansion



High client retention rates highlight potentials for expansion in framework deliverables and actionable insights

Under active due diligence



ACADIA™

Lilly

Hunt  Pharma



Scientific Foundation in Metabolic Impact Research

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Deeply Rooted in Scientific Communities

Direct Partnerships with leading academic institutions & hospitals. Agreement with **Karolinska Institute** and **Karolinska University Hospitals** for cardio-metabolic indications with multi-morbidity

Access to Rare Clinical Datasets. Privileged access to extremely valuable and scarce patient data through clinical partnerships with **Assistance Publique- Hôpitaux de Paris** in presymptomatic ALS

Access to biobank data in eating disorder. Privileged access to metabolically enriched patient data through clinical partnerships with **CHU- Saint Etienne** in Anorexia nervosa



Peer-Reviewed Validation

~ 10 Peer-reviewed scientific publications in top journals

- **Neurometabolic:** Nature cell death and disease
- **Neurometabolic and Aging:** Nature Aging
- **Rare disease:** Frontiers in public health, DrugRepo, biorxiv
- **Upcoming publications:** 4+ in metabolism, rare musculoskeletal disease, hematology

Methodology validated across 3 Therapeutic areas

- Rare disease (ALS, SCID, Mitochondrial disorders)
- Oncology
- Neurometabolic
- Cardiometabolic multimorbidity

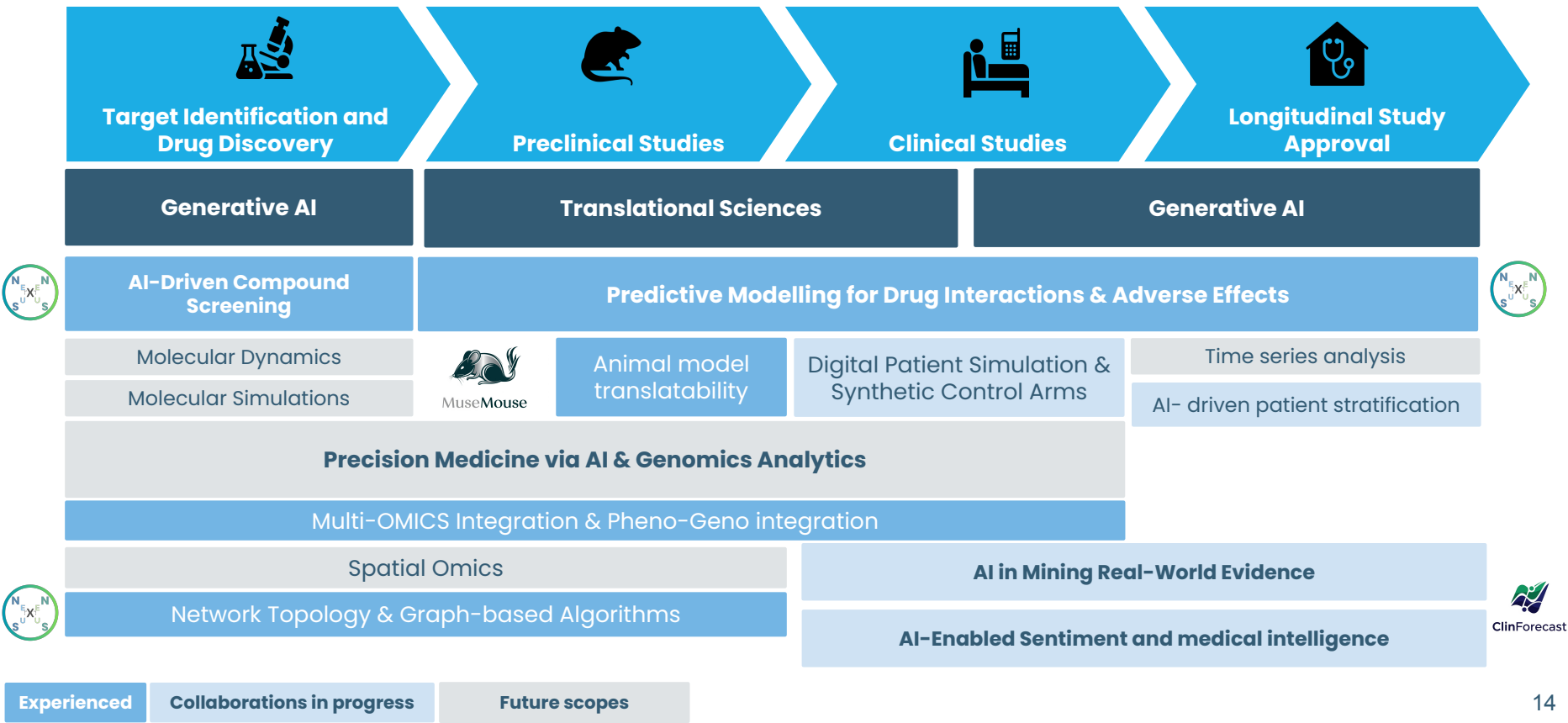
Achievements

- Discovery of **novel predictive biomarkers in pre-symptomatic ALS** (publication in communication to *Science Translational Medicine*)
- **Labex (Laboratoire d'excellence)** consortium member in collaboration with Université Paris Cité
- Discovered **best-in-class candidates** for 3 rare mitochondrial disorders (**success rate : 70%** of recommended assets show clinical benefits) with Reventus Pharma
- **4 long-standing client portfolio** in pharma and biotech



MedInsights contribution to the value chain

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ClinForecast

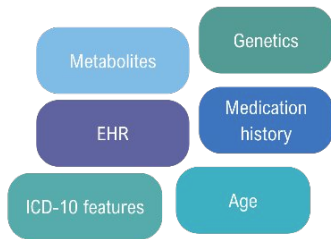


Future Expansion– Project 1: CardioTwin

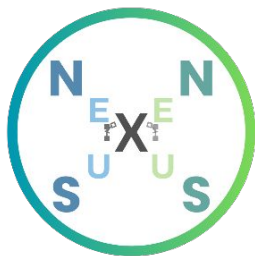
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Lp(a) Stockholm Study
~9000 individuals



Stockholm
hyperTRlglyceridaemia
Register (STRIREG)
~ 2M index individuals



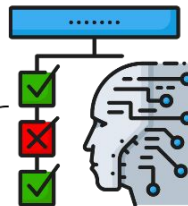
Reinforcement learning model with
HITL (Human in the loop)



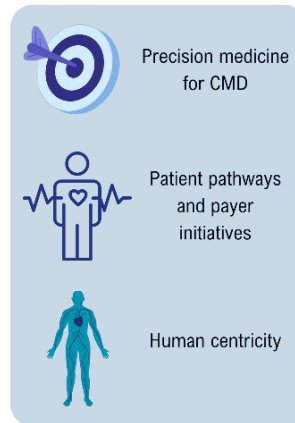
Supervised and unsupervised
clustering of patient population



Cardiometabolic patient
cohort and HCP
Karolinska University
Hospital



MedInsights (with KI/KUH) is a consortium member along with **19 other participants (across EU) on GenAI research and development in biomedical applications** across **oncology, cardiometabolism, neuropsychiatry** and **neurodegenerative** diseases



Σeureka



bpifrance
SERVING THE FUTURE



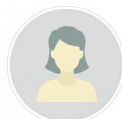
Karolinska
Institutet



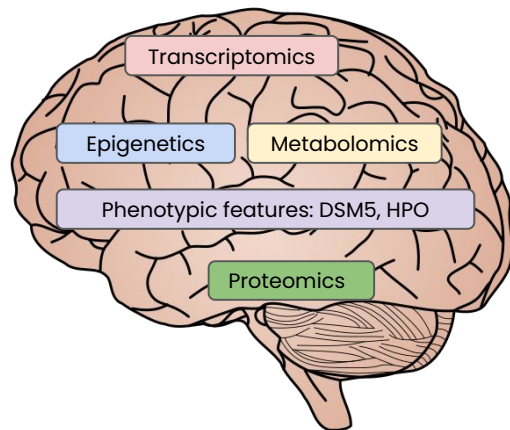
Future Expansion- Project 2: Neurometabolism



Precision medicine for neurometabolic and addiction disorders



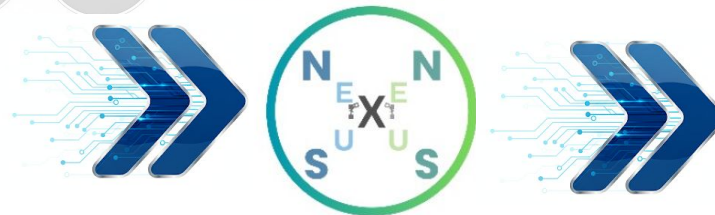
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Mouse behaviour data

Hierarchical taxonomy of psychopathology

Drug discovery and preclinical validation tests in UP Cité co-lab facility



Sciences
Université Paris Cité

LIGHTING UP THE WORLD OF TOMORROW

Students

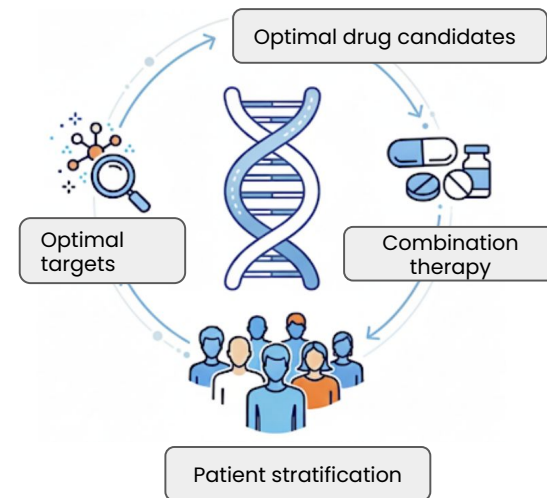
Faculty • Formation • Research • Student life • International • Paris

MedInsight and BFA Partner to Accelerate the Discovery of New Therapeutic Targets

Mots clés : Faculty of Science, Innovations, Research

The Functional and Adaptive Biology (BFA) laboratory of the University of Paris Cité (UPCité) is hosting, from April 2025, the startup MedInsight for an 18-month collaboration. This initiative aims to explore new diagnostic and therapeutic approaches, particularly in the context of metabolic dysregulation and compulsive/addictive disorders.

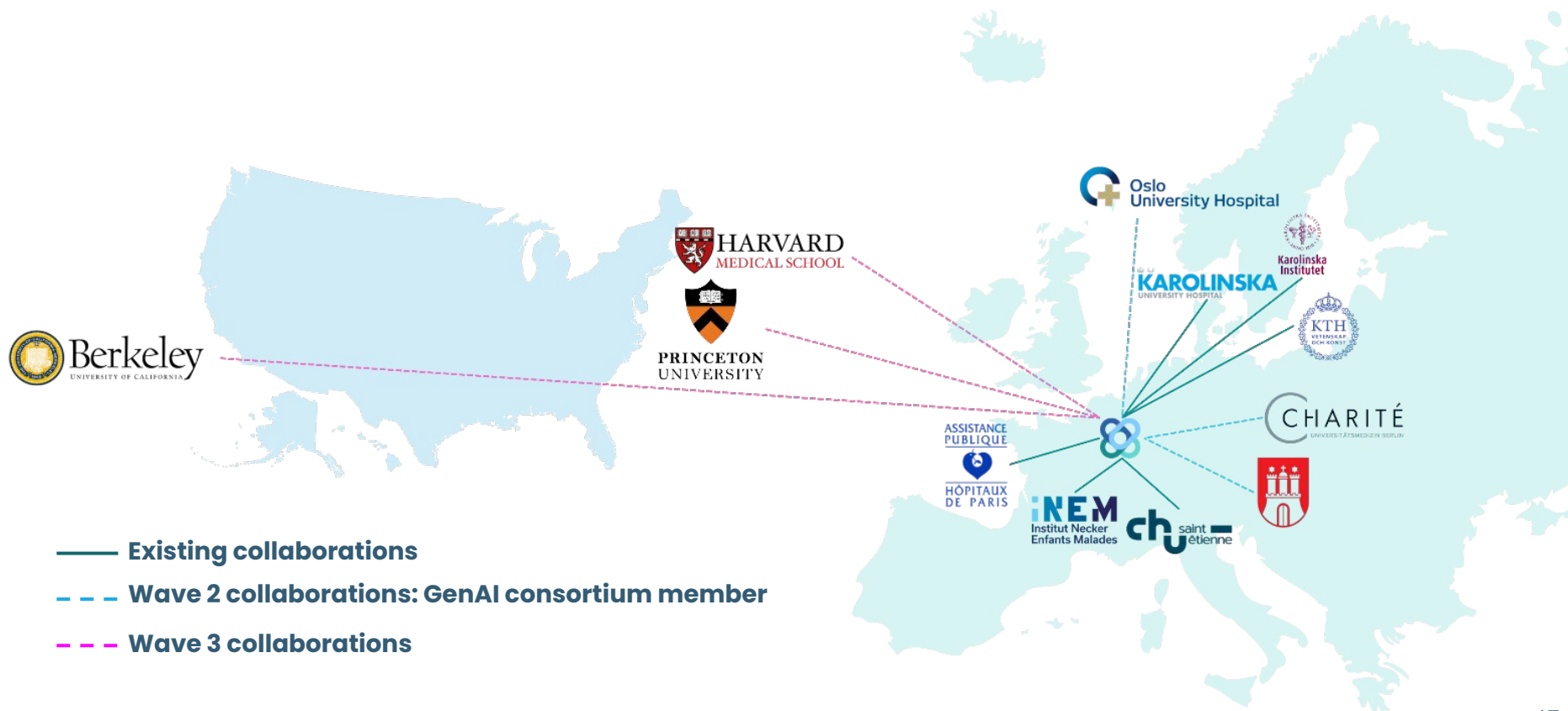
Life cycle management of existing assets





Collaboration Waves and Plans

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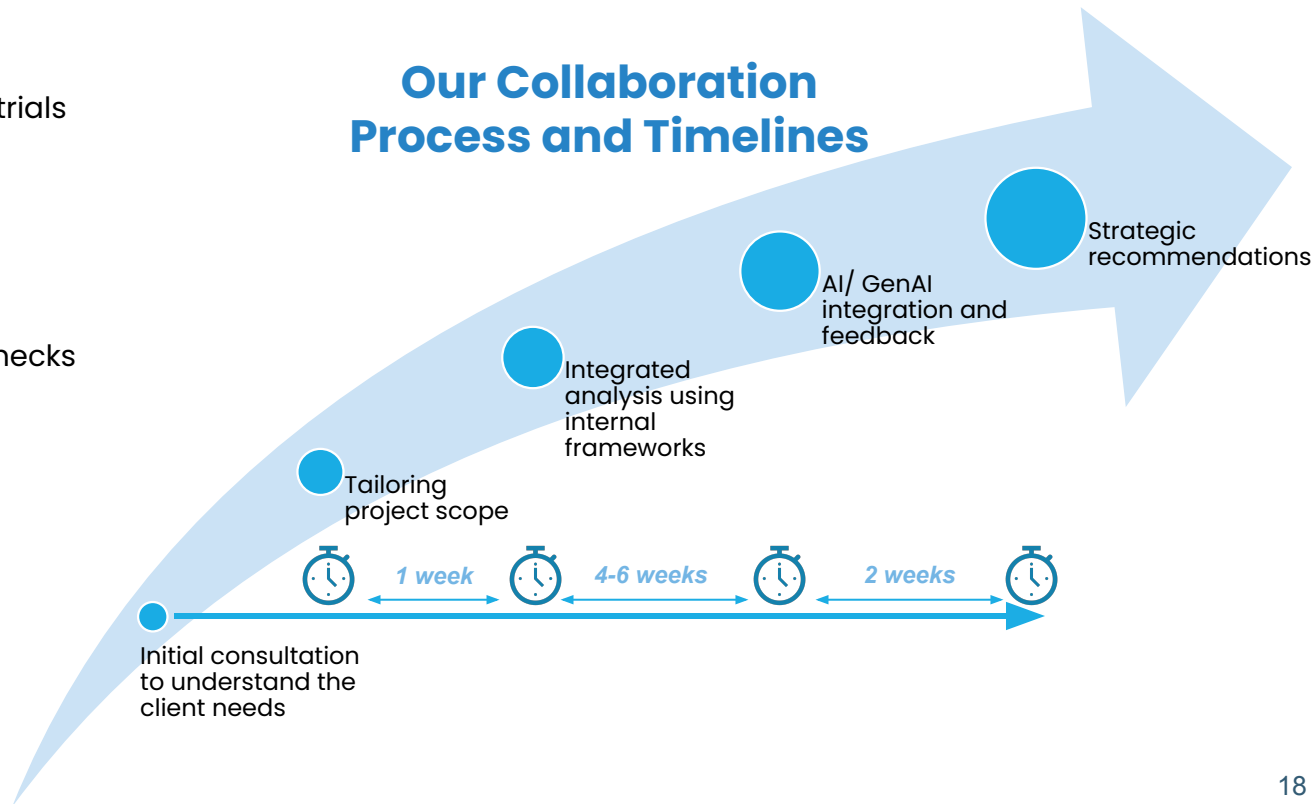




How We Work With Clients

- ✓ Assess disease lists and clinical trials across systems
- ✓ AI/ GenAI integration
- ✓ HITL (Human in the loop) and RL (Reinforcement learning)
- ✓ Report generation and quality checks

Our Collaboration Process and Timelines





Engagement Options & Next Steps

Flexible Partnership Models

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Project Based

Defined scope, timeline, and deliverables

Fixed fee structure

Typical duration: 8–12 weeks



Strategic Partnership

Ongoing access to framework, computational pipelines and expertise

Retainer-based model with priority access

Regular updates and consultations for hypothesis and results generation



**Karolinska
Institutet**



Success-Based

Risk-sharing model with milestone payments

Ideal for specific drug identification and optimization objectives





Commercialized NexusRx & GenAI-assisted modules

MedInsights



Genoptimizer



Pheno-connect



Clinicalyzer



Rx Finder



Opti-Mouse



ClinForecast



MuseMouse



Clients (Present & Future):



Revenue Models

Value based Contracts

Success Fees

Service Fees

Success Fees

Value based Contracts

Service Fees

Service Fees

Subscription



Our Dual Business Model: Two Pillars of Value

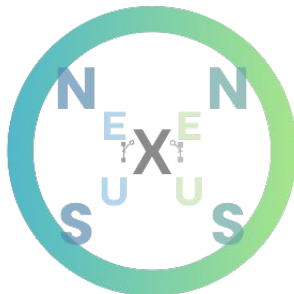
Proprietary drug development



- **High-Value** Pipeline
- Targeting **Unmet Needs**
- **Accelerated Discovery** with NEXUS-Rx
- **Long-Term Blockbuster** Potential



Innovation



Revenue



Platform + Licensing

1. **Immediate** & **Recurring** Revenue
2. **Diversified Income Streams**
(Value based contract, Milestones, Success fees, IP sharing etc)
3. Industry **Validation** & **Adoption**
4. **Scalable** Business Model



Leveraging our core innovation, NEXUS-Rx, generates sustainable revenue while building a high-value internal drug pipeline



Our internal and collaborative discovery

Our envisioned internal and external pipeline is focused on targeting metabolic processes

External Research partnership (NexusRx application)



Rare Mitochondrial

MELAS

Undisclosed indication 1

Undisclosed indication 2

Target

Lead

Pre-entry

Clinical

External Research partnership & co-development, under negotiation



Rare Musculoskeletal

Amyotrophic lateral sclerosis

Novel pathway in metabolism

Co-development with exclusive license



Cardiometabolic

Multiple indications

Precision CMD: patient stratifications

Patient specific datasets driven



Neurometabolic

Addictive disorders

Compulsive behaviors

2 drugs identified



Neurometabolic

Anorexia nervosa

Patient specific datasets driven



Thank you...

**Our team is happy to chat and provide
more detailed information on any of the above applications
Feel free to reach out:**

Soham SAHA, Ph.D., CEO and Founder
soham.saha@medinsights.fr