

IHI Call Days | Call 12

OneBrain:

Redefine boundaries of brain diseases and accelerate therapeutic breakthroughs through large precision brain health cohorts

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Link to the IHI brokerage platform:

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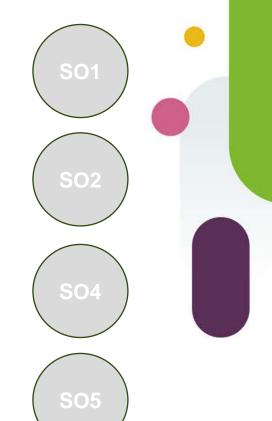


Challenges

- 1 in 3 people will experience a brain disorder during their lifetime.
- Brain diseases are the leading cause of disability and the second cause of death worldwide.
- Current available data cohorts remain fragmented and rarely multimodal.

Objectives

- Build large-scale cohort of patients with brain disorders or at risk of developing them integrating multimodal data.
- Develop multimodal and multiscale foundation models for brain diseases.
- Accelerate biomarker and drug discovery powered by AI and data science to be a game changer for brain medicine.



NEURODEGENERATIVE DISEASES

MENTAL HEALTH

RARE DISEASES

DIAGNOSIS

TREATMENT

PREDICTION



Our approach to solve the problem

OneBrain: Redefine boundaries of brain diseases and accelerate therapeutic breakthroughs through large precision brain health cohorts.

- Novel, patient-centered research-based initiative at unprecedented scale, grounded on the creation of a large real-world, trial-ready cohort with associated multimodal bioresource covering the full spectrum of brain disorders.
- This will serve as the basis for ambitious research programs aiming to redefining brain disease endotypes based on underlying biological mechanism, deriving validated biomarkers, and developing efficient mechanism-based targets and drugs.
- Unprecedented resources for novel deep learning AI and foundation models dedicated to brain diseases.
- Accelerate the transfer of research outcomes into clinical practice and real-world applications that directly improve patient care.



Fit for IHI

- Addressing a major health challenge of the 21st century, aligned with the European Health Data Space program.
- Cross-sectoral and innovation driven by nature: clinical research, pharmaceuticals, medtech, digital health, diagnostics and data science.
- Public-private collaboration is essential to translate multimodal data into clinical and societal impact, transformative for neurology and psychiatry
 - Industry contributions: imaging devices, digital monitoring, AI pipelines, biomarkers, data analytics.
 - Academic & hospital contributions: patient recruitment, clinical data, biological samples, regulatory and ethical oversight
- This collaboration will generate immediate economic benefits and enhance Europe's long-term competitiveness in this strategical field of healthcare.



Outcomes and Impact

- A first-of-its-kind, large longitudinal, recallable and interoperable <u>cohort and associated bioresource</u> <u>dedicated to brain diseases</u> leveraging genetics, multiomics, neuroimaging and neurophysiological profiling.
- Acceleration of <u>biomarker and drug discovery</u> powered by integrated Al and data science
- A platform for <u>swift implementation of innovative</u> <u>clinical trial designs</u>, and pioneering novel precision brain health strategies
- Advances in <u>ethics and sustainability in precision</u>
 <u>brain health research and care</u>

Impacts:

- Earlier diagnosis and improved patient stratification.
- Enhanced treatment development and reduced burden of brain disorders.
- Strengthened competitiveness of the EU health industry and leadership in brain innovation



Expertise and resources

We have:

- Leading public-private research institute affiliated with Sorbonne University, AP-HP, Inserm, and CNRS. Home to 29 multidisciplinary research teams spanning fields from genomics and molecular biology to systems neuroscience, neuroimaging, and behavior.
- Capabilities to implement large cohorts and international partnerships. Our organizational model brings together patients, clinicians, researchers, and industry partners
- Al and data science center

- We are looking for:
 - Technologies for multiomics, advanced genetics, brain imaging...
 - Reinforcement in AI models for biomarker and therapeutic target identification
 - Pharma and biotech companies for drug discovery and development
 - Healthtech companies for fluild, imaging and digital biomarkers.

