



CZECH INSTITUTE
OF INFORMATICS
ROBOTICS AND
CYBERNETICS
CTU IN PRAGUE

VSB TECHNICAL
UNIVERSITY
OF OSTRAVA



CLARA - Center for Artificial Intelligence and Quantum Computing in System Brain Research

Vít Dočkal, CLARA Interim Director
Česko-slovenský infodeň: TEAMING 2025

November 20, 2024



Co-funded by
the European Union

In collaboration with

PR[AI]RIE

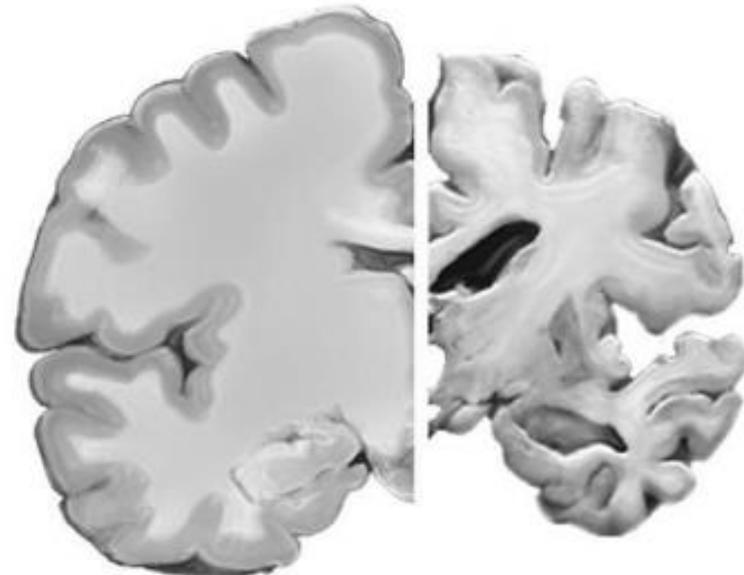
PaRis Artificial Intelligence Research Institute

CLARA Motivation

- Contribute to finding effective treatment to Alzheimer's disease and other neurodegenerative diseases
- Alzheimer's disease: **\$1.1 trillion** in healthcare costs by 2050
- 7th leading cause of death globally
- No efficient drugs available to date

1. WHO Report (2019), The top 10 causes of death
Image credit: US National Institute on Aging; Mookyung et al. 2015

Healthy
brain

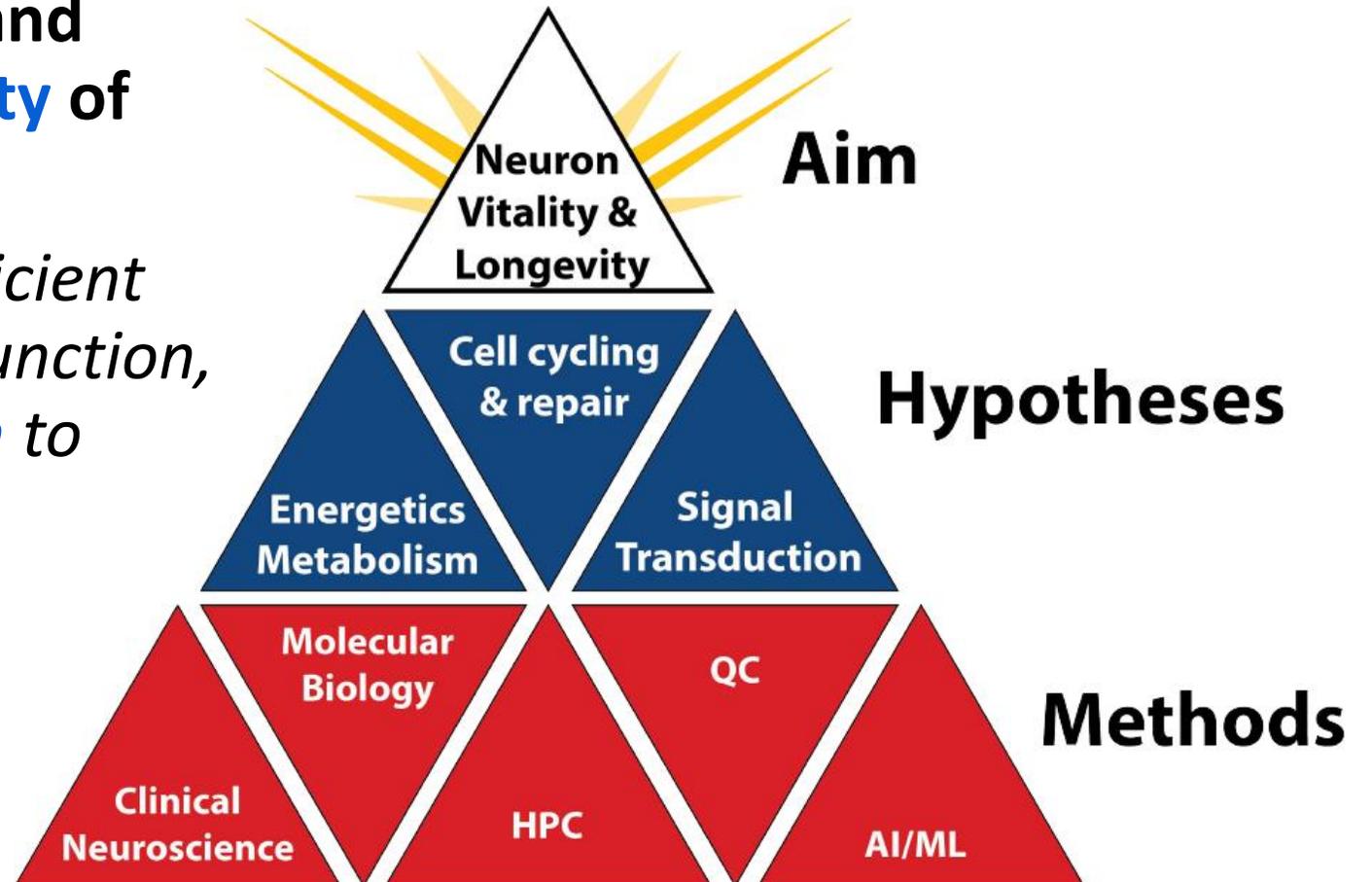


Severe
Alzheimer's
disease

CLARA Vision

CLARA strives to address the grand challenge of **vitality** and **longevity** of neurons>

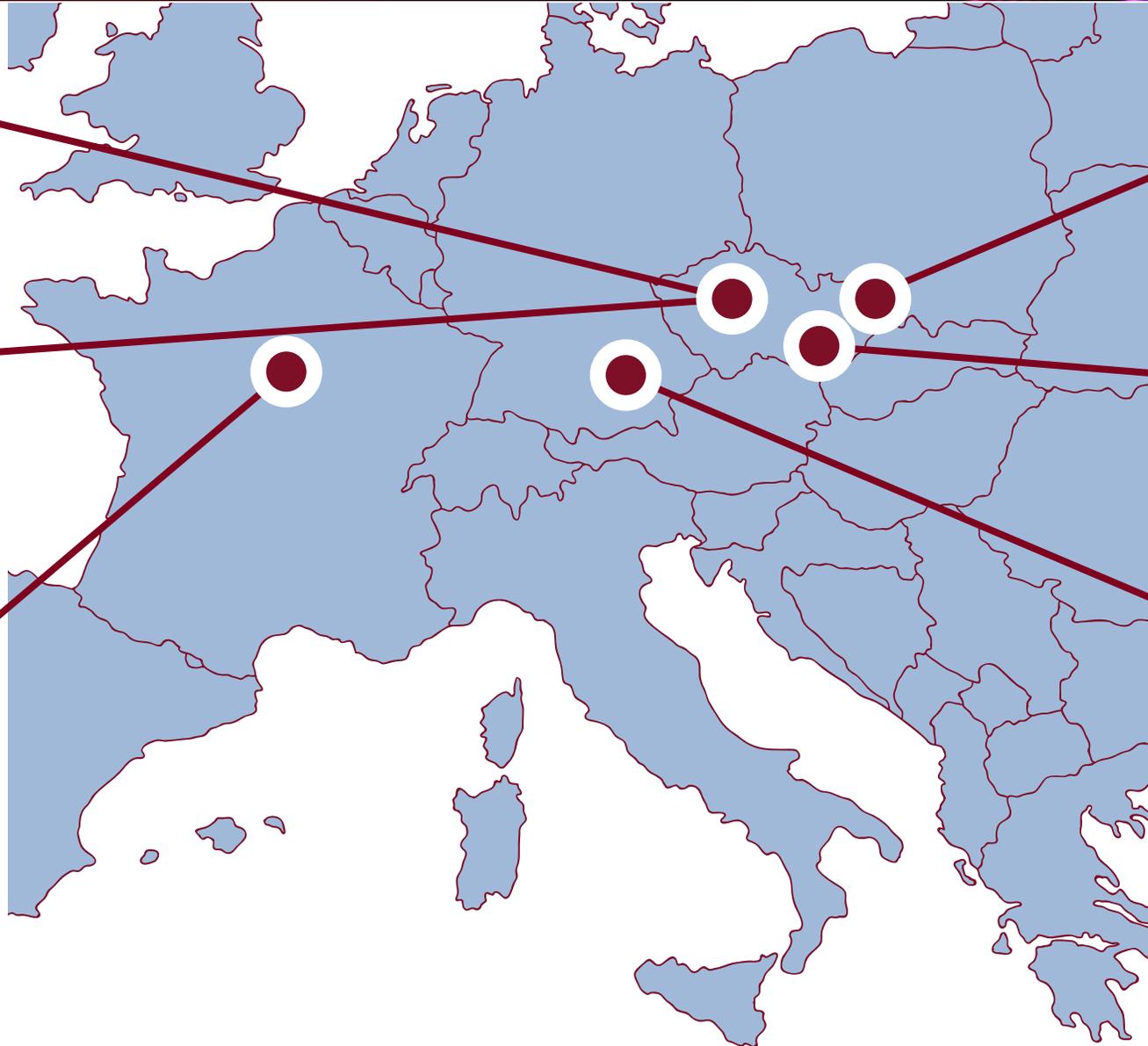
*What are the necessary and sufficient conditions to maintain optimal function, **vitality** and **longevity** of a **neuron** to exceed **100 years**?*



CLARA Focus

- Builds an **interdisciplinary center of excellence**
- Develops the next generation of **artificial intelligence / machine learning** and **classical / quantum-centric supercomputing** tools
- To power interdisciplinary research programs aimed at understanding the **causes of neurodegenerative diseases and neuron longevity.**

CLARA Partners



CLARA Differentiators

EXCELLENCE FAR BEYOND THE STATE OF THE ART

- Excellent consortium
- Interdisciplinary by design. QL, HPC, AI, protein engineering, clinical research, SSH.

CLEAR NEED FOR CLARA

- Several levels: EU priority, CZ priority, benefit for the widening countries, (**cohesion**), benefits for all partners, respective regions, EU society and economy.

SUSTAINIBILITY

- Sound sustainability financial plan and strategy (starts Day 1)

AUTONOMOUS AND TRUSTED GOVERNANCE

- Coordinator = private non-profit organization. Partnership based on transparent legal set up and friendship.



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CLARA summary

| | |
|--------------|---|
| Project name | Center for Artificial Intelligence and Quantum Computing in System Brain Research |
| Acronym | CLARA |
| ID code | 101136607 - call: HORIZON-WIDERA-2023-ACCESS-01 CZ.02.01.01/00/23_029/0008437 - OP JAK (in the approval process) |
| Duration | 11/2024 - 10/2030 (72 months/ 6 years) |
| Total Budget | 43 mil. EUR: Horizon Europe: 15 mil. EUR OP JAK: 28 mil. EUR (in the approval process) |
| Consortium | Czech Republic: INDRC - International Neurodegenerative Disorders Research Center (Coordinator) CIIRC CTU - Czech Institute of Informatics, Robotics and Cybernetics CTU in Prague VSB-TUO - Technical University of Ostrava ICRC - International Clinical Research Center, St. Anne's University Hospital Brno PBI - Paris Brain Institute, France LRZ - Leibniz Supercomputing Centre, Bavarian Academy of Sciences and Humanities, Germany |



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An application for support of the project Centre for Artificial Intelligence and Quantum Computing in Brain Systems Research (CZ.02.01.01/00/23_029/0008437) from the European Union and the Czech Republic within the framework of OP JAK has been submitted and is currently in the process of approval.



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