

Human Brain Project Summit 2023 Programme

Palais du Pharo, Marseille
28-31 March 2023
With satellite events on 27 March

Thank you to our sponsors

Gold



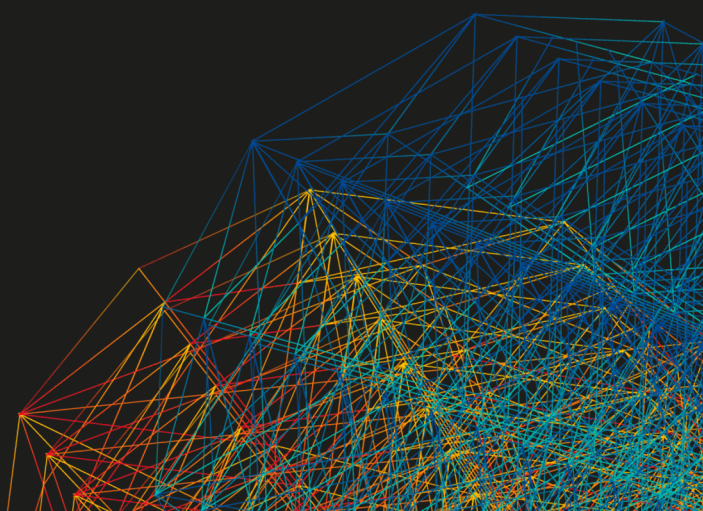
Silver



Bronze



Co-funded by
the European Union





@codemart_ro

MAKING SCIENCE USABLE. IN SHAPE. AT SCALE. AT EASE.

More than 10 years
of neuroscience
experience as
core developers of



THEVIRTUALBRAIN.

In partnership with:



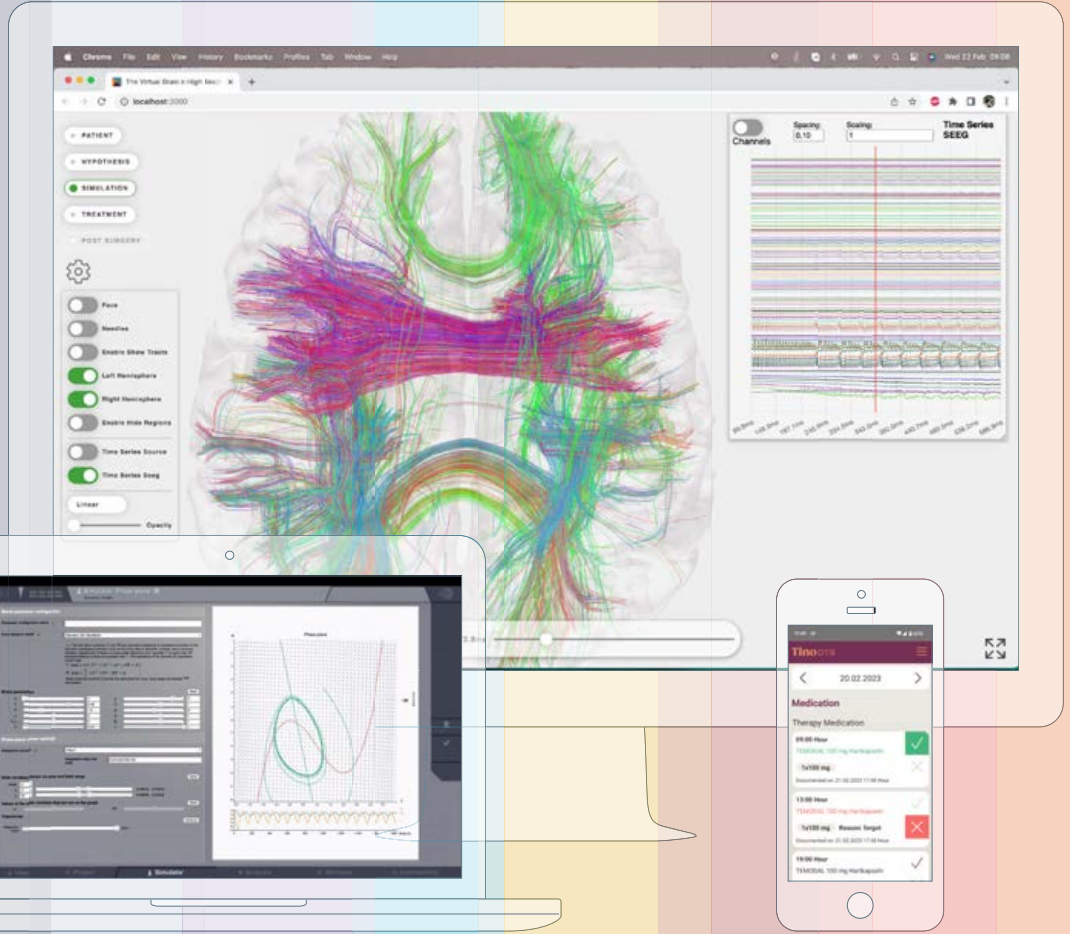
INS
at Aix-Marseille Université



McIntosh Lab
at Simon Fraser University



Brain Simulation Section
at Charité



Codemart specialists
are co-authors of the
seminal neuroscience
papers:

The Virtual Brain:
a simulator of primate
brain network dynamics
(Frontiers in Neuroinformatics)

**Brain simulation
as a cloud service:**
The Virtual Brain on
EBRAINS (NeuroImage)

**Your team creates breakthrough science.
We turn your masterpieces into usable software.**

- On supercomputer clusters. Or a touchscreen.
- With expert guidance for requirements & architecture until testing & deployment.
- Including E2E encryption, EBRAINS platform integration, scripting APIs and a stunning user interface.
- As open source package or commercial license.

ISO 9001:2015

Lloyd's certificate
for developing client-
oriented software

SOFTWARE FOR MASTERPIECES



www.codemart.ro

science@codemart.ro



Satellite Events

27 March 2023



Co-funded by
the European Union



Monday 27 March						
09:00h – 11:00h	License to Spike – A NEST Desktop and NESTML Workshop	Simulating complex neurobiological phenomena of human brain function and dysfunction in a data protection compliant environment: EBRAINS Service for Sensitive Data.	Infrastructure Training session: NMC hands on BrainScaleS	Vast parameter space exploration using L2L on EBRAINS	The process of integrating your science in an integrated EBRAINS workflow – Presented by the Scientific Liaison Unit of EBRAINS.	Software delivery for the Lab and integration into the EBRAINS software release
11:00h – 11:15h Break						
11:15h – 13:15h	License to Spike – A NEST Desktop and NESTML Workshop	Simulating complex neurobiological phenomena of human brain function and dysfunction in a data protection compliant environment: EBRAINS Service for Sensitive Data.	Publishing your research data through the EBRAINS portal	Vast parameter space exploration using L2L on EBRAINS	The process of integrating your science in an integrated EBRAINS workflow – Presented by the Scientific Liaison Unit of EBRAINS.	EBRAINS Medical Data Analytics
13:15 – 14:15h Break						
14:15h – 16:15h	Fenix User Forum meeting – How to make use of the Fenix Infrastructure	Rodent atlasing tools and QUINT workflow	EBRAINS Documentation and Tutorial Hands-On Workshop	EBRAINS Academy Workshop Series Session 1 – intracranial EEG	WE ARE SCIENCE. Towards a realistic future to enhance inclusion, gender, equality and diversity in science.	
16:15h – 16:30h Break						
16:30h – 18:30h	Fenix User Forum meeting – How to make use of the Fenix Infrastructure	The Arbor Simulator	Standardised Workflows in EBRAINS	EBRAINS Academy Workshop Series Session 2 – fMRI	WE ARE SCIENCE. Towards a realistic future to enhance inclusion, gender, equality and diversity in science.	Reconstructing and simulating multiscale brain circuits: workflows and applications to function and dysfunction

13490 0323

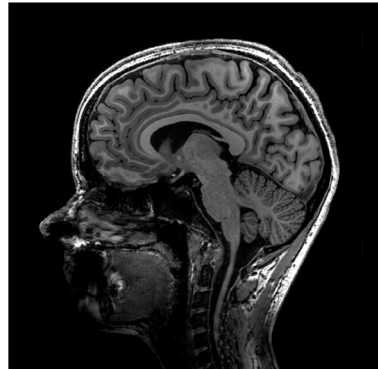
MAGNETOM Terra.X

Make the difference.

siemens-healthineers.com/terrax



MAGNETOM Terra.X* introduces the next generation 7T MRI that will enable you to make the difference. With its groundbreaking Ultra IQ Technology, it will deliver unprecedented image clarity that allows you to confidently assess subtle pathological details. In combination with our AI-powered Deep Resolve, MAGNETOM Terra.X ultimately will take clinical routine to a new level. MAGNETOM Terra.X makes the difference for clinicians and scientists.



StudyID: 4aaaa0264 / 8Tx32Rx head coil

** MAGNETOM Terra.X is still under development and not commercially available yet. Its future availability cannot be ensured.*

SIEMENS
Healthineers 



Summit Programme

28-31 March 2023



Co-funded by
the European Union



"Tuesday 28 March"

08:30	REGISTRATION
09:30	WELCOME ADDRESSES (Video message) Mariya GABRIEL (European Commissioner for Innovation, Research, Culture, Education and Youth) ■ Welcome Addresses. Eric BERTON (<i>President of Aix-Marseille University</i>), Katrin AMUNTS (<i>Forschungszentrum Jülich, HBP Scientific Research Director</i>), Pawel SWIEBODA (<i>HBP Director General, CEO of EBRAINS AISBL</i>), Viktor JIRSA (<i>Aix-Marseille University, Local Host, EBRAINS AISBL</i>), André SYROTA (<i>Chair of the HBP Stakeholder Board and of the EBRAINS AISBL Board of Directors, INSERM</i>), Sylvie RETAILLEAU (<i>Minister of Research, Higher Education and Innovation of France</i>)
10:40	COFFEE BREAK
11:30	INTRODUCTION TO THE SUMMIT Achievements and Future of Digital Brain Research Speakers: Katrin AMUNTS (<i>Forschungszentrum Jülich, HBP Scientific Research Director</i>), Jan BJAALIE (<i>University of Oslo, EBRAINS AISBL</i>), Thomas SKORDAS (<i>Deputy-Director General, European Commission</i>)
12:35	KEYNOTE The Future of Digital Neuroscience Speaker: Michael BREAKSPEAR (<i>University of Newcastle / Australia</i>) Moderator: Viktor JIRSA (<i>Aix-Marseille University, Local Host, EBRAINS AISBL</i>)
13:30	BREAK
14:30	BRAIN HEALTH: AN EMERGING EUROPEAN POLICY PRIORITY Moderator: Pawel SWIEBODA (<i>HBP Director General, CEO of EBRAINS AISBL</i>) 14:30 - 15:00 ■ Keynote address. Paul BOON (<i>President, European Academy of Neurology</i>), Nicolas GAZERES (<i>Dassault Systeme</i>) 15:00 - 16:00 ■ Brain Health: an emerging European policy priority. Philippe AMOUYEL (<i>JPNP / Fondation Alzheimer</i>), Frédéric DESTREBECQ (<i>European Brain Council</i>), Marlies DORLÖCHTER (<i>ERA-NET NEURON</i>), Gitte MOOS KNUDSEN (<i>University of Copenhagen, Chair of the HBP Science and Infrastructure Advisory Board</i>), Stefan SCHRECK (<i>European Commission DG SANTE</i>), Nicolas GAZERES (<i>Dassault Systeme</i>), Paul BOON (<i>President, European Academy of Neurology</i>), Petra RITTER (<i>Charité University Hospital Berlin</i>)
16:00	BEST ABSTRACT AWARDS 2 Best abstract awards and winners speeches Moderators: Egidio D'ANGELO (<i>University of Pavia</i>), Marja-Leena LINNE (<i>Tampere University</i>) 16:00 - 16:06 ■ Winners' announcement. Egidio D'ANGELO (<i>University of Pavia</i>), Marja-Leena LINNE (<i>Tampere University</i>) 16:06 - 16:14 ■ Best Abstract Award on Neuroscientific and Medical Research: Simulating the emergence of conscious and unconscious states at the whole-brain level. Maria SACHA (<i>CNRS - Université Paris-Saclay</i>) 16:14 - 16:22 ■ Best Abstract Award on Methodological developments and technology: VoluBA: Interactive registration of high-resolution volumes to 3D reference atlases. Julia THOENNISSEN (<i>Forschungszentrum Jülich GmbH</i>) 16:22 - 16:30 ■ Best Abstract Award on Methodological developments and technology: Pioneering open neuroscience - the role of the curation services. Sophia PIESCHNIK (<i>University of Oslo</i>)
16:30	

"Tuesday 28 March"

COFFEE BREAK

17:00

FEDERATED COMPUTING INFRASTRUCTURE**Coordinator: Thomas LIPPERT** (*JSC / Forschungszentrum Jülich*)**17:00 - 17:10 ■ Back to future: An introductory journey on a federated computing infrastructure for the HBP.** **Anna LÜHRS** (*Forschungszentrum Jülich*), **Anne NAHM** (*Forschungszentrum Jülich*), **Maren FRINGS** (*Forschungszentrum Jülich*)**17:10 - 18:15 ■ Panel discussion.** **Thomas LIPPERT** (*JSC / Forschungszentrum Jülich*), **Anders DAM JENSEN** (*Euro HPC*), **Stefano GORINI** (*CSCS - Swiss National Supercomputing Centre*), **Yannis IOANNIDIS** (*Athena Research Center, HBP Software Development Director*), **Lena ODEN** (*FernUniversität Hagen*), **Per ÖSTER** (*CSC - IT Center for Science*)

18:15

CLOSING OF THE DAY**Wednesday 29 March**

08:45

NEW WINDOWS INTO CONSCIOUSNESS**Speakers: Athina DEMERTZI** (*University of Liège*), **Pablo LANILLOS** (*Cajal International Neuroscience Center*), **Marcello MASSIMINI** (*professor of Physiology*)**Coordinator: Mavi SANCHEZ-VIVES** (*Institute of Biomedical Research August Pi i Sunyer*)

10:00

KEYNOTE**A computational approach to precision neurostimulation****Speaker: Andreas ROWALD** (*Friedrich-Alexander University Erlangen-Nürnberg*)**Moderator: Katrin AMUNTS** (*Forschungszentrum Jülich, HBP Scientific Research Director*)

10:30

COFFEE BREAK

11:00

THE FUTURE OF NEUROSCIENCE**Panel discussion: The future of neuroscience at the intersection of technology and computing****Speakers: Stephanie FORKEL** (*Radboud University*), **Randy MCINTOSH** (*University of Toronto*), **Toshihisa OHTSUKA** (*University of Yamanashi*), **Yong YAO** (*NIH BRAIN Initiative, Virtual address*)**Moderators: Katrin AMUNTS** (*Forschungszentrum Jülich, HBP Scientific Research Director*), **Viktor JIRSA** (*Aix-Marseille University, Local Host, EBRAINS AISBL*)

11:45

DIGITAL TWINS IN EPILEPSY**Speakers: Fabrice BARTOLOMEI** (*Aix-Marseille University*), **Julia MAKHALOVA** (*Aix-Marseille University*), **Simon PRIVETT** (*Patient Report*), **John TERRY** (*University of Birmingham*)**Moderator: Viktor JIRSA** (*Aix-Marseille University, Local Host, EBRAINS AISBL*)

12:30

LUNCH

13:30

PHILOSOPHY, ETHICS AND SOCIETY IN BRAIN RESEARCH**Speaker: David WINICKOFF** (*OECD*)**Moderator: Kathinka EVERS** (*Uppsala University*)

14:30

COFFEE BREAK

15:00

"Wednesday 29 March"**ARTIFICIAL NEURAL NETWORKS****The interplay of neuroscience and AI**

Speakers: **Charlotte FRENKEL** (*Delft University of Technology*), **Rainer GOEBEL** (*Maastricht University*), **Mihai PETROVICI** (*University of Bern*)

Coordinator: **Rainer GOEBEL** (*Maastricht University*)

15:45

POSTER SESSION & NETWORKING

18:45

CLOSING OF THE DAY**Thursday 30 March**

09:00

KEYNOTE**Causal Explanation in Neuroscience: Mechanisms and Pathways**

Speaker: **Lauren ROSS** (*University of California, Irvine*)

Moderator: **Javier DEFELIPE** (*Instituto Cajal*)

09:30

INNOVATION AWARDS

Coordinators: **Guillermo VELASCO** (*HBP Innovation Team Leader*), **Steven VERMEULEN** (*HBP Innovation Director, EBRAINS AISBL*)

10:00

COFFEE BREAK

10:30

BRAIN-INSPIRED ROBOTICS AND COMPUTING

Coordinator: **Steve FURBER** (*University of Manchester*)

10:30 - 11:15 ■ Young researchers. **Juan Pablo BERMUDEZ** (*KTH Royal Institute of Technology*), **Julian GÖLTZ** (*University of Heidelberg*), **Tom KNOWLES** (*University of the West of England*)

11:15 - 12:00 ■ Future Directions. **Johannes SCHEMEL** (*University of Heidelberg*), **Fabrice MORIN** (*Technische Universität München*), **Christian MAYR** (*TU Dresden*), **Silvia TOLU** (*Technical University of Denmark*)

12:00

LUNCH

13:00

INNOVATION, INDUSTRY AND HBP

Speakers: **Enric CLAVEROL- TINTURÉ** (*European Innovation Council*), **Martha DE CUNHA MALUF-BURGMAN** (*Edwards Lifesciences, Remote participation*), **Stephan NICKELL** (*Carl Zeiss MultiSEM GmbH*), **Steven VERMEULEN** (*HBP Innovation Director, EBRAINS AISBL*)

Coordinator: **Yannis IOANNIDIS** (*Athena Research Center, HBP Software Development Director*)

14:00

COFFEE BREAK

14:30

NEW AVENUES FOR DRUG RESEARCH

Speakers: **Jean-Pierre CHANGEUX** (*Pasteur Institute*), **Giulia ROSSETTI** (*Forschungszentrum Jülich*), **Joachim SCHOLPP** (*Boehringer Ingelheim Pharma*)

Coordinator: **Philippe RYVLIN** (*Centre Hospitalier Universitaire Vaudois*)

15:45

POSTER SESSION & NETWORKING

"Thursday 30 March"

18:30

CLOSING OF THE DAY

Friday 31 March

08:45

NEUROSCIENTIFIC BREAKTHROUGHS

Speakers: **Svenja CASPERS** (*Heinrich Heine University Duesseldorf*), **Gustavo DECO** (*Catalan Institution for Research and Advanced Studies*), **Umberto OLCESE** (*University of Amsterdam*), **Claire SERGENT** (*University of Paris*), **Wim VANDUFFEL** (*KU Leuven*)

Coordinator: **Cyriel PENNARTZ** (*University of Amsterdam*)

10:00

OPENING UP: EXPERIENCES FROM HBP PARTNERING PROJECTS

Moderators: **Hans Ekkehard PLESSER** (*Norwegian University of Life Sciences*), **Julien VEZOLI** (*INSERM*)

10:10 - 10:27 ■ DOPAMAP: Map of dopamine receptor positive cell types in the developing and adult mouse brain. **Jee Hyun KIM** (*Deakin University*)

10:27 - 10:45 ■ AI-Mind: Intelligent digital tools for screening of brain connectivity and dementia risk estimation in people affected by mild cognitive impairment. **Ira HARALDSEN** (*Oslo University Hospital*), **Ricardo BRUÑA** (*Universidad Complutense de Madrid*)

10:45

COFFEE BREAK

11:15

KEYNOTE

The short and the long of inhibition

Speaker: **Hannah MONYER** (*University Hospital and DKFZ Heidelberg*)

Moderator: **Wim VANDUFFEL** (*KU Leuven*)

11:45

EBRAINS - A KEY ACHIEVEMENT OF THE HBP

Speakers: **Sandra DIAZ PIER** (*Forschungszentrum Jülich, German National Node - HPC, Computational Neuroscience*), **Trygve LEERGAARD** (*University of Oslo, Norwegian National Node Leader*), **Nicola PALOMERO GALLAGHER** (*Forschungszentrum Jülich, German National Node Scientific Coordinator*), **Francesco PAVONE** (*University of Florence, Italian National Node Leader*), **Philippe VERNIER** (*CNRS Université Paris-Saclay, French National Node Leader*)

Moderator: **Rainer GOEBEL** (*Maastricht University*)

12:45

SUMMIT CLOSING REMARKS

Speaker: **Katrin AMUNTS** (*Forschungszentrum Jülich, HBP Scientific Research Director*)

13:00

LUNCH