



EBRAINS



Human Brain Project
Education Programme

EBRAINS WORKSHOP

HBP PARTNERING PROJECTS MEETING: STATUS QUO AND OUTLOOK

**5-7 SEPTEMBER 2022
NIJMEGEN, THE NETHERLANDS**

SCIENTIFIC PROGRAMME



Human Brain Project



Co-funded by
the European Union

ABOUT THE EVENT

As the Human Brain Project is in its final phase, it is time for Partnering Projects to convey the scientific community the tour-de-force they have made in furthering knowledge concerning various aspects of Brain Research. This EBRAINS Workshop offers Partnering Projects an international pedestal to showcase their major achievements to the Human Brain Project Partnering environment and the wider scientific community.

The Workshop is open for scientists from various fields of Neuroscience research, and will be hosted by the annual Donders Cognitive, Brain & Technology Summer school (DCBT 2022) promoting a shared systems-level understanding of the functional architecture of the brain and its possible emulation in artificial systems.

The event is designed as a platform for Partnering Projects to exchange about their scientific findings, extend their collaborative network and engage into open discussions with EBRAINS representatives about the transition from the Human Brain Project to EBRAINS.

It will be a three-day event hosted at the Fletcher Landgoed Hotel Holthurnsche Hof (Nijmegen, the Netherlands). This will create new communities of interested scientists that can critically contribute, as user or developer, to the evolution of EBRAINS as a sustainable infrastructure for the wider scientific community.

Further information:

humanbrainproject.eu/en/education-training-career/hbp-partnering-projects-meeting/



Scientific Chair & Local host:

Julien Vezoli | Ernst Strüngmann Institute for Neuroscience in Cooperation with Max Planck Society
Paul Verschure | Donders Institute for Brain, Cognition and Behaviour

In cooperation with:



Supported by:



Contact:

workshop.edu@humanbrainproject.eu



MONDAY 5 SEPTEMBER 2022

This programme is subject to change. Please note that all times are in CEST (=GMT/UTC+2)

08:30 - 09:00 **Registration**

09:00 - 09:30 **Welcome & Introduction**

Julien Vezoli, Paul Verschure, Marie-Elisabeth Colin

09:30 - 10:30 **PLENARY LECTURE**

(Chair: Julien Vezoli | ESI & Paul Verschure | Donders Institute for Brain, Cognition and Behaviour)

Deep brain stimulation of the thalamus restores signatures of consciousness in a non-human primate model

Béchir Jarraya | CEA Paris-Saclay, Centre NeuroSpin

10:30 - 11:00 **Coffee Break & Poster Session**

11:00 - 12:00 **PLENARY SESSION I: PRIMATE BRAIN SPECIFICS**

(Chair: Simon Nougaret | Aix-Marseille University)

Layer-specific characterization and modeling of fronto-parieto-visual dynamics in primate cortical networks

Björg Kilavik | Aix-Marseille University & Sacha van Albada | Forschungszentrum Jülich

Comparative Investigation of the Cortical Circuits in Mouse, Non-human primate and Human

Julien Vezoli | ESI

12:00 - 13:00 **Lunch Break**

13:00 - 14:30 **PLENARY SESSION I: PRIMATE BRAIN SPECIFICS**

(Chair: Simon Nougaret | Aix-Marseille University)

Computational analysis of primate vision

Simo Vanni | Helsinki University Hospital



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Integrated effects of multiple Attentional Control signals in the primate brain

Elisa Santandrea | Verona University

Development of cortical multisensory integration mechanisms at micro- and macro- scales during normal and pathophysiological conditions

Conrado A. Bosman | University of Amsterdam

14:30 - 15:00

Implementation of the EBRAINS NHP Atlas and open discussion

Wim Vanduffel | KU Leuven

15:00 - 15:30

Coffee Break

15:30 - 17:00

PARALLEL SESSIONS

EBRAINS Atlases service

Timo Dickscheid | Forschungszentrum Jülich

(Rapporteur: Simon Nougaret | Aix-Marseille University)

EBRAINS Data & knowledge service

Ingrid Reiten | University of Oslo

(Rapporteur: Ingvild Bjerke | University of Oslo)

17:00 - 17:30

Summaries by rapporteurs & concluding remarks



TUESDAY 6 SEPTEMBER 2022

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- 09:00 - 09:30** **The EBRAINS Research Infrastructure from an HBP perspective: Status and Outlook**
Jan Bjaalie | University of Oslo
EBRAINS RI, the future (and how to cooperate)
Steven Vermeulen | EBRAINS
- 09:30 - 10:30** **PLENARY LECTURE**
(Chair: Julien Vezoli | ESI & Paul Verschure | Donders Institute for Brain, Cognition and Behaviour)
Chemistry of the adaptive mind: lessons from dopamine
Roshan Cools | Donders Institute for Brain, Cognition and Behaviour
- 10:30 - 11:00** **Coffee Break & Poster Session**
- 11:00 - 12:00** **PLENARY SESSION II: BRAIN CIRCUITS & SIMULATION**
(Chair: Ingvild Bjerke | University Of Oslo)
The Pattern of Cellular Activity in the CA1 of the Hippocampus after Spatial Learning Depends on the Time Interval between Training Sessions
Eleonora Centofante | Sapienza Università di Roma
Map of dopamine 1- and 2-receptor positive cells in the developing mouse forebrain: perceived fit of registered atlas across sex, age, and regions
Jee Hyun Kim | Deakin University
- 12:00 - 13:00** **Lunch Break**
- 13:00 - 14:30** **PLENARY SESSION II: BRAIN CIRCUITS & SIMULATION**
(Chair: Luca Montelisciani | University of Amsterdam)
Project FIIND: Ferret Interactive Integrated Neuro Development Atlas
Roberto Toro | Institut Pasteur
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SENSEI: uncovering neuron structure using hard and soft approaches

Nicola Vanello | University of Pisa

Integrative Frameworks in Single-cell Connectomics

Nestor Timonidis | Donders Institute for Brain, Cognition and Behaviour

14:30 - 15:00

From Human Brain Project to EBRAINS RI: coordinating the technical aspects of the transition

Amaryllis Raouzaïou | Athena Research and Innovation Center

15:00 - 15:30

Coffee Break

15:30 - 17:00

PARALLEL SESSIONS:

EBRAINS Brain modelling & simulation service

Marmaduke Woodman | Aix-Marseille University

(Rapporteur: Luca Montelisciani | University of Amsterdam)

Massive Computing applied to EBRAINS

Lena Oden | Forschungszentrum Jülich

(Rapporteur: Marissa Diaz-Pier | Forschungszentrum Jülich)

17:00 - 17:30

Summaries by rapporteurs & concluding remarks



WEDNESDAY 7 SEPTEMBER 2022

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09:00 - 10:00

PLENARY LECTURE

(Chair: Julien Vezoli | ESI & Paul Verschure | Donders Institute for Brain, Cognition and Behaviour)

Exploiting individual differences to inform computational models of dopamine in reinforcement learning

Mehdi Khamassi | Institute of Intelligent Systems and Robotics

10:00 - 10:30

Coffee Break

10:30 - 12:00

PLENARY SESSION III: APPLIED BRAIN MODELS

(Chair: Francesco Sheiban | Politecnico di Milano)

MULTI-LATERAL: Multi-level Integrative Analysis of Brain Lateralization for Language

Clyde Francks | Max Planck & Donders Institute & Radboud University

SMART BRAIN: Advanced Morphological Reconstruction of Human Brain Tissue by Multimodal Fusion of Multiscale Optical Imaging Technologies

Jonathan Mapelli | University of Modena and Reggio Emilia

CerebNEST: A Bioinspired Multiscale Modelling of The Cerebellar Network

Alessandra M. Trapani | Politecnico di Milano

12:00 - 13:00

Lunch Break

13:00 - 15:00

PLENARY SESSION III: APPLIED BRAIN MODELS

(Chair: Thibault Griez | EBRAINS AISBL)

Responsible Research and Innovation in Applied Brain Models

Mayen Cunden | De Montfort University

Efforts on the integration and large-scale simulation of a whole-brain model led to the development of a collaborative framework for data-driven modeling

Carlos Enrique Gutierrez | Okinawa Institute of Science and Technology

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The Virtual Brain Cloud (TVB-Cloud)

Petra Ritter | Charité University Medicine Berlin

The RGS@HOME project: Scaling ICT based neurorehabilitation to personalized 24/7 home care

Paul Verschure | Donders Institute for Brain, Cognition and Behaviour

15:00 - 15:30

Coffee Break

15:30 - 16:30

Closing Plenary Lecture: Enabling Complex Simulations with Multilevel Health Data

Petra Ritter | Charité University Medicine Berlin

16:30 - 17:00

Open Discussion: Workshop wrap-up & next steps

Steven Vermeulen | EBRAINS

Paul Verschure | Donders Institute for Brain, Cognition and Behaviour

Julien Vezoli | Ernst Strüggmann Institute (ESI) for Neuroscience in Cooperation with Max Planck Society





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humanbrainproject.eu/education

