



Human Brain Project Newsletter

April 2018

Dear Sir or Madam,

This is the first edition of the Human Brain Project's external Newsletter. It gives a short overview on recent research and project news, this time from February to April 2018, as well as upcoming HBP events.

Best Wishes,
HBP editorial office

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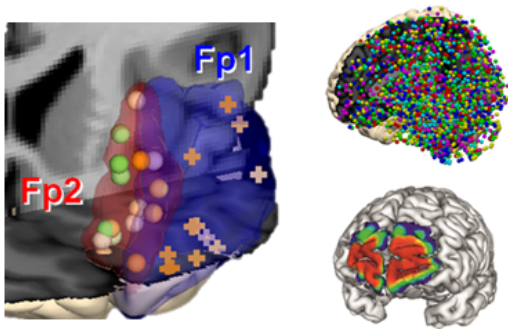
Research News

Understanding Consciousness: HBP International Conference in June



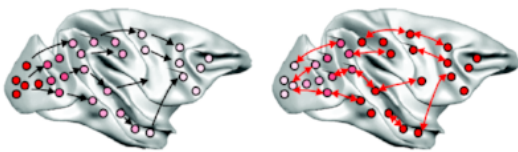
The HBP's International Conference *Understanding Consciousness: A scientific Quest for the 21st Century* takes place on June 21-22 in Barcelona. Our website features interviews with two of the organizers, neuroscientist Marcello Massimini ([here](#)) and philosopher Kathinka Evers ([here](#)).

Linking gene expression to brain microstructure



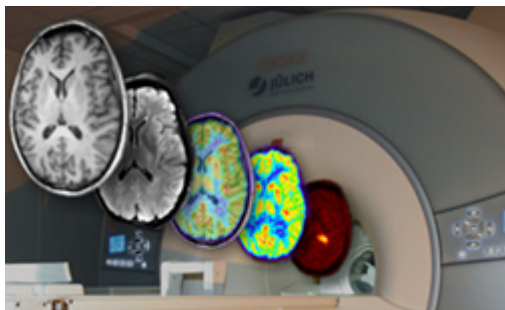
HBP scientists have developed the JuBrain Gene Expression tool (JuGEx) to combine the benefits of a genetic and an anatomical atlas. The tool makes it possible to precisely relate gene expression data from the Allen Brain Atlas to microstructural maps of the JuBrain atlas. [More](#)

Science: Why some visual cues don't reach consciousness



A team around senior author Pieter Roelfsema has elucidated the role of fluctuating brain dynamics and an event called "global ignition" in conscious perception. [More](#)

Looking deeper into brain function



HBP researchers propose a new concept to discover the "operational functions" of brain areas. As new big data bases for neuroimaging results become available, they argue that a change in perspective could lead to a deeper understanding. [More](#)

Brainbyte-Blog: What does this part of brain do?



Find out more about the new approach to brain function in this blogpost by first author Sarah Genon, leader of the task *Multimodal comparison of whole-brain maps* in HBP. For Brainbyte, she explains the need for a conceptual shift. [More](#)

Robots with Brains



A new simulator based on spiking neural networks has been developed for the Neurorobotics Platform of HBP. It enables neuroscientists to "transplant" their brain models into virtual robots. [More](#)

Watch: Exploring the societal implications of new brain science



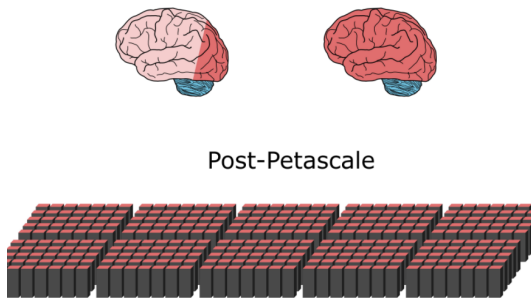
Modern neuroscience raises fundamental questions about consciousness, intelligence and what makes us human. This video from HBP research area Ethics and Society gives an overview. [More](#)

New ultrasound technique shows the brain of rodents in action



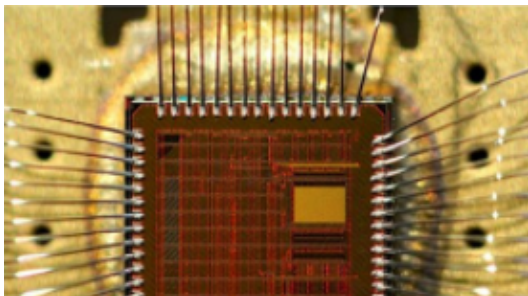
The HBP's partnering project FUSIMICE has validated a new ultrasound method to analyse what happens in the brain while executing activity. The new technology is portable, highly resolved and can be used in movement. [More](#)

Ready for Exascale: New algorithm for large-scale brain simulations



A new algorithm now allows NEST, one of the main simulators of HBP, to achieve simulations of brain-scale networks on future supercomputers of the exascale class. The new algorithm also significantly speeds up brain simulations on existing supercomputers. [More](#)

HBP and Intel reveal new neuromorphic chip architectures



HBP researchers along with colleagues from Intel have jointly revealed three new neuromorphic chips during the NICE 2018 conference. Prototypes of the new BrainScaleS-2 chip and SpiNNaker-2 chip were presented. [More](#)

Investigating circuitous networks of connection



Neuroscientist Gustavo Deco talks about his work with CHAMPMouse, an HBP partnering project investigating the circuitous network of connections that are activated when we do something as simple as distinguishing objects by sight. [More](#)

Watch: The multilevel nature of the brain in 90 seconds



Travel from human size to neurotransmitters in 90 seconds in this video illustrating the multi-scale nature of the HBP's brain research. Watch it [here](#). More information on how we link these levels in the HBP brain atlas can be found on our site [Explore the Brain](#)



International Conference on Consciousness: Early bird rate until May 3rd
The HBP International Conference on Consciousness will bring together world-leading scholars to explore consciousness. Join us, June 21-22, in Barcelona: <http://hbp-ic.com/>

Project News



Neuroscience and High Performance Computing at “Shaping Europe’s Digital Future”

In April, the HBP showcased the productive relationship between neuroscience and computing at the Bulgarian Presidency event "Shaping Europe’s Digital Future - High Performance Computing for Extreme Scale Scientific and Industrial Applications" [More](#)



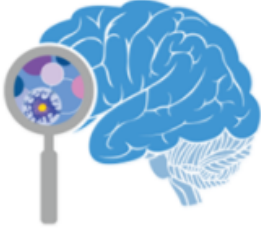
HBP Young Researchers Event

The Young Researchers Event: Brain models and Computation for Brain Medicine took place as a satellite event on 18 April 2018 at the Big Auditorium of the Bulgarian Academy of Sciences in Sofia. [More](#)



Congratulations to Prof. Matthew Lambon Ralph

The HBP’s Chair of the Stakeholder Board, Prof. Matthew Lambon Ralph, has been appointed as Director for the UK’s MRC Cognition and Brain Sciences Unit effective September 1st 2018. He plans to continue his service for the HBP when he takes up his new post. [More](#)



HBP presentations at US BRAIN Initiative meeting

HBP research was presented at the annual BRAIN Initiative meeting in Washington DC, with a focus session dedicated to the project and contributions to a session about the International Brain Initiative, of which it is a founding member. Another HBP-presentation was held at the Swiss Embassy. [More](#)



Data Governance in International Neuro-ICT Collaborations

From its inception, the HBP has pursued questions of data governance. In March, the project hosted a conference on the topic in Oxford, UK, to clarify current practice, identify obstacles and barriers, and look to the future of international research. [More](#)



Showcasing the innovation potential of the HBP

In March the Human Brain Project (HBP) put its innovations and novel technologies on display at a two-day event in London. [More](#) Further outreach events in Amsterdam and Italy have been covered [here](#).



Quake project – Early exploitation of HBP results

The project “Qbeast Utility Analysis to Market and Enterprise (Quake)” was awarded to SP7 partner BSC. It aims to prepare Qbeast, a tool to advance traditional workflows of HPC simulations, for the market. Application in the Human Brain Atlas use case in the “Data-intensive supercomputing” work package contributed to improving its implementation. [More](#)



1st Conference on Gender and Diversity “A call to action for everyone at HBP”

The HBP's first Gender and Diversity Conference was hosted at Universidad Politécnica de Madrid (UPM). Scientists from within and outside of the project discussed ways of fostering equal career opportunities between men and women and more systematically integrating sex and gender analysis into research. [More](#)

Events and Dates

May and beyond

Understanding the Human Brain - Re-thinking Man and Machine

Campus Biotech, Geneva, Switzerland

May 3, 2018 at 18:00 – May 3, 2018 at 21:00

The Swedish Swiss Chamber of Commerce (SSCC) in collaboration with the Human Brain Project (HBP) and Uppsala University are hosting an evening to understand and discuss the latest developments in neuroscience, artificial intelligence, medicine and robotics.

Understanding consciousness – a scientific quest for the 21st century.

Auditorium in CaixaForum, Barcelona, Spain

June 21, 2018 – June 22, 2018

As the first in a series of large, international HBP conferences, this meeting will focus on fundamentals and theory, computational models, and clinical-societal implications of consciousness research. Early bird registration until April 15.

NEST Conference 2018 #NEST2018

Norwegian University of Life Sciences

June 25, 2018 – June 26, 2018

The NEST Conference provides an opportunity for the NEST Community to meet, exchange success stories, swap advice, learn about current developments in and around NEST spiking network simulation and its application. We would like you to share your experiences made and results obtained with NEST during the conference. You can do so either by a short oral presentation (10–15 minutes), on a poster, through a demo, or by organizing group work. **Important dates:** • 30 April 2018 — Deadline for child-care requests • 13 May 2018 — Deadline for abstract submissions • 17 May 2018 — Notification of acceptance • 25 May 2018 — Deadline for registration

2nd HBP Curriculum Workshop Series

Kalkscheune Berlin, Germany

4-6 July 2018

The HBP Curriculum Workshops address early career researchers who want to gain knowledge outside their area of specialisation or who are interested in learning about ethical challenges or intellectual property rights.

Extended application deadline: 6 May 2018

FENS Technical Workshop: Investigating neural substrates of perception and cognition with large-scale data

Berlin, Germany

7 July 2018

At this technical workshop during the FENS Forum, renowned experts from the HBP, the Allen Institute and the BRAIN Initiative will describe large-scale efforts to systematically collect, curate, analyse and model in vivo neural activity in the rodent brain during sensation and behaviour.

FENS Networking event: Next Generation Networks in Neuroscience

Berlin, Germany

10 July 2018

As part of the FENS Forum of Neuroscience, this networking event is co-organised by FENS-CHET, ERA-NET NEURON & the HBP Education Programme. Meet and mingle with music, drinks and food, while getting updates on support possibilities, training, educational opportunities and available financial aid.

HBP School - The Human Brain Atlas: Neuroscientific basis, tools and applications

3-7 September 2018

Düsseldorf/Jülich, Germany; Maastricht, Netherlands

This HBP School will teach neuroanatomy and cognitive function of the human brain, including hands-on dissection courses, and give an overview about selected

methodologies used in the HBP to investigate the structural and functional organisation of the human brain. Application deadline: 27 June 2018

HBP School - Barcelona Cognition, Brain and Technology Summer School

Barcelona, Spain

3-14 September 2018

The BCBT School promotes a shared systems-level understanding of the functional architecture of the brain and its possible emulation in artificial systems. It addresses the investigation of learning and memory, brain function and behaviour.

Application deadline: 20 July 2018

HBP School - The Brain Simulation Platform of the Human Brain Project

Mondello (Palermo), Italy

17-21 September 2018

This School will introduce participants to the HBP Brain Simulation Platform, with the main aim to train users on how to exploit the possibilities offered by the Platform to implement cellular level computational models, to use High Performance Analytics and Computing Platform systems to configure and run a simulation, and to visualise/analyse the results.

Application deadline: 11 July 2018

Find further events at: <https://www.humanbrainproject.eu/en/follow-hbp/events/>
