



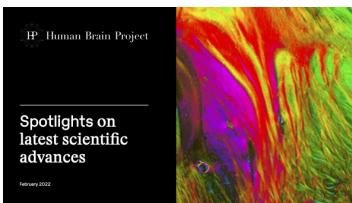
HBP Newsletter · March 2022

## Highlights



### New implant offers promise for the paralyzed

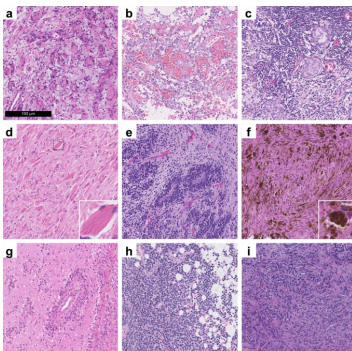
A system developed by Grégoire Courtine and Jocelyne Bloch at HBP partners EPFL and CHUV now enables patients with a complete spinal cord injury to stand, walk and even perform recreational activities like swimming, cycling and canoeing. [Read more](#)



### New HBP brochure: Spotlights on latest scientific advances

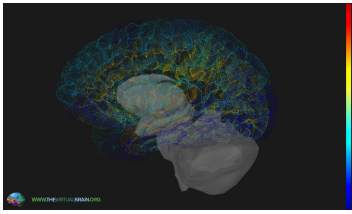
A selection of spotlights gives a taste of what HBP research has achieved over the last two to three years and where it is headed in its final phase. [Read more](#)

## News



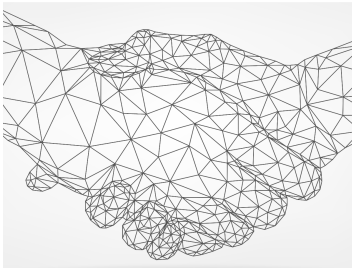
### Brain tumor data now available on EBRAINS

A large brain tumor bank from the Medical University of Vienna has been digitized and added to the EBRAINS research infrastructure. [Read more](#)



## How The Virtual Brain can help patients with epilepsy

To help promote International Epilepsy Day, we talked with neurologists and computational scientists Petra Ritter and Leon Stefanovski from Charité – Universitätsmedizin Berlin about their work on The Virtual Brain (TVB) and how it can be used to locate the areas in a patient's brain where epilepsy seizures emerge. [Read more](#)



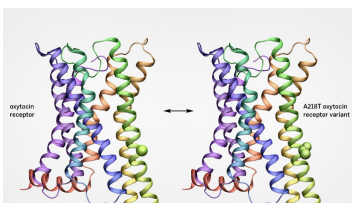
## The Human Brain Project welcomes new partnering projects

Over the past months, the HBP has welcomed 4 new Partnering Projects. They will contribute on the topics of future and emerging technology (FET), brain high-resolution data, prediction of neurosurgical treatment outcomes in Parkinson's Disease as well as the cognitive architecture for therapy robots and avatars.

All 4 partnering projects have been scientifically and ethically reviewed and approved by the Science and Infrastructure Board of HBP. Two of these projects have received the 2020 EBRAINS Research Infrastructure voucher and the other two are recipients of European and national funding.

The 4 partnering projects are:

- [BUILD](#) - Big mUltimodal hIgh-resolution atLas Data Management
- [EMBRACE](#) - EMBedding Responsible Research And Innovation in Future and Emerging TeChnologiEs
- [ParkinsonBrain](#) - Prediction of neurosurgical treatment outcomes in Parkinson's disease
- [CATRA](#) - Cognitive Architecture for Therapy Robots and Avatars



## Oxytocin and Autism: HBP Researchers Provide New Insights into the Cellular Origin of the Disorder

Scientists around HBP researcher Paolo Carloni from HBP partner Forschungszentrum Jülich show how genetic variation in the oxytocin receptor changes its structure and function. [Read more](#)

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### **The Human Brain Project is teaching the next generation of neuroscientists how to code**

A paper recently published in Neuron outlines three main obstacles to teaching students how to code. The Human Brain Project is proud to offer coding courses to young researchers through its Education programme. [Read more](#)

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### **EBRA releases Mapping Report: investment in European brain research still vital**

The mapping report provides an overview of the current state of brain research in Europe and which areas within brain research, if any, are the focus in Europe. [Read more](#)

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Read more news items [here](#).

## Upcoming Events

### **22 March 2022: Fenix Webinar: How and when to access the ICEI resources**

The goal of this webinar is to provide information on the available mechanisms to access the ICEI resources, and in particular, when and how to submit a request for resources, the evaluation process, and the allocation rules. [Find out more](#)

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## **24 March 2022: World Coma Day - Online event**

We have the honor to have several HBP members as speakers and moderators at the World Coma Day online event: Profs Steven Laureys, Marcello Massimini, Kathinka Evers and Michele Farisco.

The World Coma Day is an all-day global online event featuring stories of remarkable recovery, science talks by medical experts, educational sessions for patients and families, and "shout out" videos from providers, patients, and families around the world. It will be held online on March 22 for 24h with free registration. [Find out more](#)

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## **29 March - 1 April 2022: NICE 2022**

EBRAINS, SpiNNaker, and BrainScaleS will offer hands-on tutorials during NICE 2022. [Find out more](#)

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## **The HBP Calls for Expression of Interest for SGA3: “EBRAINS Workshops”**

Through this Call for Expressions of Interest, applicants (from within and outside the HBP) can request administrative and financial support provided by the HBP Education Programme for the planning and organisation of an EBRAINS Workshops event.

**The final cut-off date is 30 March 2022.** [Learn more.](#)

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## **7 April 2022: HBP Tea and Slides**

*Save the date for the next episode!* Information will be added [here](#).

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## **11-13 April 2022: Symposium "From cortical microcircuits to consciousness" (CORTICON)**

The Symposium ‘From Cortical Microcircuits to Consciousness’ aims at bringing together the Human Brain Project’s neuroscientists and invited guests to present their latest achievements in understanding neurocircuit dynamics at microscales, meso- and macro-scales, including the emergence of

consciousness. [Register here](#)

## Call for Submissions

We invite original, high-quality submissions describing innovative research based on the themes of the Symposium relating to a wide spectrum of fields including but not limited to: neuroscience, computer science, robotics, medicine, psychology, cognitive science and philosophy. [Find out more](#)

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## 13-15 June 2022: BASSES EBRAINS Workshop

The HBP and EBRAINS invite interested scientists to join the forthcoming EBRAINS Workshop on Brain Activities across Scales and Species (BASSES.) [Register here](#)

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## 30 May - 3 June 2022: BRAINS Brain Simulation School 2022

Registration will open soon!

Training on Single Neuron Models, Brain Circuit Models, Cognition, Collaboratory, Synaptic Plasticity and Learning

The target audience of this school are advanced master students, doctoral students and postdoctoral researchers in biomedical and technology sciences, coming from a wide range of disciplines, including medicine, biology, psychology, mathematics, informatics, information technology, physics and chemistry. The school will provide them with an introduction to the neuroinformatics and computational neuroscience tools available in the EBRAINS Infrastructure. The event is limited to 40 participants. [Find out more](#)

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Learn about more upcoming events [here](#).

## Publications

Read recent publications from Human Brain Project scientists below!

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## **Spiking neuromorphic chip learns entangled quantum states**

*Stefanie Czischek, Andreas Baumbach, Sebastian Billaudelle, Benjamin Cramer, Lukas Kades, Jan M. Pawlowski, Markus K. Oberthaler, Johannes Schemmel, Mihai A. Petrovici, Thomas Gasenzer, Martin Gärttner*

[Read the full paper in SciPost](#)

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## **Differential mechanisms underlie trace and delay conditioning in *Drosophila***

*Dhruv Grover, Jen-Yung Chen, Jiayun Xie, Jinfang Li, Jean-Pierre Changeux & Ralph J. Greenspan*

[Read the full paper in Nature](#)

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## **The BrainScaleS-2 Accelerated Neuromorphic System With Hybrid Plasticity**

*Christian Pehle, Sebastian Billaudelle, Benjamin Cramer, Jakob Kaiser, Korbinian Schreiber, Yannik Stradmann, Johannes Weis, Aron Leibfried, Eric Müller and Johannes Schemmel*

[Read the full paper in Molecular Psychiatry.](#)

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## **Quantifying arousal and awareness in altered states of consciousness using interpretable deep learning**

*Minji Lee, Leandro R. D. Sanz, Alice Barra, Audrey Wolff, Jaakko O. Nieminen, Melanie Boly, Mario Rosanova, Silvia Casarotto, Olivier Bodart, Jitka Annen, Aurore Thibaut, Rajanikant Panda, Vincent Bonhomme, Marcello Massimini, Giulio Tononi, Steven Laureys, Olivia Gosseries & Seong-Whan Lee*

[Read the full paper in Nature Communications](#)

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Read more publications [here](#).

## Event Recordings

Did you miss one of our recent events or workshops? We've got you covered!  
Watch replays via the links below:

[Watch previous episodes of our Brain Matters webinar series!](#)

[14th Fenix Infrastructure Webinar: EBRAINS services deployed on ICEI Embodied Large Scale Spiking Neural Networks in the Neurorobotics Platform](#)

## Visit from UK Minister



We were delighted to welcome George Freeman MP, #UK Minister for Science, Research and Innovation, to the EBRAINS Swiss Branch in Geneva.

It was a great opportunity to present the EBRAINS platform and discuss how to further engage with UK universities and academic centres to continue advancing brain research. [Read more](#)

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