



Human Brain Project  
Education Programme

## 2<sup>ND</sup> HBP STUDENT CONFERENCE

TRANSDISCIPLINARY RESEARCH LINKING  
NEUROSCIENCE, BRAIN MEDICINE AND COMPUTER SCIENCE

14-16 February 2018  
Ljubljana, Slovenia

Registration deadline: 31 January 2018  
Abstract submission is closed.

### PRELIMINARY SCIENTIFIC PROGRAMME

as of 16 January 2018



Contact Programme Committee:  
[studentrep@humanbrainproject.eu](mailto:studentrep@humanbrainproject.eu)

Contact organisers:  
[education@humanbrainproject.eu](mailto:education@humanbrainproject.eu)



For more information visit:  
[education.humanbrainproject.eu/web/2nd-hbp-student-conference](http://education.humanbrainproject.eu/web/2nd-hbp-student-conference)



# Preliminary scientific programme

as of 16 January 2018

The 2<sup>nd</sup> HBP Student Conference provides an open forum for exchange of new ideas among young researchers working across various aspects of neuroscience, brain medicine and computer science relevant to the Human Brain Project. The scope of the conference offers a plethora of opportunities for extensive scientific discussions, both intra- and interdisciplinary, among peers and faculty through a variety of discussion sessions, lectures and social events.

## Wednesday 14 February

12:00 - 14:00

Registration

14:00 - 15:00

Welcome speech and introduction to the HBP

**Marc-Oliver Gewaltig (EPFL)**

15:00 - 16:00

Why does ICT need biology?

**Isabel Fernaud (UPM)**

16:00 - 16:30

Coffee break

16:30 - 17:30

Student Session I:

Human Brain/Mouse Brain Organisation, Systems and Cognitive Neuroscience\*

17:30 - 18:30

Querying and exploring big scientific data

**Thomas Heinis (ICL)**

18:30 - 20:00

Welcome reception

\* Please find a detailed schedule of the student sessions on page 2.

## Thursday 15 February

09:00 - 10:00

What can we learn from artificial deep networks about biological brain function?

**Radoslaw Cichy (FU Berlin)**

10:00 - 11:00

Student Session II: Medical Informatics\*

11:00 - 11:30

Coffee break

11:30 - 13:00

Neuroethics in the big brain initiatives: Necessity or luxury?

**Arleen Salles, Michele Farisco (UU) Karen Rommelfanger (Emory University)**

13:00 - 14:30

Lunch break

14:30 - 15:30

Student Session III: High Performance Computing, Brain Simulation\*

15:30 - 16:30

Building and interacting with The Virtual Brain

**Anthony Randal McIntosh (Toronto)**

16:30 - 18:00

Posters & coffee I

## Friday 16 February

09:00 - 10:00

Neurorobotics: Robot bodies for artificial brains or brain models for robots?

**Speaker tbc**

10:00 - 11:00

Student Session IV:

Neurorobotics, Neuromorphic Computing, Theoretical Neuroscience\*

11:00 - 11:30

Coffee break

11:30 - 13:30

Career building - parallel break-out sessions

**Andrea Krönke, Manuela Möller, Uta Kletzing (EAF Berlin)**

13:30 - 15:00

Lunch break

15:00 - 16:30

Posters & coffee II

16:30 - 17:30

Designing visual artificial intelligence systems by computationally modelling human vision perception

**Gemma Roig (MIT)**

17:30 - 18:00

Closing ceremony

### Student participation information:

Participation in the 2<sup>nd</sup> HBP Student Conference is open to advanced master students, PhD students and young researchers, regardless of whether they are affiliated with the HBP or not and regardless of whether they make a submission to the scientific programme or not. **Registration is required.**

**We offer childcare during the conference. Please indicate in the registration form if you require this service.**

**Contact Programme Committee:**  
studentrep@humanbrainproject.eu

**Contact organisers:**  
education@humanbrainproject.eu

**Organisers:**  
Viktoria Tipotsch,  
Theresa Rass | MUI, Austria

**For further information visit:**

<https://education.humanbrainproject.eu/web/2nd-hbp-student-conference/>

# Student Sessions



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## Student Session I

Synaptology of the mesial temporal cortex in Alzheimer's disease

**Marta Domínguez (UPM)**

Synaptology of the somatosensory cortex in the adult mouse

**Marta Turégano (UPM)**

Fighting inactivity to prevent cognitive decline: The role of dopamine in modulating physical activity levels in older adults

**Jaisalmer de Frutos-Lucas (UPM)**

A software pipeline for efficient processing of 3D high-resolution microscopy images of large brain samples

**Giacomo Mazzamuto (LENS)**

Integrating multiple data sources for predicting the mouse mesoconnectome

**Nestor Timonidis (LENS)**

Cortical feedback to superficial layers of V1 contains predictive scene information

**Andrew Morgan (LENS)**

Cultured neuronal networks as complex dynamical systems

**Alejandro Tlaie Boria (URJC)**

## Student Session II

Feature aware domain adaptation for robust medical signal processing

**Steffen Schneider (RWTH)**

Detecting cognitive decline through dialogue processing

**Sofia de La Fuente Garcia (UEDIN)**

Detection of normal speech development using artificial neural networks

**Ana Catalina Muñoz-Arbelaez (UPB)**

Detection of pathological ageing with artificial neural networks

**Juan Esteban Betancur Ochoa (UPB)**

Semantic annotation of data on neurodegenerative diseases in patients using ontologies

**Pance Panov (JSI)**

Analysing dialogue to support detection of Alzheimer's disease

**Matthew Purver (QMUL)**

Ordinal synchronization: A novel approach for quantifying synchronization

**Ignacio Echegoyen (UPM)**

## Student Session III

Exponential first passage time approximations of neuron model with conductance-based dynamics

**Jan Hendrik Kirchner (BCF)**

Communication optimisation in distributed Spiking Neural Network simulations

**Carlos Fernandez Musoles (Sheffield)**

Graphlets for complex network analysis

**Tamara Dimitrova (MASA)**

cuHinesBatch: Solving multiple hines systems on GPUs

**Pedro Valero-Lara (BSC)**

Dynamic resource management for interactive supercomputing in neuroscience

**Marta Garcia (BSC)**

Big data for HPC: the Human Brain Project

**PoI Santamaria (BSC)**

Fitting Virtual Epileptic Patient (VEP) brain model to the empirical stereotactic EEG (SEEG) using Bayesian framework

**Meysam Hashemi (INSERM)**

## Student Session IV

Towards grasping with Spiking Neural Networks for anthropomorphic robot hands

**J. Camilo Vasquez Tieck (FZI)**

A framework for robot control with multi-modal motion activation using spiking neurons

**Lea Steffen (FZI)**

Bio-inspired cat robot: Closed-loop locomotion with neural central pattern generators

**Gabriel Urbain (UNIGE)**

Learning movements by imitation from event-based visual prediction

**Jacques Kaiser (FZI)**

Learning through reward in self-organized balanced networks

**Maria Kesa (Starlab SL)**

SpiNNakEar - Auditory pathway modelling on neuromorphic hardware

**Robert James (UMAN)**

The structure of complex neural networks and its effects on learning

**Pau Vilimelis Aceituno (MPI-MIS)**

## Conference Programme Committee:

### Chair:

Andrea Santuy | UPM, Spain

### Committee:

Nikola Simidjievski | JSI, Slovenia  
Marcelo Armendariz | KU Leuven, Belgium  
Petruț Bogdan | UMAN, UK  
Carlos Canova | JUELICH, Germany  
Claudia Modenato | CHUV, Switzerland  
Agata Mosinska | EPFL, Switzerland



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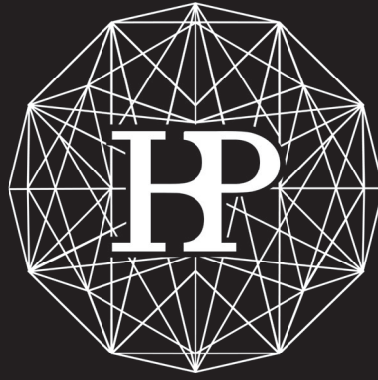
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### Fees:

**Online registration  
(until 31 January 2018):**  
€ 90.00 for students  
€ 150.00 for regular participants

**On-site registration:**  
€ 150.00 for students  
€ 200.00 for regular participants



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@HBP\_Education



@hbpeducation



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**Website:**

[education.humanbrainproject.eu](http://education.humanbrainproject.eu)

**Contact:**

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