



Human Brain Project

Co-funded by
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HBP TRAINING COURSE ON **THE BRAIN SIMULATION PLATFORM OF THE HUMAN BRAIN PROJECT**

Biomedicum Helsinki
Helsinki, Finland
7-8 October 2019



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HBP Education Programme

CALL FOR REGISTRATIONS

This short course will introduce the students to the Brain Simulation Platform (BSP) of the Human Brain Project (HBP), with the main aim to extend its access to the average user from a variety of communities in the field of Computational Neuroscience. After the course, students will have a deeper understanding on the techniques and the scientific issues underlying the implementation of a detailed computational model; students will also be able to use the BSP and access HPC systems to configure and run a simulation, to visualise and analyse simulation results, and to form collaborative groups interested in exploring scientific issues of common interest.

Requirements for attending the event

- Basic knowledge of neuronal electrophysiology
- Interest in neural modelling
(a basic knowledge of the NEURON simulator is advisable but not required)
- Interest in using Python programming
- User account on the HBP Collaboratory platform
(<https://collab.humanbrainproject.eu/>)

If you do not have an account, please send an email to bsp-support@humanbrainproject.eu stating your interest in participating in the event, and you will receive an invitation to join the platform.

Scientific Chair

Michele Migliore | Italian National Research Council

Local Organisers

Simo Vanni, Katri Wegelius | University of Helsinki
Doctoral Programme Brain & Mind (B&M)

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Further information & registration:

<https://elomake.helsinki.fi/lomakkeet/99051/lomake.html>



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Consiglio Nazionale
delle Ricerche

Monday, 7 October 2019

- 09:00 - 09:30 **Welcome and introduction to the course**
Michele Migliore | Italian National Research Council
- 09:30 - 10:30 **First steps into the Brain Simulation Platform**
Luca Leonardo Bologna | Italian National Research Council
- 10:30 - 10:45 **Coffee break**
- 10:45 - 11:30 **Electrophysiological features extraction**
Rosanna Migliore | Italian National Research Council
- 11:30 - 12:30 **Single cell modelling**
Michele Migliore | Italian National Research Council
- 12:30 - 14:00 **Lunch break**
- 14:00 - 15:00 **Single cell model optimisation: Algorithms and methods**
Carmen Alina Lupascu | Italian National Research Council
- 15:00 - 18:00 **Hands-on session I:**
- **Electrophysiological features extraction**
Rosanna Migliore, Luca Leonardo Bologna | Italian National Research Council
 - **Build your own cell model**
Rosanna Migliore, Carmen Alina Lupascu | Italian National Research Council

Tuesday, 8 October 2019

- 09:00 - 09:45 **Scientific drive: Large-scale models I, the olfactory bulb**
Michele Migliore | Italian National Research Council
- 09:45 - 10:30 **Subcellular models: Fitting synaptic events**
Carmen Alina Lupascu | Italian National Research Council
- 10:30 - 10:45 **Coffee break**
- 10:45 - 11:30 **Scientific drive: Large-scale models II, the hippocampus**
Michele Migliore | Italian National Research Council
- 11:30 - 12:30 **In silico experiments using circuits**
Luca Leonardo Bologna | Italian National Research Council
- 12:30 - 14:00 **Lunch break**
- 14:00 - 17:00 **Hands-on session II:**
- **Analysis and validation: How to improve your model**
Rosanna Migliore | Italian National Research Council
- 17:00 - 17:15 **How to get your own HPC allocation:
Access to ICEI resources and the FENIX infrastructure**
Michele Migliore | Italian National Research Council
- 17:00 - 18:00 **Q&A, discussion, conclusions**



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humanbrainproject.eu/education