3rd HBP Education School
FUTURE NEUROSCIENCE
THE MULTISCALE BRAIN:
FROM GENES TO BEHAVIOUR

Obergurgli University Centre, Austria
28 November - 4 December 2016

HUMAN BRAIN DATA
ATLASING
BRAIN SIMULATION
GENES
COGNITION
NEUROINFORMATICS PLATFORM
MOUSE BRAIN DATA

FINAL SCIENTIFIC PROGRAMME

Education Programme contact:
education@humanbrainproject.eu
Scientific Programme:

Understanding the brain requires an integrated understanding of different scales of organisation spanning genes, channels, cells, microcircuits, brain regions and their roles in behaviour from perception to action and in different states including wakefulness and sleep. This course will take the student through the latest data, models and techniques for investigating the different levels of the brain and through the process of putting the pieces together to derive new insights and theories. Workshops each day will guide the student with hands-on experience with the state-of-the-art tools and techniques for neuroinformatics, analysis, modelling and simulation.

This school is jointly organised by the Human Brain Project (HBP) and the Allen Institute for Brain Science (AI).

The morning sessions are lecture style and the afternoon and evening sessions are tutorial style.

Monday 28 November: Arrival Day

16:00 - 18:30 Registration
18:30 - 19:00 Welcome reception
19:00 - 20:30 Dinner
20:30 - 21:30 Terri Gilbert (AI), Sean Hill (EPFL) Introduction and welcome address

Tuesday 29 November: Genetic Mapping

08:00 - 09:15 Vilas Menon (AI, Janelia) Using whole-brain and single-cell gene expression to identify and characterise cell types
09:15 - 10:30 Trygve Bakken (AI) Genetic dissection of neural circuits
10:30 - 11:00 Coffee break
11:00 - 12:15 Terri Gilbert (AI) Accessing Cell Types
12:15 - 14:00 Lunch
14:00 - 15:30 Werner van Geit (EPFL), Elisabetta Iavarone (EPFL) Cell types data and modelling
15:30 - 16:00 Coffee break
16:00 - 17:30 Werner van Geit (EPFL), Elisabetta Iavarone (EPFL) Cell types data and modelling
17:30 - 19:00 Werner van Geit (EPFL), Elisabetta Iavarone (EPFL) Cell types data and modelling - continued
19:00 - 20:30 Dinner
20:30 - 22:00 Student lightning talks / poster session I

Wednesday 30 November: Cellular and Circuit Mapping

08:00 - 09:15 Qingming Luo (HUST) Brain-wide single cell reconstructions
10:30 - 11:00 Coffee break
09:15 - 10:30 Forrest Collman (AI) Synaptic mapping
11:00 - 12:15 Terri Gilbert (AI) Accessing Cell Types
12:15 - 14:00 Lunch
14:00 - 15:30 SasKia De Vries (AI) Structure, function, behaviour
15:30 - 16:00 Coffee break
16:00 - 17:30 SasKia De Vries (AI) Brain observatory datasets
17:30 - 19:00 Terri Gilbert (AI) Navigating the connectivity atlas
19:00 - 20:30 Dinner
20:30 - 22:00 Student lightning talks / poster session II

Thursday 1 December: Multiscale Behaviour

08:00 - 09:15 Francesco Pavone (LENS) Whole brain morphofunctional imaging
09:15 - 10:30 Alain Destexhe (CNRS) Multiscale modelling
This school is open to the whole student community and early post-docs upon application. Abstract submissions for presenting the applicants' own work are particularly welcome. Applications from young female investigators are highly encouraged.

Application is required (https://education.humanbrainproject.eu/web/third-hbp-school/course-application) as space is limited. Up to approx. 40 participants will be selected.

There is no registration fee. Accommodation will be provided. Seven travel grants will be available upon request. (European students only)

Scientific Committee:
Alois Saria, Sean Hill | HBP
Terri Gilbert | Allen Institute

Organisers:
Viktoria Tipotsch, Theresa Rass | MUI

Contact: education@humanbrainproject.eu