Human Brain Project
Education Programme

2ND HBP CURRICULUM WORKSHOP SERIES
SCIENTIFIC PROGRAMME SCHEDULES

4-6 JULY 2018
KALKSCHEUNE BERLIN, GERMANY

AS OF 25 APRIL 2018

LATE APPLICATION IS POSSIBLE

@hbpeducation

@hbp_education

HBP Education

HBP Education Programme

https://education.
humanbrainproject.eu/

NOTES

HBP CURRICULUM

The HBP Curriculum combines distance learning courses and complementary face-to-face workshops that provide basic lessons in the HBP core fields neuroscience, medicine and ICT for early career researchers, outside their area of specialisation. In addition, it includes courses on the subjects of ethics as well as intellectual property rights, translation and exploitation of research.

Further information:
https://education.humanbrainproject.eu/web/hbp-education-portal/hbp-curriculum

WORKSHOP & APPLICATION INFORMATION

The Human Brain Project Curriculum Workshops take place from 4-6 July 2018 in Berlin, prior to the FENS Forum. All five workshops are held in parallel. You can apply for ONE out of five workshops:

• ICT for non-specialists
• Neurobiology for non-specialists
• Brain medicine for non-specialists
• Research, ethics and societal impact
• Entrepreneurship in neuroscience

Applications are open to the entire student community and early career researchers, regardless of whether they are affiliated with the Human Brain Project or not.
Applications from young female investigators are highly encouraged.

A maximum of 30 participants per workshop will be selected by the Scientific Chair and the HBP Education Programme in a competitive selection process based on academic merit. Participants are required to submit a CV and a motivation letter with their application.

Applicants selected for participation will be informed within three weeks after the application deadline.

Participation fee: 250,00 €
The fee does not include travel and accommodation. Fees will be collected after participants have been selected.

Application is mandatory.

For more information visit:
https://education.humanbrainproject.eu/web/2nd-hbp-curriculum-workshop-series

TARGET GROUP

The 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.

ABSTRACT SUBMISSION INFORMATION

A joint poster session is organised on the evening of 5 July. If you want to present your research in the poster session, please submit an abstract with your application.

Organisers:
Alois Saria, Elisabeth Wintersteller, Lisa-Marie Leichter | MUI

For inquiries please contact:
curriculum.edu@humanbrainproject.eu

All programmes may be subject to change.

RESEARCH, ETHICS AND SOCIETAL IMPACT
DUAL USE AND RESPONSIBLE RESEARCH: ETHICAL CHALLENGES

This workshop aims to provide participants with insights on ethical aspects of dual-use research in neuroscience and Responsible Research and Innovation (RRI). Lectures will be given by some of the world's leading experts on dual-use in neuroscience research, and by active researchers on RRI. The topics covered will include the chemistry of the brain and dual action of drugs, novel incapacitants, ethics awareness and engagement and RRI. An important ingredient of the workshop is the use of team-based learning techniques.

Scientific Chairs:

Abdul K. Mohammed **|** LNU/KI
Manuel Guerrero **|** KI
Alreen Salles **|** UU

Linnæus University

Karolinska Institutet

UPPSALA UNIVERSITET

WEDNESDAY 4 JULY 2018

08:00 - 08:45	Registration
08:45 - 09:00	Introduction Abdul K. Mohammed	KI/LNU
09:00 - 10:00	The chemistry of the brain and the dual action of drugs Jean-Pierre Changeux	PI
10:00 - 10:30	Coffee break
10:30 - 11:15	Dual-use brain science: Realistic capabilities; critical concerns James Giordano	GU

11:15 - 12:00	**Dual-use neuroscience, novel incapacitants and the 2018 review conference of the Chemical Weapons Convention** Malcolm Dando	UoB
12:00 - 13:00	**Lunch break**
13:00 - 14:00	**Beyond dual-use: Exploring the limits of dual-use as a guiding concept for ethical research** Tara Mahfoud	KCL
14:00 - 15:00	**Responsible Research and Innovation in ICT** Bernd Stahl	DMU
15:00 - 15:30	**Coffee break**
15:30 - 16:30	**Responsible Research and Innovation: The role of public engagement** Simisola Akintoye	DMU
16:30 - 18:00	**Round table: Dual-use and Responsible Research and Innovation** J.P. Changeux, J. Giordano, M. Dando, B. Stahl, S. Akintoye, K. Nixdorff, T. Mahfoud, L. Bitsch
18:00 - 21:00	**Social evening**

THURSDAY 5 JULY 2018

09:00 - 10:00	**Responsible Artificial Intelligence: Ethics, governance and policy** Inga Ulnicane-Ozolina	DMU
10:00 - 10:30	**Coffee break**
10:30 - 11:30	**Ethics awareness and engagement: The impact of video games** Tyr Fothergill	DMU

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11:30 - 12:00	Discussion
12:00 - 13:00	Lunch break
13:00 - 14:00	Cognition, plasticity and ethics
	Sebastian Porsdam-Mann	HMS
14:00 - 15:00	Team-based learning (TBL) on dual-use
	Malcolm Dando	UoB
	Kathryn Nixdorff	TUDA
	Simon Whitby	UoB
15:00 - 15:30	Coffee break
15:30 - 16:30	TBL continued
	Malcolm Dando	UoB
	Kathryn Nixdorff	TUDA
	Simon Whitby	UoB
16:30 - 17:00	Discussion
17:00 - 18:00	Data use and ethical issues in HBP
	Manuel Guerrero	KI
18:00 - 20:00	Poster session

FRIDAY 6 JULY 2018

08:30 - 10:00	TBL continued
	Malcolm Dando	UoB
	Kathryn Nixdorff	TUDA
	Simon Whitby	UoB
10:00 - 10:30	Coffee break
10:30 -12:00	Open discussion round

NEUROBIOLOGY FOR NON-SPECIALISTS -
STUDYING THE BRAIN

This workshop addresses especially early career researchers who are not familiar with the field of neurobiology and/or neuroscience. It covers topics from basic neurobiology over cell biology and electrophysiology to big data handling. A major aspect will be the challenges of data collection and interpretation in a highly complex system.

Scientific Chair:

Christoph Schwarzer **|** MUI

MEDIZINISCHE
UNIVERSITÄT
INNSBRUCK

WEDNESDAY 4 JULY 2018

08:00 - 09:00	Registration
09:00 - 09:15	Introduction
09:15 - 10:00	Basics of neurobiology I Christoph Schwarzer	MUI
10:00 - 10:30	Coffee break
10:30 - 12:00	Basics of neurobiology II Christoph Schwarzer	MUI
12:00 - 13:00	Lunch break
13:00 - 15:00	Histological methods and microscopic techniques in neuroscience Maja Puchades	UiO

15:00 - 15:30	Coffee break
15:30 - 17:30	Lab visits Experimental Neurology Department Charité
18:00 - 21:00	Social evening

THURSDAY 5 JULY 2018

08:30 - 10:00	Cell biology methods Team Dorette Freyer	Charité
10:00 - 10:30	Coffee break
10:30 - 12:00	Electrophysiology Larissa Kraus	Charité
12:00 - 13:00	Lunch break
13:00 - 15:00	Experimental and clinical EEG Pawel Fidzinski	Charité
15:00 - 15:30	Coffee break
15:30 - 17:00	Neuropharmacology Alexandra Koschak	LFU
17:00 - 18:00	Data use and ethical issues in HBP Manuel Guerrero	KI
18:00 - 20:00	Poster session

FRIDAY 6 JULY 2018

08:30 - 10:00   **Models in neuroscience**
Sarah Genon | JUELICH

10:00 - 10:30   **Coffee break**

10:30 - 12:00   **Behavioural testing**
Simone Sartori | LFU

12:00 - 13:00   **Lunch break**

13:00 - 14:30   **Emics in Neuropharmacology**
Jeffrey Liu | MPG

14:30 - 16:00   **HBP Neuroinformatics Platform**
Yann Leprince | CEA

NEW HORIZONS IN BRAIN MEDICINE:
FROM RESEARCH TO CLINICS

The aim of this interactive workshop is to introduce and deepen the understanding of brain medicine for non-specialists with the most recent advances in research of neurodevelopmental, neurodegenerative and neuropsychiatric disorders. Lectures and tutorials by international experts will report the state of the art of research and treatment of brain diseases. Hands-on examples and practical tools and methodologies will be presented during a visit to a laboratory/clinic at Charité Hospital in Berlin.

Scientific Chair:

Illana Gozes **|** TAU

WEDNESDAY 4 JULY 2018

12:00 - 12:30	Registration
12:30 - 12:45	Welcome note and workshop introduction Illana Gozes	TAU
12:45 - 14:00	Big vs small data analysis targeting "disease signatures" towards precision healthcare Mira Marcus-Kalish	TAU
14:00 - 15:00	HBP Research Infrastructure: Application of network medicine to the understanding of neuropsychiatric diseases Ferath Kherif	CHUV
15:00 - 15:30	Coffee break
15:30 - 16:30	Translational approaches to treating neuropsychiatric disease: Emphasis on erythropoietin Hannelore Ehrenreich	MPG/CMPB

16:30 - 17:30   **Gene & environment interaction in mental disorders**
Hans Grabe | UMG

17:30 - 18:00   **Q&A Session**

18:00 - 21:00   **Social evening**

THURSDAY 5 JULY 2018

08:00 - 09:00   **The role of homocysteine in schizophrenia**
Joseph Levine | BGU

09:00 - 10:00   **Modern imaging techniques in neuroimmunology: Current research and clinical applications**
Paul Friedemann | Charité

10:00 - 10:30   **Coffee break**

10:30 - 13:00   **Visit to Charité Hospital - laboratory and clinical settings**
Paul Friedemann | Charité

13:00 - 14:00   **Lunch break**

14:00 - 15:00   **Oxytocin in translational neuroscience: Involvement in anxiety, fear and stress regulation**
Inga Neumann | UR

15:00 - 15:30   **Coffee break**

15:30 - 16:30   **Post-translational modulation of neurotoxicity in brain misfolding diseases**
Maria Pennuto | UNIPD

17:00 - 18:00   Data use and ethical issues in HBP
Manuel Guerrero | KI

18:00 - 20:00   Poster session

FRIDAY 6 JULY 2018

08:00 - 09:00   The role of type 2 diabetes in brain and cognitive damage
Michal Beeri | SHEBA

09:00 - 10:00   Protective effects of PACAP in models of neurodegenerative disea-
ses, with special emphasis on Parkinson's disease
Dora Reglodi | PTE

10:00 - 10:30   Coffee break

10:30 - 11:30   Autism: From gene to drug candidate and a clinical trial plan, the
case of ADNP and CP201
Illana Gozes | TAU

11:30 - 12:00   Discussion

12:00 - 13:00   Lunch break

13:00 - 14:00   Insight into learning impairments and therapies for Christianson
syndrome: X-linked neurological disorder
Anne McKinney | McGill

NEUROSCIENCE FOR ICT:
APPLICATIONS TO COMPUTATION AND ROBOTICS

"Neuroscience for ICT: Applications to Computation and Robotics" is an interdisciplinary workshop aimed at giving an insight into Information and Communications Technology (ICT) to non-specialists. In particular, the workshop will provide the attendants with an understanding of the field of computational neuroscience and robotics.

In particular, the first day will provide the participants with a general overview of the HBP Research Infrastructure, followed by lectures on computational neuroscience where the participants gain a better understanding of the interaction between neuroscience and computation. The last session will focus on data management from a computational perspective.

During the morning session of the second day, we will provide talks from expert scientists in robotics and bio-inspired robotics. In the afternoon session, we intend to bridge the gap between computational technologies and neuroscience by providing a hands-on experience with the HBP NeuroRobotics Platform (NRP).

Scientific Chair:

Alois Knoll **|** TUM

Technical
University
of Munich

TI.ITI

THURSDAY 5 JULY 2018

09:00 - 10:00	**Welcome and introduction** Cristina Iobbi | TUM
10:00 - 10:30	**Coffee break**
10:30 - 12:00	**Introduction to HBP Research Infrastructure** tbc
12:00 - 13:00	**Lunch break**

13:00 - 14:00	**Bridging the gaps: Computation and neuroscience - neuroscience and computation I**
	Egidio D'Angelo	UNIPV

14:00 - 15:00	**Bridging the gaps: Computation and neuroscience - neuroscience and computation II**
	Carmen Lupascu	CNR

15:00 - 15:30	**Coffee break**

15:30 - 17:00	**Data generation from a computational perspective**
	Anna Lührs	JUELICH

17:00 - 18:00	**Data use and ethical issues in HBP**
	Manuel Guerrero	KI

18:00 - 20:00	**Poster session**

FRIDAY 6 JULY 2018

09:00 - 10:00	**Bio-inspired control architecture for mobile robotics**
	Yannick Morel	TUM

10:00 - 10:30	**Coffee break**

10:30 - 12:00	**Neuroscience and robotics**
	tbc

12:00 - 13:00	**Lunch break**

13:00 - 14:00	**Introduction to Neurorobotics and the NRP**
	Fabrice Morin	TUM

14:00 - 16:00	**Demo experiment**

ENTREPRENEURSHIP IN NEUROSCIENCE -
TURNING SCIENCE INTO INVENTION & INNOVATION

This "hackathon" style workshop is a hands-on intensive experience complementing the theoretical aspects of the online course on intellectual property rights, translation and exploitation of research. Students will work in small multi-disciplinary teams to assemble joint applied research proposals in the wide range of fields in brain science. Experienced entrepreneurs, top executives at the interface between academia and industry and researchers from academia will present, mentor and advise on the translational aspects of the offered projects including how to advance their proposal from the lab to market, understand the problems and accordingly define the needs in the chosen field, how to choose or identify the target population, patentability options and how to build a business model. Finally, they will present their proposals to industry and academy experts. The workshop is a unique experience of diving into the entrepreneurial world, learning how to incorporate innovation and entrepreneurship mindset and concepts into day-to-day research work and beyond.

Scientific Chair:

Dana Bar-On **|** TAU

Kindly supported by:

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WEDNESDAY 4 JULY 2018

08:30 - 09:00 Registration

09:00 - 09:15 Introduction and guidelines for the workshop
Dana Bar-On | TAU

09:15 - 10:00 I-TED - Personal presentations of all participants
Dana Bar-On | TAU

10:00 - 10:30 Coffee break

10:30 - 11:15 Presenting the applied neuroscience projects: Science & technology
- Division into working groups
Dana Bar-On | TAU

11:15 - 12:00 Blue Ocean Strategy for innovation - Mini-Workshop
Yesha Sivan | TAU

12:00 - 13:00 Lunch break

13:00 - 15:00 Blue Ocean Strategy for innovation - Mini-Workshop
Yesha Sivan | TAU

15:00 - 15:30 Coffee break

15:30 - 17:00 Product-market fit
Michael Ehrlich | NJIT

17:00 - 18:00 End of the day team work:
Starting to design the project presentation

18:00 - 21:00 Social evening

THURSDAY 5 JULY 2018

08:30 - 10:00   **Interactive patents & IP Mini-Workshop**
Ute Kilger | Boehmert&Boehmert

10:00 - 10:30   **Coffee break**

10:30 - 12:00   **Team work**

12:00 - 13:00   **Lunch break**

13:00 - 15:00   **Team work**

15:00 - 15:30   **Coffee break**

15:30 - 17:00   **Next-gen-innovators - Career development Mini-Workshop with host researchers - Entrepreneurs and student open discussion**
Craig Curtis Garner | SPARK Berlin
Vedrana Högqvist-Tabor | Boost Health

17:00 - 18:00   **Data use and ethical issues in HBP**
Manuel Guerrero | KI

18:00 - 20:00   **Poster session / Team work**

FRIDAY 6 JULY 2018

08:30 - 09:00   Team work

09:00 - 10:00   Dry runs with mentor review (one team at a time) / Team work

10:00 - 10:30   Coffee break

10:30 - 12:00   Team work

12:00 - 13:00   Lunch break

13:00 - 14:00   Dry runs with mentor review (one team at a time) / Team work

14:00 - 15:00   Group presentations in front of the jury
5 min presentations and 5 min Q&A for each team

15:00 - 15:30   Coffee break

15:30 - 16:00   Final discussion, feedback and summary