



Human Brain Project
Education Programme

3RD HBP CURRICULUM WORKSHOP SERIES
**HIGH-PERFORMANCE COMPUTING
FOR NEUROSCIENCE:**
**HANDS-ON INTRODUCTION TO SUPERCOMPUTING
USAGE, TOOLS AND APPLICATIONS**

9-11 JULY 2019
FORSCHUNGSZENTRUM JÜLICH,
GERMANY

**SCIENTIFIC
PROGRAMME**



@HBP_Education



@hbpeducation



HBP Education



hbp_education



HBP Education Programme

WORKSHOP INFORMATION

Neuroscience has become highly interdisciplinary, thus supercomputing and good data management strategies have become indispensable to the field. This workshop will set the grounds for students to get started with high-performance computing (HPC)-based research and lays the foundation for them to make state-of-the-art advancements in their fields. The workshop will teach scientific computing in Python, include an introduction to HPC and hands-on trainings for applications that can be used on supercomputers and standard computers, e.g. the simulators NEST and Arbor, as well as visualisation tools. A prior experience with at least one programming language (e.g. Python, C or C++) is highly recommended.

Scientific Chair:

Abigail Morrison | Forschungszentrum Jülich

Organisers:

Sylvia Aßlaber | Medical University Innsbruck

Laura Saxer | Medical University Innsbruck

Anna Lührs | Forschungszentrum Jülich

Alexander Peyser | Forschungszentrum Jülich

Meredith Peyser | Forschungszentrum Jülich

Contact:

curriculum.edu@humanbrainproject.eu

Further information:

http://bit.ly/ICT_HPC2019



Human Brain Project



TUESDAY 9 JULY 2019

- 08:30 - 9:00 **Registration**
- 09:00 - 09:30 **Welcome & introduction**
Abigail Morrison | Forschungszentrum Jülich
- 09:30 - 10:30 **Introduction to Python, part I**
Fahad Khalid | Forschungszentrum Jülich
- 10:30 - 11:00 **Coffee break**
- 11:00 - 12:30 **Introduction to Python, part II**
Fahad Khalid | Forschungszentrum Jülich
- 12:30 - 13:30 **Lunch break**
- 13:30 - 15:30 **Scientific Computing in Python part I**
Wouter Klijn | Forschungszentrum Jülich
- 15:30 - 16:00 **Coffee break**
- 16:00 - 17:30 **Scientific Computing in Python part I**
Wouter Klijn | Forschungszentrum Jülich
- 17:30 **Poster session & social evening**

WEDNESDAY 10 JULY 2019

- 08:30 - 10:30 **Introduction to High-Performance Computing**
Alberto Madonna | Swiss National Supercomputing Centre
- 10:30 - 11:00 **Coffee break**
- 11:00 - 12:30 **HPC data management**
Lena Oden | FernUniversität in Hagen
- 12:30 - 13:30 **Lunch break**
- 13:30 - 15:30 **Introduction to parallel computing, part I**
Jan Meinke | Forschungszentrum Jülich
- 15:30 - 16:00 **Coffee break**
- 16:00 - 17:30 **Introduction to parallel computing, part II**
Jan Meinke | Forschungszentrum Jülich
- 17:30 - 18:00 **Guided tour to the supercomputing facilities at Jülich Supercomputing Centre**
Andreas Müller | Forschungszentrum Jülich

THURSDAY 11 JULY 2019

- 08:30 - 10:00 **Getting started with NEST**
Susanne Kunkel | Norwegian University of Life Sciences
- 10:00 - 10:30 **Coffee break**
- 10:30 - 12:00 **Getting started with Arbor**
Benjamin Cumming | Swiss National Supercomputing Center
- 12:00 - 13:00 **Lunch break**
- 13:00 - 14:00 **Interactive visual data analysis**
Benjamin Weyers | University of Trier
- 14:00 - 14:15 **Access to Fenix Infrastructure**
Anne Carstensen | Forschungszentrum Jülich
- 14:15 - 14:30 **Introduction to the focus exercises**
Abigail Morrison | Forschungszentrum Jülich
- 14:30 - 15:00 **Focus exercises I**
- 15:00 - 15:30 **Coffee break**
- 15:30 - 17:30 **Focus exercises II**
- 17:30 - 18:00 **Closing session**



This project has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under the Specific Grant Agreement No. 785907 (Human Brain Project SGA2).

humanbrainproject.eu/education