

Faculty Club - June 3, 2022

12:00 - 1:30 pm, Generali-Saal (SuperC)

Prof. Katrin Amunts, Forschungszentrum Jülich

The human brain atlas: Structure meets function

Starting from Brodmann's idea of structural-functional relationships at the level of cortical areas, human brain studies benefit from detailed anatomical atlases. However, brain mapping is a dynamically developing field, and Brodmann's map, which is a schematic view of an individual hemisphere, does not fulfill the requirements for a modern microstructural reference. The large size of the human brain with its billions of nerve cells, forming complex networks, implies to collect and analyze large amounts of data at microscopical level. Such data vary, to a different degree, between brains, i.e. show intersubject variability. To integrate the different aspects of brain anatomy such as cytoarchitecture, connectivity, molecular and genetic maps into a common spatial reference system, and to investigate their role for cognitive functions and behaviour, a multimodal human brain atlas is mandatory. Jülich-Brain is a cytoarchitectonic, probabilistic atlas of cortical and subcortical areas, that serves as a microstructural reference for the multilevel atlas of the Human Brain Project. It provides a freely available recourse and toolkit (<https://www.humanbrainproject.eu/en/explore-the-brain/>) to better understand brain organisation, and to make new discoveries.



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Katrin Amunts is a German neuroscientist, and well known for her work in human brain mapping. In order to better understand the organizational principles of the human brain, she and her team have created the cytoarchitectonic Jülich-Brain atlas. Katrin Amunts is a full professor for Brain Research, and director of the C. and O. Vogt Institute of Brain Research, Heinrich Heine University Duesseldorf (since 2013), and director of the Institute of Neuroscience and Medicine (INM-1), Research Center Juelich. Since 2016, she is the Scientific research director of the European flagship, the Human Brain Project.

She did a postdoctoral fellowship at the C. and O. Vogt Institute of Brain Research at Duesseldorf University, Germany, and set up a new research unit for Brain Mapping at the Research Center Juelich, Germany. In 2004, she became professor for Structural-Functional Brain Mapping, and in 2008 a full professor at the Department of Psychiatry, Psychotherapy and Psychosomatics at the RWTH Aachen University as well as director

of the Institute of Neuroscience and Medicine (INM-1) at the Research Center Juelich.

Katrin Amunts is speaker of the Helmholtz Joint Lab Supercomputing and Modelling for the Human Brain (SMBH) and coordinates the topic Decoding Brain Organization and Dysfunction of the Helmholtz Association, Germany. Since 2017 Katrin Amunts is co-speaker of the graduate school Max-Planck School of Cognition. Since 2018 she is a member of the International Advisory Council Healthy Brains for Healthy Lives, Canada. In 2016, she became a member of the National Academy of Science and Engineering, Acatech and in 2017, of the North Rhine-Westphalian Academy of Sciences.

Katrin Amunts received the prestigious 2021 Hector Science Award as well as the Order of Merit of the Federal Republic of Germany, Cross of Merit 1st Class.

Registration

Please register [here](#) by Wednesday June 1, 2022 or send an email to facultyclub@ers.rwth-aachen.de

Please note that a [contribution](#) of 10 Euro for lunch, snack and beverages will be requested on site. Based on your registration, we make a binding order to the catering company. We therefore ask for your understanding that the cost contribution is due unless you cancel your registration by noon of the previous day at the latest.

Thinking the Future
Zukunft denken

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