



A new hub for the neurosciences

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Bernstein Center consolidates research in Computational Neuroscience and Neurotechnology

What are the theoretical foundations of brain function? And how can this knowledge be applied, for example in the development of prostheses and interfaces that directly connect to the nervous system? For years, scientists at the University of Freiburg have devoted themselves to answering these questions. Now, the foundation of the Bernstein Center Freiburg as one of the university's central scientific facilities provides a platform to consolidate this branch of research in Freiburg.

From now on, the Bernstein Center Freiburg with its offices at Hansastrasse 9A will become the central facility for coordinating research in the areas of computational neuroscience and neurotechnology in Freiburg. It will combine experimental and theoretical neurosciences and their applications in computer science, microsystems technology and clinical use into a large, multidisciplinary research hub. This will facilitate scientific exchange and networking between the researchers in Freiburg, and will enhance their options for joint outward operation.

Furthermore, the centre also allows the fostering and implementation of new teaching and training initiatives e.g. the multidisciplinary international PhD and Postdoc programmes in computational neuroscience and the tri-national programme Joint Master in Neuroscience, based in Freiburg, Strasbourg and Basel organised through the tri-national network Neurex. Computational neuroscience and neurotechnology in Freiburg accomplished a remarkable amount of third-party funding, adding up to almost 20 million Euros and enabling the appointment of several new professorships at the University. The transfer of university-based fundamental research towards biomedical and technological applications is guaranteed through the strong integration of industry partners in several of the projects.

"The University of Freiburg now makes the next step and has decided to secure this concentration of scientific know-how and common goals for the future" says Professor Ad Aertsen, Coordinator of the newly founded centre. "Thus, we create in Freiburg a research cluster that is unique in Germany." Research initiatives within the BMBF-funded Bernstein Network have already made themselves a name in computational neuroscience and neurotechnology, both nationally and internationally. Hence, the newly founded centre will also carry the name of the pioneering German neurobiologist Julius Bernstein.

The scientific field is characterised by its interdisciplinarity, spanning an arc from the mathematically formulated foundations of the functionality and dynamics of neuronal networks, through neuroanatomy and -physiology, all the way to the development of clinical applications. This wide range causes the research to be spread out over nine faculties, institutes and central research facilities of the university.

The Bernstein Center for Computational Neuroscience (BCCN Freiburg) and the Bernstein Focus Neurotechnology Freiburg-Tübingen (BFNT F*T) led already towards a common direction in research. Both are multi-annual joint research projects consisting of more than a dozen individual projects and part of the National Bernstein Network that is funded by the Federal Ministry of Education and Research.

Through the foundation of the Bernstein Center Freiburg, the University of Freiburg ensures that it can maintain and even expand its cutting-edge position in this innovative and dynamic field of research.

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