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New endowed Professorship for Neuromorphic Systems

With the support of the German Manfred Stärk Foundation for Brain Research, the University of Bern has been able to establish an endowed Professorship for Neuromorphic Systems. The total endowment is 3.6 million Swiss francs and serves to strengthen the successful research in Theoretical Neuroscience at the University of Bern.

Neuromorphic systems and neuromorphic computing form an interdisciplinary field between neuroscience, artificial intelligence, and engineering. They have the goal of developing circuits and hardware (chips) that can map the self-organizing and self-regulating singularity of the brain. In addition to other applications, neuromorphic chips can be used as medical implants for damaged human tissue such as the retina. Neuromorphic systems can also help optimize the motion sequences of robots or improve their pattern recognition with the use of an artificial, self-learning system. Further future applications are places in which data needs to be processed in real time, such as autonomous driving.

Continuation of the research at Bern in the Human Brain Project

“The research in the theoretical neurosciences at the University of Bern is internationally recognized and broadly based,” explains Christian Leumann, Rector of the University of Bern. For example, there is a professorship for Machine Learning for Medicine, which is based at the Faculty of Science and the Faculty of Medicine, as well as several research groups in the Faculty of Medicine that work in the field of neuromorphic hardware and were involved in the [Human Brain Project](#). The goal of this international project was to collate knowledge about the human brain and to map it with computer models and simulations. “With the endowed Professorship for Neuromorphic Systems, the field of neuromorphic computing can now be both significantly strengthened and anchored in the research and teaching at the University of Bern,” explains Leumann.

Existing cooperation strengthened

With the support of the UniBE Foundation, the new endowed Professorship for Neuromorphic Systems is being established as an assistant professorship with tenure track, and will initially run for 12 years. During this period, it will be co-funded by the Manfred Stärk Foundation with a total of 3.6 million Swiss francs and will be based at the Department of Physiology. “I am very pleased that the creation of the endowed professorship fulfills a long-held wish of the soon-to-be 89 years old benefactor, Manfred Stärk,” explains Claudia Lehnherr, Director of the UniBE Foundation. The German Manfred Stärk Foundation has the goal of supporting basic neuroscientific research with the aim to gain a better understanding of the complex functions of the human brain. It has been

supporting the Bernese research in the field of theoretical neuroscience for ten years. “It is very important that we continue the successful and interdisciplinary research in theoretical neuroscience at the University of Bern, particularly in the Human Brain Project,” explains benefactor Manfred Stärk. The endowed professorship will focus on various areas of research: analytical methods and dynamic systems, the modeling of neuronal activity and synaptic plasticity, biologically inspired methods for machine learning, as well as theory, models and applications for rapid and energy-efficient neuromorphic systems.

Strengthening the links between medicine and the natural sciences

The endowed professorship isn't only designed to foster collaborations within the Faculty of Medicine, but also between the Faculty of Medicine and the Faculty of Science. “We are strengthening the links between the theoretical neurosciences in the Faculty of Medicine, particularly with the research platform [NeuroTec](#), the [University Clinic for Neurology at the Inselspital](#) and the [Center for Artificial Intelligence in Medicine CAIM](#),” explains Claudio Bassetti, Dean of the Faculty of Medicine at the University of Bern. “Together with the Faculty of Science, we want to encourage collaborations between the disciplines of medicine, physics and computer science,” says Bassetti.

The endowed professorship is to be advertised nationally and internationally. The appointment is scheduled for spring 2025.

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UniBE Foundation

The UniBE Foundation strengthens and supports the University of Bern with the development of pioneering global solutions for the complex challenges of our time with the current and future generations of researchers. The funding initiatives of the foundation align with the strategy of the university and focus on excellence, innovation and future potential. The foundation was established in 2021 and is chaired by Heinz Karrer, a Swiss business leader.

[Further information](#)