
National Centres of Competence in Research approved

ETH setting the tone for Swiss research

Zurich, 18 December 2013. **ETH Zurich serves as leading house or co-leading house for four new National Centres of Competence in Research (NCCR). The Federal Council of Switzerland launched eight NCCRs at Swiss universities.**

Digital fabrication, biomedical groundwork, molecular engineering and mathematical physics: ETH Zurich has become established in these research topics in the latest series of National Centres of Competence in Research and is leader or co-leader at these centres.

The Swiss government and the Swiss National Science Foundation have launched eight new NCCRs to which Swiss Government will be giving approximately CHF 30 million in funding. Federal Councillor Johann Schneider-Ammann, head of the Federal Department of Economic Affairs, Education and Research (EAER), announced this today at a press conference.

NCCRs are organised as nationwide research networks in Switzerland where one or more universities act as 'Leading Houses'. NCCR projects are characterised by their outstanding scientific quality and interdisciplinary approaches, and help to position top Swiss research and innovation internationally.

Programmes with potential

"All four programmes in which ETH Zurich is now involved have the potential to make a long-term impact on the research and innovation landscape in Switzerland," explains Ralph Eichler, President of ETH Zurich.

Roland Siegwart, ETH Vice President of Research and Corporate Relations, is also pleased: "Researchers from ETH Zurich have invested an enormous amount of energy in their proposals and tackled the job with enthusiasm. In addition, the current call was more competitive than ever before. Their preliminary work has now paid off." According to Siegwart, the experience has shown that researchers implement their visions in the context of an NCCR promotion faster and more sustainably.

Pioneering work in digital fabrication

ETH Zurich has done pioneering work in digital fabrication over the last years. The idea behind the Digital Fabrication NCCR is to develop new approaches for research and construction practices. The architects have received CHF 13.4 million in federal funds for this complex project in addition to CHF 15 million in self-generated funds from ETH Zurich. Thus, about CHF 30 million will be poured into the NCCR over the next four years. All NCCRs operate for a period of four years, but can be renewed twice for second and third phases; i.e. a total of 10 to 12 years.

Scientists from four departments at ETH Zurich alone (Architecture, IT, Electrical Engineering, Mechanical and Process Engineering, and Civil, Environmental and Geomatic Engineering) are involved in this NCCR. Measures to implement the NCCR have already been planned. When the new Arch_Tec_Lab teaching and research building is completed at the Hönggerberg campus, the Digital Fabrication NCCR will finally have a central location. It will then be possible to test large-scale manufacturing processes at the proposed multi-robotics research centre. Towards the end of the first phase, the NCCR team will also construct a digitally fabricated habitation module in the Nest build-

ing laboratory at Empa. This laboratory will allow construction experiments to be conducted and the NCCR also hopes to perform practical testing of its theoretical findings here in future.

Molecular foundations for human health

Leadership of the RNA and Disease programme is shared by the University of Bern and ETH Zurich. The study of ribonucleic acids (RNAs) has become an increasingly important field in biomedical science over the past decade. In line with its strategic initiatives Technology and Knowledge for Health and Personalised Medicine, ETH Zurich is now expanding its research in this area. The interdisciplinary programme will make it possible to deepen understanding of the diverse functions of the various RNA types, thus providing a foundation for the study of complex diseases.

Key role for mathematical physics

Research at the point of convergence between mathematics and theoretical physics is one of the most fertile areas of the two disciplines. The Mathematics of Physics (Swissmap) aims to bolster research and teaching in a field in which Switzerland is a key global leader. The programme is thus built on the well-established partnership between ETH Zurich and the University of Geneva – the Leading House for Swissmap. Together with the NCCR, the new interdisciplinary ETH Institute for Theoretical Studies has taken on a key role in Swissmap, forming an important bridge between mathematics and physics.

Comprehensive molecular engineering

Leadership of the Molecular Systems Engineering NCCR will be shared equally by the University of Basel and ETH Zurich. The objective of the project is to create complex, functional systems from molecular, biological and chemical components, and in this way further develop systems biology into a new form of molecular engineering.

The research knowledge of the University of Basel in chemistry, physics and biology complements the expertise in synthetic biology and systems biology of the Basel-based Department of Biosystems (D-BSSE) of ETH Zurich. The programme aims to expand the existing partnership between the D-BSSE and specifically the Department of Chemistry at the University of Basel. However, the goal is also to involve local companies in Basel in order to promote a targeted exchange between science and industry.

Further Information

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