ETH zürich

Press release

Four Consolidator Grants for ETH Zurich

Individual funding is history

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Four researchers from ETH Zurich have been awarded a Consolidator Grant from the European Research Council (ERC). Since Switzerland is no longer fully associated, they will receive the approximately eight million francs in research funding from the State Secretariat for Education, Research and Innovation (SERI).

If excellent researchers want to advance, it is crucial that they are able to consolidate their research group and thus strengthen their position in basic research. This is precisely where the Consolidator Grant comes in: around two million Swiss francs are available to all those researchers who are awarded such a coveted grant. Only, the four researchers from ETH Zurich who succeeded in the last call for proposals will not be able to take up the grants – as was the case previously with the Starting Grants (media release of 10.01.22), they would have to leave Switzerland to do so.

"We are again faced with the situation where the projects of ETH researchers are among the best in Europe, but the researchers still have to do without the prestigious grants," says Detlef Günther, Vice President for Research at ETH Zurich. This is particularly painful because ETH Zurich researchers were also very successful in this ERC round. Of the twelve projects submitted through ETH Zurich, 50 percent made it to the final round, and ultimately four were selected, a success rate of 33 percent. Another Consolidator Grant was acquired through the University of Basel by an ETH researcher with a dual professorship.

No longer possible in the future

And the situation is getting even worse, because in the future, researchers in Switzerland will be completely excluded from individual ERC funding. This affects the ERC Starting, Consolidator, Advanced and Proof of Concept Grants and also the EIC Accelerator, which supports start-ups. "Now, in each case, at least three scientific partners from the EU or an associated country are required for submissions to Horizon Europe. Unfortunately nothing is possible alone," explains Detlef Günther.

Projects at a glance

Filippo Coletti, Professor of Experimental Fluid Dynamics, studies the behaviour of liquids and gases and of particles suspended in these. In his project, he will investigate how such particles behave in turbulent flows and how the particles interact with the liquid and the gas. He will conduct experiments in the laboratory and outdoors and analyse them using imaging techniques including multi-camera approaches and biomedical imaging. With his project, Coletti aims to improve the prediction of the behaviour of particles in turbulent flows, both on a small scale – for example in an engine – and on a large scale – for example, during snow formation in the atmosphere.

Otmar Hilliges, Professor of Computer Science, develops methods for computers to perceive visual information (computer vision). His project aims to recognise human movements and activities in complex environments more precisely and to convert them into high-resolution digital 3D information. To this end, he will create a new 3D model of the human shape and pose. This model will serve as the basis for new artificial intelligence methods to understand human movements and their interactions with objects in the environment and each other. This could one day be used, for example, in home care robots, in the field of augmented and virtual reality, as well as for motion analysis in sports science and sports broadcasting.

Stefanie Jonas is a professor at the Institute of Molecular Biology and Biophysics. She studies how human cells control and regulate which part of their genetic information is read to produce RNA and ultimately proteins. Her project will investigate how this readout process (called transcription) is stopped in a dynamic manner – for example, in response to changes in the cells' environment. The cause of many diseases, such as cancer, is a misregulation of this readout process. Research into its molecular mechanisms could therefore lay the foundation for new therapeutic approaches.

Martin Vechev, a professor at the Department of Computer Science, develops methods that make computer systems more reliable, resilient, safe and secure. His project is dedicated to machine learning and artificial intelligence systems. By developing new technologies, he aims to contribute to a next generation of deep learning systems that people can better trust and rely on. A central approach is that the algorithms behind them are mathematically certifiable in terms of security, fairness and resilience.

Project submitted with the University of Basel:

For therapeutic or diagnostic purposes, nanoparticles are used to bind specific cell types, for example to cancer cells. For this purpose, it is common to attach antibodies to the nanoparticles, which allow the interaction with the cells. However, this connection is susceptible to shear forces. **Michael Nash**, a professor at the Department of Biosystems Science and Engineering at ETH Zurich in Basel and at the University of Basel, works in the field of molecular engineering. He develops artificial proteins and studies their function. In his project, he will develop artificial proteins that can be used to connect nanoparticles to cells and that resist shear forces. These should enable new formulations of nanoparticle-based drugs.

Further information

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