

Press Release

ERC Synergy Grants

ETH scores highly on interdisciplinarity

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Two ETH Zurich projects and one with ETH involvement have been awarded one of the coveted ERC Synergy Grants. These EU grants offer up to EUR 14 million to promote interdisciplinary collaboration on research projects.

Correlations and questions in research are becoming more and more complex, which makes collaboration between researchers from different fields necessary. Since 2012, the European Research Council (ERC) has been awarding Synergy Grants to promote research projects which demonstrate a high synergy effect and in which two to four researchers from different fields work together. This year, 37 consortiums were awarded a generous grant of EUR 10 to 14 million. ETH Zurich is leading two projects and is involved in a third. The European Research Council's Synergy Grants support a wide range of research projects across a variety of topics, including Domenico Giardini's research on predicting earthquakes, Jacob Corn's research on genome editing and Jeffrey W. Bode's research on the development of broad-spectrum antiviral therapies.

ETH and Europe conducting cutting-edge research together

This year, ETH Zurich has already been very successful during the awarding of the ERC Starting Grants, which promote individual projects by young researchers. Being awarded Synergy Grants for multiple projects in addition to this is a source of great pride for ETH Vice President Research and Corporate Relations, Detlef Günther: "Researching complex questions requires interdisciplinary collaboration. This is a field in which the European Research Area offers increasingly strong competition to other regions. These Synergy Grants prove that we are producing research of international significance in the heart of Europe." Switzerland will remain fully involved in the European research and innovation programme Horizon 2020 until the end of 2020. According to Detlef Günther, this makes it all the more important that Swiss universities are able to fully participate in the successor programme from 2021 onwards.

The three projects at a glance

Despite intense research, scientists still cannot accurately predict where or when the next big earthquake will occur. The ERC Synergy project "FEAR" team – **Domenico Giardini**, ETH Professor of Seismology and Geodynamics; Florian Amann of RWTH Aachen University; Stefan Wiemer, Director of the Swiss Seismological Service at ETH Zurich; and Massimo Cocco of the Italian Istituto Nazionale di Geofisica e Vulcanologia – want to better understand the physics of earthquake processes. Under controlled conditions in a new underground experimental facility, the Bedretto Lab, the researchers will generate small earthquakes at depths of more than one kilometer. The earthquakes will be measured, using a dense sensor network that records a wide variety of parameters, and then analysed. The consortium hopes this will allow them to gain a better understanding of the dynamics of earthquakes. The new findings will also be used to advance experiments on the safe use of geo-energy and to improve the predictability of earthquakes.

<https://seg.ethz.ch/> →

Jacob Corn, ETH Professor of Genome Biology, coordinates the second Synergy project in collaboration with Joanna Loizou of the Research Center for Molecular Medicine of the Austrian Academy of Sciences and Stephen Jackson of University of Cambridge. The Corn lab works on genome editing to understand human disease and to cure genetic disorders. With the ERC Synergy Grant, Corn and his Partners will use gene editing and chemical biology to map the many ways that cells repair damage to their DNA. Since cancer cells are highly dependent on certain types of DNA repair, the project seeks to provide insights into genome surveillance in human cells and thereby find new approaches to treat cancer.

<https://cornlab.com/> →

Viruses such as Influenza A remain one of the greatest threats to human health and are associated with enormous economic impact. Despite decades of research, we know little about the molecular mechanisms that viruses use to infect mammalian hosts and how they evade the immune system. There are currently only few broad-spectrum antiviral treatments, leaving the world's population exposed to pandemic viruses. Recent outbreaks of Ebola, Zika or West Nile viruses remind us of the continued dangers posed by viral infections. **Jeffrey Bode**, in collaboration with Patrick Matthias of the Friedrich Miescher Institute for Biomedical Research (FMI) in Basel, and Yohei Yamauchi of the University of Bristol, are investigating the molecular mechanisms of viral infections to enable novel broad-band antiviral therapies.

<https://bode.ethz.ch/> →

Further Information

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