

Animal experiments

3RCC funds 3Rs projects with CHF 1.4 million at Swiss universities

The Swiss 3R Competence Centre (3RCC) will fund five projects aiming to replace, reduce and refine animal experiments with CHF 1.4 million. Two projects are in the field of neurology and one in cancer, two areas of research where high numbers of laboratory animals are being used in Switzerland. Four of the five projects aim to reduce or fully replace the use of animals by developing approaches, which help generate more reproducible and reliable results, and with increased relevance to humans. The fifth will refine a brain-drug delivery method to improve animal welfare.

Funded projects 2020

The 3RCC has granted funding to two research groups at the **University of Zurich**. One group will optimize imaging and analysis tools to study stroke treatment effects in mouse brains, while another group will use fruit flies to investigate how colorectal cancer cells spread from the gut and invade other tissues. Two groups at the **University of Bern** will be supported for their work on developing guidance on how to take the sex of animals into consideration when designing experiments. The second group aims to replace deadly health-monitoring tests in trout. Finally, the centre will finance a refinement project at the **University of Lausanne**, supporting researchers who aim to develop a more humane way to administer drugs.

3RCC's 2020 Call

The 3RCC received 69 outline applications in respect of the 2020 call. Half of the projects related to replacement, 30% to refinement, and 20% to reduction. More than 50 international experts reviewed the 15 applications invited for submission. The 3RCC then selected five projects of high scientific calibre that promise a large impact on the 3Rs.

"The submissions we received reflect the strong need for funding of projects that aim to develop and promote the implementation of methods that do not use animals, as well as approaches that improve animal welfare and research quality," said 3RCC Director Jenny Sandström. "We are particularly happy that we were able to fund five outstanding projects in a wide range of research fields that cover all 3Rs and support 3Rs work at several Swiss research institutions."

University of Zurich: Mouse brain imaging

Ruslan [Rust](#) from the University of Zurich's Institute for Regenerative Medicine (IREM) will develop tools that allow researchers to better assess stroke therapies in mice. The use of non-invasive bioluminescence imaging to track transplanted cells within animals will allow the long-term monitoring *in vivo* on the same animals

thereby reducing the numbers of animals used by approximately 80% and substantially minimising the animals' distress.

University of Bern: Studying sex to strengthen science

Based on experimental studies on housing conditions and test procedures, Hanno [Würbel](#) and Ivana Jaric from the Vetsuisse faculty at the University of Bern will develop best practice guidance on how to include more female animals in research and thereby accounting for potential sex differences. There is currently a strong bias towards using male animals, which can make findings inconclusive as important sex differences may be missed.

University of Lausanne: Microbubbles for drug administration

Anthony [Laugeray](#) of the Department of Fundamental Neurosciences at the University of Lausanne aims to validate a new method to deliver drugs into the brain using microbubbles activated by focused ultrasound. If successful, this approach would replace intra-cranial surgery, which is widely used to administer experimental drugs into the brain. Such a new approach would significantly increase the welfare of animals classically involved in such procedures.

University of Bern: Replacing deadly fish monitoring

Heike [Schmidt](#)-Posthaus, Moritz Stelzer and Irene Adrian-Kalchhauser from the Centre for Fish and Wildlife Health at the Veterinary Faculty of the University of Bern aim to develop an alternative to a lethal method to monitor the health of trout. Thousands of trout have been killed since 2000 to assess if they are infected with a deadly parasitic disease. The researchers aim to establish a non-lethal and non-animal method to detect environmental DNA, or eDNA of pathogens in water samples.

University of Zurich: Cancer research in fruit flies

Jamie [Little](#) of the University of Zurich's Department of Molecular Life Sciences will use a newly established colorectal cancer (CRC) model in fruit flies to find out which genes cause healthy gut cells to become cancerous. The researchers will then characterise the genes and identify the molecular progression of CRC in fruit flies. The fly-based CRC model is complementary to organoid studies because flies have more complex tissue architecture, allowing researchers to study how gut cells can escape and invade other tissues.

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References:

You find an [overview](#) of the funding and more [information](#) on each project on the website.

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