

# Trends in medicine

Urs Frey, president of the Biology and Medicine division at the SNSF, outlines future trends in medical research. He is medical director at the University Children's Hospital Basel and a clinician with experience in paediatric and juvenile illnesses and pathophysiology.



## What general prerequisites are needed for optimal medical research?

Internationally networked basic research and technology development – both particular strengths of Switzerland – are essential for good medical research. Lean and uniform nationwide regulatory requirements and access to the large-scale, high-quality clinical databases and tissue banks that are being set up at various hospitals will make it easier to carry out translational and multicentre trials.

## What specific tasks will this involve for research and clinical research in particular?

Interdisciplinary and translational collaboration between biologists and doctors, for example incorporating modern “-omics” technologies, forms the basis for evidence-based medicine. Training young doctors to do research and ensuring that time is available for it are important prerequisites for high-quality clinical research.

## How is the SNSF supporting these developments?

The SNSF is supporting clinical research through a series of concerted measures. Clinicians have access to all the career funding schemes provided by the SNSF, and the eligibility requirements are adapted to the clinical curriculum. The Protected Research Time for Clinicians scheme guarantees that young clinicians will be able to spend at least 30% of their time researching their projects, and there are also competence and service centres in the form of the Swiss Clinical Trial Organisation and its six Clinical Trial Units. The Swiss Biobanking Platform is designed to promote data quality and coordination among local biobanks. The longitudinal studies (cohort studies) provide high-quality long-term data for interested researchers. The new Investigator Initiated Clinical Trials programme enables researchers to carry out large-scale clinical trials without having to rely on industry support.



## Dr Frey, where is medical research headed and what trends can you see?

As life expectancy increases, the development of regenerative therapeutic strategies, for example for degenerative disorders and cancer, will gain in importance. Research into rare diseases is also on the upswing. Illnesses caused by environmental influences, malnutrition or psychosocial pressures are affecting ever larger population groups and pushing up healthcare costs. In future, medicine will be heavily geared to researching these complex conditions, which include asthma, high blood pressure, diabetes and Alzheimer's, and finding ways of preventing and treating them. As a result of the complex interaction between genetic, environmental and lifestyle factors, such diseases can manifest themselves very differently from one person to the next. They are investigated in large patient groups with the aim of developing a treatment that is tailored to the individual patient (what is known as “personalised medicine”).



# SNSF planning envisages a strong Swiss research scene

A responsive mode of project funding based on competing proposals is and will continue to be the SNSF's core business. However, science itself is changing at a breathtaking pace. In its multi-year programme for the 2017–2020 period, the SNSF responds to the challenges facing Swiss research and presents arguments in favour of prioritising the ERI sector.

**T**he trend towards more data-driven research, internationalisation and the acceleration of research are challenges that the Swiss research community must tackle. In addition, it needs to meet the increasingly higher demand for transparency and dialogue within our society.

## The SNSF has set itself four main goals

In its multi-year programme 2017–2020, the SNSF shows how it can contribute to the positive development of Swiss research in the coming years. It has set itself four main goals:

- To continue promoting excellence and internationality in research and evaluation by responding to new requirements, awarding grants based on a competitive process and incentivising collaboration, transparency and good scientific practice.
- Promote early independence for young researchers and show them academic career prospects that are clear and attainable, thereby enhancing the quality and social acceptance of Swiss research.
- Join in efforts to accelerate knowledge transfer throughout the economy and society at large by strengthening funding activities at the interfaces between research

and innovation, particularly by collaborating on the “Bridge” programme with the CTI.

- Launch initiatives aimed at prioritising the development of new research fields and encourage the scientific community to form networks in strategically important areas.

## The ERI sector must have financial priority

All in all, the SNSF will need approximately CHF 4.5 billion between 2017 and 2020 in order to be able to implement all the planned measures. If parliament decides to accept the stabilisation programme for the federal budget without any changes, the SNSF will receive CHF 465 million less. This would make it necessary for the SNSF to narrow down its priorities and shelve some of its plans. Work on a leaner multi-year programme has already started. Despite the financial pressures, there is one point that the policymakers should not lose sight of: investments in research, education and innovation are as essential as ever for the prosperity of Switzerland as a centre of learning and industry. This may be even more so in view of the lack of skilled workers, the strong Swiss franc and the threat of exclusion from Horizon 2020, the EU's framework programme for research and innovation. For these reasons, investments in the ERI sector must remain a top priority of financial planning.