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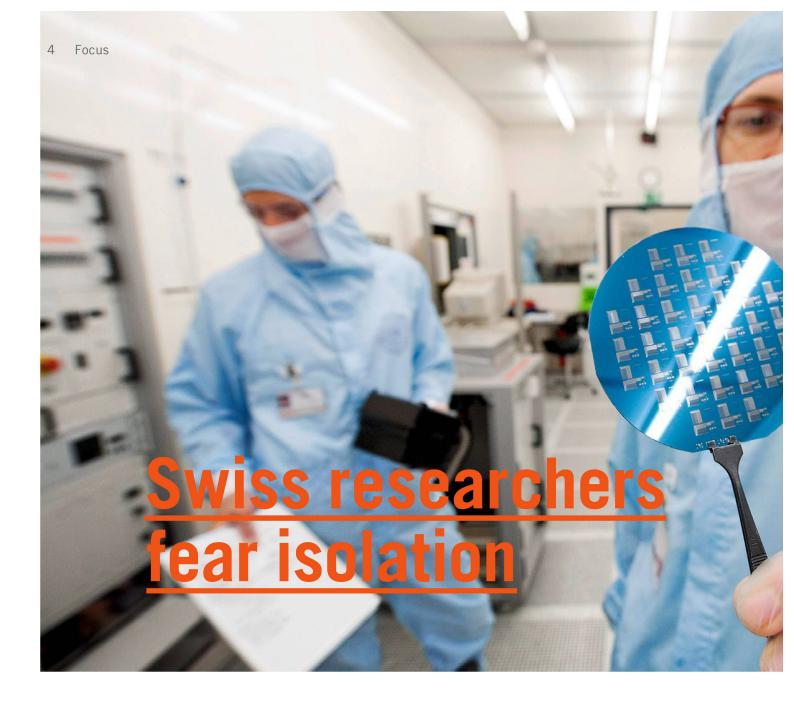
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With researchers leaving the country, professors reluctant to work at Swiss universities, and Swiss students feeling disadvantaged, research in Switzerland is experiencing hard times. The reason? An unresolved relationship between Switzerland and the EU. Within the world of European research, Switzerland has become a "third country" without privileges.

### DENISE LACHAT

"We're a small country that has always relied on recruiting foreign researchers," says Michael Hengartner, President of the ETH Board. According to him, that's why there is an international atmosphere at all Swiss universities, which is conducive to the integration of people from abroad.

# Ecosystem for top research

Knowledge and education are among Switzerland's most important resources. This is reflected in its high-performing educational system, first-class infrastructure,

and universities that regularly achieve the top spots in international rankings. Hengartner describes it as a veritable "ecosystem" that promotes cutting-edge research and has a solid, flexible – yet at the same time competitive – funding system. "Of course, we're also able to offer excellent working conditions," adds Martin Vetterli, President of EPFL Lausanne. He goes on to explain how the density of renowned scientists in Switzerland is far above average, which in turn attracts more young talent to the country. Or should that be "attracted", based on the current situation? The breakdown of negotiations with the EU over a framework agreement has had severe

Cutting-edge European research — in Switzerland. Two scientists involved in semiconductor research at the EPFL University of Applied Sciences in Lausanne. Photo: Keystone



consequences for research. Switzerland was downgraded by the EU to a "non-associated third country" in its research framework programme, resulting in Switzerland losing its previous position and influence within Horizon Europe, the world's largest programme for research and innovation with a budget of almost 100 billion euros for a period of seven years (2021–2027).

Switzerland loses its access to the "Champions League"

Compared to the 79 billion euros backing Horizon 2020,

the previous programme in which Switzerland was still an associated partner, the funding has been increased

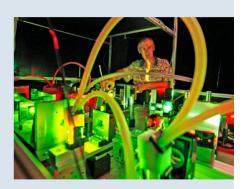
Although Switzerland may not be fully excluded from collaborating with its most important research partner, Swiss researchers are no longer able to lead large joint projects or receive grants from the European Research Council (ERC). Hengartner refers to these ERC grants as the "Champions League of research", while EPFL Presi-

# Swiss landmark achievements in EU research

What concrete results does Switzerland see from the European research funding programmes, and what benefits does it receive from the collaborations? Yves Flückiger, University of Geneva Rector and President of swissuniversities, is ready with his answer.

■ CERN: This research laboratory is the cradle of European research. Founded in 1954 near Geneva on the border between Switzerland and France, it was one of the first-ever joint European projects and today boasts 23 member states. This scientific facility was further strengthened in 1984 by the European research framework programmes. Flückiger: "These programmes played a decisive role in the development of basic research and its integration in industrial applications, in particular by promoting cooperation between laboratories and companies." Since 2012 and the discovery of the Higgs boson, CERN has been a household name around the world.

The CERN research laboratory near Geneva boasts an enormous facility for researching the tiniest of particles. Photo: Keystone



- BioNtech: The first messenger RNA vaccine against Covid-19, which was the direct result of research funded by the European Research Council over the past 20 years, was probably the most outstanding recent result of research transfer. "This vaccine was created by BioNtech, a European biotechnology company whose founders Ugur Sahin and Özlem Türeci, both of whom come from Turkish immigrant backgrounds in Germany, were funded by the European Research Council," comments Flückiger.
- ID Quantique: Flückiger cites ID Quantique as another example. It was founded in Geneva in 2001 by four scientists from the University of Geneva, who received key funding from the Swiss National Science Foundation (SNSF) as well as from various European programmes. ID Quantique has now developed from a small spin-off into the world's leading provider of solutions for secure quantum cryptography. Investors include telecom giants SK Telecom (South Korea) and Deutsche Telekom. ID Quantique has its headquarters in Geneva and maintains close relationships with academic institutions by participating in several Swiss, European and Korean R&D programmes focused on bringing innovation to market.

significantly.

A scientific "Champions League": Horizon Europe is the world's largest research programme with a budget of 100 billion euros for 2021–2027.

dent Vetterli can speak from his own experience: "I would not have been able to advance my research in digital signal processing as far as I did without an ERC grant of almost two million euros over five years." Yves Flückiger, President of swissuniversities, also points out that Swiss researchers are completely excluded from several key areas of research, including the flagship programme for quantum research, which is of strategic importance for driving forward digitalisation; the construction of the international nuclear fusion reactor ITER, where Switzerland has been involved in project management since 2007; and the Digital Europe programme, which focuses on high-performance computing, artificial intelligence and cyber security.

### The brain drain has already begun

According to Vetterli, Switzerland used to be among the most active of the associated countries involved in EU research, especially in the fields of health, environmental studies, climate, and quantum technology. Now, however, it has been sidelined for over a year, despite the financial

Research in Switzerland is more internationally linked than in almost any other country, with two-thirds of the researchers who work in Switzerland having completed their doctorates abroad.

efforts of the federal government, which has stepped in with interim funding of 1.2 billion Swiss francs. Vetterli reports on start-ups that originated on the EPFL campus and are now opening offices in Europe to ensure they continue to attract talent and can benefit from European funding, while Flückiger has heard of the first group of researchers who have already left Switzerland for France, Austria and Belgium along with their ERC grants. And Hen-



# Switzerland-EU relationship crisis drags on

Roughly a year after negotiations for a framework agreement broke down, Switzerland is making a new attempt to regulate its future relations with the EU. However, the road to finding a viable solution between Berne and Brussels is still long – and marked by mistrust on both sides. Furthermore, there is no broad-based consensus within sight on the home front.

gartner notes that candidates for professorships at the two Swiss Federal Institutes of Technology are now all enquiring about Switzerland's prospects for reassociation in the near future.

### Switzerland's prosperity is at stake

Working in isolation is unthinkable in the field of research, not to mention the sphere of innovation. As a reaction to Switzerland's non-association, the renowned Geneva-based company ID Quantique (more information in the box on page 5) has opened a branch office in Vienna to maintain access to Horizon Europe. Flückiger states that the 100 jobs which would otherwise have been created in Switzerland are now in Vienna. In Switzerland's case, Horizon Europe not only affects its research and the researchers who are worried about their top positions. It

Testing the choppy waters in Brussels: Swiss State Secretary Livia Leu. Photo: Keystone

After pausing to mull things over, the Federal Council decided in February 2022 to retackle the EU dossier. Instead of an "unpalatable" framework agreement, the government is now relying on a package containing various elements. The aim is to secure access to the European internal market, enable new agreements - e.g. for electricity - and restore associations with EU programmes such as Horizon Europe. Institutional issues, like which jurisdiction has authority in the event of a dispute, would be regulated separately in each case. The crux of the matter is that the EU Commission has so far explicitly refused to consider a procedure that would regulate these fundamental issues "on a case-by-case basis". It also maintains that the European Court of Justice should be involved in disputes, a proposal that faces strong political resistance within Switzerland. The Federal Council nevertheless hopes there will be a growing realisation at EU headquarters that maintaining the bilateral approach is also in its own interest.

Since the spring, Livia Leu, the state secretary responsible for the dossier, has been testing the waters in Brussels. As of press time, several meetings between the negotiators had taken place. Nevertheless, it will probably take some time yet before new negotiations are held at the highest political level. The Federal Council does not want to decide on a mandate until there is "a sufficient basis" for it. So far, the positions are still "wide apart", as the Federal Council made clear in mid-June. No sign of a thaw yet.

### Overshadowed by the 2023 elections

Within Switzerland there is no consensus on how to proceed with the EU issue either. The parties are trying to outdo each other with their own strategies and action plans - while at the same time lamenting that no progress is being made in finding a solution. In the view of political analyst Fabio Wasserfallen, professor of European politics at the University of Bern, the fact that the Federal Council is not moderating the debate conducted in Switzerland more forcefully is evidence of a leadership vacuum: "Unfortunately, there is a disconnect between domestic and foreign policy." According to Wasserfallen, the task of reunifying these two should fall to the Swiss government. "The package must be broadly accepted at a political level if it is to have a chance in a referendum." If this is achieved, the Federal Council could use realistic models to demonstrate how Swiss interests would be safeguarded and any concessions well mitigated. "To accomplish this, the committee would have to agree on a common approach and follow it through in the longer term." Yet the more time that passes, the more the tendency will be to wait for the federal elections in autumn 2023, concludes the political analyst. Depending on how the different parties fare, the cards will be reshuffled as the new government takes shape. "Ideally, however, there should still be opportunities to discuss the pros and cons of the Federal Council's EU plan before the elections." This would make everyone show their hand in the coming election year. THEODORA PETER

also influences students and professors who are suddenly hesitant about coming to Switzerland. And Horizon Europe is also vital for the transfer of technology, which leads to the founding of start-ups and SMEs as well as job creation in companies and the field of research. Essentially, the university representatives all agree that Horizon Europe plays a key role in Switzerland's prosperity and position as an economic hub.

Flückiger believes that the Federal Council should not start focusing on securing new research partnerships outside the EU, since research competition takes places primarily between the EU, the USA and China, which is why Switzerland's non-association remains the true problem.

When questioned, the EU delegation's response is that Swiss researchers have always been welcome and valued partners in EU research programmes – and they still are. "Swiss researchers are allowed to participate in Horizon Europe projects under the conditions that apply to non-associated third countries. To obtain full association, which includes eligibility for EU funding, the EU regulation requires third countries to enter into an umbrella agreement governing the conditions and terms of association. Further developments on this issue must be considered in the context of the overall relationship between the EU and Switzerland."

The EU is therefore putting pressure on Switzerland to comprehensively define its relationship with its European neighbours. Until then, the EU sees no reason to give Swiss research any preferential treatment. So far, neither the efforts of Swiss diplomacy nor an appeal by researchers have altered the situation. ETH Board President Michael Hengartner states that this situation is not only detrimental to Swiss researchers, but also to European research itself: "This is unequivocally a lose-lose situation."