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Switzerland.

Science-Switzerland, October – November 2021

News on Swiss science, technology, education and innovation

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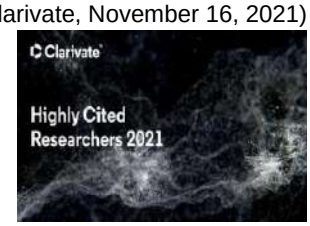
Federal Council Enables Direct Financing for Horizon Europe

(Federal Council, October 20, 2021)

In the context of Switzerland's continued non-associated third country status within the EU Framework Program for Research and Innovation "Horizon Europe", as well as related program and initiatives, the Federal Council recently initiated the necessary credit reallocations to ensure that, in the absence of funding from the European Commission, Swiss project partners can instead obtain direct funding from the Federal Government, as stipulated by the 2021-2027 Horizon package. In addition, the Federal Council also instructed the Federal Department of Economic Affairs, Education and Research (EAER), in cooperation with the Federal Department of Finance (FDF), to examine possible complementary and replacement measures to strengthen Switzerland's long-term standing as a location for research and innovation.
/web/2021/00-211020-31

Swiss Researchers Among Most Cited in World

(Clarivate, November 16, 2021)



Clarivate recently published its annual "Highly Cited Researchers" list, which recognizes influential researchers from around the world whose work ranks in the top 1% of cited scientific publications in their respective field. The 2021 list contains about 6,600 highly cited researchers – 102 of which are from a Swiss-based institution, thereby accounting for 1.5% of all the highly cited researchers on the list and placing Switzerland 10th in the country ranking. Although this represents a relatively sharp decline compared to last year (-0.7%), it is important to highlight that this sudden shift is anomalous, as it predominately reflects a change in Clarivate's methodology, which happened to have a particularly heavy impact on Switzerland, and especially on researchers at the Swiss Institute of Bioinformatics.
/web/2021/00-211116-53

Swiss Technology Transfer Report 2021

(Swiss Technology Transfer Association, November 26, 2021)

The Swiss Technology Transfer Association (swiTT) recently released the 2021 edition of the "swiTT report", which presents an in-depth overview of the technology transfer activities of Swiss public research institutions in two main areas: research collaborations of the participating institutions with private or public partners; and activities for the economic exploitation of research results from these institutions. This year, the questionnaire was returned by seven cantonal universities, the two Federal Institutes of Technology, three universities of applied sciences, as well as three research institutions of the ETH domain, who collectively reported the following indicators for the year 2020: 3,431 new research contracts, 634 invention disclosures, 334 priority patent applications, 219 license & option agreements, and 90 startups founded.
/web/2021/00-211126-6e

1. Policy

Easier Employment Market Access for Foreigners With Swiss University Degree

(Federal Council, October 27, 2021)

The Federal Council recently announced that it intends to create the legal perquisites for third-country nationals who obtained a master's or doctorate degree from one of the universities in the country to be eligible to work in Switzerland after their graduation. To achieve this, the corresponding press release argued that these graduates should be excluded from the maximum annual number of residence permits, if their employment is of high scientific or economic interest. In this context, the Federal Council subsequently opened the corresponding consultation process, which will run until 18 February 2021. This is a significant development, because Switzerland currently possesses very strict rules when it comes to foreign workers, and generally only issues less than ten thousand work permits annually for workers outside the EU/EEA.
/web/2021/01-211027-79

Swiss Biodiversity Policy Over Past 20 Years

(WSL, October 29, 2021)

In an effort to better understand the status of biodiversity in politics, as well as to elucidate how attention to it has developed and identify any blind spots, a team of Eawag and WSL researchers recently conducted an in-depth study of approximately 7,000 biodiversity-related federal policy documents, which were drafted between 1999 and 2018. In doing so, the team for example found that although the political interest in biodiversity has remained constant over the last 20 years, there have been thematic shifts. The researchers moreover discovered that there is generally less mention of biodiversity in the legal texts than in the drafting stage, as well as that it is largely constrained to only a few policy sectors. Nevertheless, the team also contend that over time, the term "biodiversity" has been used more and more frequently, which is an encouraging sign.
/web/2021/01-211029-44

Complete Revision of Innosuisse Funding Ordinance

(Federal Council, November 01, 2021)

The Board of Directors of Innosuisse recently approved the submission of the complete revision of the Innosuisse Funding Ordinance for consultation, which contains the provisions required to implement the amendment to the Federal Act of 14 December 2012 on the Promotion of Research and Innovation (RIPA, SR 420.1) in the area of innovation promotion. The aim of the amendment is to give Innosuisse greater room for maneuver and flexibility, including in the promotion of innovation projects and startups. The ordinance also addresses the need for changes that have become apparent in Innosuisse's first years of operation. The consultation will last until 15 February 2022, and it is expected that the law will be passed during the winter session of 2021.
/web/2021/01-211101-15

2. Education

New "Bernoulli Center for Fundamental Studies"

(EPFL, October 22, 2021)

In an effort to foster excellence and promote research in the fundamental sciences, EPFL recently not only broadened the scope of its EPFL's Bernoulli Center – which previously predominately supported research in mathematics and related applications – to also include theoretical computer science and theoretical

physics, but also expanded its management team with Professors from several EPFL schools and institutes. This is an exciting development, because as underlined by the center's head, Professor Emmanuel Abbé, the most important scientific discoveries can be traced back to breakthroughs in the fundamental sciences, thereby highlighting the importance of nurturing a synergistic ecosystem in this domain. In this context, the center also strives to encourage under-represented groups, like women, to pursue careers in the fundamental sciences.
/web/2021/02-211022-63

Impact of COVID-19 on Post-Compulsory Educations and Training

(Federal Council, November 15, 2021)

The Federal Statistical Office (FSO) recently investigated the impact of the COVID-19 pandemic on post-compulsory education and training pathways in Switzerland and found that although academic Baccalaureate holders were much faster to transition to a higher education institution in 2020 compared to previous years, the transitions of students with a federal vocational or specialized Baccalaureate remained relatively unchanged. This is an interesting finding, because although the former resulted in a record number of new students in the universities and institutes of technology, the results indicate that the COVID-19 pandemic has not affected vocational education and training (VET).
/web/2021/02-211115-07

ETH Zurich - EPFL Joint Doctoral Program in Learning Sciences

(ETH Zurich, November 26, 2021)

ETH Zurich and EPFL recently teamed up to launch a new joint doctoral program, which aims to help shape the future of learning by educating a new generation of dual-discipline scientists, who can bring together knowledge and methods from multiple disciplines, such as psychology, education, computer science and data science, to answer questions of how people learn and hence how to teach in the digital age. During the four-year program, students must obtain at least 12 credits, including a total of eight credits from two mandatory courses (worth four credits each) taught each year at ETH Zurich and at EPFL. Students can moreover choose from a wide range of optional courses on topics such as machine learning, how to learn, and digital technology for education.
/web/2021/02-211126-33

New Master's Degree in Interdisciplinary Brain Sciences

(University of Zurich, November 30, 2021)

The University of Zurich and ETH Zurich recently launched a new, joint Master's Degree in Interdisciplinary Brain Sciences (MSc IDB), which combines brain biology with neurotechnology and clinical methods, thereby preparing graduates for a broad range of career options. To achieve this, students begin by learning about the biology and genetics of the brain in the first semester, before subsequently acquiring a detailed understanding of a range of methods used in daily clinical and therapeutic practice in their second semester. The students then have six months to deepen and supplement their knowledge while producing a Master's thesis. In addition, an eight-week internship in a clinic, or with a partner company in the pharmaceutical or medtech sector, offers important insights into what daily working life will look like.
/web/2021/02-211130-9a

3. Life Science

Simultaneous Optical and Electrical Tracking of Heart Activity

(University of Bern, October 05, 2021)

A team of researchers led by University of Bern Professor Stephan Rohr recently developed a new experimental system, which, for the first time, allows for simultaneous optical and electrical measurements

of cardiac ventricular activation. This is an exciting development, as the results obtained with the novel "POEMS" system are expected to open new perspectives in the study of normal cardiac function, as well as in the investigation of mechanisms causing cardiac arrhythmias. To provide an example, the team is currently investigating the burning question of whether cardiac arrhythmias can also be caused by non-muscle cells, such as activated connective tissue cells. This is important, because if this is the case, it would mean that other cell types – i.e., not only muscle cells – could also become targets for anti-arrhythmic therapies.
/web/2021/03-211005-05

Highly Potent Antibody Against SARS-CoV-2

(EPFL, October 12, 2021)

A team of researchers from the Lausanne university hospital and EPFL recently discovered a highly potent monoclonal antibody that targets the SARS-CoV-2 spike protein and is effective at neutralizing all variants of concern identified to date, including the delta variant. To achieve this, the antibody blocks the spike protein from binding to cells expressing the so-called ACE2 receptor, thereby effectively halting the viral replication process and thus enabling a patient's immune system to eliminate SARS-CoV-2 from the body. This is an exciting development, because it opens the door to improved treatments for severe forms of the disease, as well as to enhanced prophylactic measures. However, it is important to note that this novel antibody is not intended to replace COVID-19 vaccines, which remain the most effective way to prevent infection.
/web/2021/03-211012-d2

Probiotic Bacterium to Improve Cancer Immunotherapy

(Università della Svizzera italiana, October 18, 2021)

A team of researchers from the Institute for Research in Biomedicine (IRB, affiliated to USI), together with colleagues from Synlogic, recently developed a synthesized strain of the bacterium Escherichia coli (E. coli), which can "colonize" tumors and subsequently converts ammonia – a metabolic waste product that accumulates in tumors – into an amino acid called "L-arginine", which enhances the anti-tumor functions of T-cells. This is an exciting development, because although tuning the concentration of metabolites in favor of an effective anti-tumor response has already been viewed as a promising potential therapeutic intervention for some time, researchers, until now, had struggled to develop a suitable method, which would enable them to modulate these concentrations in the tumors themselves.
/web/2021/03-211018-60

Upgraded Biosafety Level 3 Lab for Airborne Virus Research

(University of Geneva, October 22, 2021)

The University of Geneva recently upgraded a biosafety level 3 (BSL3) laboratory so that it could also handle airborne viruses, such as coronaviruses, thereby enabling its virologists to carry out cutting-edge research aimed at developing effective treatments and vaccines against these potentially deadly pathogens. The BSL3 laboratory was initially set up to study blood-borne viruses, such as HIV, but as explained by the lab's future operational manager, Sophie Clément-Leboube, airborne viruses, which are generally much more contagious, require more secure equipment. As such, the newly upgraded lab not only contains isolators with integrated gloves to ensure the complete separation of the researchers from the viruses, but it also features an integrated microscope, which will enable researchers to remotely observe the evolution of an infected cell.
/web/2021/03-211022-5f

Promising Approach to Prevent Memory Decay

(University of Fribourg, October 29, 2021)

A team of researchers led by University of Fribourg Professor Simon Sprecher recently discovered a promising new mechanism to prevent so-called Aβ-mediated memory decay during the early stages of

Alzheimer's disease. This is an important development, because as explained by Sprecher, it promises to provide them with new insights into how the course of the disease can be slowed down or, ideally, even stopped. To achieve this, the team conducted various experiments with genetically modified fruit flies, which in turn enabled them to demonstrate that they could reduce the excitability of the flies' nerve cells – a factor, which was hypothesized to accelerate Aβ-mediated forgetting – which, as a result, remedied their memory deficits.
/web/2021/03-211029-5a

Proton Therapy to Treat Lung Cancer

(Paul Scherrer Institute, November 09, 2021)

As part of an international Phase 3 clinical trial led by NRG ONCOLOGY, the Paul Scherrer Institute, together with the Radio-Oncology Center of the Cantonal Hospitals of Aarau and Baden, recently used proton therapy to treat a patient with lung cancer for the first time in Switzerland. This is an exciting development, because although this type of therapy has already become established for treating certain tumors in the area of the head, neck and torso, the treatment of tumors in the lungs constitutes a new territory – primarily because it is difficult to direct proton beams at the lungs with a high degree of accuracy. However, even with these challenges, the team is nevertheless hopeful that this novel form of radiotherapy will not only help to extend patient survival rates – even without surgery – but also to reduce the secondary effects on healthy lung tissue and the heart.
/web/2021/03-211109-f5

Flagship Project to Investigate Consequences of Stress on Brain and Body

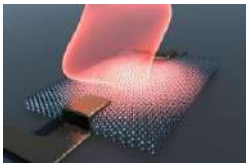
(University of Zurich, November 17, 2021)

The "Hochschulmedizin Zürich" initiative recently unveiled a new flagship project, called "STRESS", which will bring together an interdisciplinary team of researchers from the University of Zurich, ETH Zurich, the University Hospital of Psychiatry Zurich and the University Hospital Zurich in order to better understand, diagnose, and treat the effects of stress on people's mental and physical health. This is an important development, because although stress not only constitutes a major risk factor for psychiatric and neurodegenerative disorders, such as bipolar depression or dementia, but also for cardiovascular diseases and type 2 diabetes, psychiatric and cardiovascular diseases are rarely looked at together, and diagnosis and treatment are usually conducted separately.
/web/2021/03-211117-cc

4. Nano / Micro Technology / Material Science

Ultrafast Control of Quantum Materials

(Paul Scherrer Institute, October 18, 2021)



An international team of researchers, which also included Simon Gerber from the Paul Scherrer Institute, recently published a review on the latest developments in ultrafast materials science, in which they not only illustrated how light can fundamentally change the properties of solids, but also how these effects can be used for future applications, such as high-speed information processing and storage, lossless energy transfer, and quantum technologies. Excitingly, the researchers moreover indicated that they believe that the field is now ripe to move from discoveries of new effects in laser-driven materials towards harnessing these effects for potential technologies.
/web/2021/04-211018-7d

Optical Upconverter for Low-Cost Short-Wave Infrared Light Imaging

(Empa, October 26, 2021)

A team of researchers at Empa, EPFL, ETH Zurich and the University of Siena recently developed an innovative "organic upconversion device" (OUC), which can convert weak Infrared (IR) light into stronger, visible light by using thin layers of dye made from carbon-based chemistry. This is an exciting development, because this novel device could significantly reduce the costs of short-wave infrared light (SWIR) cameras, which can be used for a wide variety of applications, such as sorting out damaged fruit, inspecting silicon chips, as well as to manufacture high-quality night vision devices, to name a few. To achieve this, the device first allows IR light to fall through an electrically conductive glass pane onto a squaraine dye layer in a photodetector, before subsequently amplifying it in an "analog" manner and displaying it directly onto an OLED layer.
/web/2021/04-211026-35

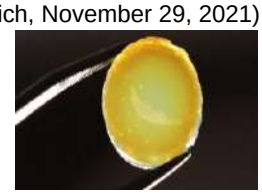
New Dubochet Center With Most Powerful Electron Microscope

(EPFL, November 23, 2021)

EPFL, the University of Lausanne and the University of Geneva recently launched a new joint platform, called the "Dubochet Center for Imaging" (DCI), which houses two of the most powerful life sciences electron microscopes in the world, thus promising considerable advances in the field of biomedical research. To achieve this, the microscopes machines make use of an innovative technique known as cryo-electron microscopy (cryo-EM), which allows scientists to examine biomolecular samples under a microscope without having them dry out or lose their natural structure. As explained by Nobel laureate Jacques Dubochet, this is accomplished by freezing the samples so quickly that they do not have the time to crystallize, thereby enabling them to better withstand the flow of electrons that pass through them, and thus to be "photographed" in their natural state.
/web/2021/04-211123-f1

Novel Aerogel-Based Photocatalyst for Hydrogen Generation

(ETH Zurich, November 29, 2021)



A team of researchers led by ETH Zurich Professor Markus Niederberger and his doctoral student Junggou Laura Kwon recently developed a new method to activate titanium dioxide (TiO2) nanoparticle-based aerogels for visible light, which could not only help to increase the conversion efficiency of solar energy into hydrogen, but also of other interesting gas-phase reactions, such as CO2 reduction. This is an exciting development, because although TiO2 nanoparticle-based aerogels have successfully demonstrated their potential as a promising architecture for gas-phase photocatalysis, their efficiency has largely been limited because of the wide bandgap of TiO2 (3.2 eV), which, until now, has restricted its working range to the ultraviolet (UV) portion of sunlight – i.e., to less than 5% of the solar spectrum.
/web/2021/04-211129-27

5. Information & Communications Technology

Privacy-Preserving Federated Analytics System for Precision Medicine

(EPFL, October 11, 2021)

A team of researchers led by EPFL Professor Jean-Pierre Hubaux, together with colleagues from the Lausanne university hospital (CHUV), the MIT Computer Science and Artificial Intelligence Laboratory, and the Broad Institute of MIT and Harvard, recently developed a new, federated analytics system, called "FAMHE", which enables different healthcare providers to collaboratively perform statistical analyses and

develop machine learning models – all without exchanging the underlying datasets. This is an exciting development, because as explained by Professor Jacques Fellay, FAMHE not only makes it possible to perform secure collaborative research on patient data at an unprecedented scale, but the technology on which it is based could also enable and empower collaborations around sensitive data in a wide range of other fields.
/web/2021/05-211011-eb

Relativistic Zero-Knowledge Protocol to Secure Data Transfers

(University of Geneva, November 04, 2021)

A team of researchers led by University of Geneva Professors Nicolas Brunner and Hugo Zbinden recently developed a novel zero-knowledge protocol, which, unlike previous implementations, is based on a physics concept – namely, the principle of relativity – thereby enabling users to identify themselves without having to disclose any information about their personal data, such as when withdrawing money from an ATM. This is an exciting development, because according to the researchers, their novel implementation would guarantee absolute security of data processing and could not be hacked, thereby making it suitable for a wide range of identification tasks and blockchain applications, such as cryptocurrencies or smart contracts.
/web/2021/05-211104-72

Predicting Demographics From Instant Messages

(University of St.Gallen, November 10, 2021)

By analyzing more than 300,000 WhatsApp messages from 226 German volunteers, a team of researchers led by University of St.Gallen Professor Clemens Stachl, Timo Koch from the Ludwig-Maximilians-Universität München and Peter Romero from Keio University were recently able to identify distinct language differences between gender and age groups, which could enable machine learning algorithms to predict user demographics with a high degree of accuracy. These findings are important, because they imply that tech firms could potentially profile users based on their digital language footprints in instant messages, thereby raising numerous questions about how this data should be protected.
/web/2021/05-211110-4b

Evolutionary Algorithms to Uncover Mechanism of Synaptic Plasticity

(University of Bern, November 10, 2021)

As part of the EU-funded Human Brain Project, a team of researchers led by Dr. Mihai Petrovici from the Universities of Bern and Heidelberg recently developed a new approach to uncover the mechanisms of learning via synaptic plasticity – a critical step towards understanding how our brains function, as well as to be able to build truly intelligent, adaptive machines. Specifically, this new approach is based on so-called evolutionary algorithms, which look for solutions to problems by mimicking the process of biological evolution, such as the concept of natural selection. Thus, biological fitness, which describes the degree to which an organism adapts to its environment, becomes a model for evolutionary algorithms, whereby the "fitness" of a candidate solution depicts how well it solves an underlying problem.
/web/2021/05-211110-3a

Security Vulnerabilities in "DRAM" Memory Devices

(ETH Zurich, November 15, 2021)

A team of researchers led by ETH Zurich Professor Kaveh Razavi, together with colleagues at the Vrije Universiteit Amsterdam and Qualcomm Technologies, recently discovered a serious hardware vulnerability in modern DRAM memory devices, which renders all currently deployed mitigations insufficient to fully protect them against an attack known as "Rowhammer". This is significant, because DRAMs are not only

widely used in computers, tablets, and smartphones, but also because it means that these devices will continue to be vulnerable to Rowhammer attacks for years to come, as DRAM devices cannot be easily updated "in the wild" and it will take time for chip manufacturers to find new ways to update mitigation measures on future generations of DRAM chips.
/web/2021/05-211115-cf

Effects of COVID-19 on Digitalization

(University of Zurich, November 18, 2021)

A team of researchers led by University of Zurich Professor Michael Latzer recently released the sixth edition of the Swiss WIP project, which, as part of the broader "World Internet Project" (WIP), aims to record the diffusion and use of the internet in an international comparison, as well as to analyze its social, political, and economic implications. Given the exceptional circumstances, this year's edition also includes a special report on the effects of the COVID-19 pandemic on these trends. In this context, the team in particular found that although many activities have shifted to digital spaces as a result of the pandemic, there appear to be clear differences between the digitalization advances forced by COVID-19 in the short term and what is desired in the long term.
/web/2021/05-211118-6f

6. Energy / Environment

Internalization of External Transport Costs

(University of Basel, October 04, 2021)

In the largest worldwide pricing experiment to date, a team of researchers led by University of Basel Professor Beat Hintermann and ETH Zurich Professor Kay Axhausen, together with colleagues from the Zurich University of Applied Sciences, recently demonstrated that transport pricing is not only technologically feasible, but that it can also significantly reduce the external costs of traffic in respect to health, climate, and congestion. This is a significant finding, as in 2017, external costs of transport in Switzerland alone ran to more than CHF 13 billion. Specifically, the researchers found that during their experiment, pricing and financial incentives led to a significant reduction in external costs of 5.1%, as participants adjusted their travel behavior and reduced costs by switching to different routes, changing departure times, and using other modes of transport.
/web/2021/06-211004-bd

Geothermal Panels for Underground Infrastructure

(EPFL, October 07, 2021)

EPFL spin-off Enerdrape recently developed a modular, scalable and easy-to-install geothermal panel-like technology, which enables them to turn underground infrastructures, such underground parking lots, subway stations, or tunnels, into renewable heat sources. This is an exciting innovation, because over a third of the energy used in Switzerland each year currently goes to heating – nearly 60% of which originates from fossil fuels, thereby making Switzerland the biggest such consumer in Europe. The system in particular consists of a series of thin metal panels, which can be installed in underground structures and function as heat exchangers that capture geothermal and ambient energy. A heat pump then circulates this energy throughout the building above, thus providing a constant supply all year long.
/web/2021/06-211007-b2

Glaciers Continue to Shrink Despite Favorable Weather Conditions

(Swiss Academy of Sciences, October 19, 2021)

A team of researchers at the Cryospheric Commission (CC) of the Swiss Academy of Sciences recently found that despite abundant snow in the winter, as well as comparatively cool and mixed summer weather conditions, the volume of Swiss glaciers still decreased by almost 1 percent in 2021. This is a sobering finding, as it illustrates that in times of climate change, even a "good" year is not always good enough for the glaciers. Specifically, the CC found that although the glaciers were relatively well protected by winter snow until July, some 400 million tons of ice were nevertheless lost over the last 12 months in Switzerland. In this context, the impact of climate change was especially evident in the total volumes of fresh snow in summer, which were surprisingly low despite considerable precipitation.
/web/2021/06-211019-6f

Fossil Rivers of Sahara Illustrate Threat of Global Warming

(University of Geneva, October 26, 2021)

By reconstructing the palaeohydrology of the Egyptian Sahara, a team of geologists led by University of Geneva PhD student Abdallah Zaki and Professor Sebastien Castelltort recently found that following a rapid temperature increase of about 7°C approximately 10,000 years ago, the frequency of heavy rainfall events increased fourfold, which in turn increased river flooding, and ultimately resulted in a major migration of people away from the Nile valley and into the center of the country. This is an important finding, because as underlined by Castelltort, it provides us with "a historical lesson told by the rocks on how the Earth system behaves in the event of rapid global warming."
/web/2021/06-211026-77

Reducing Climate Risks With Rapid Energy Transitions

(Empa, November 18, 2021)

Using a model specifically designed to calculate the physical limit of accelerating the energy transition, Empa scientists Harald Desing and Rolf Widmer recently concluded that in order to achieve this with the lowest cumulative CO2 emissions, we should quickly push ahead with the conversion to solar energy and use fossil power plants at full capacity for one last time to do so. Paradoxically, this approach would temporarily increase fossil fuel emissions by up to 40% – in order to provide enough energy to build the necessary renewable capacity – but after five years, the fossil engine could be shut down for good, thus resulting in the lowest cumulative emissions overall. This is important, because as underlined by the authors, the temperature of the atmosphere does not depend on current emissions, but, rather, on cumulative emissions – including past emissions.
/web/2021/06-211118-b1

Pilot Plant for Efficient and Sustainable Li-Ion Batteries

(Bern University of Applied Sciences, November 23, 2021)

The Bern University of Applied Sciences recently opened a unique new research facility, which aims to make the production of lithium-ion (Li-ion) batteries more efficient and sustainable. This is an important development, because although Li-ion batteries are used in many everyday applications – including cars, smartphones, and hearing aids – the extraction of the raw materials needed to manufacture them, as well as the production process itself, often have a considerable ecological impact. In this context, the research facility, which will be made available to research and industry as a basis for experiments, is not only capable of making a wide range of different sized battery cells with different performance levels, but also enables teams to select and modify different materials at will, as well as to include or switch out individual components as desired.
/web/2021/06-211123-c2

Limits of Hydrogen as Key Climate Friendly Energy Carrier

(ETH Zurich, November 24, 2021)

ETH Zurich recently published a thought-provoking opinion piece on their Zukunfts- and Energy Blogs, in which Professor Anthony Patt argued that although green hydrogen may help us decarbonize in a few limited applications – notably seasonal energy storage, steel production, and as an intermediate step in producing sustainable aviation fuels – ambitions to making it a key energy carrier for ground transport and heating are largely misguided. This is because according to Patt, even if we limit ourselves to green hydrogen, it would, in most cases, be more efficient, less expensive, and demand fewer natural resources and new infrastructure to use renewable energy directly. These issues are crucial from a systems perspective, which Patt illustrates based on the ground transport and heating sectors.
/web/2021/06-211124-af

7. Engineering / Robotics / Space

High-Speed Autonomous Flight Through Challenging Environments

(University of Zurich, October 07, 2021)

A team of researchers led by University of Zurich Professor Davide Scaramuzza recently developed a new approach to autonomously fly quadrotors through unknown, complex environments at high speeds, using only on-board sensing and computation. To achieve this, the team first used a so-called “simulated expert” to teach the drone’s neural network how to predict the best trajectory based only on the data from its sensors, before subsequently testing the system in the real world, where it was able to fly in a variety of environments without collisions at speeds of up to 40 km/h. Excitingly, this novel approach could also be used to improve the performance of autonomous cars, or even to open the door to a new way of training AI systems for operations in domains where collecting data is difficult or impossible, such as on other planets.
/web/2021/07-211007-dc

Compositional Link Between Exoplanets and Host Stars

(University of Bern, October 14, 2021)

An international team of researchers, which also included astrophysicists from the NCCR PlanetS at the University of Bern and the University of Zurich, recently demonstrated that although our assumptions regarding star and planet compositions are not fundamentally wrong, the relationship is not as simple as initially expected. Specifically, although the results confirmed that the composition of rocky planets is indeed intimately tied to the composition of their host star, the team also found that, contrary to previous hypotheses, the iron abundance in a few of the planets was higher than in their host star. This is an important finding, as the results could not only provide scientist with vital clues about the history of planets, but they could also help them to constrain inferred planetary compositions, which provides an indication regarding the habitability of a given planet.
/web/2021/07-211014-6f

Autonomous Luggage Transportation Robot

(PostAuto, October 22, 2021)

PostAuto, in collaboration with the car-free commune Saas-Fee and Saas-Fee/Saastal Tourism, recently initiated an innovative pilot project, which aims to use an autonomous robot called "Robi" to help travelers transport their luggage on the last leg of their journey. Specifically, Robi is designed to wait for travelers at public transport stops or in front of their accommodation, thereby enabling them to easily load their luggage

on the robot at their point of departure and comfortably make their way to their destination, while Robi accompanies them every step of the way. Once there, travelers simply retrieve luggage from the robot, which kindly says goodbye and subsequently drives to the next customer.
/web/2021/07-211022-eb

EPFL Rocket Team Wins European Rocketry Challenge

(EPFL, October 27, 2021)

The EPFL Rocket Team was recently crowned the European champion of rocket launching at this year's European Rocketry Challenge (EuRoC) in Ponte de Sor, Portugal, as well as won the Hybrid 3km Flight Award for achieving the best flight in its category. This is an exciting achievement, because it was not only the first time that the team formally launched one of its rockets at this kind of international event, but also the members' first opportunity to test the hybrid engine that they had built. This constituted a significant step, because although hybrid engines allow for greater precision over the rocket's altitude, they also substantially complicate the design. In addition to the EPFL rocket team, ARIS, the aerospace student initiative of ETH Zurich, also won an award for achieving the best flight in the Hybrid 9km category.
/web/2021/07-211027-df

Microrobot With Ultrasound-Activated Ciliary Bands

(ETH Zurich, November 09, 2021)

A team of researchers led by ETH Zurich Professor Daniel Ahmed recently developed an innovative new microrobot, which is equipped with an ultrasound-activated synthetic system that mimics the natural arrangements of starfish larva ciliary (tiny hairs), thereby enabling it to generate different patterns of vortices with a suction or thrust effect – depending on what is needed – just like its natural model. This is an exciting development, because as explained by Ahmed, this system could not only be used for a wide variety of medical applications, such as the treatment of gastric tumors, but it could also have important implications for the manipulation of smallest liquid volumes in research and in industry.
/web/2021/07-211109-06

Using AI to Discover Exoplanets

(University of Geneva, November 11, 2021)

By implementing artificial intelligence techniques similar to those used in autonomous cars, a team of astronomers from the Universities of Geneva and Bern, the NCCR PlanetS, and Disaitek recently developed a new technique that could not only make it possible to discover exoplanets that were previously impossible to detect, but which could also be used on Earth to detect illegal dumping. To achieve this, the researchers employed a neural network, which, as explained by Disaitek president Anthony Graveline, aims to determine, for each pixel in an image, the object it represents. In this context, the researchers taught the neural network to identify the luminous flux induced by planets passing in front of their star from gigantic numerical simulations by cross-referencing all available observations of that star with the range of configurations seen during its training.
/web/2021/07-211111-53

Significant Potential for Social Robots in Switzerland

(University of Applied Sciences and Arts Northwestern Switzerland, November 24, 2021)

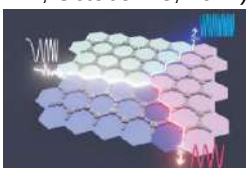
An interdisciplinary team of researchers from the University of Applied Sciences and Arts Northwestern Switzerland, the Zurich University of Applied Sciences and the University of St.Gallen recently completed a two-year study on the opportunities and risks of social robots for Switzerland across four main application areas – health, publicly accessible areas, private households, and education, to be exact – thereby providing a valuable, systematic introduction to the topic for anyone who deals with social robots in any

way, or is planning to do so in the future. In this context, the study for example found that although there is a wide range of potential uses for social robots across all areas of application, users tend to prefer their use in an assistance and support function.
/web/2021/07-211124-50

8. Physics / Chemistry / Math

Topological Insulator With Superior Robustness Against Disorder

(EPFL, October 13, 2021)



A team of researchers led by EPFL Professor Romain Fleury, together with his PhD student Zhe Zhang and Pierre Delplace from the ENS Lyon Physics Laboratory, recently developed a topology-based method that forces microwave photons to travel along a one-way path, despite unprecedented levels of disorder and obstacles on their way. This is an exciting development, as it paves the way for a new generation of high-frequency circuits and extremely robust, compact communication devices. Specifically, as explained by Fleury, this new discovery will enable them to use topology to build circuits and devices without having to worry about "impedance matching", which could in turn be extremely useful for developing next-generation communication systems, which require circuits that are highly reliable and easily reconfigurable.
/web/2021/08-211013-c3

Exotic Magnetic States in Miniature Dimensions

(Empa, October 14, 2021)

An international team of researchers led by Empa and the International Iberian Nanotechnology Laboratory was recently able to fabricate carbon-based triangulene quantum spin chains, which exhibited clear signatures of a phenomenon known as "spin fractionalization" – one of the cornerstone models of quantum magnetism first proposed by the 2016 Nobel laureate F. D. M. Haldane in 1983. This is an exciting development, as their results could not only help researchers improve their understanding of low-dimensional quantum magnetism, but they may also contribute toward the emerging field of quantum computing.
/web/2021/08-211014-df

CERN Installs Two New High-Tech Muon Detectors

(CERN, November 09, 2021)

After nearly a decade of dedicated efforts, CERN recently completed the installation of two so-called "Muon New Small Wheels" (NSW) in the ATLAS detector. This is an exciting development, because as explained by ATLAS Spokesperson Andreas Hoecker, the NSW constitute the first new detectors in ATLAS specifically designed to handle high-luminosity conditions, thereby not only providing fast, but also precise, muon-tracking capabilities. This is particularly important within the context of CERN's ongoing High-Luminosity upgrade of the Large Hadron Collider (HL-LHC), which will dramatically increase the rate of collisions in the ATLAS experiment, thereby enabling it operate at close to its design of 7 TeV per beam, as well as at luminosities of more than double the original design.
/web/2021/08-211109-ec

New Perspective on "Kondo Effect"

(EPFL, November 30, 2021)

Using the most advanced material characterization tools and micro-fabrication technologies available today, an international team of researchers led by EPFL Professor László Forró and Edoardo Martino recently unveiled a unique quantum-mechanical interaction between electrons and native topological

defects in layered materials, which, until now, had only been created and studied in unique and custom-made samples. Known as the "Kondo effect", this anomaly affects a metal's conduction properties by scattering and slowing the electrons, thereby changing the flow of electrical current through it. This is an exciting development, because this discovery opens a new and more accessible way to explore unique quantum interactions in materials, which could boost discovery and transfer to technological solutions.
/web/2021/08-211130-e6

9. Architecture / Design

Positive Effects of Blue-Green Infrastructure

(Eawag, October 14, 2021)

According to a recent study by team of Eawag researchers led by Peter Marcus Bach, blue-green infrastructure (BGI) – in other words, waterbodies, and green spaces in the urban areas – presents a promising approach to not only counter the difficulties of traditional urban drainage systems in responding to increasingly long and intense heatwaves, as well as heavy local rainfall, but also to increase biodiversity and improve the quality of urban life. It is important to note however that BGI encompasses more than individual trees or fountains in parks: rather, this approach should be based on strategic planning and take advantage of the potential to improve urban ecology. Thus, in all BGI schemes, a central role is played by a near-natural water cycle, with watercourses and open expanses of water in the urban environment.
/web/2021/09-211014-17

Towards Less Heteronormative Living Spaces

(EPFL, October 20, 2021)

As part of her Master's thesis, EPFL architecture student Claire Logoz recently developed a radical new approach to the layout of four "villas urbaines" – typical city-center buildings in Lausanne – which pushes the boundaries of traditional architectural norms and offers a thought-provoking example of how we can design less heteronormative living spaces. This is an important project, because although our lifestyles have drastically changed over the past two centuries, the same cannot be said about our living spaces, which were originally designed by men, and, according to Logoz, limit the way we live. In this context, Logoz's design for example includes several symbolic "alternations", such as walk-through closets that serve as doors, as well as numerous humorous ideas, such as replacing a fireplace with a washing machine to create a "living laundry room".
/web/2021/09-211020-eb

Recognition for Young Designers and Filmmakers

(University of Applied Sciences and Arts Western Switzerland, November 12, 2021)

The following five recent HES-SO graduates recently won CHF 50k each from the Hans Wilsdorf Foundation for their promising design and film projects. Victor Salinier combines 3D ceramic printing and modeling techniques with leatherwork to develop new aesthetics and functions for haute couture-inspired accessories. Blanca Algarra Sanchez designed a mobile exhibition entitled "The Nomadic Truffe Experience". Alexandre Haldemann produced a thought-provoking film about the end of life entitled "J'ai oublié que l'on mourra" (I forgot that we will die). Sophie Fellay is preparing to launch a new, sustainable brand called "Studio Remo". Finally, Nina Mégroz produced a 5-minute-long animated short film, which explores the relationship that we have with the different versions of ourselves(s) that live in our unconscious.
/web/2021/09-211112-28

Using AI and Robots to Build Innovative Hanging Gardens

(ETH Zurich, November 23, 2021)

With the help of artificial intelligence and four collaborative robots, a team of researchers led by ETH Zurich Professors Fabio Gramazio and Matthias Kohler, together with several partners, are creating a unique, 22.5-meter-tall green architectural sculpture for the Tech Cluster Zug. Envisioned to consist of five geometrically complex wooden pods that are slightly offset from each other and supported by eight thin steel pillars, the sculpture was designed using specially developed software, which not only presented the team with sophisticated design options, but also enabled them to explore the designs in three dimensions and fine-tune them in real-time. The researchers then turned to four robotic arms to help them precisely place the wooden panels according to the computer design, thereby enabling a team of craftspeople to easily join and glue them together.
/web/2021/09-211123-a8

10. Economy, Social Sciences & Humanities

Underrepresentation of Women in Research During Pandemic

(University of Geneva, October 20, 2021)

A team of researchers from the University of Geneva and the University Hospitals of Geneva, in collaboration with the BMJ Publishing Group, recently found that women researchers not only submitted significantly less research for publication than their male counterparts during the COVID-19 pandemic, but also that they occupied less prestigious authorship positions. These findings are important, because as explained by Professor Angèle Gayet-Ageron (first author), the attainment of these key positions, alongside with the total number of articles published, are essential for moving up the academic ladder. As such, the authors strongly emphasize that the slowdown in the publications by women researchers should be taken into consideration to ensure that this does not have a negative impact on the development of their careers.
/web/2021/10-211020-f3

Global Trade Alert Report: International Subsidies

(University of St.Gallen, October 25, 2021)

As part of the 28th Global Trade Alert Report, University of St.Gallen Professor Simon J. Evenett and Johannes Fritz, CEO of the St.Gallen Endowment for Prosperity Through Trade, recently highlighted the pervasiveness of subsidies in global trade in an effort to find common ground on the topic. This is important, because as underlined by the authors, subsidies not only affect a considerable proportion of global good trade – more than 62%, to be exact – but they also constitute a major source of controversy in the world trading system, as illustrated by the sharp rise of subsidy-related trade disputes and investigations into subsidized imports since 2010. Is also worth noting that the damage inflicted by subsidies is not merely economic, but they also perpetuate an unsustainable cycle of mimicry and retaliation.
/web/2021/10-211025-5e

Transformation of Family Networks: Estrangement, Divorce and Adoption

(University of Lucerne, November 05, 2021)

A team of researchers led by University of Lucerne Professor Bettina Beer recently launched a new study to shed light on the transformations of family networks that result from broken contacts, thereby making an important theoretical contribution to the topic of "kinship ethnology" (Verwandtschaftsethnologie). To achieve this, the project will be divided into three parts, which aim to address the question of how family relationships change through alienation, divorce or adoption, as well as how they can be described and

conceptualized. Moreover, given the increasing divorce rates, the growing number of blended families, as well as the psychological, legal, and social support that those affected by broken contacts may need, the study will also aim to tackle topics of social and political significance that go beyond the social science relevance of the research.
/web/2021/10-211105-ea

Sustainable Investment Study 2021

(Lucerne University of Applied Sciences and Arts, November 18, 2021)

A team of Lucerne University of Applied Sciences and Arts researchers led by Professor Manfred Stuettgen and Brian Mattmann recently published this year's edition of the Sustainable Investments Study, which demonstrated that although assets in sustainable mutual funds in Switzerland have more than doubled in the past twelve months, the strategies designed to manage climate risks continue to be a great challenge for fund providers. For one, it is not always clear which funds should qualify as "sustainable", thereby leaving ample room for interpretation. Moreover, even if a fund's strategy is clearly in line with Paris climate goals, their implementation is greatly hampered by the lack of valid data, robust modelling, and reliable future scenarios, which in turn also makes it difficult – particularly for private investors – to assess their climate friendliness.
/web/2021/10-211118-64

Aversive Effect of Not Being Tagged on Instagram

(University of Basel, November 23, 2021)

A team of researchers from the University of Basel and the University of Koblenz and Landau recently found that being cut out of- or not being tagged in a photo on social media platforms such as Instagram can induce a similar negative response in individuals as being excluded in real life. This is an important finding, because as underlined by the authors, even though not being tagged is a very brief act of exclusion that may often even occur unintentionally, it can threaten a person's fundamental needs for self-esteem and belonging and can lower their mood. In this context, the team for example found that although individual differences appeared to play a key role in how not being tagged on Instagram was perceived, being cut out of a photo elicited a particularly aversive effect, regardless of the individual need to belong.
/web/2021/10-211123-10

Mental Health Literacy of Teachers and Caregivers

(Zurich University of Applied Sciences, November 25, 2021)

Although teachers and caregivers are often the first to recognize signs of psychological stress, strain, and/or disorders, a recent study, which was conducted by the Zurich University of Applied Sciences and the Sociopediatric Center of the Cantonal Hospital Winterthur, found that many of them do not feel as though they could always adequately assess and address them in the context of everyday school life. Specifically, among the study respondents, only approximately one third (34%) considered themselves to be "experienced" or "very experienced" in dealing with stressed students, while almost a quarter (23%) said they had little or no experience with the topic. The remaining 42% felt as though they could competently act on selected mental health topics within the school context, but nevertheless expressed uncertainties in dealing with certain disorder-specific issues.
/web/2021/10-211125-a4

11. Start-ups / Technology Transfer / IPR / Patents

Proof of Concept Lab

(Zurich University of Applied Sciences, October 08, 2021)

The Zurich University of Applied Sciences (ZHAW) recently opened a new multidisciplinary innovation platform, called the Proof of Concept Lab, in order to bring entrepreneurially-minded companies together with university-based innovators and experts from different disciplines. In doing so, it offers SMEs and startups, as well as larger companies and public institutions, an ideal environment in which new ideas can take shape in a collaborative setting, and feasibility can be evaluated and tested using prototypes in an uncomplicated and effective manner. This is an exciting development, because as underlined by initiator Adrian Burri, “the challenges of today can often only be resolved when multiple companies join forces across industry borders or along the value chain.”
/web/2021/11-211008-dc

Spark Award 2021

(ETH Zurich, October 13, 2021)

A team of researchers led by Professor Paolo Ermanni was recently presented with the Spark Award 2021, which recognizes the most innovative and economically promising innovation developed at ETH Zurich of the past year, for their new process that enables them to produce lightweight, recyclable fiber composites at a low cost. Thanks to their high load-bearing properties, these sustainable composites are particularly suitable for large-scale components, such as wind turbine rotor blades. In additional to Prof. Ermanni’s team, the following projects also made it to the final round: multi-layered protein cage to transport water-insoluble active ingredients; RNA molecule to effectively kill cancer cells; synthetic polymer-based drops to reliably detect illnesses; and powerful, energy-efficient electro-optical modulator.
/web/2021/11-211013-52

Swiss Sustainability Challenge

(University of Applied Sciences and Arts Northwestern Switzerland, October 28, 2021)

A jury recently named Simon & Josef as the winners of this year’s Swiss Sustainability Challenge, which is organized by the University of Applied Sciences and Arts Northwestern Switzerland and Pax, and aims to promote sustainable project ideas of young people. In this context, Simon & Josef developed an innovative platform, which allows guests to cancel or personalize their room cleaning needs via smartphone, thereby enabling hotels to optimize their processes, reduce their consumption of natural and chemical resources, as well as to improve their customer service. Simon & Josef was followed by Antefil Composite Tech, which produces high quality plastic parts quickly and affordably, in second place, as well as KLY, which works with reliable Swiss mills to upcycle bran into a superfood, in third.
/web/2021/11-211028-be

Swiss Technology Awards 2021

(startupticker.ch, November 19, 2021)

The following startups and companies were recently recognized for their outstanding technology-based innovations and developments for the transportation sector with the coveted "Swiss Technology Award" – Switzerland's leading technology prize – which was presented during this year’s Swiss Innovation Forum: Procavea Biotech ("Inventors" category), aims to revolutionize the delivery of RNA therapeutics and small molecule drugs via an innovative and proprietary protein cage platform; embotech ("Startups/Rising Stars" category) develops decision-making software that solves complex optimization problems at top speed; Belimo ("Innovation Leaders" category) developed the "Belimo Energy Valve™", which uses

intelligent software to measure and control the flow of water in heating, ventilation and air conditioning systems.
/web/2021/11-211119-55

Forbes "30Under30 DACH"

(startupticker.ch, November 30, 2021)

Forbes recently published this year's 30under30 DACH list, which features 90 exceptional young personalities from Germany, Austria, and Switzerland, who positively impact business and society with their entrepreneurial thinking and innovative ideas. Among them, there were the following 23 Swiss deeptech startup founders: Ciril Stebler (velocorner.ch); Jakob Manz, Lukas Warwla & Tim Grunow (Archlet); Carlo Loderer & David Ballagi (Zippsafe); Philippe Sahli & Lars Mangelsdorf (Yokoy); Noah Faoro, Daniel Lagnaux & Lars Hulsbergen (KORK); Antonia Hirt (Epiopharm); Robin Gnehm, Nicholas Hänny & Carla Vilela Gonzaga Hänny (NIKIN); Paulina Grnarova (DeepJudge); Luca Placi (Enuu); Margaux Peltier (Enerdrape); Adonis Bou Chakra (Aepsy); Philippe Ganz (aiEndoscopic); Luca Naef (VantAI); Dadvan Yousuf (CROWDLI); and Shirly Valge (Velas).
/web/2021/11-211130-ab

12. General Interest

New Lab for Science in Diplomacy

(University of Geneva, October 08, 2021)

ETH Zurich and the University of Geneva recently established a new interdisciplinary lab in the heart of the internationally renowned city of Geneva, which aims to bring science and diplomacy closer together and thus improve the ability of diplomats and other international actors to effectively address complex global challenges, such as climate change. To achieve this, the work of the "Lab for Science in Diplomacy" (SiDLab) will be based on the efforts of a Chair in Negotiation Engineering, which aims to use quantitative methods to increase logical accuracy in negotiations and to de-emotionalize underling conflicts, as well as a Chair in Computational Diplomacy, which aims to develop a new theoretical framework for international relations that employs algorithms, as well as mobilizes computing power, to improve our understanding of global issues.
/web/2021/12-211008-7a

Managing International Partnerships Digitally

(Bern University of Applied Sciences, October 28, 2021)

A team of researchers from the Bern University of Applied Sciences and the University of Applied Sciences of the Grisons, with the support of Innosuisse, and in collaboration with Switzerland Global Enterprise and five internationally active companies, are developing a new, digitally supported management model to support Swiss companies in maintaining their foreign distribution partnerships – a task, which many SMEs fail at in the long run. To achieve this, the so-called "Managing International Partnerships digitally" (MIPd) model will not only cover four central tasks in dealing with distribution partners – namely, selection, qualification, motivation and evaluation – but it will also demonstrate how best to structure the processes for accomplishing these tasks, as well as illustrate which digital technologies can support their implementation.
/web/2021/12-211028-9f

Role of Science in Swiss COVID-19 Policy Response

(Swiss Academies of Arts and Sciences, November 02, 2021)

The Swiss Academies of Arts and Sciences recently published the first comprehensive study on the role of science in the COVID-19 pandemic policy response, which demonstrated that although the Swiss response possesses a good track record, there is also room for improvement. As such, the study also presented six options for future action, which in particular aim to disburden Switzerland's public administration, as well as to revise and diversify its national science advisory agencies, instruments and mechanisms. In this context, the main conclusion of the study was that the Swiss model would have greatly profited from an independent national council authorized explicitly to advise on short-term science policy matters of national significance, such as setting national goals, formulating national strategies, and developing national action plans.
/web/2021/12-211102-76

Swiss Game Award 2021

(startupticker.ch, November 15, 2021)

The following four game developers were recently recognized at this year's Swiss Game Developers Association "Swiss Game Award" for their creative and innovative projects, which have put the Swiss game industry on the radar. Hidden Fields won the "Best Entertainment Game" award for its hand-drawn horror tale "Mundaun"; Blindflug Studios won the "Best Serious Game" award for its Swiss-inspired strategy game "Democratia"; Stelex Software won the "Audience Choice" award for its interactive, virtual reconstruction of the "Castello Visconteo" in Locarno and its surrounding environment in the 16th century; and Sunnyside Games won the "Excellence in Visuals" award for its challenging action-shooter game "Towaga".
/web/2021/12-211115-19

13. Calls for Grants/Awards

BRIDGE Proof of Concept Call for Young Researchers

(Swiss National Science Foundation, October 12, 2021)

The Swiss National Science Foundation and Innosuisse recently launched a new call for proposals for the BRIDGE "Proof of Concept" program, which aims to help young researchers apply their research results and gain the confidence needed to make a market entry. The BRIDGE Proof of Concept funding scheme is open to applicants from all disciplines who want to independently conduct and manage a project at a Swiss higher education research center, and who obtained a Bachelor's, Master's, or doctoral degree that is recognized in Switzerland within the past 4 years. Successful applicants can subsequently receive up to CHF 130k per year for a maximum of 18 months in order to cover their salary, as well as any other costs that are directly linked to the execution of their project. Submission deadline: 6 December 2021.
/web/2021/13-211012-7e

Call for National Research Program on "COVID-19 in Society"

(Swiss National Science Foundation, November 02, 2021)

The Swiss National Science Foundation recently launched a call for the National Research Program "Covid-19 in Society" (NRP 80), which aims to provide evidence-based guidance and action knowledge to policymakers and relevant institutions and organizations to support the best possible management of the COVID-19 pandemic, as well as of future pandemics. To achieve this, NRP 80 focuses on the situation in

Switzerland from social sciences and humanities perspectives and comprises the following three research modules: supporting responsible behavior, supporting individual and collective welfare, as well as supporting crisis management and lasting change. NRP 80 will operate with overall funding of CHF 14 million and support research work for a period of three years. Pre-proposals must be submitted by 24 January 2022, via the mySNF platform.
/web/2021/13-211102-54

Call: Postdoc Mobility Fellowships for Research Abroad

(Swiss National Science Foundation, November 04, 2021)

The Swiss National Science Foundation recently opened applications for its "Postdoc.Mobility" fellowships, which are aimed at researchers who have done a doctorate and who wish to pursue a scientific or an academic career in Switzerland. The fellowships include a grant for subsistence costs, a flat-rate for travel expenses, as well as a possible contribution to research and conference costs. In addition, fellowship holders can apply for a return grant, which includes a salary and social security contributions, to finance their initial period of research after returning to Switzerland. The funding period is in principle 24 months (fellowship) and 3 to 12 months (return phase). Submission deadline: 1 February 2022.
/web/2021/13-211104-3a

SNSF Scientific Image Competition 2022

(Swiss National Science Foundation, November 09, 2021)

The Swiss National Science Foundation is inviting researchers throughout Switzerland and Liechtenstein to submit their photographs and videos to the SNSF Scientific Image Competition, which aims to offer a fresh look at science and how it is done. The competition is open to all scientists working at a research institution in Switzerland or Liechtenstein and for work produced after 1 January 2021. A first prize of CHF 1,000, as well as several distinctions of CHF 250, will be awarded in each of the four categories of the competition: object of study, research locations and instruments, women and men of science and short videos. The winning images will moreover be exhibited at the Biel/Bienne Festival of Photography from 6 to 29 May 2022. Submission deadline: 31 January 2022.
/web/2021/13-211109-0d

Call for Projects on Decarbonization, Circular Economy and Biodiversity

(Federal Office for Spatial Development, November 23, 2021)

The European Commission and Switzerland recently launched a call for projects for the 2021-2027 Interreg Alpine Space program, which aims to enable Alpine regions to become climate neutral, enhance their competitiveness and to equip themselves to address climate change. To achieve this, the program brings together stakeholders from Liechtenstein, Austria, Switzerland, Slovenia, as well as from Alpine regions in Germany, France and Italy, to collaborate in joint projects across national borders that address one of the following four thematic objectives: a green Alpine region, adapted to the challenges of climate change; carbon neutral and resource sensitive Alpine region; innovation and digitalization supporting a green Alpine region; and cooperatively managed and developed Alpine region. Submission deadline: 28 February 2022.
/web/2021/13-211123-21

SNSF Starting Grants for Independent Research Projects

(Swiss National Science Foundation, November 25, 2021)

Based on a mandate from the Swiss government, the Swiss National Science Foundation recently launched a call for the SNSF Starting Grants 2022, which aims to provide grantees with the opportunity to lead an independent research project and direct a team of researchers in Switzerland. In the context of Switzerland's continued non-associated third country status within Horizon Europe, this call targets

researchers who wanted to apply for a 2022 ERC Starting Grant, while also covering the SNSF's 2022 Eccellenza funding scheme. To qualify, applicants should have conducted between 3 and 8 years of research after their PhD defense or equivalent, or between 5 and 12 years after their medical degree, and have already achieved scientific independence, as well as contributed to impactful research in their field. Submission deadline: 1 February 2022.
/web/2021/13-211125-dd

Upcoming Science and Technology Related Events

World Economic Forum Annual Meeting
January 17-21, 2022
https://is.gd/ZiJXY0
Collaboration, Multistakholder Impact
Davos-Klosters

Conference Technoark
January 28, 2022
https://is.gd/3KbW75
IT, Electronics, Industry 4.0
Swiss Digital Center (Sierre) & Online

Annual Meeting of the SSN
January 29, 2022
https://is.gd/S2BxDo
Life Sciences, Health Care, Neuroscience
Fribourg

Verbier Art Summit
January 28 - February 12, 2022
https://is.gd/1NPFgc
Art, Literature, Culture
Verbier

Annual Conference of the SVPW
February 3-4, 2022
https://is.gd/Qu6Ds1
Political Science, Education, Training
Lausanne

Virtual Zurich Life Science Day 2022
February 8, 2022
https://is.gd/xv0Gq4
Life Science, Network, Career Fair
Online

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