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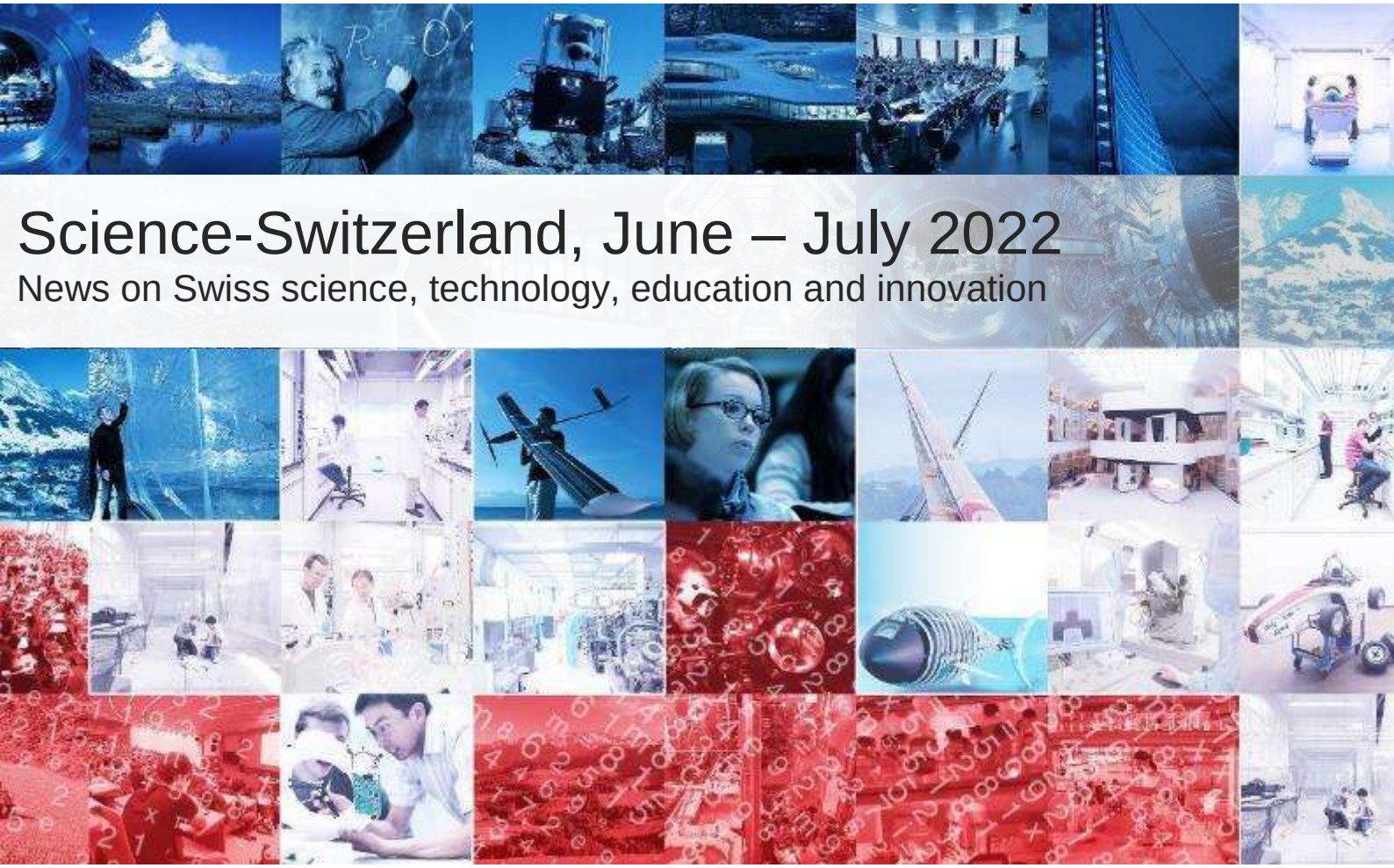
Switzerland.



Science-Switzerland, June – July 2022

News on Swiss science, technology, education and innovation

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2 Math Nobel Prizes for Switzerland

(International Congress of Mathematicians, July 05, 2022)

The International Congress of Mathematicians recently awarded the highly prestigious Fields Medal – considered the equivalent of a Nobel Prize for mathematics – to four exceptional mathematicians, including Professor Hugo Duminil-Copin from the University of Geneva and the Institut des Hautes Études Scientifiques, as well as EPFL Professor Maryna Viazovska, to recognize the outstanding quality of their work, as well as their considerable promise of future achievement. Duminil-Copin was in particular recognized for solving longstanding problems in the probabilistic theory of phase transitions in statistical physics, especially in dimensions three and four. Viazovska, on the other hand, was not only recognized for her proof that the E8 lattice provides the densest packing of identical spheres in 8 dimensions, but also for her additional contributions to related extremal problems and interpolation problems in Fourier analysis.
/web/2022/00-220705-9d

Swiss Universities Excel in QS-Rankings

(Quacquarelli Symonds, June 09, 2022)

With eight universities prominently listed among the top 250 of the recently released QS World University Rankings 2023, Switzerland once again confirmed its position as a global leader for world-class higher education and research. Ranked as the 9th best university in the world, as well as retaining its title as the leading university of continental Europe's for a fifteenth consecutive year, ETH Zurich led the way, followed closely by EPFL, which currently occupies 16th position. In addition, the University of Zurich secured its position as Switzerland's leading comprehensive university at rank 83, while the University of Bern (120), the University of Geneva (125), and the University of Basel (136) were also prominently listed among the 200 best universities in the world. Finally, just outside the top 200, the list also features the University of Lausanne (203), as well as the Università della Svizzera italiana (240).
/web/2022/00-220609-b2

Switzerland Is 2nd in IMD World Competitiveness Rankings 2022

(IMD Business School, June 15, 2022)

Switzerland recently placed second in the newly-released World Competitiveness Rankings 2022 – a comprehensive annual report by the IMD Business School, which acts as a worldwide reference point on the competitiveness of countries, as well as on how they manage their competencies to achieve long-term value creation. In this context, Switzerland in particular topped the charts in the "institutional framework", "finance", “health and environment”, as well as "education" sub-categories, while also receiving high scores for its public finance (3rd), productivity & efficiency (2nd), and scientific infrastructure (4th). Overall, this resulted in Switzerland placing 1st in the "government efficiency" and "infrastructure" categories, as well to improve its position from 5th to 4th in the “business efficiency” category.
/web/2022/00-220615-b9

1. Policy

Towards Fossil-Fuel Independence for Switzerland

(ETH Zurich, June 17, 2022)

An interdisciplinary team of researchers from the ETH Zurich Energy Science Center recently published a new policy brief, which provides an insightful overview of the ways in which Switzerland could increase its independence from fossil fuels in the coming years, as well as the political steps needed to achieve this. In this context, the paper highlights that although a Swiss energy system that is free of greenhouse gases by 2050 is both technically and economically feasible, there is no silver bullet in the form of one technology to solve the problem. Instead, the team contends that a fossil-free and net-zero energy system will rely on a diverse combination of technical, political and social measures, which can range from already being economical today, to needing further development and/or policy support.
/web/2022/01-220617-de

Tech-Transfer Enhancements to Reinforce Swiss Startup Ecosystem

(State Secretariat for Education, Research and Innovation, June 22, 2022)

The State Secretariat for Education, Research and Innovation (SERI) recently published a new assessment report, which, at the request of the Federal Council, aimed to investigate how the transfer of research findings could be accelerated within the startup ecosystem. In this context, the report in particular concluded that greater support for knowledge and technology transfer for startups can be achieved by improving the regulatory framework. To achieve this, the report proposed a number of measures, including: developing clear policy guidelines on the handling of intellectual property at universities; encouraging universities to acquire patent expertise; providing startup financing to cover patent-related costs; and proving support to universities to help them include entrepreneurship training in their study program.
/web/2022/01-220622-1f

Strategic Plan for ETH Domain: 2025-2028

(ETH Board, July 05, 2022)

The ETH Board recently published its Strategic Plan for the ETH Domain for the period 2025–2028, during which it not only aims to be internationally competitive, but also to serve Switzerland by addressing important challenges in the context of education, research and innovation (ERI). To achieve this, the ETH Board will in particular focus on five Strategic Areas, in which the ETH Domain is well positioned to have a strong impact, while also implementing various measures in the context of the core and key transversal tasks of the Domain, in order to ensure that it can continue to achieve excellence in education, research and knowledge and technology transfer. The new Strategic Plan moreover addressed the long-term organizational development of the ETH Domain as a whole.
/web/2022/01-220705-b4

2. Education

HES-SO Becomes University Associated Partner of UNITA Consortium

(University of Applied Sciences and Arts of Western Switzerland, June 02, 2022)

The University of Applied Sciences and Arts of Western Switzerland (HES-SO) recently joined the UNITA – Universitas Montium consortium as an associate university partner, thereby providing its students and staff with a plethora of exiting new opportunities for collaboration and mobility. This is a significant development, because in doing so, the HES-SO has not only become the first Swiss university of applied

sciences to join forces with a European university, but it has also done so within a difficult context for Swiss universities, given their continued exclusion from the European Union's research and innovation framework program "Horizon Europe". UNITA in turn comprises six comprehensive research universities, which are committed to establishing a new model of increasingly collaborative and integrated teaching, research and innovation.
/web/2022/02-220602-25

Virtual Learning Environment for Manufacturing Sector

(University of Applied Sciences and Arts of Southern Switzerland, June 24, 2022)

As part of the EIT Manufacturing program, a team of researchers led by Professors Silvia Giordano and Achille Peternier from the University of Applied Sciences and Arts of Southern Switzerland have been working to develop an innovative learning environment, which not only enables users to obtain a direct, immersive experience with selected activities related to the manufacturing sector, but also boosts three paradigmatic shifts in education: LEARNING4ALL, ACCESS4ALL and FEELING4ALL. To achieve this, the so-called "V-Machina" project aims to develop a Virtual Manufacturing Environment (VME) where students and practitioners alike can familiarize themselves and safely practice with expensive, cumbersome, and potentially dangerous machinery and robots.
/web/2022/02-220624-f7

3. Life Science

Diagnostic Procedure to Accelerate Tailored Stroke Therapy

(Empa, June 08, 2022)

A team of researchers led by Robert Zboray, Antonia Neels and Somayeh Saghamanesh from Empa, together with colleagues from the University Hospital in Geneva and the Hirslanden Clinic, recently combined a range of laboratory technologies to examine various blood clots taken from patients during neurosurgical procedures, thereby resulting in virtual 3D images that revealed detailed and previously unknown properties of blood clots. This is an exciting development, because the researchers ultimately hope that their findings could one day make it possible to interpret conventional hospital images in very short time – just as if the blood clot had been examined in an ultrafast virtual laboratory – which would in turn pave the way for a more accurate and personalized therapy for stroke patients in a timely manner.
/web/2022/03-220608-8a

Prestigious Ovarian Cancer Research Grant to Swiss Researchers

(University of Bern, June 08, 2022)

Biomedical scientist Sven Rottenberg (University of Bern) and clinical scientist Intidhar Labidi-Galy (University of Geneva & HUG) recently received a prestigious joint grant from the "Congressionally Directed Medical Research Programs" (CDMRP) for their project on ovarian cancer, thereby providing them with approximately USD 878,000 over the next four years. This constitutes an extraordinary achievement, because as explained by Professor Brigitte Galliot, Vice-Rector for Research at the University of Geneva, in the past 10 years, only one other Ovarian Cancer Research Program award was granted to a European scientist. Moreover, of the seven different types of awards, the project of Sven and Intidhar Labidi-Galy is one of only 12 Investigator-Initiated Research Awards, which were selected from 95 applications.
/web/2022/03-220608-77

CHUV Opens Three New Interdisciplinary Oncology Centers

(CHUV, June 14, 2022)

The Lausanne university hospital (CHUV) recently opened the following three new interdisciplinary oncology centers, thereby further strengthening its unique capacity to offer patients rapid access to word-renowned cancer specialists, cutting-edge innovations, personalized care, as well as effective treatments: the "ENT and Cervical-Facial Tumor Center", which specializes in the treatment of tumors in the oral cavity, pharynx, larynx, salivary glands, thyroid and parathyroid glands; the "Liver-Pancreas Tumor Center", which specializes in the treatment of cancers affecting the bile ducts, as well as the organs of the liver and pancreas: and finally, the "Brain and Spinal Cord Tumor Center", which treats tumors of the brain and spinal cord – including gliomas, meningiomas, brain metastases, skull base tumors, as well as complex and rare brain tumors.
/web/2022/03-220614-87

Easy-to-Use Breath Test for Detecting Tuberculosis

(Zurich University of Applied Sciences, June 15, 2022)

A team of researchers from the Zurich University of Applied Sciences, the startup Avelo, as well the University of Zurich, recently received a CHF 380,000 Innosuisse grant in order to develop and clinically validate a novel, non-invasive breath aerosol collector by 2023, which could constitute a real game changer in the fight against tuberculosis (TB). Specifically, contrary to the current standard – the spit test, which is difficult to collect and requires sophisticated sample preparation – the novel breath test works in combination with existing PCR tests and is similar in application to an alcohol breath test: affected individuals need only blow into a filter a couple of times. This is in turn made possible thanks to a highly efficient filter made of 3D nanofibers, which provide a substantial surface area to which the aerosols stick.
/web/2022/03-220615-45

Ultra-Affordable High-Throughput Transcriptomics

(EPFL, June 29, 2022)

EPFL spin-off Alithea Genomics recently developed an innovative system, which enables scientists to easily tag bulk RNA samples with molecular barcodes so they can be processed by the hundreds in one single tube. This is an exciting development, because the novel process is not only 25 times cheaper than conventional methods, but also reduces the time needed to sequence hundreds of samples from several days to just a few hours, as well as significantly reduces the amount of plastic and chemical compounds required. As such, Riccardo Dainese, CEO of Alithea Genomics, contends that their "technology is starting to open doors for the widespread application of RNA sequencing beyond fundamental research and towards industrial applications," including biomarker discovery and drug development.
/web/2022/03-220629-f3

New "Healthy Longevity Center" Boosts Research on Aging

(University of Zurich, June 30, 2022)

The University of Zurich, with the support of the Velux Stiftung, recently launched a new "Healthy Longevity Center", which aims to provide real-time data on the heterogeneity and complexity of lifelong development. This is an exciting development, as it not only marks an important step in the implementation of the University of Zurich's "healthy longevity" concept, but, more specifically, it also complements the recently-created Healthy Longevity Innovation Cluster to form a dynamic research and innovation ecosystem for healthy longevity. In this context, the healthy longevity cluster and center have three main priority areas: forming and maintaining networks in the academic and private sectors; exploiting new technologies; and providing a base for innovation.
/web/2022/03-220630-f4

Overcoming Resistance to Cancer Immunotherapy

(University of Basel, July 14, 2022)

A team of researchers led by Professor Alfred Zippelius and Dr. Nicole Kirchhammer from the University of Basel and the University Hospital Basel, in collaboration with colleagues from the University of Zurich, was recently not only able identify an important factor in cancer immunotherapy – namely, a signaling molecule known as chemokine CCL5 – but also to present a method for introducing it into the tumor's microenvironment. To achieve this, the team in inserted the gene for CCL5 into an adenovirus, which is not harmless to humans and possesses receptors on its surface that guide it directly to the tumor. In this context, once the virus reaches the tumor, the gene is read out and CCL5 is produced in the tumor's local environment over a longer period of time, which in turn helps facilitate effective immunotherapy.
/web/2022/03-220714-4a

Insulin-Independent Approach to Normalize Diabetic Ketogenesis

(University of Geneva, July 15, 2022)

A team of researchers led by University of Geneva Professor Roberto Coppari, research associate Girorgio Ramadori, and post-doctoral fellow Gloria Ursino recently provided a proof of principle of an insulin-independent pathway, which can normalize diabetic ketogenesis using a protein called S100A9. This is an exciting development, because although insulin therapy has probably saved the lives of hundreds of millions of people suffering from type 1 diabetes or severe forms of type 2 diabetes, it is not without its dangers, as it is difficult to dose and, in the long term, can also lead to serious metabolic and cardiovascular problems. As such, researchers have been working to develop complementary or alternative treatments that are more effective and less dangerous than insulin therapy.
/web/2022/03-220715-29

New Class of Broadly Neutralizing Coronavirus Antibodies

(Università della Svizzera italiana, July 15, 2022)

A team of researchers led by Professors Federica Sallusto and David Veesler from the Università della Svizzera italiana/ETH Zurich and the University of Washington, respectively, recently discovered a new class of antibodies, which bind to-, as well as neutralize, most types of human and animal coronavirus. To achieve this, the team first used a broad screening approach to isolate seven so-called monoclonal antibodies (mAbs) from infected and vaccinated individuals, before subsequently employing a range of structural and functional approaches to uncover that the fusion peptide is kept "hidden" in the spike protein and is only exposed when the virus spike protein binds to the receptor on the host cell. This is an exciting development, as it paves the way for the design of next-generation vaccines capable of inducing broadly protective antibodies.
/web/2022/03-220715-13

Imaging Brain With Ultrasound Waves

(ETH Zurich, July 26, 2022)

Following the successful development of ultrasound methods for the early detection of breast cancer 6 years ago, a team of ETH Zurich semiologists led by PhD student Patrick Marty from the group of Professor Andreas Fichtner, with the support of senior scientist Christian Boehm, is currently investigating how the brain can be examined with ultrasound. This is an exciting development, because compared to computed tomography (CT) or X-rays, ultrasound is not only almost entirely harmless to the body, but it is also much more cost-effective than magnetic resonance imaging (MRI), and the ultrasound devices are transportable for use in remote regions.
/web/2022/03-220726-fb

4. Nano / Micro Technology / Material Science

Non-Destructive Method to Determine Chemical Composition of Samples

(Paul Scherrer Institute, June 08, 2022)

A team of researchers from the Paul Scherrer Institute, the Roman settlement of Augusta Raurica, Empa, and the Natural History Museum of Bern, recently developed a new experimental method, which makes it possible to non-invasively determine the chemical composition of a given sample with the help of elementary particles called muons. This is a significant development, because by using this method, the team were not only able to examine precious gold and silver objects that were excavated in Augusta Raurica – one of the most important Roman sites in Switzerland – but also to investigate how a lithium-ion battery ages through use, thereby highlighting the exciting potential of this novel method for the study of ancient artefacts and modern technologies alike.
/web/2022/04-220608-2e

Hazard Assessment of Graphene-Containing Particles

(Empa, June 16, 2022)

An international team of researchers under the leadership of Empa recently investigated the potential biological effects of particles derived from polyamide – polyamide 6 (PA6), to be exact, which is a widely-used engineered thermoplastic polymer – reinforced with reduced graphene oxide (rGO), and found that they appeared to show a negligible impact on all the models tested. Although these findings are encouraging, as they suggest that rGO-reinforced PA6 composites present a low risk to human health at acute exposure conditions, it is important to underline that the results found for rGO alone – in particular in vivo – also suggest that long-term effects after repeated exposure cannot be excluded. As such, the team contends that further studies are required to address the possible chronic impact of rGO-reinforced composite materials.
/web/2022/04-220616-5b

PET-Like Plastic Made From Non-Edible Biomass

(EPFL, June 27, 2022)

A team of researchers led by EPFL Professor Jeremy Luterbacher and first author Lorenz P. Manker recently developed a new, PET-like plastic, which can be easily made from the non-edible parts of plants, and meets the criteria for replacing several current plastics, while also being more environmentally friendly. This is an exciting development, because this new, biomass-derived plastic not only exhibits a wide array of useful properties – including being tough, heat-resistant, and a good barrier to gases – which makes it a promising candidate for applications ranging from packaging and textiles to medicine and electronics, but, thanks to its structure, it can also be chemically recycled and degrade back to harmless sugars in the environment.
/web/2022/04-220627-00

5. Information & Communications Technology

Limits of Universal Privacy-Preserving Data Sharing Mechanisms

(EPFL, June 02, 2022)

A team of researchers led by EPFL Professor Carmela Troncoso and doctoral assistant Theresa Stadler recently published a new paper, which not only illustrates that there are still multiple challenges associated with the development of a universal privacy-preserving data sharing mechanism, but also that existing

solutions continue to fall short of their promises. Specifically, the team contends that both privacy preserving cryptography, as well as the anonymization of data, are limited by the inherent trade-off between high flexibility in data utility and strong guarantees around privacy. This is an important insight, because according to the authors, this may well mean that the scope of data-driven applications needs to be reduced and data holders will need to make explicit choices regarding data sharing.
/web/2022/05-220602-50

Causality-Preserving Asynchronous Reality

(ETH Zurich, June 20, 2022)

A team of researchers led by ETH Zurich Professor Christian Holz and postdoc Andreas Rene Fender recently developed a new, asynchronous reality system, called "AsyncReality", which can capture co-located or remote physical events in real-time, construct a causality graph of co-dependent events, and subsequently enable immersed users revisit them at a suitable time in a causally accurate way. This is a significant development, because thanks to this new system, users can not only control when a real event in the physical world happens by "muting" real events and delaying them to a suitable time in their workflow, but also to experience past realities in which they were not even physically present.
/web/2022/05-220620-6a

3 Google Research Scholar Awards for Switzerland

(University of St.Gallen, July 07, 2022)

University of St.Gallen Professor Damian Borth, as well as ETH Zurich Professors Ryan Cotterell and Marina Krstic Marinkovic recently received a coveted Google Research Scholar Award to support their world-class research in the fields of machine learning and data mining, natural language processing, and quantum computing, respectively. Specifically, Borth aims to investigate the geometry of large populations of neural networks models, as well as to train so called "Hyper-Representations" encapsulating their characteristics. Cotterell on the other hand is working to control and understand representations through concept erasure, while Marinkovic is developing a quantum mapping algorithm of resonator interaction with n atoms.
/web/2022/05-220707-ec

Speculative Calculations Open Backdoor to Information Theft

(ETH Zurich, July 12, 2022)

A team of researchers led by ETH Zurich doctoral student Johannes Wikner and Professor Kaveh Razavi recently discovered a serious security vulnerability that affects most existing microprocessor computer systems and could enable hackers to exploit a certain type of program instructions, known as "returns", to gain unauthorized memory access and steal sensitive information, such as encryption keys or security-relevant passwords. This is especially risky in cloud environments, where multiple companies share computer systems. As is usual in such cases, the security researchers informed the affected manufacturers of "Retbleed" before it was made public, thereby enabling them to take initial measures to close the vulnerability.
/web/2022/05-220712-5c

Highly-Secure Experimental Quantum Key

(EPFL, July 28, 2022)

An international team of researchers from EPFL, ETH Zurich, the University of Geneva, the University of Oxford and the Université Paris-Saclay was recently able to present the first experimental realization of a so-called device-independent quantum key distribution (QKD) protocol. This is a significant development, as it offers much broader security guarantees than previous schemes and thus holds the promise

of communication security not possible in conventional cryptography. To achieve this, the team combined significant theoretical advances with an improved optical fiber link, which enabled them to generate entanglement between two trapped-ion qubits with record-high fidelity over millions of runs.
/web/2022/05-220728-69

6. Energy / Environment

Consequences of Climate Change in Alps

(University of Lausanne, June 02, 2022)

Working with colleagues in the Netherlands and Finland, a team of researchers led by Professor Sabine Rumpf from the University of Basel, as well as Professors Gregoire Mariethoz and Antoine Guisan from the University of Lausanne, recently investigated the change in snow cover and vegetation using high-resolution satellite data from 1984 to 2021 and found that during this period, plant biomass above the tree line increased in more than 77% of the observed area. This is a significant discovery, because as underlined by Rumpf, the scale of this climate change induced "greening" has turned out to be "absolutely massive" in the Alps, which in turn is putting its unique biodiversity under considerable pressure. The team moreover found that snow cover had decreased significantly in almost 10% of the area.
/web/2022/06-220602-24

Global Inventory of Cryospheric Ecosystem Microbiome

(EPFL, June 09, 2022)

A team of researchers led by EPFL PhD student Massimo Bourquin recently conducted a study to generate a comprehensive, comparative inventory of the microorganisms living in cryospheric ecosystems. In doing so, the team not only discovered that this microbiome possesses unique features and was probably formed early in evolutionary times, compared to those in the Earth's other ecosystems, but also that many of these microorganisms are currently very much under threat from climate change. In this context, the team's database, which contains information from no less than 695 samples collected from a diverse range of cryospheric ecosystems, could serve as a particularly useful reference for further research on cryosphere microbiology and the effects of climate change.
/web/2022/06-220609-4e

High-Resolution Model of European Energy System

(ETH Zurich, June 13, 2022)

A team of researchers led by ETH Zurich researcher Bryn Pickering and two co-authors from the Technische Universiteit Delft recently developed an open-source, high-resolution model of the entire European energy system, which maps the demand for, as well as the supply of, renewable energy produced with established, and already commercially available, technologies for different sectors and regions. In doing so, the model consolidates fluctuating flows of power, heat, hydrogen, synthetic hydrocarbons and biofuels on an hourly basis over an entire year across an area covering 35 countries. Excitingly, the model enabled the team to subsequently generate more than 400 ways in which Europe's energy system can become green and self-sufficient by 2050 with only a marginal increase above optimal cost.
/web/2022/06-220613-3a

Diverse Forests Outyield Monocultures

(University of Zurich, June 13, 2022)

An international team of researchers led by Peking University, which also included University of Zurich Professor Bernhard Schmid, recently found that species-rich forest plantations not only yield more than monocultures, but that they also improve other aspects of the ecosystem, such as offering greater capacity

for carbon storage. Specifically, by analyzing 270 studies from 255 sites around the world, the team found that plantations with a mix of tree species produce up to 25% more biomass than single-species plantations, as well as that the trees grow taller and have greater trunk density, which, all things considered, means that they yield approximately 25% more timber and bind 25% more carbon. The researchers moreover found that mixing nitrogen-fixing and non-nitrogen-fixing species had no impact on the performance of diverse forests.
/web/2022/06-220613-b5

Lack of Rain Causes Mass Diebacks of Scot Pines

(WSL, June 14, 2022)

A team of WSL researchers recently found that the repeated mass diebacks of Scots pines on the mountain slopes of the Valais since the 1990s appear to have primarily been caused by negative precipitation anomalies between midsummer and early autumn. Specifically, the team discovered that despite the fact that summer months with very low rainfall have become neither more extreme nor more frequent over the past four decades, global climate change has significantly increased the potential evapotranspiration in spring and summer, which subsequently also prolonged and intensified the period of low soil moisture between midsummer and autumn. As a result, Scots pines have become critically dependent on substantial precipitation events to reduce the increased water stress, which has put them at high risk of severe damage or complete desiccation.
/web/2022/06-220614-0d

Indirect Effects of Climate Change Adaptations on Aquatic Ecosystems

(Eawag, June 16, 2022)

Within the context of the "Hydro-CH2018" hydrological scenarios of the National Center for Climate Services NCCS, a team of researchers led by Christian Stamm (Eawag) and Florian Altermatt (Eawag/University of Zurich) recently published an insightful study, which illustrates how failure to effectively account for indirect effects associated with human responses to climate change may exacerbate direct climate change impacts on aquatic ecosystems. These findings are significant, because although there is no denying that we need to take urgent action to stop climate change and reduce its direct impact on all ecosystems, first author Morgane Brosse underlines that it is imperative that we also carefully consider the consequences of our actions to avoid making matters worse.
/web/2022/06-220616-48

European Aerosol Pollution Map

(Paul Scherrer Institute, June 20, 2022)

An international team of researchers led by Professor Andre Prevot from the Paul Scherrer Institute recently measured the composition of fine dust at 22 locations in Europe, thereby enabling them to determine the major sources of organic aerosols – stemming both from natural and from anthropogenic sources – as well as their variations over the course of days, months and seasons. This is an important development, because as explained by co-author Imad El Haddad, this data can in turn be used by epidemiologists to determine the aerosol sources that are most detrimental to human health, as well as enable policy makers to propose targeted measures to reduce the most dangerous aerosols.
/web/2022/06-220620-ea

Swiss Power-to-X Collaborative Innovation Network

(Empa, June 24, 2022)

Approximately 170 stakeholders from research, business, administration and politics recently came together for the first major exchange of the newly created Swiss Power-to-X Collaborative Innovation Network SPIN, which aims to facilitate the achievement of suitable framework conditions for Power-to-X. In addition to presentations and workshops, the initial "SPIN Day" also offered plenty of opportunities for

exchange between the various players, and, as a first concrete result, the participants jointly agreed on the Power-to-X Declaration of Dübendorf. This is a significant development, because although growing number of players have increasingly focused on the potential of Power-to-X technologies in recent years, Switzerland has, until now, lacked a national platform that bundles interests, facilitates exchange and discusses framework conditions.
/web/2022/06-220624-a6

High-Speed CO2 Storage in Bacteria

(University of Basel, July 21, 2022)

A team of researchers led by Professor Ben Engel and Dr. Ricardo Righetto from the Biozentrum (University of Basel), together with Professor Volker Müller from the Goethe University and Professor Jan Schuller from the Philipp University of Marburg, was recently able to successfully elucidate the structure of an enzyme called "HDCR", which can be found in the heat-loving bacterium Thermoanaerobacter kivui, and produces formic acid from gaseous hydrogen (H2) and carbon dioxide (CO2). This is an exciting development, because HDCR not only constitutes the first known enzyme that can directly use hydrogen as an electron source for CO2 storage, but it also reduces CO2 with a higher activity than any other known biological or chemical catalyst. As such, it has gained considerable interest in hydrogen storage, as well as for combating climate change.
/web/2022/06-220721-08

7. Engineering / Robotics / Space

Swiss Teams Qualify for European Mars Rover Challenge Finals

(University of Applied Sciences and Arts Northwestern Switzerland, June 08, 2022)

After a year of hard work, an interdisciplinary team of students from the University of Applied Sciences and Arts Northwestern Switzerland (FHNW) recently qualified in second place for the 2022 European Rover Challenge (ERC) finals. This is an exciting development, as it constitutes team's first time to compete at the ERC. In this context, the team's "Meyer 1" rover features a sophisticated chassis and rocker suspension, which enable it to overcome large obstacles, as well as a robotic arm, which can move around different axes and perform various tasks with a multifunctional tool. The FHNW Rover Team will in turn be joined by 14 other teams from 7 countries, including EPFL Xplore, which qualified in 4th place for the ERC finals 2022, and previously placed 3rd at the ERC in 2021.
/web/2022/07-220608-b0

Ground-Breaking Number of Brown Dwarfs Discovered

(University of Bern, June 09, 2022)

An international team of researchers led by Mariangela Bonavita from the Open University, as well as Clémence Fontanive from the Center for Space and Habitability (CSH) and the NCCR PlanetS at the University of Bern, recently developed an innovative search method, which enabled them to directly image four new brown dwarfs – mysterious astronomical objects that fill the gap between the heaviest planets and the lightest stars, with a mix of stellar and planetary characteristics. This is an exciting development, because it constitutes the first time that multiple new systems with brown dwarf companions on wide orbital separations have been announced at the same time, and thus significantly advances the number of known brown dwarfs orbiting stars from large distances, with a major boost in detection rate compared to any previous imaging survey.
/web/2022/07-220609-10

Gaia Data Release 3

(University of Geneva, June 13, 2022)

The European consortium for the data processing and analysis of the ESA-led Gaia satellite, which also includes a team of researchers from the University of Geneva, recently published its third catalogue of data – known as the "Gaia Data Release 3" (DR3) – thereby providing astronomers with a colossal amount of new information to map our galaxy in three dimensions with unprecedented precision. This is a significant development, because as explained by University of Geneva astronomer Laurent Eyer, the DR3 not only features much more detailed information on the positions, distances and motions of stars, but it also contains nearly ten million sources of variable light intensity, which have been classified and studied in detail. Moreover, the team have been able to do this for nearly 30 types of variable sources, compared to only 6 for DR2.
/web/2022/07-220613-15

New Dual Drone Can Fly and Land on Water

(Empa, June 14, 2022)

A team of researchers led by Professor Mirko Kovac from the Imperial College London and Empa recently developed an innovative new "dual-robot" drone, called "MEDUSA", which not only features a flight component that allows it to access hard-to-reach areas, but also a dive component that monitors water quality. This is an exciting development, because MEDUSA could not only open up new possibilities for taking water samples fully automatically in remote areas – as illustrated in a recent test with Eawag on Lake Zurich – but it could also facilitate the monitoring and maintenance of offshore infrastructure, such as subsea pipelines and floating wind turbines. Moreover, while the underwater pod is new, the aerial drone is an industry standard, so MEDUSA systems are rather easy to design and combine with industrial drones.
/web/2022/07-220614-8b

Personalized Systems for Patients With Motor Impairments

(EPFL, July 01, 2022)

As part of the Assistive Technologies Challenge class at EPFL, a cross-disciplinary team of students from the mechanical engineering, microengineering, electrical engineering and materials science sections recently worked with five motor-impaired patients to develop a range of innovative, personalized systems that addressed their needs. These included a robotic hand brace that uses a tiny motor to bend and straighten the fingers; a robotic easel that can be moved using a voice-control system; a neck brace, which includes a piston-actuated system that enables patients to raise and lower their head on their own; a computer software that can translate finger movements captured by a camera into specific commands on a computer; and a reconfigured, touch-sensitive keyboard, which can be automatically raised and helps to reduce fatigue.
/web/2022/07-220701-33

Flexible and Intuitive Collaborative Robot System

(Bern University of Applied Sciences, July 14, 2022)

As part of the Innosuisse-supported "AgileRobotics" research project, a team of researchers led by Bern University of Applied Sciences Professor Sarah Rochat is currently working with an industry partner to develop a new, collaborative robot system, which can not only be adapted flexibly and easily, but is also intuitive to use. To achieve this, the team is in particular focusing on developing more intuitive human-machine interfaces, which enable human-defined targets to be converted into specific robot actions, and are based on the following three-tier architecture: "tasks", which correspond to natural language; "device

primitives", which correspond to the machine's capabilities; and "skills", which are object-oriented and serve as a communication bridge.
/web/2022/07-220714-d4

Magnetically-Steerable Catheter for Stroke Treatment

(ETH Zurich, July 21, 2022)

ETH Zurich spin-off Nanoflex Robotics, which was co-founded by Matt Curran, Dr. Christophe Chautems and Professor Brad Nelson, recently developed new type of catheter, which not only features a magnetic head that can easily be steered in any direction via a magnetic field, but which is also smaller, more maneuverable, and safer than conventional catheters, due to the softness of the material. This is an exciting development, because the magnetic catheter's precision steering could not only speed up and simplify procedures in the future, while simultaneously reducing the risk of accidental vessel damage, but the system also does not require surgeons to be at the patient's side during the procedure, as they can steer the magnetic catheter by remote control.
/web/2022/07-220721-01

8. Physics / Chemistry / Math

Identical Photons From Different Sources

(University of Basel, June 13, 2022)

A team of researchers led by University of Basel Professor Richard Warburton and postdoctoral researcher Lian Zhai, in collaboration with colleagues at the Ruhr University Bochum, recently succeeded in creating identical photons originating from different and widely-separated sources – an important step towards applications such as tap-proof communications and the quantum internet. To achieve this, specialists in Bochum first produced extremely pure gallium arsenide to synthesize the quantum dots, before physicists in Basel subsequently used electrodes to expose two quantum dots to precisely tuned electric fields, which modified the energy levels of the quantum dots in such a way that the photons emitted by the quantum dots had precisely the same wavelength.
/web/2022/08-220613-55

Photonic Integrated Circuit-Based Erbium-Doped Amplifier

(EPFL, June 17, 2022)

A team of researchers led by EPFL Professor Tobias Jan Kippenberg and PhD student Zheru Qiu recently developed a compact erbium-doped waveguide amplifier (EDWA), which can not only generate a record output power of more than 145 milliwatts, but also provide a small-signal net gain above 30 decibels, which translates to an over 1,000-fold amplification in the telecommunication band in continuous operation. This is an exciting development, because as explained by Kippenberg, operating with high output power and high gain is not a mere academic achievement, but rather, it is crucial to the practical operation of any amplifier, and also signals that high-pulse-energy femtosecond-lasers on a chip can finally become possible using this approach.
/web/2022/08-220617-7e

10 Anniversary of Higgs Boson Discovery

(CERN, July 04, 2022)

Ten years ago, on 4 July 2012, the ATLAS and CMS collaborations at the Large Hadron Collider (LHC) announced the discovery of a new particle with features consistent with those of the Higgs boson predicted by the Standard Model of particle physics. This constituted a monumental milestone, because as explained

by CERN's Director-General, Fabiola Gianotti, it not only marked the end of a decades-long journey of exploration, but it also ushered in an exciting new era of studies of this very special particle. Remarkably, all of the LHC results obtained so far are based on just 5% of the total amount of data that the collider will deliver in its lifetime, which in turn further amplifies the anticipation for the imminent third run of the LHC, as well as for the collider's major upgrade – the high-luminosity LHC – which is scheduled to commence its experiments in 2029.
/web/2022/08-220704-cd

New Method to Differentiate Mirror-Image Molecules

(Paul Scherrer Institute, July 05, 2022)

A team of researchers from the Paul Scherrer Institute, EPFL, and the University of Geneva recently developed a new method that enables them to perfectly distinguish between enantiomers – the variants of so-called "chiral molecules", which exist in two forms that are structurally identical but are mirror images of each other. This is an important development for a variety of fields, including biochemistry, toxicology, and drug development, because the two variants can cause completely different effects in the human body and must, thus, for example, be separated so that only the desired variant gets into a drug. To achieve this, the new method exploits a phenomenon known as helical dichroism (HD), which, unlike circular dichroism (CD) – the currently established method for distinguishing between enantiomers – is based on the orbital angular momentum (OAM) of light.
/web/2022/08-220705-b3

New Technique to Quantify Gravitational Constant "G"

(ETH Zurich, July 11, 2022)

A team of researchers led by ETH Zurich Professor Jürg Dual recently developed an experimental set-up, which enables them to quantitatively determine the dynamic gravitational interaction between two parallel beams vibrating at 42 Hz in bending motion, and thus infer the magnitude of the gravitational constant "G" in a new way. This is a significant development, because due to the fact that the Newtonian constant of gravitation "G" cannot be derived mathematically, as well as that it is a very weak force and cannot be isolated, it can only be quantified by being measured with as many different methods as possible. As such, despite numerous experiments over the century, the scientific community is still not satisfied with the current figure, which remains less precise than the values of all the other fundamental natural constants.
/web/2022/08-220711-c3

9. Architecture / Design

Renovating 19th-Century Buildings While Preserving Their Character

(EPFL, June 22, 2022)

EPFL researcher and architect Catarina Wall Gago recently published a new book, entitled "Entre sauvegarde et confort domestique: Rénovation d'un héritage bâti", which aims to provide a guide to renovation best practices. To achieve this, Wall Gago not only compared changes in the design and layout of revenue houses in Lisbon, which were rebuilt after the 1755 earthquake, and terraced houses constructed as part of the urban expansion of Oporto, as well as examined Geneva's so-called "Fazyste belt", but also identified two key phases in the renovation of the three cities' housing stock. Specifically, while first phase spanned the late 19th and early 20th centuries and focused on hygiene and sanitation, the second phase, which began in the 20th century and continues to present day, has seen homes become smaller and lofts converted to meet increasing demand.
/web/2022/09-220622-c4

Humane Sustainability in High-Density Housing

(Bern University of Applied Sciences, June 28, 2022)

An interdepartmental team of researchers from the Bern University of Applied Sciences recently launched a new project, which aims to develop an intervention-oriented process for identifying, integrating and monitoring the needs of users in high-density housing with a focus on aspects of humane sustainability. This is an important development, because according to the team, research on basic user needs in high-density housing is currently insufficient, as feedback of this kind is usually only incorporated into concrete project plans in the form of feedback from participatory methods and processes, which generally makes them reactive in terms of content, and limits their effect. To address this shortcoming, the researchers therefore aim to identify critical phases in planning processes where the identification and integration of user needs are of concern.
/web/2022/09-220628-cb

Bringing Cultural Archives to Life

(EPFL, July 11, 2022)

By applying machine learning and digital museology techniques to archives of cultural data, a team of researchers led by EPFL's Cultural Heritage and Innovation Center Director Alain Dufaux, together with colleagues Christophe Fellay from the Valais School of Art, Didier Grandjean and Carole Varone from the Swiss Center for Affective Sciences, as well as Irene Hediger from the Zurich University of the Arts is working to develop a range of innovative, new, creative and artistic experiences. This is an exciting development, because as explained by the researchers, the development of digital methods in artificial intelligence, virtual reality, and data science presents academics and artists with a unique opportunity to rethink and reinvent the role of archives as spaces for public engagement with culture, as well as data sources for new forms of artistic creation.
/web/2022/09-220711-fe

Digitizing a 1,000m2 Swiss National Treasure

(EPFL, July 21, 2022)

Thanks to a collaboration between EPFL and the Stiftung für das Panorama der Schlacht bei Murten, a team of researchers led by Professor Sarah Kenderdine are currently working to digitize the Panorama of the Battle of Murten – a 100 x 10-meter work created in 1893 by German panorama painter Louis Braun – in an undertaking that promises to yield one of the largest digital images ever produced. This is an exciting development, because this will not only result in the largest single seamless image ever created at 1,600 gigapixels – as far as any published research has established – but it will also yield a series of data science and valorization initiatives, as well as an interactive, 360-degree viewing experience for the public.
/web/2022/09-220721-b6

10. Economy, Social Sciences & Humanities

Elections Influence Social Norms

(University of Fribourg, June 08, 2022)

A team of researchers led by Jana Freundt from the University of Fribourg, as well as Arno Apffelstaedt and Christoph Oslislo from the University of Cologne, was recently able to demonstrate that elections can shift the modal appropriateness perception of actions and, depending on the elected rule, increase their dispersion. As a result, actions previously judged socially inappropriate can become socially appropriate,

and thus weaken a pre-existing moral consensus. Interestingly, the team moreover found that the influence of elections on norms could even still be observed – albeit in a weakened form – if the electoral process had democratic shortcomings. These findings are important, as they open up new perspectives for reflecting on the role of democratic processes in social cohesion.
/web/2022/10-220608-50

Federal Council Launches "Swiss Climate Scores"

(State Secretariat for International Finance, June 29, 2022)

As part an ongoing effort to position the Swiss financial center as an international leader in terms of credible climate transparency, the Federal Council recently launched the so-called "Swiss Climate Scores", which aim to provide institutional and private investors in Switzerland with comparable and meaningful information on the extent to which their financial investments are compatible with international climate goals. To achieve this, the Swiss Climate Scores contain indicators that not only reflect the current situation of global companies in the financial product or portfolio, but also show where these companies are currently positioned in relation to global climate goals – i.e. net zero by 2050.
/web/2022/10-220629-ef

University of Zurich Students Win WTO Moot Court Competition

(University of Zurich, July 07, 2022)

A team of students composed of Giulia Bachmann, Mattia Brugger, Kayla-Leigh Coetzee and Robert Matic from the University of Zurich's Faculty of Law recently emerged victorious from the global final round of the John H. Jackson Moot Court Competition in Geneva, during which they, along with 23 other top-notch teams, represented a fictitious case before a public audience and a seven-member panel of experts presided over by World Trade Organization (WTO) Deputy Director-General Angela Ellard. This is a significant achievement, because the competition not only brought together a total of 71 teams from universities around the world, but it also required the students develop a deep understanding of the intricacies of trade law, as well as of the technical requirements relating to renewable energies and the extraction of rare earth elements.
/web/2022/10-220707-7d

New Method to Characterize Semantics of Risk

(University of Basel, July 08, 2022)

A team of researchers led by Dirk Wulff and Professor Rui Mata from the University of Basel recently developed a new method to map the representation of risk for different groups and individuals, and found that although semantic clusters appear to generalize across languages, their frequency varies systematically across demographic groups. For example, although individuals were found to share similar thoughts about risk across languages, age, and gender overall, older and female respondents appeared to associate risk more closely with threat and less with fortune, relative to younger adults and males. These findings are important, because as explained by Wulff, they could play a vital role in helping to provide a better understanding of how different social groups interpret risk, and thus enable risk communication strategies to be improved to combat social polarization.
/web/2022/10-220708-11

Regional Analysis of Poverty in Switzerland

(Swiss National Science Foundation, July 28, 2022)

By analyzing tax data of the Canton of Bern, as well as other administrative data and survey results – in a manner that respected data protection – a team of researchers led by Bern University of Applied Sciences Professor Oliver Hümbelin was recently able to demonstrate that although poverty is almost equally distributed between urban and rural areas in Switzerland, there are nevertheless regional difference in the

groups that are affected. Specifically, the team found whereas in the cities, it is mainly people from certain occupational groups, such as freelancers or service providers, as well as people from migrant countries outside Europe, who are poor, in the countryside, by contrast, it is particularly people who work in agriculture, as well as retired people, who fall below the cut-off for receiving social assistance.
/web/2022/10-220728-e3

11. Startups / Technology Transfer / IPR / Patents

Swiss Economic Award and SEF.WomenAward Winners

(startupticker.ch, June 03, 2022)

The following three startups recently received the coveted Swiss Economic Award at this year's Swiss Economic Forum for their outstanding entrepreneurial achievements: Auterion provides enterprises with an ecosystem of software-defined drones, payloads, and third party applications; Carvolution offers a wide range of cars in a simple, flexible and inexpensive all-inclusive package; and yamo produces nutritious and delicious food options for kids of all ages. Moreover, the Swiss Economic Forum also recognized the following women with the SEF.WomenAward for their exceptional entrepreneurial performances: Fajer Mushtaq (Oxyle) was named the young entrepreneur of the year, Brigitte Breisacher was named CEO of the year (Alpnach Schränke AG, Alpnach Küchen AG), and Simona Scarpaleggia (EDGE Certification) was presented with the honorary award.
/web/2022/11-220603-fb

Innosuisse Funds Science-Based Innovation Projects

(startupticker.ch, June 07, 2022)

The following four science-based innovation projects recently secured funding from Innosuisse as part of the national innovation projects framework: Together with researchers from the Bern University of Applied Sciences and the Inselspital, Pulsewave AG aims to advance the development of its remote patient monitoring device "TempleGuard"; Flowbone, together with a team of EPFL and ETH Zurich researchers, is developing a new solution to decrease the incidence of osteoporotic hip fractures; TOPADUR Pharma and the University Hospital Zurich are developing a new approach to treat diabetic retinopathy and other retinal eye diseases; and Zynnon, together with CSEM and La Source Institute and School of Nursing, are working to improve the real-time monitoring of risks associated with indoor airborne pathogen transmission.
/web/2022/11-220607-91

EPFL Innovation Park to Expand With Focus on Co-Creation

(EPFL, June 12, 2022)

Some 30 years after the EPFL Innovation Park opened its doors, the EPFL Innovation Park Foundation recently teamed up with EPFL, the Canton of Vaud and the City of Ecublens to double its capacity with a new site, called the "Ecotope", within the next ten years. Crucially, the idea is not just to add surface area, but rather, to create an ecosystem in its own right, where policymakers, researchers, investors, executives, entrepreneurs, students and citizens can come together for open dialogue and debate. To achieve this, the project architects were tasked with ensuring that the new site will not only fit in seamlessly with its natural surroundings, but also that it will provide occupants with a peaceful work environment, along with common spaces and "village square" areas for brainstorming and ideation.
/web/2022/11-220612-ad

Swiss Medtech Award Winners 2022

(Swiss Medtech, June 14, 2022)

AlveoliX recently received the coveted Swiss Medtech Award for its advanced in-vitro models, called "Organs-on-Chip", with which the team has been able to recreate the microenvironment of a human lung, including its respiratory movements, on a miniature scale. This is an exciting development, because as explained by co-CEO Dr. Janick Stucki, their innovative "Lung-on-Chip" technology not only increases the efficiency and safety of drug development, but also enables more personalized testing, which in turn could help to reduce costs, as well as animal testing, in the future. In addition, the jury and the audience also honored the impressive achievements of the other two finalists: Biospectal SA, which aims to usher in an “optical revolution in blood pressure management”, and Healios AG, which is pioneering digital biomarkers in neurology.
/web/2022/11-220614-67

Research Awards for CO2 Plasma Reactor and Nano Pipette Tips

(University of Applied Sciences of Eastern Switzerland, June 16, 2022)

The following two research projects conducted at the University of Applied Sciences of Eastern Switzerland (OST) were recently awarded this year’s "Innovation Awards" from the Stiftung FUTUR in recognition of their innovative solutions, which promise to provide a significant technical innovation boost for industry and economy. The main prize went to the team of Professor Andre Heel, which developed a new type of plasma reactor that uses CO2 emissions from energy-intensive industries to generate energy. In addition Professor Frank Ehrig and his team of researchers received the recognition award for their low volume disposable pipette tips, which can dispense volumes of less than 100 nanoliters – compared to previous pipette tips, which could dispense minimal volumes of a few microliters – for high-tech medical diagnostics and drug research.
/web/2022/11-220616-66

More Than 25,000 New Companies in First Half of 2022

(startupticker.ch, July 01, 2022)

According to a recent study by the Institut für Jungunternehmen (IFJ), there continues to be a high level of new incorporations in Switzerland, despite the persistence of economic and security uncertainties, as well as the ongoing international COVID-19 measures. Specifically, the study revealed that 25,447 new companies were registered in the Swiss Commercial Register in the first six months of 2022, which, despite representing a decline of 3.6% compared to the record-first half of 2021, is still 13% above the 10-year average. In this context, the analysis moreover revealed that the top growth sectors in the current year included high-tech (+18.9%), healthcare (+7.4%) and transport & logistics (+7.3%), while the highest percentage declines were recorded in agriculture & forestry (-21.9%), wholesale trade (-17.2%) as well as retail trade (-14.9%).
/web/2022/11-220701-b9

Female Innovation Forum 2022

(startupticker.ch, July 08, 2022)

The fifth annual "Female Innovation Forum" recently brought together more than 250 innovation drivers, investors, business angels, entrepreneurs and startup founders to exchange ideas, learn and gather inspiration from workshops and keynotes, as well as to recognize the following inspiring founders for their exceptional achievements. To begin with, Stefanie Flückiger-Mangual was named “Innovator of the Year”, while Nathalie Moral won the “Recognition” award. The “Social Innovation” award in turn went to Claudine Münger, while the “Digital Innovation” and “Diversity & Inclusion” awards went to Petra Marty and Johanna Seeliger, respectively. Finally, Sophia Borowka, Cristina Rossi and Rhiana L. Spring were named the “Newcomers of the Year”.
/web/2022/11-220708-97

12. General Interest

Successful Conclusion of Eight National Centers of Competence in Research

(Swiss National Science Foundation, June 01, 2022)

Originally launched in 2010, the third generation of National Centers of Competence in Research (NCCRs) are reaching the regular end of their funding period. Based at seven Swiss universities, the eight NCCRs further strengthened Switzerland's leading position in their respective research fields and made their results available to the scientific community across over 7,500 publications. These new scientific insights have in turn not only been of great interest to experts and the general public alike, but, thanks to their emphasis on implementing structural changes for the long term, they have also been able to firmly embedded their research areas in the Swiss university landscape. As such, the conclusion of an NCCR does not mean that it stops having an impact, but rather, that it will continue to benefit various stakeholders in academia and beyond.
/web/2022/12-220601-cc

Boost for One Health and Quantitative Legal Research

(University of Zurich, June 01, 2022)

The University of Zurich (UZH) recently created a new funding instrument, called "TRANSFORM", which aims to foster long-term interdisciplinary research structures by accelerating bottom-up initiatives and anchoring them in new or transformed organizational units. In this context, the university subsequently launched the first two funding initiatives – namely, the Institute of One Health Research and the Center for Legal Data Science. In this context, Vice President Elisabeth Stark explained that the Institute of One Health Research links research-focused veterinary medicine, human medicine and natural sciences at UZH, while the Center for Legal Data Science fits perfectly into UZH's digitalization strategy and complements the activities of the Digital Society Initiative, as well as of the Digitalization Initiative of the Zurich Higher Education Institutions.
/web/2022/12-220601-b7

Advancing Configurational Comparative Research Methods

(University of Lucerne, June 07, 2022)

As part of his SNSF-funded professorship at the University of Lucerne, Alrik Thiem, together with engineers Lusine Mkrtchyan and Zuzana Sebechlebská, have been developing innovative, new empirical research methods, as well as data analytics, which aim to enable researchers to structure and evaluate existing data sets in a meaningful way. In this context, the team in particular developed a software, called "CORA" (Combinational Regularity Analysis), which is based on Boolean algebra – a mathematical system based on the laws of logic – and which not only makes it possible to analyze data sets in such a way that the underlying structure – i.e. the extent to which cause and effect are related – becomes visible, but also to make accurate predictions about what will happen when certain factors or parameters are changed.
/web/2022/12-220607-ca

CHF 50 Million for Innovative, High-Risk Research

(Swiss National Science Foundation, July 05, 2022)

Following the reception of 232 applications, the Swiss National Science Foundation (SNSF) recently awarded grants to 24 projects worth CHF 50 million under its transitional measure "SNSF Advanced Grants 2021", which is aimed at scientists who wish to carry out innovative, high-risk research in Switzerland. In this context, 10 projects will be funded in mathematics, the natural sciences and engineering, 10 in the life sciences, as well as 4 in the humanities and social sciences. Regarding the institutional division,

researchers at the universities will receive 54% of the funds, while 42% are allocated to the ETH Domain and 4% to other institutions. In addition, it is encouraging to see that although the participation of women researchers in the call unfortunately remained low (22%), they nevertheless lead 10 of the selected 24 projects (42%).
/web/2022/12-220705-e3

Link Between Gender Equity and Environmental Sustainability

(University of St.Gallen, July 29, 2022)

A team of researchers led by University of St.Gallen (HSG) Professor Jamie Gloor, together with fellow HSG colleagues Eugenia Bajet and Winfried Ruigrok, as well as Corinne Post from the Villanova School of Business, recently published a new article that offers six strategies to help business and political leaders empower women and address environmental challenges through an intersectional approach to sustainability. This is important, because although gender equity and environmental sustainability may seem like unrelated issues, the team contend that research demonstrates that they are, in fact, closely intertwined. In this context, the team argues that women in leadership positions may be particularly effective leaders, as evidenced by the fact that companies with more female executives and board members perform better on both environmental impact and overall CSR goals.
/web/2022/12-220729-5f

13. Calls for Grants/Awards

Call: Agora Scheme to Foster Dialogue Between Scientists and Society

(Swiss National Science Foundation, July 15, 2022)

The Swiss National Science Foundation recently opened applications for its “Agora” scheme, which aims to promote the spread of knowledge, as well as the exchange of views and perspectives about scientific research. To achieve this, Agora projects therefore have to initiate a direct dialogue between researchers and the public in which they interact and listen to each other. In this context, the SNSF will award grants of between CHF 5,000 and CHF 200,000 for small communication formats, as well as large-scale initiatives with more far-reaching goals. In addition to these regular Agora projects – for which applications must be submission by 10 October 2022 – researchers can also submit rolling call projects with budgets of up to CHF 50,000 at any time.
/web/2022/13-220715-22

Upcoming Science and Technology Related Events

Startup Board Academy
August 29-September 26, 2022
https://is.gd/p7joYk
Training, Investment, VC
Bern

Falling Walls Lab Switzerland
September 5, 2022
https://is.gd/GtFTFu
Innovation, Breakthroughs, Pitching
Zurich

Funding for Innovation
September 7, 2022
https://is.gd/V4EIWM
Innovation, Funding, Tech-Transfer
Zurich

Top 100 Swiss Startup Award
September 7, 2021
https://is.gd/5rQLsg
Startups, Deeptech, Innovation
Zurich

Creative Economies Forum
September 7-8, 2022
https://is.gd/LiZ6Kt
Innovation, Research, Entrepreneurship
Zurich

Swiss Public Health Conference
September 13-14, 2021
https://is.gd/fPWV7d
Health, NCDs, Environment
Bern

Impact Finance Conference
September 26, 2022
https://is.gd/awwqf0
Finance, Sustainability, Investment
Bern

Forum EPFL
October 3-7, 2022
https://is.gd/HHav3z
Recruitment, Students, Networking
Lausanne

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