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Science-Switzerland, December 2019 – January 2020

News on Swiss science, technology, education and innovation

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New President of the Swiss Universities

(University of Fribourg, January 30, 2020)

As from the first of February, Astrid Epiney, President of the University of Fribourg, took over the chamber of swiss universities as president. This chamber represents the interests of all the universities and ETH within swissuniversities. The chamber of swissuniversities consists of Presidents form all Universities and both Federal Institutes of Technology. Epiney studied law science in Mainz, Lausanne and Florence. Since 1994 she is a Professor for international law, Europa law and Swiss public law at the University of Fribourg.
/web/2020/00-200130-cd

Biophysical Society honors Swiss Professor

(University of Zurich, December 10, 2019)

At the Society's awards ceremony in San Diego next February, Ben Schuler will be honored specifically for his many years of work with single-molecule spectroscopy. Ben Schuler is a professor of molecular biophysics at the UZH Department of Biochemistry. Schuler and his team researched the astonishing mechanisms of H1 and ProTα, and published the findings in an article in Nature nearly two years ago. Their work was made possible by unique and complex detection methods that have propelled Schuler into the top tier of biophysicists. The Biophysical Society has chosen Schuler as a fellow thanks to his work on developing new methods for researching protein folding.
/web/2019/00-191210-2e

Young Talents in Clinical Research Funding

(SAMS, January 16, 2020)

With the «Young Talents in Clinical Research» program, the SAMS and the Gottfried and Julia Bangerter-Rhyner Foundation aim at encouraging young medical doctors to venture into clinical research. For the period 2017 – 2020, CHF 1 million per year is made available by the Bangerter Foundation to support young physicians working in Switzerland with «protected time for research» and «project grants». Applications can only be submitted within an open call for proposals. The next call is planned for 31 March 2020. Applications must be written in English and registered online.
/web/2020/00-200116-23

1. Policy

Switzerland and Korea Strengthening Cooperation for Manufacturing of Medicinal Products

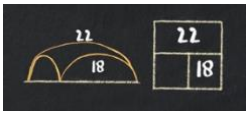
(Admin.ch, December 18, 2019)

Swissmedic, the Swiss Agency for Therapeutic Products, in cooperation with the State Secretariat for Economic Affairs (SECO) and its partner authority in the Republic of Korea intend to work more closely in the therapeutic products sector. On 18 December 2019 in Bern, Raimund Bruhin, Director of Swissmedic, the Swiss Agency for Therapeutic Products and Eui Kyung Lee, Minister of Food and Drug Safety (MFDS) signed an agreement on the mutual recognition of inspection results relating to Good Manufacturing Practice for medicinal products.
/web/2019/01-191218-1e

2. Education

New Arithmetic Curriculum for Schoolchildren

(University of Geneva, December 23, 2019)



A recent study conducted by the University of Geneva (UNIGE) had shown that our everyday knowledge influences our ability to solve problems, sometimes leading us into making errors. This is why UNIGE, in collaboration with four research teams in France, has now developed an intervention to promote the learning of maths in school. The programme is designed to help schoolchildren surpass their intuitions and informal knowledge, and rely instead on the use of arithmetic principles. The results are surprising. More than half of the students who took part in the intervention were able to solve difficult problems, compared to only ca. 30% for pupils who followed the standard course of study.
/web/2019/02-191223-8e

Reassessing Medical Education for Future Doctors

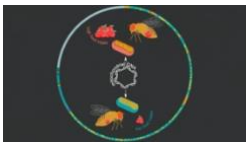
(SWR.ch, January 28, 2020)

Medical education urgently needs to be reassessed, following the increase in the number of medical graduates from 2017 to 2020. Current medical curricula are overloaded due to advances in scientific knowledge and stakeholders' growing expectations. Future medical doctors will undoubtedly need new competences. Due to big data and artificial intelligence, new tools will facilitate clinical work, so computational skills and computer science education should be included in the medical curricula. Moreover, the fragmentation of medicine and subspecialization of specialized medicine will continue, requiring the structure of medical education to be adapted. The first three years (Bachelor) should include the basic subjects and skills required by all medical doctors, while the following three years (Master) should offer a choice of specialized tracks, reflecting the growing diversity of medical practices.
/web/2020/02-200128-60

3. Life Sciences / Health Care

High-Resolution Map of Mitochondrial DNA Variants

(EPFL, December 10, 2019)



To uncover the relationship between variation in genes and phenotypic diversity, geneticists use a set of fully sequenced fruit-fly genomes. Studies have hinted that variation in mitochondrial genes is associated with diseases like obesity, type-2 diabetes, multiple sclerosis, and schizophrenia. The problem is that, unlike "regular" genes in nuclear genomes, we actually know very little about how variation in mitochondrial genes relates to variation in phenotypes. Now, EPFL scientists have created a high-resolution map of mitochondrial DNA variants in the fruit fly, connecting mitochondrial genes to metabolic traits and diseases. The work can help future studies by providing a higher resolution to connect genes and traits, e.g. feeding behavior.
/web/2019/03-191210-4b

Excessive Antibiotic Prescriptions for Children

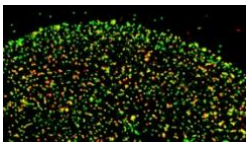
(University of Basel, December 14, 2019)

Antimicrobial resistance is one of today's biggest threats to global health and development, according to the World Health Organization. One factor contributing to this global health threat is the excessive use of antibiotics worldwide. A research team from Swiss TPH (Swiss Tropical and Public Health Institute) and Harvard Chan School analyzed data from 2007–2017 from health facilities and household surveys from eight

countries. Whereas the study found that, children in low- and middle-income countries are receiving an average of 25 antibiotic prescriptions during their first five years of life. This excessive amount could harm the children's ability to fight pathogens as well as increase antibiotic resistance worldwide.
/web/2019/03-191214-63

Uncovering the Mechanism of Viral Infection

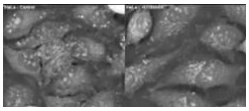
(University of Zurich, December 17, 2019)



Viruses have been part of animals and humans for eons. When viruses invade a cell, they can infiltrate the nucleus with their genome and become part of the it. Viruses transfer their genes between various organisms, as well as between tissues containing well differentiated cells inside a living creature. But how they uncoat their well-packed genes and release them to cause infection is largely unknown. Researchers at the University of Zurich have now discovered a protein that enables adenoviruses to infect human cells. The Mib1 protein gives the virus the signal to uncoat the DNA and release it into the nucleus. Blocking this protein could therefore help people with weakened immune systems to fight dangerous viruses.
/web/2019/03-191217-17

A Novel Non-Invasive Imaging Technique to Study Intracellular Phenomena

(EPFL, December 19, 2019)



A study by researchers at EPFL has cast fresh light on a range of intracellular phenomena. The team used a microscope developed by spin-off Nanolive to observe changes in cell size during division, organelle movements, and the formation of tiny lipid droplets – all over an extended period and without damaging the cell. They then quantified the observed phenomena using a software specially designed to shift through the mass of raw imaging data. The study, published in the journal PLOS Biology, paves the way for the technology to be used in other areas of scientific research.
/web/2019/03-191219-df

Uncovering the Mechanism of REM Sleep

(University of Bern, December 20, 2019)

Rapid Eye Movement (REM) is a characteristic eye movement in paradoxical sleep, that is, in the stage with high dream activity. This sleep phase has a peculiarity: Although the muscle tone of the sleeping person is completely relaxed, the eyes suddenly move back and forth. But why is this strange phenomenon useful? For decades, scientists have been trying to answer this question. Researchers from the universities of Bern and Fribourg have now discovered that certain neurons play an important role in eye movement during REM sleep. The next step is to find out what function REM sleep has.
/web/2019/03-191220-54

Pathogens Can Drive the Evolution of Social Behavior in Insects

(University of Bern, December 20, 2019)

Ants and honeybees share nests of hundreds or thousands of individuals in a very small space. Hence the risk is high that infectious diseases may spread rapidly. In order to reduce this risk, the animals have developed special social behaviors that are referred to as social immune defense. This achievement is generally assumed to have evolved only in the eusocial insects including ants, bees and wasps. The finding that also more primitively social ambrosia beetles remove pathogens by cleaning each other indicates that social immunity may have evolved already much earlier. This was reported by scientists from the University of Bern and the University of Würzburg.
/web/2019/03-191220-e6

Fighting Against Cancer Using a Novel Combination of Antibodies

(University of Basel, December 30, 2019)

In recent years, immunotherapies against cancer have raised great hopes. Medical oncologists and scientists from the University of Basel have now found a promising novel immunotherapy method. Their combined use of antibodies based on differing mechanisms of action lead to an effective destruction of tumors in animal models. Researchers believe that patients with tumors not responding well to current immunotherapy methods could benefit most from this new combination. In the meantime, several early clinical trials in humans are underway. The innovative and translational potential of this work is the result of a close and excellent collaboration between applied and basic research, between the University of Basel and EPFL, as well as between academia and industry.
/web/2019/03-191230-e0

How Bacteria Control Their Cell Cycle

(University of Basel, December 30, 2019)

Each living cell grows and divides, thus generating new offspring. This process is also known as the cell cycle. Strictly speaking, it describes a periodic repetition of two coordinated cycles: the duplication of a cell's genetic information on the one hand and cell division on the other. Although the cell cycle in plant and animal cells has been elucidated quite precisely in the past decades, it has remained unclear how these two processes are coordinated in bacteria. Researchers at the Biozentrum of the University of Basel have demonstrated how bacteria coordinate cell division with the replication of their genetic material. In an interdisciplinary study they explain why the current concept of the bacterial cell cycle has to be rewritten.
/web/2019/03-191230-15

Novel Method for Fast and Precise Diagnosis of Preeclampsia

(EMPA, January 07, 2020)

Preeclampsia often gradually creeps up as a general discomfort and goes widely and unnoticed – until mother and child suddenly become a medical emergency, which in severe cases can even lead to death. In Switzerland, around two percent of all pregnant women suffer from the condition; each year around 500,000 children and 76,000 mothers die worldwide. However, it is difficult to diagnose preeclampsia swiftly and reliably – until now, that is. The Basel-based company "MOMM Diagnostics" is developing a simple and precise test that provides certainty within minutes. With a highly sensitive immunoassay, the two markers are detected in tiny concentrations of several picograms per milliliter using antibodies. The specificity and sensitivity of the test are significantly higher than those of the current clinical diagnosis. The technology is currently in the process of being patented.
/web/2020/03-200107-a1

Hearts that Fix Themselves

(University of Zurich, January 09, 2020)

Our heart valves ensure that blood flows away from the heart, but not back. If someone's valves no longer open or close properly, artificial heart valves are life-saving. But such prostheses are not as robust and they have a limited lifetime. With the novel transcatheter aortic valve implantations (TAVI), however, interventions have become minimally invasive. Using this technique, Prof. Maximilian Emmert from the University of Zurich is now trying to engineer heart valves that could last a lifetime. Emmert wants to get the body to build the heart valve itself using an artificial prosthesis, which will be broken down by the human cells and replaced by the body's own tissue. The cells are cultured on a polymer heart valve, on which they produce connective tissue in a bioreactor. This results in a scaffold onto which other cells can subsequently bind inside the body. Before implantation, the

cells are removed to avoid immune rejections of the patient. Recently, the team around Emmert achieved a breakthrough when they successfully implanted such heart valves in sheep.
/web/2020/03-200109-4c

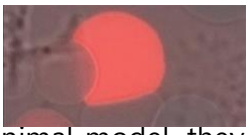
50% of Transplant Recipients at Risk of Infection

(university of Geneva, January 09, 2020)

A group of Swiss researchers, under the direction of the University Hospitals of Geneva (HUG), the University of Geneva (UNIGE) and the University Hospital of Zurich, show that more than 50% of patients who have received an organ transplant may develop severe infections - of bacterial origin in 60% of cases - in the first year after the transplant. Although the number of multi-resistant bacterial infections is fortunately low at the moment in Switzerland, the trend is very alarming in view of the progression of antibiotic resistance worldwide.
/web/2020/03-200109-21

Non-Toxic Functional Bioinspired Molecular Factories

(University of Basel, January 09, 2020)



Researchers at the University of Basel have succeeded in developing molecular factories that mimic nature. To achieve this, they loaded artificial organelles inside micrometer-sized natural blisters (vesicles) produced by cells. These molecular factories remain intact even after injection into an animal model and demonstrate no toxicity. The molecular factories were injected into zebra fish embryos. In this animal model, they produced the desired compound. The viability of the animal was not compromised by the injection.
/web/2020/03-200109-99

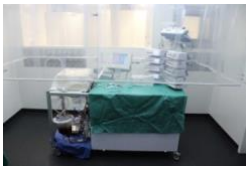
Novel Treatment for Rare Pediatric Epilepsy

(Idorsia, January 10, 2020)

US-based Neurocrine Biosciences, Inc. and Swiss-based Idorsia Ltd. announced an amendment to the agreement originally signed in 2019 granting Neurocrine Biosciences an option to license ACT-709478 – a potent, selective, orally-active, and brain-penetrating T-type calcium channel blocker, under development for the treatment of a rare pediatric epilepsy. A Phase 1 clinical trial was completed in 2019, and a Phase 2 study in a rare pediatric epilepsy is planned in mid-2020. The U.S. Food and Drug Administration (FDA) is expected to approve the Investigational New Drug (IND) application in 2020. The option includes research collaboration to discover, identify and develop additional novel T-type calcium channel blockers. These should be useful in treating different forms of epilepsy as well as other disorders, e.g. essential tremor and pain.
/web/2020/03-200110-41

World Premiere: Machine Keeps Human Liver Alive for One Week

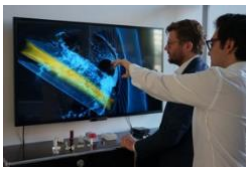
(ETH Zurich, January 13, 2020)



Researchers from the University Hospital and ETH Zurich have developed a machine that repairs injured human livers and keep them alive outside the body for one week. This breakthrough may increase the number of available organs for transplantation saving many lives of patients with severe liver diseases or cancer.
/web/2020/03-200113-68

Reducing the Risk of Blood Clots in Artificial Heart Valves

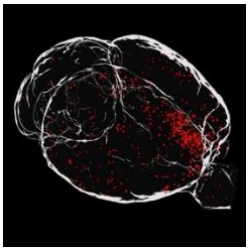
(University of Bern, January 13, 2020)



People with mechanical heart valves need blood thinners on a daily basis, because they have a higher risk of blood clots and stroke. Researchers at the ARTORG Center of the University of Bern, Switzerland, now identified the root cause of blood turbulence leading to clotting. Design optimization could greatly reduce the risk of clotting and enable these patients to live without life-long medication.
/web/2020/03-200113-7b

Toxoplasmosis Inhibits All Fear in Host

(university of Geneva, January 14, 2020)



The parasite Toxoplasma gondii infects animals, including humans. Its objective is to reach the intestines of felids, the definitive host in which it reproduces sexually. To do so, the parasite first infects mice and drastically alters their behavior. The natural fear of mice toward cats is transformed into attraction, making them easy preys. In new research at the University of Geneva, it is demonstrated that the parasite is not limited exclusively to ridding mice of this natural predator fear; it alters their overall behavior relating to anxiety, stress and curiosity. These findings disprove the myth of a specific alteration of the mouse's fear of cats, showing instead that the rodent's general behaviour is altered.
/web/2020/03-200114-d2

Neuron_Reduce: A Faster Neural Simulation Algorithm

(EPFL, January 15, 2020)

Detailed neuron models consisting of thousands of synapses are key for understanding the computational properties of single neurons and large neuronal networks, and for interpreting experimental results. Simulations of these models are however, computationally expensive (using lots of computing hours), which considerably decreases their utility. For the first time, Scientists at the Hebrew University of Jerusalem and the EPFL Blue Brain Project have formulated a unique analytical approach to the challenge of reducing the complexity of neuron models while retaining their key input/output functions and their computational capabilities. The Neuron_Reduce algorithm together with detailed examples for the usage of the algorithm, are publicly available on GitHub.
/web/2020/03-200115-78

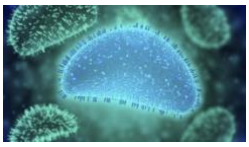
Genetics Determines our Ability to Fight off Gut Infections

(EPFL, January 17, 2020)

Our immune system's ability to fight off bacterial, viral and other invading agents in the gut differs between individuals. However, the biological mechanism by which this happens is not well understood. Part of this difference may be explained by genetic factors. Scientists at EPFL's Institute of Bioengineering have published two papers in Genome Biology that uncover how genetics influences an organism's ability to mount an immune reaction to an invading gut pathogen. In the first, the researchers show that gut infection changes RNA splicing, affecting the production of messenger RNA (mRNA) – a crucial molecule in the path from gene to protein. The second reports the discovery of a number of genetic variants that alter the levels of gene expression in the gut following infection.
/web/2020/03-200117-a1

Targeting Cellular Traitors to Combat Viruses

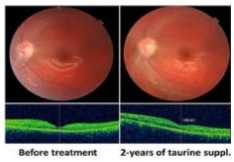
(University of Zurich, January 20, 2020)



Whereas antibiotics have helped combat bacterial infections, medicine still does not have effective means to combat disease-causing viruses. The reason lies in the special way these quasi-living organisms function. Viruses do not simply attack us; they live in constant symbiosis with us. To outmaneuver a virus, you have to take a targeted approach and first understand precisely how these pathogens work. A research group at the University of Zurich's Institute of Molecular Life Sciences specializing in viral infections believes that current antiviral therapies focus on the wrong target, namely the virus itself. A more promising approach may be to eliminate cellular traitors that signal to viruses when to enter the cell, preventing actual infection – meaning no hostile takeover of the cell function, and no massive multiplying of the virus.
/web/2020/03-200120-be

Cardiac and Visual Degeneration Arrested by a Food Supplement

(University of Geneva, January 21, 2020)



Our genome consists of 20,000 genes, all of which may trigger disease. Researchers at the University of Geneva (UNIGE) have recently identified 45 new genes that cause blindness or cognitive problems. The scientists focused in particular on the SLC6A6 gene, which encodes a transporter protein that carries taurine – an amino acid essential for the functioning of the retina and cardiac muscle. When there are pathogenic mutations of the SLC6A6 gene, an individual lacks taurine and will gradually lose his or her sight, going blind within a few years and developing a weak heart. The UNIGE geneticists discovered that an oral taurine supplement may compensate for this deficiency. This innovation in the treatment of recessive genetic diseases is reported in Human Molecular Genetics.
/web/2020/03-200121-08

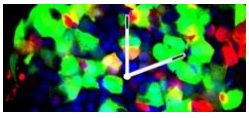
Portable Device to help Diagnose Sepsis faster

(EPFL, January 22, 2020)

Sepsis claims one life every four seconds. It is the primary cause of death in hospitals, and one of the ten leading causes of death worldwide. Sepsis is associated with the body's inflammatory response to a bacterial infection and progresses extremely rapidly. Many scientists are working on this critical issue, including those at Abionic, an EPFL spin-off. Researchers at the Laboratory of Bionanophotonic Systems (BIOS) at EPFL's School of Engineering have just unveiled a new technology. They have developed an optical biosensor that slashes the sepsis diagnosis time from several days to just a few minutes. Their novel approach draws on recent developments in nanotechnology and on light effects at a nano scale to create a highly portable, easy-to-use device that can rapidly detect sepsis biomarkers in a patient's bloodstream.
/web/2020/03-200122-8f

Control Diabetes by Resetting our internal Clocks

(University of Geneva, January 31, 2020)



Today, increasing evidence show that disturbances in our internal clocks stemming from frequent time zone changes, irregular working schedules or ageing, have a significant impact on the development of metabolic diseases in human beings, including type-2 diabetes. Such disturbances seem to prevent the proper functioning of the cells in the pancreatic islet that secrete insulin and glucagon, the hormones that regulate blood sugar levels. By comparing the pancreatic cells of type 2 diabetic human donors with

those of healthy people, researchers at the University of Geneva (UNIGE) and at the University Hospitals of Geneva (HUG), Switzerland, were able to demonstrate, for the first time, that the pancreatic islet cells derived from the Type 2 Diabetic human donors bear compromised circadian oscillators. The disruption of the circadian clocks was concomitant with the perturbation of hormone secretion.
/web/2020/03-200131-ad

4. Nano / Micro Technology / Material Science

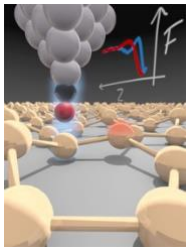
Porous and elastic Biomaterial for Transplantations

(EPFL, December 20, 2019)

Researchers from EPFL and UNIGE, in collaboration with the startup Volumina-Medical SA, have developed an innovative technique to allow for the direct transition from controllable in vitro cell culture to in vivo implantation. This technique uses chimeric particles: for in vitro cultures, these materials function like conventional microcarriers, but in part due to their surficial protection, they can come together to form an effective stem cell niche in vivo after subcutaneous injection. Besides potential use in regenerative medicine, this method could be applied for future studies of personalized models of human hematological pathologies.
/web/2019/04-191220-36

Arrangement of Atoms measured in Silicene

(University of Basel, December 23, 2019)



Since the experimental production of graphene, two-dimensional materials have been at the heart of materials research. Similar to carbon, a single layer of honeycombed atoms can be made from silicon. This material, known as silicene, has an atomic roughness. In contrast to the ultra-flat material graphene, which is made of carbon, silicene shows surface irregularities that influence its electronic properties. Now, physicists from the University of Basel have been able to precisely determine this corrugated structure. This method is a suitable for analyzing other two-dimensional materials. The method developed by the researchers in Basel offers new insights into the world of two-dimensional materials and the relationship between structure and electronic properties.
/web/2019/04-191223-b0

Biodegradable Infrastructure

(ETH Zurich, January 03, 2020)

In order to monitor buildings or infrastructures such as bridges, engineers have to either install external sensors to measure tension, deformation, wind and strain, or to incorporate these devices into the initial design. But civil engineers and biologists are now looking into new materials to lay the foundations for living structures that respond to their environment. They aim to create self-sustaining infrastructures with the capabilities to monitor their condition and repair themselves. Organic infrastructures with closed material cycles – such as bridges made of robust plant fiber – offer a sustainable alternative to concrete. If such an organic structure is damaged, it could repair itself. And at the end of the service life, it could be broken down into compostable components. For experts to discuss and define related research questions and projects, a workshop and a symposium are scheduled to take place in spring 2020 at ETH Zurich.
/web/2020/04-200103-c2

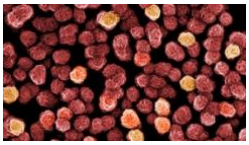
Developing a CO2 Negative "Eco-Concrete"

(EMPA, January 06, 2020)

Cement is among the most widely used products in the world, yet its a huge contributor to global CO2 emissions with a share of around seven percent. The production of one ton of cement causes around 700 kg of carbon dioxide (CO2) that is emitted in the atmosphere. Empa research-ers are working on a magnesium-based cement that will provide the basis for this eco-concrete. Resources for the raw material are available in regions where magnesium-containing olivine is found in the soil. In cement product-ion from olivine, CO2 is added to the raw magnesium silicate. Since only part of the material is burnt in a subsequent processing step, overall less CO2 is produced than was previously consumed.
/web/2020/04-200106-98

Nano-pharmaceuticals in the Environment

(EMPA, January 07, 2020)



Empa researchers are investigating the risks of a relatively new class of substances made from tiny materials: nano-drugs. Particles between 1 and 100 nanometers in size are easy to produce and can be used for medical imaging, antimicrobial coatings or drug release. It is known that conventional pharmaceuticals can be released into the environment after being administered. Hormone-like substances can lead to thin-shelled bird eggs or fertility disorders in fish. But little is known about the environmental risks of nanomaterials used as carriers for drugs. They, too, could find their way into water, soil and air, and the Empa study analyzes the risks of medical nanomaterials. Gold nanoparticles, for example, do not cause any problems when used in medical applications, such as cancer treatments. However, the situation is different for silver nanoparticles. They are used for their antibacterial effect, but in the biosphere the nanomaterial exerts a toxic effect on microorganisms.
/web/2020/04-200107-03

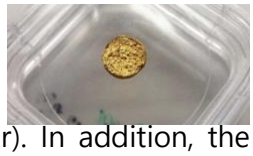
Study finds Gold to be Superficial

(University of Geneva, January 14, 2020)

Geological processes produce different kinds of deposits. Porphyry-type deposits are formed underneath volcanoes by an accumulation of magma that releases fluids on cooling and precipitates metals in the form of ore. These porphyry deposits, which are found mainly around the Pacific Ring of Fire, produce three-quarters of the natural copper and a quarter of the natural gold mined. The researchers found that less than 1% of the gold is captured in the ores in the deep copper-rich deposits. On the other hand, in deposits located at a depth of up to 3 km, the rate climbs to 5%. This is a valuable indication for the mineral exploration industry, which now knows at what depth it will find large deposits of copper, or conversely large gold deposits, irrespective of the volcano.
/web/2020/04-200114-70

18-carat Gold Nugget Made of Plastic

(ETH Zurich, January 10, 2020)

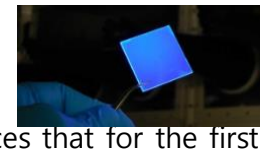


ETH researchers have created a new form of 18-carat gold which is built on plastics. Instead of a metal alloy element, the researchers used protein fibers and polymer latex to form a matrix in which they embedded thin discs of gold nanocrystals. This plastic gold's density is just 1.7 g/cm^3, instead of the conventional density of 15 g/cm^3 (the mixture is usually there-quarters gold and one-quarter copper). In addition, the plastic gold contains countless tiny air pockets that are invisible to the eye, which make it even more lightweight. The new approach allows for the creation of almost any kind of gold, the researchers say.

They could, for instance, replace the latex in the matrix with plastics such as polypropylene. While the plastic gold can be used for jewelry and watches, it is also suitable for chemical or electronics applications.
/web/2020/04-200110-a1

Nanoplatelets in QLED Screens

(ETH Zurich, January 20, 2020)



Quantum dot light emitting diode (QLED) screens show bright, intense colors, which are produced using quantum dot technology. Researchers at ETH Zurich have developed a technology that increases the energy efficiency of QLEDs. By minimizing the scattering losses of light inside the diodes, a larger proportion of the light generated is emitted to the outside. The team has produced light sources that for the first time emit high-intensity light in only one direction. Compared to conventional LEDs consisting of a multitude of spherical semiconductor nanocrystals, the new technology composed of ultra-thin nanoplatelets has the advantage of being very easy to produce in a single step. It is also possible to increase the intensity of conventional LEDs by arranging several light-emitting layers on top of each other.
/web/2020/04-200120-49

5. Information & Communications Technology

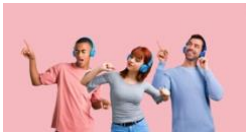
New Network Design for "Internet from Space"

(ETH Zurich, December 10, 2019)

Satellites do not yet play a major role in the world's Internet infrastructure. However, this may soon be set to change. Within the next decade, a new generation of satellites could lay the foundations for an "Internet from space". Ankit Singla, professor at ETH Zurich's Network Design & Architecture Lab and his team are investigating how to improve the performance of large- scale computer networks, including the Internet. Bhattacherjee (the doctoral candidate who is working with Singla) and Singla have now developed a mathematical model that demonstrates how one might fundamentally improve the network design in space. They have tested their design approach using the example of SpaceX and Amazon, but it can be applied independently of the technology of a particular company.
/web/2019/05-191210-fe

Wireless Audio Streaming over Bluetooth Low Energy

(CSEM.ch, January 10, 2020)



January 2020 marks the beginning of a new era for wireless audio, with the arrival of audio streaming over Bluetooth Low Energy (LE Audio), as announced by the Bluetooth SIG (Special Interest Group). CSEM anticipated this new feature in the latest iterations of its silicon-proven icyTRX Bluetooth LE IP, which is already fully compatible. With the release of the new audio streaming feature, the Bluetooth SIG is finally providing a standard, interoperable solution for True Wireless Stereo (TWS), which until now could only be achieved by relying on proprietary protocols. Hearing aid manufacturers are amongst those who will immediately benefit from the new features, enabling, at long last, true low-power audio streaming compatibility across all software platforms and smartphone manufacturers.
/web/2020/05-200110-62

6. Energy / Environment

Hydrogen Society

(University of Zurich, December 18, 2019)

Hydrogen is a clean source of electricity. It is also a fuel, a fertilizer and an excellent energy storage. Car manufacturers are trying to harness the properties of hydrogen and are working on the sustainable vehicles of the future. Unlike internal combustion engines, which pump out CO2, the only exhaust fuel cells produce is water vapor. Recently, the Canton of Zurich put its first two hydrogen vehicles into service. And in the next years, the supermarket chain Coop intends to build a fleet of hydrogen-powered trucks. But hydrogen still isn't produced sustainably. 96% percent of the hydrogen currently used is manufactured from coal, oil or natural gas. A consortium of scientists at the University of Zurich and Empa are now working on using artificial photosynthesis to split water and generate hydrogen, by converting sunlight directly into chemical energy. The challenge for now, however, is to develop catalysts that are long-lasting and efficient.
/web/2019/06-191218-12

Capture CO2 from Trucks, and Make it New Fuel

(EPFL, December 23, 2019)

In Europe, transport is responsible for nearly 30% of the total CO2 emissions, and reducing emissions is an ongoing challenge. Researchers at EPFL have now patented a concept that could cut trucks' CO emissions by almost 90%. It involves capturing CO directly within the exhaust system and converting it into a liquid in a box on the vehicle's roof. The liquid CO would then be delivered to a service station, where it will be turned back into conventional fuel using renewable energy. Calculations show that a truck using 1 kg of conventional fuel could produce 3 kg of liquid CO. The system could theoretically work with any type of fuel and with trucks, buses and even boats. In order to neutralize the impact of existing vehicles in terms of carbon emissions, the system can be retrofitted.
/web/2019/06-191223-2d

Climate Signals Detected in Global Weather

(ETH Zurich, January 02, 2020)

Climate researchers can now detect the fingerprint of global warming in daily weather observations at the global scale. They are thus amending a long-established paradigm: weather is not climate – but climate change can now be detected in daily weather. The findings could have broad implications for climate science. The study stems from a collaboration between ETH researchers and the Swiss Data Science Center (SDSC), which ETH Zurich operates jointly with its sister university EPFL.
/web/2020/06-200102-23

Reducing Human-induced Earthquake Risk

(EPFL, January 06, 2020)

Most earthquakes are caused naturally. However, some are triggered by human activity, such as the injection of gases and liquids into the underground, as seen in CO storage or geothermal energy production. The technology used in Switzerland, known as Enhanced Geothermal Stimulation (EGS), creates an artificial geothermal reservoir. But EGS has faced setbacks after triggering earthquakes in 2006 and 2013. Researchers at EPFL and the Swiss Federal Office of Energy have now devised strategies for reducing the earthquake risk associated with geothermal energy. They came up with the idea of "training" the reservoir before the stimulation process begins. Hereby, the stresses on faults is reduced

and earthquakes become less likely. Those findings have been published in Geophysical Journal International.
/web/2020/06-200106-eb

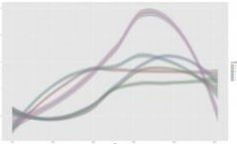
Watt d'Or 2020: Swiss Energy Prize

(Swissinfo, January 09, 2020)

Archie picked up the award in the "renewable energy" category, presented in Bern, for ingesting hydrogen and CO2 and converting them into biomethane, which is then fed into the natural gas grid. This biological methanation takes place in the Regio Energie Solothurnexternal link hybrid plant. The greenhouse of Meyer Orchideenexternal link in Wangen, canton Zurich, was awarded the prize in the "energy technologies" category for growing orchids in a climate-neutral way. In the category of "energy-efficient mobility", the joint winners are the electric municipal vehicles developed by the Swiss family company Viktor Meiliexternal link in Schübelbach, canton Schwyz. A total of 45 projects had entered the race for the Watt d'Or 2020. These were evaluated by a committee of experts who selected 19 of them for the final round.
/web/2020/06-200109-96

Water Governance: Is Less More?

(university of Geneva, January 10, 2020)



Researchers from the University of Geneva and the University of Lausanne analyzed water governance in six European countries from 1750 to 2006. They show that there has been an inflationary trend in the number of regulations. However, instead of improving the situation, this has led to malfunctions in the system. Rules that are designed to improve resource management will eventually come into conflict in the long run. In the years from 1900 to 1980, the governance developed and the rules, which grew in precision, generated significant positive effects. But since 1980, negative indirect effects have been reinforced, and they can even offset the previous positive effects. That's why, in water governance, less can be more.
/web/2020/06-200110-b6

Irrigation Offset Effects of Anthropogenic Warming During Hot Days

(ETH Zurich, January 15, 2020)

Large- scale irrigation is one of the land management practices with the largest effect on climate conditions – and especially hot extremes. Yet how the climatic effects of irrigation compare to those of global warming is largely unknown. In a new study an international team of researchers under the lead the ETH Zurich, has examined the influence of irrigation more closely. They used observational data and global climate simulations to isolate the climatic effects of irrigation from the warming induced by other natural and human climatic drivers. The research team found that the effect of global warming contributing to more frequent and intense heat extremes was partly or completely offset by the cooling effect of irrigation over these regions, and South Asia in particular. Over South Asia, irrigation locally reduced the likelihood of hot extremes by a factor of 2 – 8.
/web/2020/06-200115-91

H2 Energy joins the Hydrogen Global Community

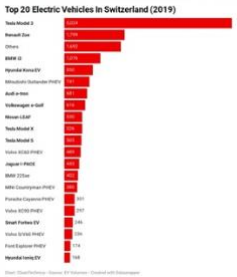
(H2-view, January 15, 2020)

Switzerland-based H2 Energy has joined the Hydrogen Global community. H2 Energy is involved in several joint ventures to advance the deployment of clean hydrogen vehicles and related support infrastructure in Europe. The company's efforts include the Hyundai Hydrogen Mobility (HHM). The first step of the endeavor will see HHM roll out 1600 fuel cell trucks to Switzerland by 2025 and

another 500 to Norway by 2022. Hydrogen Global was launched in November 2019 by the World Energy Council to facilitate the exchange insights and promote the deployment of clean hydrogen and hydrogen-based fuels.
/web/2020/06-200115-1b

5.5% Plug-In Vehicles sold in Switzerland

(Clean Technica, January 19, 2020)



Switzerland. The rather wealthy European country ended the year with a 5.5% PEV market share, according to EV Volumes. Far and away, the Swiss plug-in vehicle (PEV) leader was the Model 3, which had 29% of PEV market share. That means it had ~1.6% of the overall auto market in Switzerland all by itself, and it put the Model 3 at #4 in the overall auto market in the country, only trailing the Skoda Octavia, Volkswagen Tiguan, and Volkswagen Golf. Overall, the Swiss PEV market rose 82% in 2019, according to EV Volumes. Other than the market-leading Model 3, the steady Renault Zoe had a solid showing and swallowed 10% of the PEV market, followed by the BMW i3 at 6% and the Hyundai Kona EV at 5%.
/web/2020/06-200119-4e

Citizen Action against Climate Change

(University of Geneva, January 24, 2020)

A University of Geneva (UNIGE) researcher, Tobias Brosch, has synthesized two decades of scientific studies on climate change – within the framework of the Geneva Science-Policy Interface's (GSPI) first policy brief – to identify the obstacles to behavior change and overcome them. Based on more than 400 studies in psychology, neuroscience, affective science and behavioral economics, he identified five categories of barrier preventing individuals from making any potential behavior change to fight climate change: perceptual barriers; a person's own specific interests and immediate personal benefits; moral barriers; social barriers; barriers to action. For each category he makes recommendations for breaking down the barriers. Strengthening ties among political authorities, academic authorities and international organizations could also aid the search for and communication about actions that are within anyone's reach.
/web/2020/06-200124-f9

Growing Interest in Green Investment

(University of Zurich, January 30, 2020)

The University of Zurich's (UZH) Center for Sustainable Finance and Private Wealth (CSP) investigates ways of making global financial flows more sustainable. This is challenging, since the world's capital, like its natural watercourses, flows through deeply entrenched paths to the same old places. According to estimates, it would take about USD 2.5 trillion to achieve the United Nation's Sustainable Development Goals by 2030, while about USD 140 trillion – half of the world's wealth – is controlled by the world's billionaires, who make up 0.7 percent of the global population. CSP's research shows that investing a mere fraction of the world's wealth in sustainable assets would suffice to prevent environmental disasters and make our economy more sustainable. Sustainable investment appears to be growing steadily.
/web/2020/06-200130-d8

7. Engineering / Robotics / Space

Successful Launch for the Exoplanet Telescope CHEOPS

(Admin.ch, December 18, 2019)

The first joint mission by the European Space Agency (ESA) and Switzerland was successfully launched on 18 December 2019. CHEOPS (CHaracterising ExOPlanet Satellite) will measure the size, composition, and atmospheric properties of planets orbiting around other stars to determine whether the exoplanets could be habitable. The University of Bern heads the international consortium of more than 100 researchers, while the Science Operations Centre will be based at the University of Geneva. It is the first time in ESA's history that such a center is not located at ESA. The regular operations of CHEOPS are planned to begin at the end of March 2020 after an initial set of tests. The launch of CHEOPS happened only one week after the Nobel Prize was awarded to Didier Queloz and Michel Mayor from the University of Geneva for their discovery of the first exoplanet in 1995.
/web/2019/07-191218-c9

Capturing Alien Comets

(University of Zurich, December 19, 2019)

Comets have fascinated humanity for centuries. But where do they come from? According to the most popular theory, giant planets scattered objects into the outer regions of our solar system during an early phase of its formation. Passing stars may scatter these objects back into the inner solar system, where we observe them as comets. The University of Zurich now presents a second potential origin for comets: They can be captured out of interstellar space. Two interstellar visitors made headlines already. In 2017, the asteroid-like body Oumuamua was detected, and in 2019 a comet that came from interstellar space. Both are leftovers of planet formation in other solar systems. New models show that the trajectories of interstellar objects can be altered by Jupiter's gravity, such that they become bound to our solar system. Those alien comets are interesting since they offer a possibility to study the composition of material formed in other solar systems.
/web/2019/07-191219-be

Foldaway Robots for Interactive Mercedes-Benz

(EPFL, January 07, 2020)

In collaboration with Mercedes-Benz, the EPFL spin-off Foldaway Haptics mounted a novel car with their tiny robots, in order to render it interactive. The origami-inspired robots, which fold and unfold in an instant, can perform multiple movements in very short times and in response to the driver's decisions. The concept car, dubbed VISION AVTR and inspired by the film Avatar, was presented during the Consumer Electronics Show in Las Vegas, the world's largest consumer tech show. VISION AVTR is designed to showcase the interaction between humans, technology and nature.
/web/2020/07-200107-a5

Gravitational Lensing used to Calculate A Cosmic Expansion Rate Greater than Expected

(ETH Zurich, January 12, 2020)

A team of astronomers using NASA's Hubble Space Telescope have announced that the universe is expanding faster than expected. They measured the expansion rate – called the Hubble constant – using gravitational lensing, a brand-new technique, completely independent of any previous method. The researchers calculated a Hubble constant value of 73 kilometers per second per megaparsec

(with 2.4% uncertainty). This value differs significantly from the previous number of 67, which was based on observations by the European Space Agency's Planck satellite on how the cosmos behaved more than 13 billion years ago.
/web/2020/07-200112-0f

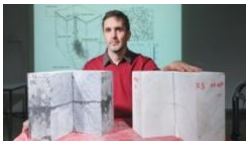
7 Billion Year Stardust: The Oldest Meteorite on Earth

(ETH Zurich, January 13, 2020)

In a meteorite that fell fifty years ago in Australia, researchers from the Field Museum, the University of Chicago, ETH Zurich and other universities have now discovered stardust that formed 5 to 7 billion years ago–the oldest solid material ever found on Earth. The meteorites are called presolar grains – minerals formed before the Sun was born. These bits of stardust became trapped in meteorites where they remained unchanged for billions of years, making them time capsules of the time before the solar system.
/web/2020/07-200113-07

Predicting Hydraulic Fracture Propagation

(EPFL, January 16, 2020)



Researchers at EPFL have developed a new model to calculate hydraulic fracture propagation. Acclaimed for its accuracy by experts, the model better predicts fracture geometry and the energy cost of hydraulic fracturing – a widely used technique in areas such as CO2 storage, hydrocarbon extraction, dams and volcano hazard monitoring. Engineers use the technique to re-level buildings via compensation grouting, prevent cracks from spreading around dams, and even improve safety in deep underground tunnels. The model developed at EPFL allows more accurately prediction the size of the induced fractures and, therefore, how much water can be pumped in and out of the rock, and at what rate.
/web/2020/07-200116-a8

Robot that Grips without Touching

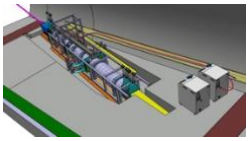
(ETH Zurich, January 21, 2020)

As part of his ETH Pioneer Fellowship, the former ETH doctoral student Marcel Schuck is currently developing a method that makes it possible to lift and manipulate small objects entirely without touching them. The technology is based on sound waves. This is particularly relevant in situations where damage to small components costs money, such as in the watchmaking or semiconductor industry. Conventional robotic grippers are prone to damaging fragile objects. To counter this, soft, rubber- like grippers can be used. Although these cause no damage, they are easily contaminated, like a well-used rubber eraser. The principle of gripping without touching also has an economic benefit: when working with a conventional robot, a different gripper is required for almost every new shape. The acoustic gripper eliminates the need for an extensive set of expensive high- precision grippers.
/web/2020/07-200121-2b

8. Physics / Chemistry / Maths

New Detector Expected to Catch First Collider Neutrino

(CERN, December 17, 2019)

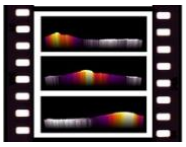


Even though particle colliders create huge numbers of neutrinos, not a single one produced in a collider has ever been detected. This could now change with the approval of a new detector for the FASER experiment at CERN. The new addition to FASER, which will be located along the beamline of the Large Hadron Collider

(LHC), is only 25 cm wide, 25 cm tall and 1.35 m long, but weighs 1.2 tons. Since neutrinos interact very weakly with matter, a target with a lot of material is necessary to detect them. The detector will be installed before the next LHC run, which will start in 2021. It will collect data throughout this run and is expected to possibly detect more than 20 000 neutrinos. Since most collider neutrinos are produced at very high energies, the detection and study of such neutrinos will be a milestone in particle physics.
/web/2019/08-191217-cd

Real-Time Production of Synthetic Natural Gas from CO2 and H2 Observed for First Time

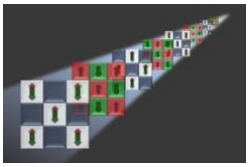
(EMPA, January 08, 2020)



Researchers at the joint EPFL-Empa lab in Sion have developed a reactor system and an analysis method that has allowed them to observe the real-time production of synthetic natural gas from CO2 and H2 for the first time.The scientists have designed a reactor that can use IR thermography to visualize dynamic surface reactions and correlate it with other rapid gas analysis methods to obtain a holistic understanding of the reaction in rapidly changing conditions. They showed the catalyst working and responding to changes in feed gas composition in real time for the first time. Due to their results, the reaction startup and activation behavior are now better understood, which can lead to optimized reactor and catalyst designs to improve the performance of these reactor systems working in dynamic conditions.
/web/2020/08-200108-9a

Unexpected Twist in a Quantum System

(ETH Zurich, January 10, 2020)



Physicists at ETH Zurich, ed by Tilman Esslinger, professor at the Institute for Quantum Electronics, have observed a surprising twist in a quantum system caused by the interplay between energy dissipation and coherent quantum dynamics. By simplifying the quantum mechanical equations describing their experiment, the physicists were eventually able to discover an analogy to a mechanical system. In fact, the formulae bore a striking resemblance to those describing a shaft turning inside a bearing.
/web/2020/08-200110-47

Using "Beauty Baryons" to Test Key Principle of the Standard Model

(Cern.ch, January 15, 2020)

The LHCb collaboration has reported an intriguing new result in its quest to test a key principle of the Standard Model called lepton universality. Lepton universality is the idea that all three types of charged lepton particles – electrons, muons and taus – interact in the same way with other particles. As a result, the different lepton types should be created equally often in particle transformations, or "decays", once differences in their mass are accounted for. However, some measurements of particle decays made by the LHCb team and other groups over the past few years have indicated a possible difference in their behavior.
/web/2020/08-200115-01

Milestone for High Luminosity LHC Tunneled

(CERN.ch, January 15, 2020)

The underground structures of the High-Luminosity LHC have been connected to the LHC tunnel. For the past 18 months, diggers have been at work underground to excavate the structures for the future accelerator. At each site, the underground constructions consist of a shaft around 80 metres deep, a service cavern, a 300-metre tunnel and four 50-metre tunnels connecting the new structures to the

existing LHC tunnel. Around 80% of the excavations on the two sites are now complete: after having dug the shafts, the caverns and almost all of the two longer tunnels, the civil engineering companies are now working on the tunnels that will connect the new structures to the LHC tunnel. And as a result they connected the LHC with its successor. A second connection between the new tunnels and the LHC tunnel should be completed before summer 2020. The underground structures will be fully completed by mid-2021, while the surface buildings will be completed by mid-2022.
/web/2020/08-200115-6e

9. Architecture / Design

Self-Learning Heating Control System to Save Energy and Increase Comfort

(EMPA, January 06, 2020)

Factory halls, airport terminals and high-rise office buildings are often equipped with automated "anticipatory" heating systems. These work with pre-defined scenarios specially calculated for the building and help save building own-ers a great deal of heating energy. However, such an individual programming is too expensive for individual apartments and private homes. Now, a group of Empa re-searchers developed an intelligent heating and cooling control that does not necessarily have to be programmed. Instead, the system can just as easily learn to reduce costs by itself and based on the data of past weeks and months. With this trick, the cost-saving technology will soon also be available for families and singles.
/web/2020/09-200106-6d

Improving the Energy-Efficiency of Building Parks

(EMPA, January 06, 2020)

Buildings in Switzerland consume around 40% of the final energy. Heat generation accounts for the lion's share of this. The differences in how much energy a building consumes are immense: a poorly insulated building can consume up to 300 kWh per square meter per year, while a building built according to the Minergie standard requires no more than a tenth of that. Empa researchers from the "Urban Energy Systems" department have taken a close look at Switzerland's existing buildings in order to find practical answers to these questions. The aim is to identify those measures which, with the optimum use of resources, can avoid as much CO2 emissions as possible.
/web/2020/09-200106-f1

10. Economy, Social Sciences & Humanities

Microeconomic Models analyze Egg Trading between Hermaphroditic Fish

(University of Basel, January 13, 2020)

The sex life of hermaphroditic animals is determined by one fundamental question: Who assumes the female role and produces the costly eggs? Hamlets avoid this dilemma by engaging in reciprocal egg trading. Scientists have now used microeconomic models to analyze the circumstances required for this complex system of trading to work.
/web/2020/10-200113-6b

Federal Council Delegation Meets New EU Commission President

(Admin.ch, January 20, 2020)

A delegation of the Swiss Federal Council led by President Simonetta Sommaruga met with the president of the European Commission, Ursula von der Leyen, during the World Economic Forum in Davos. Talks focused on Swiss-EU bilateral relations, particularly with regard to concluding an institutional agreement. A need for flexibility was noted in order for both sides to reach acceptable solutions. Talks also addressed amendments to the agreement on technical barriers to trade for medical devices, as well as joint efforts to tackle climate change and cooperation on migration. The EU's European Green Deal aims to make Europe the first climate-neutral continent. The Federal Council had earlier decided that Switzerland should aim to be climate neutral by 2050. Discussions will continue on an informal expert level.
/web/2020/10-200120-4d

"Green Economy": An ambiguous concept

(EPFL, January 21, 2020)

Today's consumers want a cleaner, greener society. There are a number of concepts out there addressing this goal, such as green economy, green growth, sustainable development, bioeconomy and circular economy. Concerns about climate change have given rise to these concepts that are widely used despite their lack of a concrete definition. EPFL researchers have taken a closer look at the "green economy" concept in particular to clarify exactly what it means.The research, published this month in Journal of Cleaner Production, looked specifically at the concept of the green economy. Scientists compared 140 definitions found in journal articles (117) and white papers (23) published over the past ten years.
/web/2020/10-200121-3b

11. General Interest

Understanding How Zebra Finches Learn to Sing

(University of Zurich, January 15, 2020)

Complex learning processes like speaking or singing follow similar patterns. Using the example of zebra finches, researchers at UZH and ETH Zurich have investigated how young birds imitate the courtship songs of their fathers and practice them thousands of times. The study has revealed what aspects of the song are remembered overnight, and that sleep allows the bird to optimally build upon the progress made on the previous day.
/web/2020/12-200115-8f

Researching a Sustainable Superfood

(ETH Zurich, January 30, 2020)

Light green, tasting like bean sprouts and with a pleasantly grainy texture, Wolffia is one of five genera of duckweed or "water lentils". It is also the most easily digestible, fast growing and healthy, containing large amounts of high-quality plant proteins, lots of fiber, valuable unsaturated fatty acids and few carbohydrates. Researchers at ETH Zurich's Department of Environmental Systems Science believe that duckweed – long prized in Asian cuisines but largely unknown in Europe – could become a staple in a largely vegetarian diet, recommend as a way to help mitigate the climate crisis. They are investigating how

to optimize the production process to produce large volumes, while keeping costs low and maintaining hygienic conditions. Approval must then be sought from the European Union to market this novel food.
/web/2020/12-200130-4a

12. Calls for Grants/Awards

Awarded Infection Biologist

(University of Basel, December 13, 2019)

Marek Basler, Professor of Infection Biology at the University of Basel's Biozentrum, is one of three scientists to be awarded this year's Sanofi-Institut Pasteur International Junior Award. The Sanofi-Institut Pasteur Award evolved from a long-standing collaboration between Sanofi and the Institut Pasteur, with the goal of promoting scientific excellence as well as innovations in the service of global health. The award honors Basler's research on a bacterial injection apparatus, which plays a role in infectious diseases as well as in shaping the composition of bacterial communities. His work has impacted research in many areas of microbiology, such as pathogenesis and microbial communities.
/web/2019/13-191213-5c

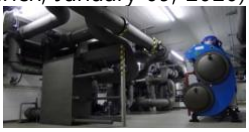
Sinergia Grant Goes to Researchers in Lausanne

(EPFL, December 18, 2019)

Professors from the Swiss Federal Institut of Technology Lausanne and their research partner from Lausanne University Hospital received a Sinergia Grant from the Swiss National Science Foundation (SNSF) for their project to treat tracheomalacia. This illness commonly affects small children and is characterized by excessive airway collapse due to an exaggerated floppiness of the supporting cartilage. In its severe version, tracheomalacia is a life-threatening respiratory situation. The researchers want to develop a new hydrogel-based stent to treat tracheomalacia in small children. The SNSF Sinergia grants promote interdisciplinary collaboration between two to four applicants whose project involves breakthrough research.
/web/2019/13-191218-2c

ETH Hönggerberg Received the Watt d'Or 2020 Award

(University of Zurich, January 09, 2020)



The Federal Office of Energy recognized the Anergy Grid at the Hönggerberg campus with the Watt d'Or 2020 award in the category of Buildings and space. Anergy Grid is a dynamic underground storage system, working like a battery that charges or supplies energy depending on the season. What makes the Anergy Grid a flagship project for sustainable energy supply are its intelligently connected heat sources and its size. The Watt d'Or honours outstanding achievements in the area of energy, with the aim of motivating businesses, policy makers and the public at large to discover the advantages of innovative projects and energy technologies for themselves.
/web/2020/13-200109-82

ERC Consolidator Grant for Leukemia Stem Cell Research

(University of Basel, January 15, 2020)

The ERC Consolidator Grants were awarded for the sixth time in 2019. These grants support highly qualified junior researchers who have 7-12 years of experience after their doctorate and have a promising scientific track record. After a first round of grants in autumn 2019, in which three researchers from the University of Basel were successful, the ERC has now awarded another Consolidator Grant to Prof. Dr. Claudia Lengerke in a second round. Prof. Dr. Claudia Lengerke is clinical professor for hematology and stem cell research at the University of Basel and a senior physician at the University Hospital Basel. For her groundbreaking project investigating novel strategies for the elimination of leukemia stem cells, the physician will receive a grant of approx. EUR two million over five years.
/web/2020/13-200115-fb

Upcoming Science and Technology Related Event

Annual European Life Sciences CEO Forum
February 19, 2020
https://www.sachsforum.com
Life Sciences, Health Care & Medical
Zurich

World Immune Regulation Meeting
March 4-7, 2019
http://www.wirm.ch
Immune Activation, Autoimmunity
Davos

International Conference on Engineering & Technology
March 10, 2020
https://www.wrfconference.com
Scientific, Research & Development
Geneva

Swiss Biotech Day
April 21, 2020
https://swissbiotechday.ch/home/
Finance, Production, Licensing
Basel

Diversity in science and tech: why it matters?
April 22, 2020
https://www.csem.ch
Science, Technology, Networking
Bern

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