



Science-Switzerland, April - May 2015

News on Swiss science, technology, education and innovation

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swissnex Annual Report 2014

(swissnex Boston, May 01, 2015)

The first joint Annual Report of the swissnex Network has been published. Whilst at its origin, 15 years ago, swissnex began as an innovative experiment in Boston, today it has evolved into an established and well recognized network. Together with 18 Science and Technology Counselors positioned in Swiss Embassies around the globe, the swissnexes offer a diversity of tailor-made services to support the internationalization of our partners' projects and organizations and, by consequence, of Switzerland's education, research and innovation landscape. It remains nonetheless necessary for each swissnex to continue to reinvent itself, to be innovative in the development of partnerships, to explore new opportunities and to adapt to local cultures, in order to remain successful in meeting its stated objectives. Such dynamism relies heavily on ensuring a collaborative approach with our partners; one that is based on confidence and which builds on harnessing mutual creativity and expertise.



<http://swissinnovation.org/news/web/2015/00-150501-70>

Academy of Natural Sciences celebrates its 200th Anniversary

(Akademie der Naturwissenschaften, May 22, 2015)

The Academy of Natural Sciences (SCNAT) is celebrating its 200th anniversary this year with the motto "experience natural sciences up close." SCNAT is using many different methods to try and get the public involved with events planned across Switzerland, including 3 installations on the topic of "Time and Change," which will go on tour from June until October 2015, accompanied by researchers excited to discuss their work, and will interact with pedestrians in 12 different swiss cities. Other exhibitions, field trips, discussions, lectures, and fun afternoons are also being organized by more than 200 organizations all throughout 2015.



<http://swissinnovation.org/news/web/2015/00-150522-40>

Ranking: ETH Zurich Is Best University in Continental Europe

(ETH Zurich, May 28, 2015)

In the 2015 University Rankings by Subject, published by QS Ranking, ETH Zurich's earth and marine sciences ranked top worldwide. ETH's environmental sciences ranked third. Just a year ago, ETH's earth sciences faculty ranked ninth, with Harvard University holding the top spot, followed by the University of Cambridge (UK) and the University of California, Berkeley. The latter now ranks second, and Harvard third. ETH's earth sciences faculty was rated highest in the categories "Academic reputation" and "Citations per paper". The rankings for other ETH subjects were: electrical & electronic engineering (#5), architecture & civil engineering (#7), chemistry (#8),



statistics & applied mathematics (#8), computer science (#9), mathematics (#9), physics & astronomy (#9), and biological sciences (#10). ETH is typically the best-placed university in continental Europe in these rankings.

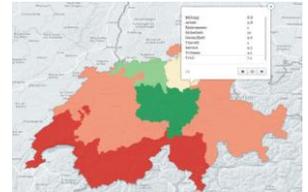
<http://swissinnovation.org/news/web/2015/02-150528-2c>

Switzerland is the Happiest Country in the World

Switzerland is the happiest country in the world, proclaimed researchers during their presentation of the annual World Happiness Report. Some factors taken into consideration during the making of this report are financial income, life expectancy, and perception of freedom. Scientists have been analyzing 158 different countries based on such aspects and creating a "happiness-index" every year since 2012, with hopes of facilitating positive political and social changes. The statistics of this study also help determine what the key to happiness in a country seems to be. What may come as a surprise is that money alone doesn't make a population happy, but things like justice, honesty, trust, and health, as well as parents instilling a positive attitude into children at an early age, are all necessary aspects of a content, well-rounded and wholesome society.

<http://swissinnovation.org/news/web/2015/00-150423-f0>

(20 Minuten, April 23, 2015)



Swiss National Startup 'Team' to Take On the US

Out of over 100 top Swiss startups, 20 have been selected as winners of venturelab's 'Venture Leaders USA' competition to attend a ten-day Business Development Program in Boston and New York organized in cooperation with swissnex Boston in June. The top 20 minds of the Swiss startup scene will then have the opportunity after the program to pitch their business ideas to American investors and industry representatives as they compete with local US startups. The great potential for Swiss innovation in this realm is clear, and revolutionary breakthroughs ranging from knee injury implants to intelligent digital solutions for managing insurance and financial products are merely the beginning.

<http://swissinnovation.org/news/web/2015/00-150415-7b>

(venturelab.ch, April 15, 2015)

UNIL Students Meet Bill Clinton to Promote Change

Four students from the University of Lausanne (UNIL) accepted the invitation of former US president Bill Clinton to attend the Clinton Global Initiative University (CGIU) in Miami. The initiative aims to bring together decision makers of tomorrow to promote change in the world today. About a thousand students from seventy universities, representing eighty nationalities, were encouraged to create a development project. Projects must relate to major contemporary challenges identified by CGIU, e.g. training, environment and climate change, peace and human rights, fighting poverty, or public health. Two UNIL proposals selected by the CGIU will develop an autonomous system that produces water from atmospheric moisture, and a training center to help women develop skills to work in the textile industry in Burundi.

<http://swissinnovation.org/news/web/2015/00-150421-d9>

(University of Lausanne, April 21, 2015)



Seven ETH Researchers Awarded ERC Grants

Seven ETH Zurich professors have applied successfully for an ERC Advanced Grant, which is worth about CHF 2.5 million. Two of the seven received the coveted award for the second time. ERC Advanced Grants are very popular among researchers throughout Europe, as only top researchers' projects are supported by the European Research Council (ERC). The grants are therefore considered a special distinction. In addition, researchers welcome the significant funds: the approved projects receive from CHF 2.5 million to CHF 3.5 million over a period of five years. The success rate of ETH researchers is an impressive 33%: seven of the 21 projects submitted were approved for an ERC Advanced Grant. Professor Ruedi Aebersold, head of the Institute of Molecular Systems Biology, and Professor Atac Imamoglu, head of the Institute of Quantum Electronics, were successful for a second time. In total, ETH researchers received the amount of CHF 16.6 mio.

<http://swissinnovation.org/news/web/2015/12-150529-5d>

(ETH Zurich, May 29, 2015)



1. Policy

Education Offensive to Strengthen Economy and Society

(Akademien der Wissenschaft Schweiz, May 12, 2015)

One of the greatest challenges for Switzerland is the education of specialists required by economy, society and research. The Swiss Academies of Arts and Sciences and the other representatives of the vocational and higher education issued a statement in which they conclude that, in order to achieve this, reforms are necessary in all higher education pathways. A corresponding growth of resources in the Dispatch on Education, Research and Innovation for the years 2017-2020 is important. The planned reforms cannot be implemented with a lower average growth rate than in the current period (3.7%) without, at the same time, threatening the substance of Swiss education and research.

<http://swissinnovation.org/news/web/2015/02-150512-b9>

A Pitch for Independent Research

(ETH Zurich, April 17, 2015)

The autonomy of research is particularly important for the university in order to drive gains in knowledge without commercial interests. Only by being autonomous is diversity possible, says ETH Vice President Detlef Günther. However, science is committed to serve society and politics. ETH Zurich needs to prove its sense of responsibility on a daily basis. "We should think ahead for the challenges of the future in order to then find the corresponding answers of tomorrow and the day after tomorrow and to also offer solutions."

<http://swissinnovation.org/news/web/2015/00-150417-a4>

New Regional Policy Supports Asia Connect Center HSG

(University of St. Gallen, April 15, 2015)

Owing to the big challenges in the European sales markets, many small and medium-sized enterprises (SMEs) from Eastern Switzerland have to generate an increasing part of their turnover in Asia. Here, SMEs are able to rely on strengths such as the Swiss quality image and the free trade agreement with China. However, the cost situation is sometimes a disadvantage vis-à-vis competitors from the Eurozone. This is the point of departure with which the Asia Connect Center (ACC-HSG) has been dealing ever since 2012. It has already supported more than 50 SMEs in their initial steps in Asian markets. The first sales units have been placed and initial orders have been generated. On the other hand, medium-sized enterprises have developed in Asia to such an extent that they, in turn, are giving intensive consideration to expansion into Europe. Both scenarios are expected to have a favourable impact on jobs in the region that the ACC-HSG promotes.



<http://swissinnovation.org/news/web/2015/01-150415-35>

2. Education

Interdisciplinary Institute of Data Science Launched

(University of Italian Switzerland, April 15, 2015)

In April 2015, Università della Svizzera italiana (USI) celebrated the launch of its new Interdisciplinary Institute of Data Science, the brainchild of two professors at USI. This exciting initiative comes at a time when the potential of huge data sets being collected to analyse our behaviours and preferences to pave the way for many interesting opportunities for social and scientific progress has been recognised. The Institute aims to develop analysis techniques drawn from fields as diverse as statistics, economics, urban planning, and physics, and will encourage a direct link between academic research and society through interdisciplinary research projects. For a list of public events hosted by the Institute, visit their website.

<http://swissinnovation.org/news/web/2015/02-150415-08>

ETH Zurich's 2014 Annual Report Out

(ETH Zurich, May 28, 2015)

ETH Zurich's 2014 Annual Report shows the most significant achievements, developments and events of the past year, grouped by topic. Topics include teaching innovations, strategic partnerships, and knowledge transfer. The university continued to grow in 2014, attracting a record total of 18,500 male and female students. The number of visiting and exchange students fell only very slightly, despite Switzerland no longer being able to participate in the



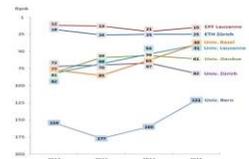
Erasmus+ scheme and student exchange activities now taking place through the Swiss-European Mobility Program. The trend in engineering sciences is pleasing given Switzerland's shortage of skilled workers, with an increase of 51 percent in the number of new Bachelor students in this field over the past ten years.

<http://swissinnovation.org/news/web/2015/02-150528-f4>

Leiden Ranking 2015

(www.leidenranking.com/ranking/2015, May 29, 2015)

The Centre for Science and Technology Studies (CWTS) at the University of Leiden offers university rankings based exclusively on bibliometric indicators such as the number of publications (P), mean normalised citation score (MNCS) and the proportion of publications in the Top 1% (PPtop 1%), in the Top 10% (PPtop 10%) or in the Top 50% (PPtop 50%). The CWTS believes that preference should be given to the Top 10% indicator because it offers the greatest stability. In 2015, as in earlier years, the top 50 universities with the highest percentage of frequently cited publications (PPtop 10%) is strongly dominated by US institutions, with just a few non-US institutions. These non-US institutions are from the UK, Switzerland, and Israel. As far as Switzerland is concerned, the two federal institutes of technology achieve the highest placed rankings, at 15th (EPF Lausanne) and 25th (ETH Zurich) respectively. Five other Swiss universities figure in the Leiden ranking, which includes 750 universities worldwide: The University of Basel (40th), the University of Lausanne (41st), the University of Geneva (61st), the University of Zurich (82nd) and the University of Bern (121st).



<http://swissinnovation.org/news/web/2015/02-150529-c3>

3. Life Science / Health Care

Phage Virus as Antibiotic Alternative

(20 Minuten, May 22, 2015)

More and more antibiotics have been losing their effectiveness when it comes to treating illnesses, as bacteria are becoming increasingly resistant to them. A new alternative is something called phage. These are non-contagious viruses that specifically attack bacteria and kill them, with minimal side effects on the patient. Phage are already being successfully utilized in countries such as Russia, Poland, and Georgia, among others, but the treatment has not yet been accepted into Swiss medical practice. Yok Ai Que from the University Hospital of Lausanne says this is because of the lack of clinical trials. That is what the University Hospital is now working on. As part of a European research project, they are investigating how effective phage therapy is in patients with infected burns. If successful, many other illnesses could be treated with this new method in the future.



Controversy over the Pre-Implantation Diagnosis

(20 Minuten, April 24, 2015)

The controversy over the so-called pre-implantation diagnosis is raging. On June 14, Switzerland will vote on the issue. The disputed constitution, if passed, would allow 12, instead of the previous 3, embryos to be implanted for invitro fertilization, as well as allow these embryos to be pre-scanned for genetic defects, which currently isn't permitted. Those against claim that the scans would eradicate disabilities, and subsequently make disabled people seem unwanted, but Michael Wolff from Bern's University Hospital says that most disabilities cannot be detected that early anyway, and this diagnosis would not eliminate disabilities coming into the world, but could reduce the percentage slightly. In any case, he also says that he would only recommend this diagnosis in specific cases, with families with genetic diseases for example, and not as a general widespread scan, as the risks usually outweigh the likelihood of finding anything.



<http://swissinnovation.org/news/web/2015/03-150424-33>

Advances in Assessing Relapsing Multiple Sclerosis

(My Science, April 15, 2015)

Researchers at Novartis presented new analyses showing their advances in assessing the impact of relapsing multiple sclerosis (MS) and the efficacy of its oral prescription medication Gilenya as a form of treatment at the annual American Academy of Neurology meeting in Washington DC. Among the analyses discussed, the researchers added brain volume loss to an existing assessment tool for analyzing MS activity. This promises to



give better predictions of the prognosis of disability progression. Gilenya is approved in both the US and the EU, and further development of the drug to treat paediatric MS is currently ongoing.

<http://swissinnovation.org/news/web/2015/03-150415-7e>

Tackling Prions Using Industrial Robots

(University of Zurich, April 15, 2015)

University of Zurich neuroscientist Adriano Aguzzi and his multidisciplinary team of prion researchers have been exploiting advances in robotic technology in the form of a four-meter long robot that is able to conduct thousands of automated experiments a day with increasingly smaller sample sizes. Prion diseases arise from infectious pathogenic proteins that can cause neurodegenerative diseases in mammals such as mad cow disease, Creutzfeldt-Jakob disease in humans, and scrapie in sheep. In collaboration with the University Hospital, Aguzzi and his team have been developing RNA technologies to tackle these diseases using a genetic networks approach, and are confident that focusing on 'small RNAs' will give new insights into these diseases.

<http://swissinnovation.org/news/web/2015/03-150415-29>

Immune Cell Screening Platform Wins Spark Award

(ETH Zurich, April 17, 2015)

Once a year the ETH Zurich presents the Spark Award to the most promising invention registered for a patent. Of the five finalists in this year's edition Professor Manfred Knopf and his team were given the prize for their novel approach to characterize T-cells. Characterizing these specific cells of the immune system could open new doors for personalized therapies. Especially patients suffering from autoimmune diseases and various types of cancer could profit from new therapies based on this method for screening of T-cell specificities. The award ceremony also spotlighted the excellent work of the technology transfer office of the ETH Zurich, which supports 20 spin-offs a year of which more than 90% survive for more than 5 years.



<http://swissinnovation.org/news/web/2015/03-150417-78>

Using Genome Database to Predict Cancer Risk for a Whole Country

(republic-of-innovation.ch, April 17, 2015)

Large genome databases are starting to reveal critical health information—even about people who have not contributed their DNA. The CEO of an Icelandic gene-hunting company says he is able to identify everyone from that country who has a deadly cancer risk, but has been unable to warn people of the danger because of ethics rules governing DNA research. The company, DeCode Genetics, based in Reykjavík, says it has collected full DNA sequences on 10,000 individuals. And because people on the island are closely related, DeCode says it can now also extrapolate to accurately guess the DNA makeup of nearly all other 320,000 citizens of that country, including those who never participated in its studies.

<http://swissinnovation.org/news/web/2015/06-150417-71>

Neural mechanism Involved in Chronic Pain Identified

(republic-of-innovation.ch, April 17, 2015)

Bernese researchers have identified a neural mechanism involved in the onset of chronic pain and have managed to restore normal functioning in mice. This could lead to more effective medication, according to the study published in Neuron. Over a million people in Switzerland suffer from chronic pain, but the causes are poorly understood. The team at the Physiology Institute examined the neuronal changes involved in the cingulate gyrus, a brain area involved in the management of emotions associated with pain. The researchers found that chronic pain causes increased excitability of neurons in this region, reduced functioning of an ion channel and the triggering of nerve impulses, which increases the feeling of pain. The ion channel's normal functioning could be restored by activating a specific serotonin receptor.

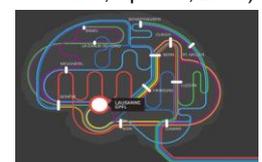


<http://swissinnovation.org/news/web/2015/03-150417-d2>

The Brain Forum Shows how Collaboration Accelerates Research

(republic-of-innovation.ch, April 17, 2015)

The Brain Forum 2015 in Lausanne attracted more than 1,000 participants. The philanthropist Hansjörg Wyss, industry representatives like Nestle and Roche, scientists from around the world, entrepreneurs and representatives of major initiatives on the brain come together to exchange ideas on brain research. An exhibition presented innovative scientific





work, such as a project that shows how reality substitution is poised to replace traditional virtual reality. There was also a presentation of startups to promote innovative solutions related to brain research. Patrick Aebischer, co-president of the Brain Forum and President of the EPFL, believes that we can only reveal the brain's mysteries by cooperating with opinion leaders from universities, the health sector, foundations, economics and politics. This collaboration aims to provide patients and society with innovative technology solutions.

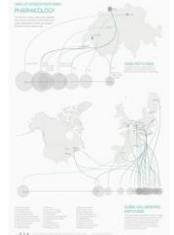
<http://swissinnovation.org/news/web/2015/03-150417-c1>

Analysis of International Co-operation in Pharmacology

(republic-of-innovation.ch, April 17, 2015)

The applied research team of Professor Thomas Gauthier at the Geneva Management Institute (HEG) has used the data analytics stack that it developed for use in neurosciences, biochemistry and molecular biology to discover and then view international co-operation between Swiss universities and companies in the field of pharmacology. Alongside the Swiss universities, the two flagships of the Swiss pharmaceutical industry, Novartis and Roche, have developed valuable international networks for scientific collaboration.

<http://swissinnovation.org/news/web/2015/03-150417-3d>



Bachelor's Thesis on Quantum Computing Published in Science

(ETH Zurich, April 17, 2015)

Bettina Heim has succeeded in publishing the results of her semester project in one of the most prestigious scientific journals. Heim was able to show why in certain tests current quantum computing devices were no faster than conventional computers, contrary to previous assumptions. In her research, Heim was able to explain why D-Wave, a highly discussed novel computing device that uses quantum physical effects, is unable to solve certain computational problems any faster than a conventional computer. It was shown that quantum effects accelerated solving the optimisation problem in the simulation, but only if the simulation was very rough; that is, when Heim performed them with a small number of milestones. When the simulation included a large number of closely positioned milestones – a very realistic scenario – the quantum speedup was no longer observed.

<http://swissinnovation.org/news/web/2015/02-150417-23>

Mammalian Ribosome Mapped at High Resolution

(ETH Zurich, April 17, 2015)

Researchers at ETH Zurich recently reported in the journal Science their unprecedented achievement of 3.8Å resolution in the complete mapping of the porcine mitochondrial ribosome. Studying the structure of ribosome, the cell's protein-producing machinery, is important in order to understand protein synthesis and for pharmaceutical applications such as developing antibiotics to attack bacterial ribosomes while leaving human mitochondria unharmed. The scientists used a combination of cryo-electron microscopy and mass spectrometry to elucidate the structure, and were even able to resolve tiny movements associated with the ribosome in action i.e. ribosomal translation of two RNA molecules. These experiments were conducted at ETH Zurich's Center for Optical and Electron Microscopy.

<http://swissinnovation.org/news/web/2015/03-150417-22>

Bioethical Discussion on Novel Gene Editing Method

(ETH Zurich, April 17, 2015)

In April Science magazine published an opinion piece signed by a large number of scientists including University of Zurich assistant professor Martin Jinek, calling for a moratorium on genome editing of the human germ line using the CRISPR/Cas9 method. CRISPR/Cas9 allows researchers to manipulate DNA in a targeted way, thus theoretically allowing genetic engineering with a precision that was hitherto considered to be possible only in science fiction. While the specificity of the technology is not at a point where it could be used in patients, Martin Jinek, who worked closely with one of the most prominent signatories of the article, Professor Jennifer Doudna of UC Berkley, believes that a preemptive bioethical discussion on the topic is necessary. While he is critical of CRISPR/Cas9 being used for germ line engineering, he fully supports further research into the method's capabilities to treat somatic diseases.

<http://swissinnovation.org/news/web/2015/03-150417-8a>





Novartis Broadens Cancer Immunotherapy Profile

(republic-of-innovation.ch, April 17, 2015)

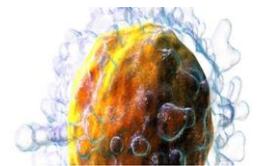
In a move to deepen its leadership position in immuno-oncology Novartis announced a deal with Aduro Biotech. The \$750 million deal sets up a collaboration between the companies in regard to the development of a new approach to attack tumors using the patient's own natural defenses. The promising preclinical drug candidates activate an immune response against the tumor by stimulating the so called STING pathway. During development Novartis will support the research with milestone payments. An eventual market introduction would see Aduro handling sales in the United States sharing profits with Novartis who would take on international sales paying Aduro set royalty fees. In a second announcement regarding cancer immunotherapies, Novartis announced a new internal immuno-oncology R&D branch to be run by Glenn Darnoff.

<http://swissinnovation.org/news/web/2015/10-150417-0d>

Vitamin E to reduce Oxidative Stress

(ETH Zurich, April 21, 2015)

When a foreign body such as a virus or another pathogen enters our bodies, a certain class of immune cells – the T cells – jump into action, proliferating rapidly. It takes a few days to reach the sufficient amount, hundreds of thousands of T cells, enough to overwhelm the infection. However, this immune response does not take place if significant oxidative stress is damaging the T cells, as Manfred Kopf and his team of ETH researchers have shown in their new publication. Oxidative stress occurs due to UV radiation, air pollution, smoking, alcohol consumption as well as infections. Kopf and his team have now shown that higher doses of vitamin E can reduce the stress on immune cells in mice.



<http://swissinnovation.org/news/web/2015/03-150421-5c>

Improved Care for Children with Burn Injuries

(University of Zurich, April 23, 2015)

The University Children's Hospital Zurich is helping a hospital in the Afghan capital Kabul improve care for children with burn injuries. The two heads of children's burn units, Habib Ur Rahman Qasim from Kabul and Clemens Schiestl from Zurich are working in close collaboration. Thanks to funding, it has been possible to renovate the building infrastructure in the hospital in Kabul. Previously, children with burns were treated in the corridor of the surgical clinic, often two to a bed. The renovation included building a separate six-room pediatric burns ward. The next step now is to give the staff better training.

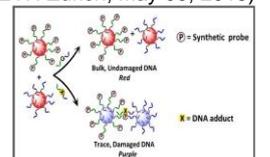


<http://swissinnovation.org/news/web/2015/10-150423-03>

In-gene Detection of Personalized Cancer Biomarkers

(ETH Zurich, May 05, 2015)

DNA adducts are personalized biomarkers caused by toxicant or drug exposure and susceptibility. However, their measurement is so far restricted to specialists due to technical limitations. The invention is a colorimetric probe for sequence-specific detection of DNA adducts. Advantageous features include compatibility with high-throughput screening techniques, relatively low cost and ease of operation, and applications in epidemiology and personalized medicine. The invention is a colorimetric nanoprobe for detecting mutagenic or cytotoxic DNA adducts in a DNA sequence. The probe consists of gold nanoparticles functionalized with unique synthetic oligonucleotides containing an altered base that selectively pairs opposite a target DNA adduct.



<http://swissinnovation.org/news/web/2015/03-150505-01>

Navigation System for Liver Surgery Gets FDA Clearance

(CAScination, May 08, 2015)

CAScination AG, a Swiss medical device company, announces FDA 510(k) clearance of its unique, award-winning surgical navigation system for open liver surgery. Being a pioneer in surgical navigation for soft organs, CAScination guides surgical instruments for effective tumor removal while sparing healthy parts of the liver. The CAS-ONE LIVER device (CE marked since 2010) is in active use in leading European cancer centers and has enhanced treatments for hundreds of patients. CAScination's highly intuitive surgical navigation system with unique ultrasound fusion technology offers guidance for a wide range of surgical instruments and ablation devices. It provides surgeons with a clinically relevant tool to target small tumors and to identify structures at risk.





This enables treatment of complex and advanced liver disease where high tumor load and critical tumor location demand a sophisticated surgical technique.

<http://swissinnovation.org/news/web/2015/03-150508-44>

Measuring Your Own Movement with App

(ETH Zurich, May 11, 2015)

As part of a campaign run by the Swiss radio and television broadcaster SRF, two members of ETH Zurich have developed an app which allows users to carry out live comparisons between their own physical activity data with that of others. The data collected is then made available for research. Antavi was established by Ulf Blanke and Sebastian Feese from the Wearable Computing Laboratory, part of the Department of Information Technology and Electrical Engineering (D-ITET), with funding from the Pioneer Fellowship programme. Back in 2013, they developed a Züri Fäscht app to measure streams of movement at major events like Zurich's famous carnival. It was downloaded 70,000 times. Antavi's current project is based on a campaign run by the Swiss radio and television broadcaster SRF. Under the slogan "SRF bewegt" ("SRF gets moving"), radio stations SRF 1 and SRF 3 have joined forces with the Federal Office of Public Health, the Federal Office of Sport and the Federal Office of Energy to inject some movement into people's inactive everyday lives.

<http://swissinnovation.org/news/web/2015/03-150511-4b>



How Horses Express Emotion

(ETH Zurich, May 15, 2015)

Researchers at the Ethology and Welfare Unit of ETH Zurich's Institute of Agricultural Science have discovered that horse whinnies have two separate fundamental frequencies. The first frequency determines whether the emotion is positive or negative, while the second frequency demonstrates the strength of the emotion. While trying to learn more about expression of emotion in horses, researchers performed an experiment exposing the animals to positive and negative situations, while also setting up microphones and cameras to record their behavior and vocalisations. Although this knowledge could definitely be helpful to equestrians and veterinarians who handle these creatures, this research was actually a part of a larger project hoping to discover the effects of domestication. Researchers' main aims are to see whether domestic animals and their wild counterparts express emotion in the same way, or if the domestic species learn to convey emotion from their human owners.

<http://swissinnovation.org/news/web/2015/03-150515-40>

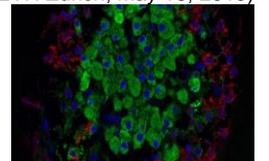


The Life and Death of Beta Cells

(ETH Zurich, May 18, 2015)

ETH researchers studying microRNA – tiny strands of ribonucleic acid – in beta cells have found a type that plays a key role in cell death under stress. Diabetes is one of the scourges of modern society, and the number of cases is rising every year. Already, there are over 380 million diabetics around the world. The International Diabetes Foundation estimates that by 2030, over half a billion people will be suffering from type 2 diabetes. Today, Switzerland has more than 430,000 diabetics, 40,000 of them with type 1 diabetes. What both type 1 and type 2 diabetes have in common is a dying off of insulin-producing beta cells, which are found on the pancreas. This deprives the body of an important signalling molecule that plays an essential part in how cells absorb glucose from the blood and metabolise this fuel.

<http://swissinnovation.org/news/web/2015/03-150518-16>



Chameleon Proteins Make Individual Cells Visible

(ETH Zurich, May 18, 2015)

Researchers discovered a new mechanism of how fluorescent proteins can change colour. It enables the microscopic visualization of individual cells in their three-dimensional environment in living organisms. Researchers at ETH Zurich's Department of Biosystems Science and Engineering in Basel have developed a new microscopy technique that enables for the first time to selectively visualize individual cells within the complex, three-dimensional tissue of a living organism. The researchers have thus succeeded in capturing spectacular microscopic images, such as in the nervous system of a zebrafish larva, a preferred model organism for research. Motor neurons in the spinal cord can be seen in the researchers' images; at the same time, a single neuron with all





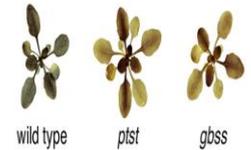
its extensions is highlighted in another colour. An observation by William Dempsey, post-doc in the group of ETH professor Periklis Pantazis, led to the new application.

<http://swissinnovation.org/news/web/2015/03-150518-f6>

Alter the Amylose Content in Plant Starch for Industry Applications

(ETH Zurich, May 20, 2015)

Prof. Samuel C Zeeman, Institute of Agricultural Science, ETH Zürich, presents a novel way to alter the amylose content of starch via the newly discovered gene PTST. PTST transports to starch granules the enzyme GBSS, which then catalyzes amylose production. Thus, modifying PTST will modify the amylose content in a starch-containing plant. Functional diversity in the starch production can be achieved. The role of PTST (Protein Targeting to Starch) in delivering GBSS (Granule-Bound Starch Synthase) to the starch granule and its consequent importance in the amylose synthesis was discovered through fundamental studies in the model plant *Arabidopsis thaliana*. The alteration of the PTST expression represents a new way for altering the amylose content of starch.



<http://swissinnovation.org/news/web/2015/03-150520-9f>

Progression-Free Survival Trial in Advanced Gastrointestinal or Lung Neuroendocrine Tumors

(My Science, May 23, 2015)

Novartis announced that the Phase III study of Afinitor (everolimus) tablets plus best supportive care in patients with advanced nonfunctional neuroendocrine tumors (NET) of gastrointestinal (GI) or lung origin met its primary endpoint: significant extension of progression-free survival (PFS) compared to placebo plus best supportive care. The RADIANT-4 study is part of one of the largest clinical trial programs in NET. NET are a rare type of cancer that originate in neuroendocrine cells found throughout the body, and are most often found in the GI tract, lungs or pancreas. NET can be functional or nonfunctional: functional NET produce symptoms caused by the secretion of hormones and other substances; nonfunctional NET do not secrete hormones, and may only produce symptoms caused by the tumor's growth, such as intestinal blockage, pain and bleeding. At time of diagnosis, up to 44% of patients with GI NET and 28% of patients with lung NET have advanced disease, meaning the cancer has spread to other parts of the body and is more difficult to treat. There are limited treatment options for patients with advanced GI or lung NET.

<http://swissinnovation.org/news/web/2015/03-150523-9c>

Swissmedic Discovers Dangerous Slimming Products

(Federal Administration, May 28, 2015)

The Swiss regulatory authority Swissmedic has analysed 61 illegally imported slimming products to establish their contents. Over three quarters of the products, originating primarily in the Far East, contained undeclared active ingredients. Over half contained the active ingredient sibutramine, which was withdrawn from the global market in 2010 due to the risk of serious side effects. More and more drinks such as coffee and fruit juice – some containing harmful quantities of banned substances – are offered as slimming aids. The results show that consuming such products involves substantial risks. Swissmedic urges people not to buy and consume medicines or nutritional supplements from dubious suppliers on the Internet. It also reminds private individuals that it is illegal for them to import substantial quantities of medicines into Switzerland.

<http://swissinnovation.org/news/web/2015/03-150528-48>

New Therapies for Liver Cancer

(University of Zurich, May 28, 2015)

The liver is the only organ in the human body that can regrow. This characteristic underlies new approaches to treating liver cancer being used at University Hospital Zurich (UHZ) and researched at the University of Zurich (UZH) under a Clinical Research Priority Program called "Liver Tumors: from Palliation to Cure". UHZ and UZH are at the forefront of international liver research. Around 700,000 people worldwide contract liver cancer annually. Whenever possible, liver tumors are removed surgically. A healthy liver can quickly regenerate up to 70% of its tissue. However, the remaining, healthy section is often too small to regenerate. UHZ's new surgical procedure called ALPPS is raising hope of a cure, and UHZ and UZH are collaborating to improve the procedure.

<http://swissinnovation.org/news/web/2015/03-150528-78>



New Antibody Could Revolutionize Cancer Treatment

(University of Zurich, May 28, 2015)

XBiotech, an American biotech firm, is developing a new antibody to combat cancer that also improves the patient's well-being. Its work is based on research done by Thomas Kündig, a dermatologist at University Hospital Zurich (UHZ) who teaches at the University of Zurich (UZH). Seriously ill people treated with the anti-interleukin-1alpha antibody, branded Xilonix, have been able to leave their beds, start eating again and go to work. Moreover, they're living much longer than expected. Thomas Kündig explained that rather than targeting the tumor, the drug was primarily treating the cachexia, the wasting of the body that accompanies cancer. Cancer leads to general illness, loss of appetite, and depression, with patients dying from cachexia rather than from the tumor itself. Xilonix could thus revolutionize cancer treatment.



<http://swissinnovation.org/news/web/2015/03-150528-b4>

Tool to Find Partners in Life Sciences

(<http://resourcecenter.biotechgate.com/>, May 28, 2015)

The Biotechgate database has over 36,000 company profiles listed worldwide in over 90 countries, covering 10 major sectors within the life sciences. It is a useful tool aimed at helping biotech, medical technology or pharmaceutical companies look for partners, potential clients, funding, and licensing opportunities. It also includes companies that provide services or tools, e.g. CROs/CMOs. The companies are categorized by sector: Biotechnology – Therapeutics & Diagnostics, Biotechnology – R&D Services, Pharma, Medical Technology, plus others. The tool is easy to use, and enables users to select criteria and target sub-sectors and companies of interest.

<http://swissinnovation.org/news/web/2015/03-150528-66>

Roche Bets \$555M on an Indian Biotech's Immuno-Oncology Drug

(republic-of-innovation.ch, May 28, 2015)

Roche inked a deal worth up to \$555 million to work with India's Curadev Pharma on cancer treatments that use the body's immune system to combat tumors, expanding its trove of assets in one of the industry's hottest fields. The partnership covers early-stage treatments that target the enzymes IDO1 and TDO, pathways tumors use to hide from T cells. By inhibiting IDO1 and TDO at the same time, Curadev hopes to unblind the immune system and prevent tumors from escaping its defenses. The biotech's lead compound is a small-molecule treatment, and the company believes it has potential both as a standalone treatment and in combination with other immunotherapies. Under the deal, the Swiss drugmaker will pay \$25 million up front and promise up to \$530 million tied to milestones to get its hands on Curadev's top prospect, now in preclinical development.



<http://swissinnovation.org/news/web/2015/03-150528-72>

Bumblebee Genome Mapped

(ETH Zurich, May 28, 2015)

A research collaboration spearheaded by ETH Zurich has shed light on the genome of two commercially important species of bumblebees. The large shadow cast by the honeybee collapse has distracted from the fact that in recent years in the US as well as in other areas some previously common bumblebee species have also become rare or endangered, or disappeared altogether. For this reason, two former ETH researchers, Seth Barribeau and Ben Sadd, together with Professor Paul Schmid-Hempel from the group for experimental ecology, started a bumblebee genome project eight years ago. The objective of the project was to analyse the genomes of two commercially important species: the European Buff-tailed Bumblebee, *Bombus terrestris*, and its American counterpart, the Common Eastern Bumblebee *Bombus impatiens*. The researchers were surprised to find that they were able to associate relatively few specific genes to social organisation and behaviour. "The genes for this don't differ very much between bumblebees and honeybees," says Schmid-Hempel.



<http://swissinnovation.org/news/web/2015/03-150528-15>

Oncology portfolio in 21 Medicines and 11 Investigational Compounds

(My Science, May 28, 2015)

Novartis highlighted the strength of its expanded oncology portfolio in 21 medicines and 11 investigational compounds across more than 185 data presentations at the upcoming American Society of Clinical Oncology (ASCO) Annual Meeting, May 29-June 2, and the Congress of the European Hematology Association (EHA), June



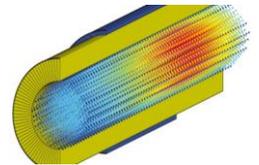
11-14. Data demonstrates advances in research in a variety of cancer types, including melanoma, lung, breast, kidney and blood cancers, underscoring Novartis' leadership in developing treatments with the potential to improve and possibly extend the lives of people with solid and hematologic tumors. "Novartis is proud to showcase our portfolio of medicines, enhanced by the acquisition of oncology products and related assets from GSK," said Bruno Strigini, President of Novartis Oncology. "In addition to new data across many disease areas, we look forward to presenting the overall survival data for the combination regimen of two of the assets we acquired - Tafenlar and Mekinist - as these targeted therapies play a critical role for certain patients fighting metastatic melanoma. These medicines - plus the many others highlighted at ASCO and EHA - exemplify our mission to transform cancer care." <http://swissinnovation.org/news/web/2015/03-150528-7b>

4. Nano / Micro Technology / Material Science

Computer simulations for Nanoelectronics

(ETH Zurich, April 21, 2015)

The tinier electronic components become, the harder they are to manufacture. Producing a transistor that is 20 nanometers and smaller from semiconductors such as the element silicon is not just a technical challenge. Physical effects, so-called quantum mechanical patterns, alter the materials' properties on a nanometre scale. ETH Zurich professor Mathieu Luisier from the Integrated Systems Laboratory has now come to the rescue. A special computer programme helps him and his team predict what happens when the composition, form and size of materials change in the nanoworld. These simulations can further help designers and engineers in the development and construction of nanodevices.



<http://swissinnovation.org/news/web/2015/04-150421-f0>

Techtextil Innovation Award '15 for Electrode Yarn

(EMPA, April 29, 2015)

For the long-time monitoring of electrocardiograms, electrodes must be skin-friendly and non-irritating, but in addition they must deliver leads without artifacts even if the skin is dry and the body is moving. Today's adhesive conducting gel electrodes are not suitable for such applications. In collaboration with partners from the industry, an Empa research team has developed an embroidered electrode from polyethylene terephthalate yarn which is plasma-coated with silver for electrical conductivity and with an ultra-thin titanium layer on top for passivation. Two of these electrodes are embedded into a breast belt. They are moisturized with a very low amount of water vapor from an integrated reservoir. The combination of silver, titanium and water vapor results in an excellent electrode chemistry. With this belt the long-time monitoring of electrocardiography is possible at rest as well as when the patient is moving.



<http://swissinnovation.org/news/web/2015/04-150429-f5>

Clean Carbon Nanotubes Coupled to Superconducting Circuits

(University of Basel, May 27, 2015)

Coupling carbon nanotube devices to microwave circuits offers a significant increase in bandwidth (BW) and signal-to-noise ratio. These facilitate fast non-invasive readouts important for quantum information processing, shot noise and correlation measurements. However, creation of a device that unites a low-disorder nanotube with a low-loss microwave resonator has so far remained a challenge, due to fabrication incompatibility of one with the other. Employing a mechanical transfer method, we successfully couple a nanotube to a gigahertz superconducting matching circuit and thereby retain pristine transport characteristics such as the control over formation of, and coupling strengths between, the quantum dots. Resonance response to changes in conductance and susceptance further enables quantitative parameter extraction. The achieved near matching is a step forward promising high-BW noise correlation measurements on high impedance devices such as quantum dot circuits.

<http://swissinnovation.org/news/web/2015/04-150527-f9>



Körber Award for Multiferroics

(ETH Zurich, May 29, 2015)

Nicola Spaldin, Professor for Material Theory at ETH Zurich, has been awarded the Körber Prize, one of the most prestigious scientific awards in Europe. The EUR 750,000 Körber Prize honours outstanding scientists working in Europe for innovative research approaches with high application potential. Spaldin is to receive the Körber Prize for the creation of a new class of crystalline compounds that could revolutionise the world of computers. With the help of computer models, the British chemist and materials scientist developed a new family of crystalline compounds: multiferroics, materials that respond to both electric and magnetic fields. The magnetic structure in these crystals can be influenced by applying electric fields. Multiferroics are thus destined for ultra-fast, extremely small and highly energy-efficient computers of the future.



<http://swissinnovation.org/news/web/2015/04-150529-b9>

5. Information & Communications Technology

ABB to Enhance Ultra-High Voltage DC Transmission System in China

(My Science, April 15, 2015)

Swiss engineering multinational ABB received a USD 100 million commission in the first quarter of 2015 to improve the ultra-high voltage direct current transmission (UHVDC) line from Lingzhou to Shaoxing in China. In what will be the seventh national 800-kilovolt UHVDC system, ABB will be providing converter transformers, power switches, and other components to enhance the transport of electricity and minimise losses over 1700 km between the energy sources in the west and consumption centres in the east of China.

<http://swissinnovation.org/news/web/2015/05-150415-9e>

Phishing Wave Targets Swiss SMEs

(Alp ICT, April 15, 2015)

According to the reporting and analysis center for information security, small and medium businesses faced increasingly sophisticated and more numerous phishing attacks in 2014. Hackers exploit flaws on companies' websites to collect the emails of corporate clients. They then contact these customers, offering a potential refund if they follow a link in the email body. The e-mail address and website resemble those of the company, and the client is asked to provide credit card details. Companies are advised to take preventive measures for content management systems (CMS) and set up firewalls for web applications. If data theft has already occurred, it must immediately advise its customers to change passwords and possibly file a criminal complaint with the cantonal police.

<http://swissinnovation.org/news/web/2015/05-150415-ff>

Cloud Platform for Swiss Digital Media

(Alp ICT, April 17, 2015)

The Swiss Broadcasting Corporation (SRG SSR) has chosen to partner with Swisscom to renew its technical infrastructure for digital media production. By 2019, Swisscom will build and operate a cloud platform for all the applications needed to produce SRG SSR's radio, TV and online content. Producing such programs involves transporting, processing and recording very large volumes of data. The corporation states that its goal is to have a cost-effective, highly effective and available IT infrastructure, while remaining flexible thanks to rapid technological progress. After studying different options, an external solution was chosen in order to keep specific know-how in-house and use standard Swisscom services - a win-win situation for all parties. The sourcing of standardized technical infrastructure ensures considerable cost savings for the program.

<http://swissinnovation.org/news/web/2015/05-150417-96>

FinTech Ecosystem Expands

(Alp ICT, April 17, 2015)

FinTech holds a monthly Swiss Financial Technology event in Geneva for companies and investors. Both its visibility and the number of participants are growing, and the group now has 300 members. FinTech builds on existing structures like the Alp ICT cluster and incubator Fongit. Zurich also has its dedicated event (FinTech Meetup Zurich) and the FinTech community is active all over Switzerland and worldwide. Financial technologies



are growing, especially as US companies develop solutions for the general public. Geneva's local ecosystem, with its banks, financial service providers, and many technology service companies and startups related to finance and/or data security, promotes this development around its financial center. An incubator dedicated to developing high added value or B2B FinTech services will be established in the fall.

<http://swissinnovation.org/news/web/2015/05-150417-17>

Cleaning Up the Scientific Data Deluge

(University of Zurich, April 17, 2015)

Every nine years, the scientific output doubles at the moment. A small think-tank has now formed at the University of Zurich in order to standardize the archival, management and publication of the university's scientific output. The group leadership includes Andrea Malits from the central library, Peter Kunszt from the IT department as well as Christian Fuhrer from the Open Access group of the university.

<http://swissinnovation.org/news/web/2015/05-150417-d1>



New Automated Platform to Find Service Providers

(Alp ICT, April 17, 2015)

Sliiks, an online platform created in 2015, can automatically search for the right service provider in areas such as computing, graphics, media or marketing. There is a growing need for digital and administrative services, like creating a website, designing a logo, or translating a document. However, in Switzerland project managers often struggle to identify a suitable provider and obtain offers that meet their needs. Sliiks aims to remedy this by serving as a stepping stone to appropriate professionals. The system performs searches based on specific criteria, e.g. contact language, partner sought and budget. Access to the platform is free and the process is very simple: customers define their needs, receive offers and choose their service provider. It is available in French, English and German.

<http://swissinnovation.org/news/web/2015/05-150417-6c>

Switzerland among World Leaders in Encryption

(Alp ICT, April 17, 2015)

Snowden's revelations of the NSA's widespread spying program have changed companies' and the public's perception of online safety and data protection. The study "2014: The Year of Encryption", published by Egress Software Technologies, reveals that nearly two thirds of IT professionals in Europe are now more aware of data security problems and 70% need encrypted messaging software and file encryption. According to a recent survey published by F-Secure, more than two thirds of consumers want to protect their privacy and half want to use digital services that prioritize security and confidentiality. Thanks to Switzerland's conducive legal framework and strong reputation in cryptography, numerous Swiss-based start-ups – including Quantitative Data Solutions, Qnective, Threema, Tresorit, Zwooky, ID Quantum Silent Circle and Di55erent – have developed innovative encryption solutions to meet these needs.

<http://swissinnovation.org/news/web/2015/05-150417-04>



Intel Aquired Swiss Micro Projector Startup

(republic-of-innovation.ch, April 17, 2015)

Lemoptix, which has forty employees, has been acquired by Intel Corporation for an undisclosed amount. It will join the "New Devices" division of the American group to develop its mobile technology department. With the acquisition of Composyt Light Lab in January, the US company now has two EPFL spin-offs in its portfolio. Their activities will remain at the Lausanne Innovation Park. Lemoptix, founded in 2008 is developing a laser projector the size of half a sugar cube, capable of projecting color information on any medium. This device can be integrated into various objects like glasses, the car displays, mobile phones and 3D scanners. The young company supplies such items to the Japanese company Hamamatsu. It is collaborating with Composyt Light Lab to develop augmented reality glasses.

<http://swissinnovation.org/news/web/2015/05-150417-a7>





Attention Span is Now Less than that of a Goldfish

(republic-of-innovation.ch, May 22, 2015)

Humans have become so obsessed with portable devices and overwhelmed by content that we now have attention spans shorter than that of the previously jokingly juxtaposed goldfish. Microsoft surveyed 2,000 people and used electroencephalograms (EEGs) to monitor the brain activity of another 112 in the study, which sought to determine the impact that pocket-sized devices and the increased availability of digital media and information have had on our daily lives. Among the good news in the 54-page report is that our ability to multi-task has drastically improved in the information age, but unfortunately attention spans have fallen. In 2000 the average attention span was 12 seconds, but this has now fallen to just eight. The goldfish is believed to be able to maintain a solid nine.



<http://swissinnovation.org/news/web/2015/10-150522-5a>

Moving with Thoughts Through a Virtual Game Environment

(My Science, May 27, 2015)

The start-up MindMaze has opened up a new dimension in the world of video games: moving with thoughts through a virtual environment or even directly interacting through certain emotions. A cap fitted with sensors and virtual immersion glasses with motion sensors--this is how the user enters another world. The system merges augmented reality with virtual reality. The environment adapts to the user's hand movements, which are visible. Emotions and sensations felt in the moment actually prompt new virtual elements. Imagined movements are performed by the avatar, as if it were directly connected to the user's brain. MindMaze, an EPFL spin-off developed around a device for the rehabilitation of stroke victims, has used its expertise to launch this new system. Still in the prototype stage, the device goes a step further in advancing gamers' immersive experience.



<http://swissinnovation.org/news/web/2015/05-150527-81>

IBM's Watson Could Diagnose Cancer Better Than Doctors

(republic-of-innovation.ch, May 27, 2015)

Watson's next goal could revolutionize oncology. IBM is currently working on the third-generation of the Watson platform, which has the power to debate and reason, according to IBM CEO Ginni Rometty. The latest version of Watson can absorb and analyze vast amounts of data, allowing it to make diagnoses that are more accurate than human doctors. If a Watson-style computer was deployed through a cloud interface, healthcare facilities may be able to improve diagnosis accuracy, reduce costs and minimize patient wait times. In combination with the Memorial Sloan-Kettering Cancer Center and Wellpoint, a private healthcare company, researchers hope to see Watson available for rent to any clinic or healthcare facility that wants to get its opinion on an oncology diagnosis. On top of this, researchers state that the system will be able to suggest the most affordable way of paying for treatment.

<http://swissinnovation.org/news/web/2015/05-150527-2a>

New Report on the Development of Cybercrime

(Federal Administration, May 28, 2015)

The Reporting and Analysis Centre for Information Assurance MELANI focus in their 20th semi-annual report not merely on the main events of the second half of 2014, which concerned primarily incidents of blackmail and attacks on poorly protected systems. The report published in April also takes a look at the development of cybercrime over the past decade. There has been a massive increase in both the number of internet users and the number of platforms and services over the past ten years. New services and applications have produced further opportunities to find vulnerabilities and to exploit them too. This has also had an impact on criminal structures and has been exploited accordingly. Recent years have seen the development of a veritable underground market where everything needed for an attack can be obtained. At present, various states are also keenly interested in using the internet for espionage and surveillance methods.

<http://swissinnovation.org/news/web/2015/05-150528-c3>

New Hub for Computer Games

(ETH Zurich, May 28, 2015)

ETH Zurich's new Game Technology Center in the Department of Computer Science will pool Swiss know-how in the development of computer games. This was announced as part of the final presentation of the Game Programming Laboratory. ETH Zurich announced its intention to further expand its commitment to the development



of computer games. The Department of Computer Sciences is establishing a Game Technology Center where scientists will be able to devise new technologies for computer game development in a cross-disciplinary manner and in collaboration with industry. ETH president Lino Guzzella explains the decision: “Game technology is not only interesting for start-ups and the creative industries, but also for science and teaching. In future, we want to pool ETH’s strengths and pay increased attention to this technology.”

<http://swissinnovation.org/news/web/2015/05-150528-1d>



6. Energy / Environment

Energy Strategy for 2050

(20 Minuten, May 15, 2015)

Renewable energy sources produce at times huge amounts, and at others almost no electricity; an aspect of sustainable energy that a Swiss study has shown won't be a problem. The Energy Strategy for 2050, which will have a large part of the power supply in Switzerland be from renewable sources, has been structured to work with this fluctuation of electricity from renewable sources. A study performed by scientists at the ETH Zurich has simulated with software the future wind and sun energy productions, and demonstrated that even on a cloudy day, for example, when there isn't a surplus of power, the water pump power plants that are to be built for the 2050 plan will effectively take over. However, there is still the debate over whether or not these energy pumps will remain profitable in the future, and to that question this study does not have an answer.



CHF 95 Billion for Transport in 2010

(Federal Administration, April 15, 2015)

The total costs for transport in Switzerland in 2010 amounted to CHF 94.7 billion. This is equivalent to approx. CHF 12,000 per inhabitant. Road transport accounted for CHF 78 billion, rail transport CHF 10.3 billion and aviation CHF 6.4 billion. None of the user groups fully funded the generated costs themselves in either passenger transport or freight transport. These are the latest findings of the Federal Statistical Office's (FSO) statistic on the costs and funding of transport.

<http://swissinnovation.org/news/web/2015/06-150415-7f>

Tropical Town: Seeding Sustainable Settlements

(ETH Zurich, April 17, 2015)

In Asia and Africa, rapid urbanization has seen human populations move to cities on an unprecedented scale. Increasingly, the inability to settle these new urban dwellers into formal housing, and the inability to engage them economically and socially is bringing about serious urban issues. Initiated by the Future Cities Laboratory of the Singapore-ETH Center, the Tropical Town project was developed in collaboration with Universitas Indonesia (Jakarta), and the Municipal Planning Authority in Batam, Indonesia. The center of the project's concept is a housing unit that provides space for working and living, and can be expanded vertically by adding additional floors as the economic capacity of the household grows.



<http://swissinnovation.org/news/web/2015/06-150417-ec>

Swiss Electricity Consumption Falls 3.1% in 2014

(Federal Administration, April 17, 2015)

National electricity consumption fell to 57.5 billion kilowatt hours (kWh), a 3.1% decrease from 2013 according to a report released by the Federal Office of Energy. This comes despite an increase in power plant production by 1.9% to 69.6 billion kWh, the second highest electricity output ever recorded. However, an increase in the surplus of electricity exports from 3.1 to 5.5 billion kWh could account for this. This in turn caused an increase in the export trade balance from 327 million in 2013 to 442 million francs. The distribution of electricity production amongst the different sources is as follows: 56% hydropower, 38% nuclear, 6% conventional thermal and other power plants.

<http://swissinnovation.org/news/web/2015/06-150417-af>



Good and Bad News for Oil Palm Smallholders

(ETH Zurich, April 21, 2015)

The Oil Palm Adaptive Landscapes (OPAL) is a transdisciplinary project led by ETH Zurich and funded by the Swiss National Science Foundation. It includes academic and non-governmental partners from Indonesia, Central Africa, Colombia, and Europe. Over the next six years, the project will develop integrated research on scenarios of development of oil palm landscapes to contribute to better decision making and management in tropical regions. Over the last year, palm oil prices have dropped drastically. Has oil palm turned from blessing to curse for small-scale farmers? Depending on the region, this development may hold some opportunities for smallholders.

<http://swissinnovation.org/news/web/2015/06-150421-89>



New Study on Swiss Alpine Groundwater Launched

(University of Zurich, April 27, 2015)

In a project funded under the University of Zurich's "Forschungskredit," hydrologist Philipp Schneider and his team are looking into the quality, quantity, distribution, and storage patterns of alpine groundwater. The researchers now want to conduct a qualitative and quantitative study of bodies of groundwater in unconsolidated sediments around the Tiefen Glacier over several years, including mapping and geophysical measurements. They are monitoring temperature, electrical conductivity, water level, and runoff locally over the entire year. In the snow-free period they will also be conducting experiments by taking targeted samples to determine the quality and origin of the groundwater. This way the team will be able to find out whether climate change is impacting water quality. Philipp Schneider also hopes his work will make a major contribution to our understanding of the dynamics of water storage and water quality in the Swiss Alps.

<http://swissinnovation.org/news/web/2015/06-150427-b5>



New Technologies for Water Management

(ETH Zurich, May 15, 2015)

In Bern, the Aare has yet again flooded over its banks. Research groups have again highlighted the linked relationship between global warming and excessive precipitation, which emphasizes the need for further measures to reduce the risks in the future. The logical solution is to widen the rivers and revitalize the wetlands, improving the natural water retention of such areas, which the Swiss cantons have just set out priorities to do, but new technologies for water management are also needed, such as that of a group at the EPFL, who have developed a computer model that handles precipitation forecasts in real time and calculates flood peaks. With this, the optimal strategy for a specific weather situation can be determined. However, with unknown climate changes in our midst, we will have to combine a variety of methods and ideas to curb the future flooding in the 21st century.

<http://swissinnovation.org/news/web/2015/06-150515-ce>



The Mystery of the Superquake is Solved

(20 Minuten, May 15, 2015)

The 2011 earthquake that destroyed the nuclear power plant in Fukushima was a "superquake," and ETH-researchers are now providing an explanation that these "superquakes" occur at the end of so-called "super cycles." These cycles start with smaller earthquakes forcing a tectonic plate under the edge of another. The tension in this area builds up until a piece of one of the plates stuck under the other breaks off completely, causing the "superquake." Researchers continue to expand their theoretical understanding of earthquake cycles, which could eventually help with assessing the long-term risks in certain areas. However, this could still be a long way off because, as Robert Herrendörfer from ETH Zurich says, "these theoretical models...are still limited and not yet suited for earthquake prediction."

<http://swissinnovation.org/news/web/2015/06-150515-b0>



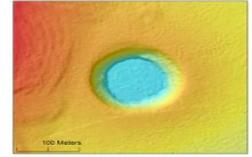
Underwater Craters at the Lake Neuchâtel Discovered

(ETH Zurich, May 18, 2015)

Anna Reusch, a doctoral student at ETH's Geological Institute, was utterly amazed one morning: during a routine measuring run with her research vessel on Lake Neuchâtel, she suddenly saw an unusual shape on the control



panel screen. Beneath the boat, at a depth of over 100 metres, had to be something no one had ever seen before. She immediately informed her professor, Michael Strasser: "We've found something that you absolutely have to see." An initial rough data analysis on board indicated that Reusch and her colleagues were looking at a scientific sensation: an enormous crater, measuring 10 metres deep and 160 metres in diameter. "I'll remember this day for a long time – I never expected anything like this," recalls Reusch, adding: "It just goes to show that even in the 21st century, there are still thrilling and exciting discoveries to be made in Switzerland!"
<http://swissinnovation.org/news/web/2015/06-150518-a1>



Super Quakecycles Occur in Subduction Zones

(ETH Zurich, May 28, 2015)

When tectonic plates collide, they produce earthquakes like the recent one in Nepal. Researchers at ETH Zurich have explained how and why superquakes occur in subduction zones, where one plate moves under another. These zones are found worldwide, including off the South American coast, in the US's Pacific Northwest, and in Japan. Earthquakes occur along a megathrust fault, but only in seismogenic zones, where friction prevents relative movement of the plates over long periods of time, causing stresses to build up. An earthquake releases pressure suddenly, new stresses build up again, and an earthquake cycle is born. The final superquake affects the entire subduction zone segment. The study results published in Nature Geoscience show that the wider a seismogenic zone, the greater the probability of a supercycle occurring.



<http://swissinnovation.org/news/web/2015/06-150528-cc>

Extreme High-Temperature and Heavy Rainfall Events Attributed to Observed Warming

(ETH Zurich, May 29, 2015)

Torrential rains and blazing heat have been mentioned even in the oldest manuscripts and have always been part of the climate. A substantial proportion of today's extreme high-temperature and heavy rainfall events, however, can be attributed to the observed warming. A substantial proportion of all globally occurring hot extremes and heavy rainfall events can be attributed to warming primarily caused by humans. Since a heat or precipitation event does not have the same socio-economic impact everywhere in the world, it is necessary to combine our approach with regional information on exposure and vulnerability in order to carry out a comprehensive risk assessment. This type of risk assessment could serve as an important scientific basis for decisions on warming targets or even for global questions of liability.



<http://swissinnovation.org/news/web/2015/06-150529-d7>

The Future of Storage System: Batteries and Fuel Cells

(ETH Zurich, May 30, 2015)

"In order to halt climate change, we need to transform our transportation system", Anthony Patt, Professor of climate policy from ETH Zurich says. He compares cars that store the electricity electrochemically in the form of batteries with cars that store it chemically in the form of a hydrogen fuel cell: "Important reasons for governments to support the initial diffusion of fuel cells are: First, although fuel cells are unlikely to outperform batteries when it comes to cars, they will likely do so for long-distance trucks. Second, producing hydrogen through electrolysis may be the best way to balance out the fluctuation in power generation that comes from wind and solar, enabling a completely renewables-based power system. At the same time, battery vehicles are more efficient than fuel-cell vehicles, as long as the electricity charging those batteries is coming directly from the windmill or photovoltaic panel, and does not have to be stored somewhere else in between. However, the market is big enough for both batteries and fuel cells, and the two technologies can complement each other in the race to stop burning oil."



<http://swissinnovation.org/news/web/2015/06-150530-23>

Innovative hybrid-electric powertrain for road sweepers

(Empa, May 31, 2015)

Empa, ETH Zurich and the road sweeper manufacturer Bucher Municipal have jointly developed a pioneering hybrid-electric powertrain for road sweepers in a CTI project. The concept is based on a gas-driven engine, which provides power to the electric motors. Compared to conventional sweepers, the energy consumption has been halved and CO2





emissions reduced by more than 60 percent. Bucher Municipal is currently working on a concept study to investigate possible commercialisation of the new technologies.

<http://swissinnovation.org/news/web/2015/11-150531-24>

7. Engineering / Robotics / Space

ABB Expands Collaborative Robot Expertise

(My Science, April 15, 2015)

Swiss engineering multinational ABB recently acquired gomtec GmbH, a 25-person company based near Munich specializing in mechatronic systems. This acquisition is in effort to further support ABB's initiatives in the development of new generation collaborative robots with integrated security components, and is in line with ABB's Next-Level strategy based on three strategic growth areas: profitable growth, enhanced competitiveness, and lower business model risks. ABB is a leading supplier of industrial robots worldwide, having installed over 250,000 to help manufacturers increase productivity, product quality, and worker safety.

<http://swissinnovation.org/news/web/2015/07-150415-7c>

Star Formation Stops from Inside Out

(ETH Zurich, April 17, 2015)

According to a team of astrophysicists at ETH Zurich, star formation is quenched beginning in the inside regions before moving to the outside regions of most giant galaxies. The international team of researchers used the European Southern Observatory's Very Large Telescope and the Hubble Space Telescope to study 22 giant galaxies, known as 'red and dead' because they mostly consist of older stars that emit red light, and were able to reach this important conclusion which could have implications for our understanding of the exact mechanism of how the birth of new stars in giant galaxies becomes interrupted. Their findings were recently published in the journal 'Science'.

<http://swissinnovation.org/news/web/2015/07-150417-e8>

Robotic Analytics as Future Standard Method in Archeology

(ETH Zurich, April 17, 2015)

With the help of robots, archaeologists may soon be able to compare their findings with data from thousands of experimental reference samples, enabling them to determine tool use in the Stone Age. Archeologists from the Monrepos Research Center in Neuwied, Germany teamed up with robotics experts at the ETH Zurich and had additional help from the Kuka robotics company. In collaboration, scientists have developed a robotic system that is able to perform use-wear analysis in an automated way. Jonas Buchli, professor at the Institute for Robotics and Intelligent Systems at ETH Zurich is convinced that in 10 years' time, robotic analysis will be the standard method in archaeology.

<http://swissinnovation.org/news/web/2015/07-150417-ee>



Lowering the Burden of Back Pain Patients

(EMPA, April 21, 2015)

In collaboration with the University of Pittsburgh and the University Clinic Balgrist, the Swiss Federal Laboratories for Materials Science and Technology, EMPA have made significant progress in understanding the mechanics of lumbar vertebrae movement, shining a light on the process of abrasion between vertebrae and spinal disk. Analyzing computer simulations of the human skeleton the researchers were able to pinpoint processes that could help explain how lower back pain develops and why it has a tendency to reoccur even after successful surgeries. The novel insights gained in the study could, if combined with a recently developed 3D x-ray system, help develop individualized therapies; thus taking a heavy weight off the shoulders of patients suffering from severe back pain.

<http://swissinnovation.org/news/web/2015/07-150421-bf>





Investigating the Impact of Gravity on Cells

(University of Zurich, May 08, 2015)

The University of Zurich conducted a series of three experiments investigating the connection between gravity and various cellular functions. In particular, the experiment focused on the role of gravity during the oxidative burst, an old and proven method for the destruction of bacteria. In a second experiment, a specially constructed microscope made real-time recordings of the influence of gravity on the dynamics of the cellular skeleton and of the mitochondria contained in the cell. The third experiment observed cells from the human immune system in zero gravity.

<http://swissinnovation.org/news/web/2015/07-150508-a9>



Finding Young Engineering Talents

(20 Minuten, May 15, 2015)

Swiss companies often complain that there is a lack of young engineering talent. However, a new study shows that this is mostly the companies' own fault. Although many do use the Internet and social networks to advertise technical education and engineering professions, they tend to go about it the wrong way. What they post is usually very dry or too complicated, and rarely accompanied by videos or pictures. To truly appeal to a younger audience, businesses should go the more visually exciting route, chiefly fascinating video clips that appeal to young people emotionally, and make engineering appear more attractive to them.

<http://swissinnovation.org/news/web/2015/07-150515-bd>



Bionic Athletes Compete in Cybathlon

(ETH Zurich, May 20, 2015)

Next year's Cybathlon will host people with physical disabilities equipped with advanced assistive devices including robotic technologies. The goal of this unique competition is to remove barriers between people with physical disabilities, researchers and the general public and to promote the development of assistive technologies that are useful for daily life. We talked to Robert Riener, the Cybathlon's main organizer and Professor of Sensory-Motor Systems at ETH. The Cybathlon will take place on 8 October 2016 at the Swiss Arena in Kloten. People with varying degrees of disability, aided by cutting-edge assistive technology, will participate in the unique competition. A team is comprised by a technology provider and at least one pilot who directs the technological device. As a result, two medals await each winning team at the Cybathlon: one for the parathletes and another for the provider. The technological device that is deployed can either be a product that is already available on the market or a prototype from a research lab.

<http://swissinnovation.org/news/web/2015/07-150520-6b>



Soft Robotics for Adaptive Building Facades

(ETH Zurich, May 29, 2015)

Today, building envelopes tend to be static and unable to adapt to changing conditions. Now, for the first time, an adaptable façade has been used for the newly inaugurated House of Natural Resources (HoNR) that produces electricity and regulates light and heat generation. Adaptive Solar-Fassade The adaptive solar façade is assembled on the south side of the House of Natural Resources. The envelope of a building is of great importance in the building's energy balance, and insulation and air-tightness have improved significantly in recent years. But there is also significant untapped potential when it comes to contributing to the transition of our energy system towards renewable energy sources: the building envelope of a building, particularly the façade, can be designed to recover heat and generate electricity.

<http://swissinnovation.org/news/web/2015/07-150529-14>



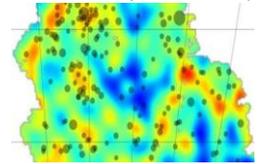


8. Physics / Chemistry / Math

Shedding Light on Dark Matter

(ETH Zurich, April 15, 2015)

Two years ago, the international research project called the Dark Energy Survey (DES) started its operations. Now, DES has just published the results of a study co-led by a postdoc in your group. It must be exciting news as Fermilab, the coordinating institution for the project, has announced it in a press release. DES has produced its first map of the distribution of dark matter. The study was co-led by Chihway Chang, one of the postdoctoral researchers in my research group. The region mapped in this study comprises about 140 square degrees, while DES will eventually map a region of 5000 square degrees of the southern sky. The map shows the regions of high and low dark matter density. It reveals that dark matter tends to concentrate in areas where there is a high amount of ordinary matter, for instance in galaxy clusters. This confirms our theories for the formation of structures in the universe, including galaxies and stars.



<http://swissinnovation.org/news/web/2015/08-150415-b7>

Back in Action

(The Boston Globe, April 29, 2015)

The world's biggest particle accelerator is back in action after a two-year shutdown, embarking on a new mission that scientists hope could give them a look into the unseen dark universe. Scientists at the European Organization for Nuclear Research, or CERN, shot two particle beams through a 27-kilometer tunnel, beneath the Swiss-French border near Geneva. They hope to see all sorts of new physics, including a first ever glimpse of dark matter, during the collider's second three-year run. Dark matter and dark energy make up most of the universe, but scientists haven't been able to see them yet, so researchers are looking for them in high-energy crashes, on the international space station as well as in a deep underground mine.

<http://swissinnovation.org/news/web/2015/08-150429-2e>

Squeezed Quantum Cats

(ETH Zurich, May 26, 2015)

ETH professor Jonathan Home and his colleagues reach deep into their bag of tricks to create so-called "squeezed Schrödinger cats". These quantum systems could be extremely useful for future technologies. Quantum physics is full of fascinating phenomena. Take, for instance, the cat from the famous thought experiment by the physicist Erwin Schrodinger. The cat can be dead and alive at once, since its life depends on the quantum mechanically determined state of a radioactively decaying atom which, in turn, releases toxic gas into the cat's cage. As long as one hasn't measured the state of the atom, one knows nothing about the poor cat's health either – atom and kitty are intimately "entangled" with each other.



<http://swissinnovation.org/news/web/2015/08-150526-a6>

9. Architecture / Design

Future Cities Lab in Singapore to Continue

(ETH Zurich, May 27, 2015)

Singapore's National Research Foundation has awarded funding to the Singapore-ETH Centre for a second five-year phase of the Future Cities Laboratory. The second phase commences in September 2015 and addresses the challenges of sustainable urban development. Three quarters of the Swiss population live in urban areas – with nearly 1.9 million in the greater Zurich area alone – but urban growth rates in the country are relatively low at 1%. Singapore, too, is predominantly urban now, with more than 5.3 million people living in urban areas. Sustainable urban development is a pressing issue not only for Asian megacities, but for big cities around the world.



<http://swissinnovation.org/news/web/2015/09-150527-c1>



Sustainable Construction: Inauguration of the House of Natural Resources

(ETH Zurich, May 30, 2015)

The House of Natural Resources (HoNR) is a flagship project for a hardwood building. June 3 marked the office building on ETH's Hönggerberg campus after 18 months of construction. It is an exciting development for researchers at ETH Zurich as the building will serve as a research laboratory for sustainable construction. Six professors from the Institutes of Structural Engineering, Building Materials, and Technology in Architecture and their research groups were involved in the construction of the building, implementing findings directly from their research projects. The inauguration does not mean their work is complete – they now want to test the technologies over a longer period and find out where their strengths and weaknesses lie. ETH President Lino Guzzella says of this unique new building: «The House of Natural Resources is a good example of on-site interdisciplinarity. It shows how wood, an indigenous raw material, can be used in a sustainable and technically smart way.»



<http://swissinnovation.org/news/web/2015/09-150530-bb>

10. Economy, Social Sciences & Humanities

Global Family Business Index

(University of St. Gallen, May 28, 2015)

The Center for Family Business at the HSG published the Global Family Business Index for the first time. The list reveals the world's 500 largest family businesses. Combined, they employ about 21 million people, i.e. almost as many as live in Australia. In Switzerland, approx. 88 per cent of all enterprises are considered to be family businesses; in Germany, they exceed 90 per cent; and in Austria, they amount to about 80 per cent. The phenomenon is not limited to German-speaking countries, though. In Europe as a whole, their proportion reaches an average of 70-80 per cent, and the picture is also very striking in the US, where roughly 90 per cent of all companies are deemed to be family businesses. Most family businesses are small and medium-sized enterprises, but there are also large examples among them.

<http://swissinnovation.org/news/web/2015/10-150528-b6>

With more Flexible Working Time

(Federal Administration, April 21, 2015)

According to the Swiss Labor Force Survey 2014, carried out by the Federal Office of Statistics, almost half of all employees had flexible working hours in 2014. Part-time employment increased by 5%. Every fifth person worked regularly on Saturdays and every tenth on Sundays. Every twentieth person worked over night. 5% of all employees worked on an on demand basis. 7% of all workforce had several jobs at the same time. 7% of all employees had a fixed term contract. Some differences could be observed in terms of working time models depending on the level of education and gender.

<http://swissinnovation.org/news/web/2015/10-150421-02>

First Impact Investing Conference on the HSG Campus

(University of St. Gallen, April 29, 2015)

On the occasion of the first Impact Investing Conference on the HSG campus, experts from academia and practice discussed investments that generate a measurable social or ecological benefit. The University of St.Gallen's hub in São Paulo and the Impact Investing Latin America research platform, which was initiated by the HSG, organised a conference in Switzerland for the first time. After three runs in Brazil, the Impact Investing & Social Finance Conference was this year staged on the campus of the University of St.Gallen for the first time. The term "impact investing" denotes investments in companies which besides financial profit also strive for measurable social or ecological benefit.



<http://swissinnovation.org/news/web/2015/10-150429-b3>

Design of a Sustainable Financial System

(Federal Administration, May 03, 2015)

The UNEP Inquiry into the Design of a Sustainable Financial System identifies financing as one of the greatest challenges in advancing sustainable development. Switzerland is strongly committed to environmental issues. In combination with its advanced financial sector, Switzerland is in a unique position to present an opportunity for the



transition to a green and inclusive economy. The Swiss team for the UNEP Inquiry gathers representatives of the financial sector, NGOs and academia along with government representatives to reflect on the Inquiry's questions regarding a financial system aligned to sustainable development. The recommendations and ideas presented within this report is the outcome of the Swiss Team's thought process, and it has to be acknowledged that more work is needed to validate some of them and formulate plans for action.

<http://swissinnovation.org/news/web/2015/10-150503-2b>

The Most Valuable Brands in Switzerland

(20 Minuten, May 15, 2015)

Every year, Interbrand publishes a list of the most valuable brands in Switzerland, and this year Nescafé coffee has come in first, with a denomination of 10.6 million Swiss francs. Nescafé is followed in this ranking by the business magazine Bilanz, the market consulting firm Interbrand Roche, Nestlé, and Rolex. The companies that have increased most in value this past year is the building materials manufacturer Sika, with a huge growth of 78 percent, and the sanitary technology Geberit Group, with an increase of 29 percent. In regard to the competition between the successful retailers Migros and Coop, Migros achieved 37th place in this ranking, and Coop only 42nd. Overall, the value of Swiss brands has decreased slightly from 105 to 103 billion francs this year.



<http://swissinnovation.org/news/web/2015/10-150515-f2>

Ten Years of Technology and Economics

(ETH Zurich, May 21, 2015)

The Department of Management, Technology and Economics (D-MTEC) is celebrating its tenth anniversary. In both its research and teaching, the department explores the interfaces between technology and economics. Graduates with in-depth knowledge in these areas are in high demand on the labour market. D-MTEC works in close collaboration with companies like the Bühler technology group, which participated in the Entrepreneurial Leadership Seminar 2013. Modern technologies permeate our lives and shape our society, making it all the more important to examine their impact on the environment, people, society and the economy. Since its foundation in 2005, the Department of Management, Technology and Economics at ETH Zurich has been investigating the relationship between technology and the economy.



<http://swissinnovation.org/news/web/2015/10-150521-30>

Youth Violence Declining

(ETH Zurich, May 28, 2015)

Researchers at ETH Zurich's Criminological Research Unit have examined the evolution of violence among youths in the canton of Zurich. The representative survey of ninth grade students, conducted for the third time, shows that the propensity towards violence is clearly decreasing within this age group. The researchers have confirmed that youth violence has fallen with respect to offences registered by the police, as well as in terms of violent experiences that youths themselves report. The largest decrease was observed in theft and blackmail, followed by assault. There appears to be less bullying in schools, and violent offences have declined most sharply in public spaces. However, cases involving sexual violence against minors declined the least. For the first time, the study included cyberbullying and dating violence.

<http://swissinnovation.org/news/web/2015/10-150528-65>

Financial System Supports the Transition to a Green Economy

(Federal Administration, May 28, 2015)

At a symposium entitled "Swiss Finance in a changing world" held in Bern, national and international experts debated how the financial system can boost the green economy. Building a green economy that effectively manages negative environmental impacts – like climate change, biodiversity loss and pollution – requires major investments. To compensate for the lack of public resources, private finance is urgently needed to create resource-efficient infrastructure, technologies, and innovative production and consumption models. This is why the United Nations Environment Program (UNEP) launched the international UNEP Inquiry into the Design of a Sustainable Financial System. The Geneva-based Inquiry aims to align the global financial system with the long-term needs of a green economy. As home to a globally active financial center, Switzerland is contributing valuable experience to this international inquiry.

<http://swissinnovation.org/news/web/2015/10-150528-1c>



New Study on the Digital Maturity of Swiss Enterprises

(University of St. Gallen, May 29, 2015)

The University of St.Gallen pooled forces with the strategy consultancy firm Crosswalk and a group of experts to develop a tool with which enterprises are able to check their digital maturity. The Digital Maturity Model is based on the St.Gallen Business Engineering Framework and records a firm's digital development. The study reveals that the overwhelming number of enterprises have already left the stage of "trying things out" behind and are tackling corporate digitalisation on the basis of plans. Whereas companies in the information and communication industries achieve the highest degrees of maturity, firms from the manufacturing industry and from public administration and from education are lowest on the scale. Traditionally rather conservative enterprises from the banking and insurance sector attain a comparably high degree of digital maturity because in those sectors, digital innovation is regarded as a crucial competitive edge. Small and medium-sized enterprises occupy a very good position in comparison. In particular, they outdo the majority of big corporations in terms of culture and expertise. In transformation projects, this appears to be an advantage because the size and more flexible structure of such firms enable them to react to new circumstances at a faster pace.

<http://swissinnovation.org/news/web/2015/10-150529-8f>

11. Technology Transfer / IPR / Patents

Stimulate Regional Innovation

(republic-of-innovation.ch, April 17, 2015)

The Neuchâtel State Council wants to stimulate the canton's economic development by diversifying its economic base. The bill to support economic development (LADE) also aims to encourage the creation of wealth and jobs. The current law dates from 1978 and was intended primarily to rebuild the economy after the watchmaking crisis. The council believes that modern, flexible legislation is needed to overcome today's economic challenges. It is aware of the important role that the canton plays in wealth creation. The bill covers four complementary areas that can be summarized as the "4i strategy": innovation, integration, implementation and image. This includes maintaining Neuchâtel's vocation as an industrial canton, since this sector is the main motor of its development.



<http://swissinnovation.org/news/web/2015/11-150417-8d>

ETH Domain Boosts Record in Knowledge and Technology Transfer

(Federal Administration, May 28, 2015)

ETH Domain has successfully fulfilled its mandate from the Federal Council and Parliament, despite the negative effects of the adoption of the immigration initiative. The attraction of the two Federal Institutes of Technology in Zurich and Lausanne continues unabated: with more than 28,500 students and doctoral students, a new record was reached in 2014. In terms of knowledge and technology transfer, the ETH Domain with ETH Zurich, EPFL and the four research institutes PSI, WSL, Empa and Eawag also climbed record heights. However, if the ETH Domain is expected to continue to benefit Switzerland as a center of knowledge and industry, it is dependent on optimal parameters, especially planning security, stable basic funding and international openness.

<http://swissinnovation.org/news/web/2015/11-150528-b5>

Longterm Support for RUNWAY Startup Incubator

(My Science, May 31, 2015)

The Zurich University of Applied Sciences (ZHAW) and Zürcher Kantonalbank (ZKB) have decided to form a long-term partnership to engage in startup promotion. Between 2015 and 2019, ZKB will contribute substantial funds to support the RUNWAY Startup Incubator. For the next four years, ZKB will contribute a sizeable sum of money towards the RUNWAY Startup Incubator. These funds will be used to further develop and operate the Incubator, which was established in 2014, as well as related sub-projects and supporting projects. As a sponsoring partner, ZKB is also committed to be involved in applied research & development concerning startups. At the same time, it has agreed to respect the university's right to academic freedom and not to attempt to influence the content of teaching programs, research projects, or consulting work in any way.



<http://swissinnovation.org/news/web/2015/11-150531-d8>



12. General Interest

Ernesto Bertarelli - Richest Person in World's Happiest Country

(Bloomberg.com, May 27, 2015)

Ernesto Bertarelli has every reason to be happy. His \$15.8 billion fortune makes him the richest person in Switzerland, the world's happiest place, according to a new survey. The World Happiness Report 2015 names the alpine nation of 8 million people as the happiest country in the world, followed by Iceland, Denmark, and Norway. Seven of the top-10 happiest countries on earth are in northern Europe, while the other three are Canada, Australia, and New Zealand. Bertarelli's fortune is the 54th biggest in world, according to the Bloomberg Billionaires Index. Italian born, Bertarelli, his family, and their pharmaceutical company Serono moved to Geneva in the 1970s. By 1996, Ernesto was running the company and by 2006 had sold his family's 64.5 percent stake to Merck for \$8.6 billion. These days he has about 80 percent of the family wealth in cash investments, according to the index, and acts as chairman of Geneva-based Waypoint Capital.



<http://swissinnovation.org/news/web/2015/12-150527-4e>

13. Calls for Grants/Awards

Bilateral Call: Swiss-US Energy Innovation Days 2015

(energiaplus.com, March 17, 2015)

US Ambassador, Suzi LeVine, and Walter Steinmann, Director of the Swiss Federal Office for Energy (SFOE) announced the 2nd Swiss-US Energy Innovation Days, which will be held in Zürich from August 18 to 21, 2015. The second edition of the Swiss-US Energy Innovation Days 2015 will focus on Integrated Building Systems: Representatives from Swiss and US universities, companies, state institutions and organizations will examine 4 topics: Energy Technologies, Architecture & Space, Mobility and Society. They will explore innovations and new business opportunities in workshops, site visits and evening receptions, which will be jointly organized by the Swiss Society of Engineers and Architects (SIA), the Zurich University of Applied Sciences (ZHAW), and the Massachusetts Clean Energy Center (MassCEC).



<http://swissinnovation.org/news/web/2015/00-150317-4f>

Call: Join Swiss Pavilion at largest BIO Convention in Philadelphia

(Swiss Biotech Association, February 04, 2015)

Bio International Convention- the Global Event for Biotechnology in Philadelphia - is the largest global event for the biotechnology industry and attracts the biggest names in biotech, offers key networking and partnering opportunities and provides insights and inspiration on the major trends affecting the industry. Bio International Convention 2014 The 2014 Bio Exhibition featured more than 1,800 exhibitors and covered a surface of 160,000 square feet. event included 55 state, regional and country pavilions who in turn hosted many companies from their regions.



<http://swissinnovation.org/news/web/2015/13-150204-bf>

Call: Swiss Pavilion at Biotechnica 2015 in Hanover

(Swiss Biotech Association, February 04, 2015)

Biotechnica - Europe's No.1 event for biotechnology, life sciences and lab technology - is the only trade fair that covers the complete value-adding chain in biotechnology from basic research to finished product. This allows the show to put the different areas of research in touch with one another and forge links between industry and the academic world. A total of 616 exhibitors from 28 different countries were 2013 in Hanover. Switzerland was in the spotlight since it was announced the official Partner Country of Biotechnica 2013. This drew a lot of attention to the Swiss exhibitors, which will profit from the lasting impression they left in 2013. The submission deadline is April, 30 2015.



<http://swissinnovation.org/news/web/2015/13-150204-75>



Call: Swiss Summer School on "Democratic Innovations"

(NCCR-Democracy, January 05, 2015)

The 2nd Swiss Summer School in Democracy Studies will take place at the University of Zurich in June 2015. The Summer School "Democratic Innovations" brings together academics from all over the world with a common interest in how established democracies adapt to new challenges. Institutional innovations in citizen participation, new forms of political behavior and public deliberation as well as the effects of digital technologies in reaching out to the public will be addressed in five one-day sessions. The Summer School gives doctoral students from political science, media and communication science, political philosophy and related disciplines the unique opportunity to discuss their research projects with renowned experts from their field and to establish valuable contacts for their academic future.

<http://swissinnovation.org/news/web/2015/02-150105-d8>

Call: Opportunities for Researchers from the Socio-economic Sciences and Humanities

(net4society, October 15, 2014)

The NET4SOCIETY, a transnational co-operation among National Contact Points for Socio-Economic Sciences and the Humanities (SSH), published the opportunities for researchers from the socio-economic sciences and humanities within the framework of Horizon 2020. The document comprises almost 40 calls with different sub topics. Application requirements and deadlines differ among the individual topics.

<http://swissinnovation.org/news/web/2014/13-141015-d6>

Call for Grants: Technology Fund

(Startupticker, October 24, 2014)

Swiss small and medium-sized enterprises developing and marketing innovative technologies that reduce greenhouse gas emissions, support the use of renewable energy or conserve natural resources can apply for guarantees of up to 3 million for a duration of 10 years at most. The Technology Fund is a federal climate policy instrument falling under the responsibility of the Swiss Federal Office for the Environment (FOEN). The first loan guarantees are expected to be issued at the beginning of 2015.

<http://swissinnovation.org/news/web/2014/13-141024-d2>

Call: SNSF Professorship

(SNSF, September 30, 2014)

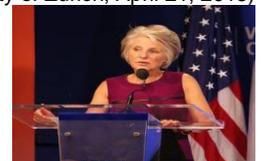
The SNSF professorships address young and promising researchers who aim to pursue an academic career and start their own research team. An SNSF professorship includes the researcher's salary, a research grant, salaries of employees, as well as a contribution to infrastructure costs. The funding period is 4 years and may be extended by no more than 2 years. The submission deadline is May 1, 2015.

<http://swissinnovation.org/news/web/2014/13-140131-b1>

Call: 4 months Research Grant at Worlds Leading Think Tank

(University of Zurich, April 21, 2015)

The Europa Institute at the University of Zurich (EIZ) in cooperation with the State Secretariat for Education, Research and Innovation, offers two Short-Term Research Grants at the top U.S. think tank Woodrow Wilson Center (WWC) in Washington D.C.. The WWC is the nation's key non-partisan policy forum for tackling global issues through independent research and open dialogue to inform actionable ideas for Congress, the Administration and the broader policy community. Today the WWC is one of the leading think tanks in the world.



Successful applicants will get the chance to spend four months at the WWC conducting independent, advanced research. A workspace is provided and the fellows can profit from all facilities, the connections, and the extensive network of the WWC. Furthermore they get access to the Library of Congress and the grant of total 20'800 USD gives them the freedom to focus entirely on their research.

<http://swissinnovation.org/news/web/2015/13-150421-20>

Call: Application Progress Open for Switzerland's First Fintech Incubator

(Alp ICT, May 26, 2015)

Temenos and Polytech Ventures have joined forces to create "Fusion" Switzerland's first incubator focused on the fintech sector. Drawing on their knowledge of the banking IT sector and developing start-ups, they will network, mentor, refine, advise, help provide syndicated funds and support start-up fintech companies at premises in the



heart of Geneva. Polytech Ventures had the original idea and with Temenos they have developed it to the point of launch. Crossing-Tech, the technology integrator and connectivity factory, FTI (part of the University of Geneva), IDIAP (the independent research institute affiliated to EPFL), Safehost and CreaFinance have all signed up to provide funds, expertise or resources. Fintech start-ups can apply to join the incubator and go through an interview process. Application process is now open. Start-ups can apply through <http://www.fintechfusion.ch> until June 15. The incubator is open to start-ups from all over the world. <http://swissinnovation.org/news/web/2015/13-150526-20>



Call: seif Awards for Social Entrepreneurship

(http://seif.org/de_DE/award/, May 28, 2015)

Until 30 June, seif-swiss is calling upon social entrepreneurs all over the world to apply for the seif Awards for Social Entrepreneurship. For the 5th birthday of the biggest competition for social entrepreneurs in Switzerland they will award CHF 10'000 each in 4 different categories. The winners and finalists will also be celebrated on stage during the festive award ceremony on 6 October and receive access to the world of investors. <http://swissinnovation.org/news/web/2015/13-150528-13>



Upcoming Science and Technology Related Events

The European Summit for Clinical Nanomedicine and Targeted Medicine – The Translation to Knowledge Based Medicine

June 28-July 1, 2015

<http://goo.gl/keo8fr>

Nanomedicine

Basel

5th European PEFC & H2 Forum

June 30-July 3

<http://www.efcf.com/>

Fuel Cell, Hydrogen

Lucerne

8. European Summit for Clinical Nanomedicine and Targeted Medicine

June 29-July 1

www.clinam.org

Biotech

Basel

New frontiers of automated content analysis in the social sciences

July 1-3, 2015

<http://goo.gl/36J9bO>

Social Science

Zurich

2015 NTN Swiss Biotech Innovation Day

August 19, 2015

<http://www.swissbiotech.org/events#event:1261>

Biotech

Zug

Industry Day 2015

August 25, 2015

<https://goo.gl/XkOCWX>

Engineering, Biotech, Medicine

Zürich

9th European Congress on Tropical Medicine and International Health

September 6-10, 2015

<http://www.ectmihbasel2015.ch/ectmih2015/home.html>

Biotech

Basel

Changing Paradigms in Drug Development: Product Strategy

September 15, 2015

<http://goo.gl/OOBqIE>

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International Dual Career Network

IDCN Event at Zurich Insurance

September 17, 2015

<http://goo.gl/jlci6o>

Business and Academia

Zurich

ScienceComm'15

September 24-25, 2015

<http://www.sciencecomm.ch/index.php/en/sciencecomm-15>

Life Science

Solothurn

15th Annual Biotech in Europe Forum

September 29-30, 2015

<http://www.sachsforum.com/basel15/index.html>

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Swiss Biotech Fall Day 2015

October 15, 2015

<http://goo.gl/ryKKMp>

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Monthey

Changing Paradigms in Drug Development: Company Strategy

November 17, 2015

<http://goo.gl/qjohkC>

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