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State Secretariat for Education, Research and Innovation SERI
Innovation Promotion Agency CTI
Swiss Federal Office of Energy SFOE

Science-Switzerland, February – March 2013

News on Swiss science, technology, education and innovation

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Switzerland tops European Innovation Scoreboard 2013

(swissinfo.ch, March 30, 2013)

Switzerland is the most innovative country in Europe, comfortably ahead of second-placed Sweden, according to an annual study by the European Union. The Innovation Union Scoreboard 2013, published this week, gives a comparative assessment of the innovation performance of the EU's 27 member states and the relative strengths and weaknesses of their research and innovation systems. Switzerland, which isn't a member of the EU, confirmed its position as the overall innovation leader, continuously outperforming all EU countries. The report said Switzerland's strong performance was linked to being among the top-three performers for 15 indicators, in particular in "open, excellent and attractive research systems" where it has best performance in all three indicators: firm investments; intellectual assets; innovators and economic effects.
http://swissinnovation.org/news/web/2013/00-130330-7e.html

High Number of Patents Per Capita

(SERI, February 08, 2013)

About 49,000 triadic patent families were filed in 2010, compared to over 45,000 registered in 2000. The United States accounts for 28.1% of patent families (13,837), a lower share compared to the one recorded in 2000 (30.5%). The share of triadic patent families originating from Europe has also tended to decrease, losing almost one percentage point between 2000 and 2010 (to 28.6% in 2010). The origin of patent families has shifted towards Asian countries. When triadic patent families are expressed relative to the total population Japan, Switzerland, Sweden and Germany were the four most inventive countries in 2010, with the highest values recorded in Japan (118.5 patent families per million population) and Switzerland (108.3).
http://swissinnovation.org/news/web/2013/00-130208-be.html

Second in Highly Cited Paper Ranking

(SERI, March 15, 2013)

The impact factor (or relative citations indicator) is a bibliometric indicator used to measure the international competiveness of a country's publications. In the period between 2005 and 2009, the impact of Swiss publications was excellent as it exceeded the global average by 16%, placing Switzerland 2nd in the world behind the United States. An alternative measure to citation averages is the proportion of highly cited papers. For most countries, the development of the proportion of highly cited papers follows the national citation average relatively closely. However, Switzerland is a notable exception in that respect as the top 10%-index is considerably higher than the mean citation rate. In other words, Switzerland is one of the most important producers of high impact publications.
http://swissinnovation.org/news/web/2013/00-130315-e8.html

Swiss Science Counselors' Conference

(SERI, March 25, 2013)

The Swiss National Science Foundation, the Commission for Technology and Innovation, the Swiss Academies of Arts and Sciences and the State Secretariat for Education, Research and Innovation, hosted a conference with more than 30 foreign attachés. Opening the conference, Federal Councillor Johann N. Schneider-Ammann affirmed his dedication to Switzerland as an open place for business and innovation. Healthy competition and international cooperation will continue to progress with Swiss businesses. The assembled swissnex Science Consulates and Counsellors play a viable role in developing international cooperation. The ERI Network comprises Swiss representatives from the swissnex Science Consulates and Swiss Embassy education, research and innovation Counsellors.
http://swissinnovation.org/news/web/2013/01-130325-d2.html

1. Policy

Science, Education, and Culture Policy

(Swiss Government, February 01, 2013)

The Commission for Science, Education, and Culture of the Council of States recently voted on several policy matters concerning energy research, gender equality, and genetic research. For energy research, they approved sixty million francs of funding for the ETH domain from 2013 to 2016. Several motions on gender equality were suspended until a later date due to insufficient information. Finally, the commission voted in favor of a motion on retraining options for care personnel.
http://swissinnovation.org/news/web/2013/01-130201-0a.html

Continuing Successful Participation in EU Framework Programs

(SERI, February 28, 2013)

The Federal Council has referred to parliament two dispatches on funding for Swiss participation in the EU Framework Programs in the areas of Research and Innovation on the one hand, and education, training, youth and sport on the other. The former is intended to give researchers in Switzerland continued access to the second most significant source of public funding and to the European research network. The second dispatch is designed to continue the mobility opportunities of students in education, training and on youth and sport courses. The total budget set in both dispatches is approximately 4.7 billion Swiss francs (including reserves) for the years 2014 to 2020. Their approval by parliament will allow the Federal Council to conduct negotiations with the EU on renewing both bilateral agreements.
http://swissinnovation.org/news/web/2013/01-130228-52.html

120 Years of Statistical Data on Switzerland

(Swiss Government, February 28, 2013)

The 2013 editions of the Statistical Yearbook of Switzerland and Statistical Data on Switzerland have just been published. These two publications provide an overview of all economic and social aspects of life in Switzerland. The Yearbook is a large compendium of diagrams and texts and Statistical Data on Switzerland is a summary of the most important statistical information. The data from the 120th edition of the Statistical Yearbook are fully accessible and searchable online.
http://swissinnovation.org/news/web/2013/01-130228-8e.html

Foreign Commuter Statistics Increases 4th Quarter 2012

(Swiss Government, March 04, 2013)

Based on a statistical analysis by the Federal Statistical Office (FSO), last year, there was a 4.8% increase of foreign frontier workers entering Switzerland. More than half of frontier workers came from France representing a (52.8%), while the rest included: Italy at (23.1%), Germany (20.7%), Austria (3.0%), and finally 0.4% from other countries. On 1 June 2002, with the entry in force of the bilateral agreements, the duration of the permits for the border jumped from 1.2 years to 5 years. Since termination of employment is not always reported to authorities, the number of permits for foreign workers recorded in the central information system migration (SIMIC) does not coincide with those actually working within the border of Switzerland.
http://swissinnovation.org/news/web/2013/01-130304-52.html

Autonomous Vehicles Challenge Road Regulation

(swissinfo.ch, March 07, 2013)

Though autonomous vehicles have made some advances in the United States, these vehicles will not be featured at the Geneva Auto Show. Ambiguity over road regulations and liability concerns over car accidents threaten to delay development in Europe. However, teams from Oxford University, Berlin's Free University and the University of Parma in Italy as well as many car manufacturers including: Audi, Mercedes-Benz, BMW, Volvo and Nissan are proactively working to develop these smart cars. EPFL and the French firm Induct are currently testing a driverless electric shuttle on its 55 hectare campus. The "Navia" is fitted with laser telemetry, GPS, 3D cameras and sensors which will detect objects up to a 200 meter range while carrying eight people at a maximum speed of 20 km/h. Meanwhile, EPFL hopes to set up a driverless public transport system upon approval from the Federal Roads Office, who are said to be "interested."
http://swissinnovation.org/news/web/2013/01-130307-48.html

No Increase for Capacity Building in Human Medicine

(SERI, March 08, 2013)

The Federal Council (FC) has decided that no additional funding will be provided for human medicine in Switzerland above that allocated in the Dispatch on the Promotion of Training, Research and Innovation (ERI) 2013-2016. Acknowledging the need to train new and existing physicians, the Federal Council supports cantonal efforts to implement ERI-related measures and highlights annual increases of 3.7 percent in basic contributions under the University Assistance Act. However, the federal departments responsible for Economy, Education and Research (WBF) and Home Affairs (EDI) have decided that no extra funding will be available to increase university places in human medicine during this period. The FC nevertheless agrees to focus on consolidating and extending research and education in human medicine during 2017-2020.
http://swissinnovation.org/news/web/2013/01-130308-36.html

National Vocational Training Campaign 2013-2014

(SERI, March 11, 2013)

To attract more young talent into vocational training, the State Secretariat for Education, Research and Innovation (SBFI) has launched a national campaign via an Internet portal called berufsbildungplus.ch (German) or formationprofessionnelleplus.ch (French). Promotional material is also available. The campaign aims to strengthen national and international competitiveness by meeting companies' growing demand for skilled labor and arousing young people's interest in vocational training. As the number of school leavers drops over the coming years, companies will find it increasingly difficult to recruit staff at all educational levels. The challenge is to make young people aware of new career opportunities, improve vocational training's image, explain vocational training's benefits for companies and careers, and encourage companies to create apprenticeships and invest in training.
http://swissinnovation.org/news/web/2013/01-130311-4f.html

Neuropolis will house the Human Brain Project

(UNIL, March 12, 2013)

The Human Brain Project (HBP) aims to model the structure and functioning of the human brain using high-performance computers. The HBP will be led by EPFL, with UNIL and CHUV, and involve a thousand scientists and technicians from 90 research institutions. The Canton of Vaud will support this ambitious project by providing land on the Dorigny university campus and CHF 35 million to build the Neuropolis building that will house the project. For 10 years, the European Union will allocate approximately one billion euros to the HBP, with 54 million euros being shared among the participating institutions during the initial 30-month phase from late 2013. This will put the Lake Geneva region at the heart of a global neurosciences network.
http://swissinnovation.org/news/web/2013/01-130312-9f.html

More Funding for Energy Research

(ETH Zurich, March 14, 2013)

The Swiss Federal Parliament has adopted the action plan "Coordinated Energy Research Switzerland". The plan increases the funding for the ETH Domain by CHF 60 million in the period of 2013 to 2016. In an earlier plan, these funds would have been provided from within the institutions normal budget. In a new motion, the parliament has decided to make additional funds available. This strengthens the positions of the involved institutions, as seven new competence centers and 30 new research groups with full professorships are planned.
http://swissinnovation.org/news/web/2013/01-130314-cd.html

Bilateral Forum on Innovation

(SERI, March 21, 2013)

Bilateral forums on innovation aim to strengthen cooperation between Switzerland and Germany. The first, held in Schaffhausen in November 2011, focused on sustainable mobility and the second, held in Erlangen in March 2013, focused on medical technology. The forum explored new developments in this field and offered workshops on personalized medical technology. Serving as a cooperative platform, it enabled hundreds of research institutes and companies from both countries (including from biomedical and medical technology clusters) to plan innovative joint projects. After opening the forum, Johann N. Schneider-Ammann, Head of the Swiss Department of Economics, Training and Research and Johanna Wanka, German Minister of Education and Research, held a ministerial meeting to discuss the next forum and further joint activities.
http://swissinnovation.org/news/web/2013/01-130321-bb.html

2. Education

EPFL Students Completing Master at Harvard

(EPFL, February 06, 2013)

Four students from EPFL completed their masters' projects in Harvard Medical School labs thanks to the sponsorship of the Bertarelli Foundation. Amélie, Elvira, Léonie and Nicolas, four students passionate about neuroscience, recently returned from a one-year stay in Boston, where they completed their masters' projects at Harvard Medical School. Their work was sponsored by the Bertarelli Foundation, whose goal is to advance neuroscience by combining the skills of engineers and medical experts. Most of these young travelers are now doctoral assistants.
http://swissinnovation.org/news/web/2013/02-130206-c5.html

Swiss Research System Strong at Fostering Breakthroughs

(FUTURE, February 07, 2013)

A comparative study by the Royal Swedish Academy of Sciences shows that the Swiss research system is very strong and good at fostering breakthrough research through several important factors. The size of Swiss universities is relatively small, but the funding level is high. This leads to high quality research from high quality professors and students. The university system also has independence from politics, giving it strong, stable governance in the long term. Finally, recent reforms have helped coordinate research nationally and create centers of excellence to focus research better.
http://swissinnovation.org/news/web/2013/02-130207-9e.html

EPFL Joining edX MOOC

(edX, February 20, 2013)

EdX, the not-for-profit online learning enterprise founded by Harvard University and the Massachusetts Institute of Technology (MIT), announced today the international expansion of its X University Consortium with the addition of six new global higher education institutions. The École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland, Australian National University (ANU), Delft University of Technology in the Netherlands, McGill University and the University of Toronto in Canada, and Rice University in the United States are joining the Consortium and will use the edX platform to deliver the next generation of online and blended courses. This international expansion enables edX to better achieve its mission of providing world-class courses to everyone, everywhere, and is the natural next step to continue serving the large international student body already using edX on a daily basis.
http://swissinnovation.org/news/web/2013/02-130220-ca.html

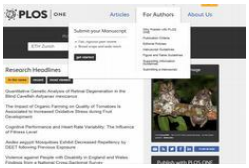
Catalyst for University Renewal

(UZH, February 27, 2013)

The Zurich Cantonal Council has approved the upgrading of Zurich University's Irchel campus, opening the way to vital renovation and new works. To support university infrastructure development, the Council has granted a credit of CHF 195 million. This will enable the fifth building phase to be launched, 40 years after the first. Two new buildings, scheduled for completion in 2018/2019, will house the Institutes of Chemistry. The new facilities will provide the space needed to further strengthen their research and teaching focus on life sciences. Older buildings, some dating from 1973 and urgently requiring renovation, will subsequently be restored. Eventually the Irchel campus will be extended and the university center transformed in line with the university's long-term development strategy.
http://swissinnovation.org/news/web/2013/02-130227-48.html

Library Supports Researchers by Paying Article Fees

(ETH Zurich, March 01, 2013)



Good news for researchers: The ETH Library assumes publication fees for open-access publisher Public Library of Science (PLOS). Members of ETH Zurich previously received a 10% discount on PLOS article charges, but now the publication fees are fully paid by the ETH Library if the article's author is employed by ETH Zurich. The university has been supporting open access since 2006, when it signed the Berlin declaration on Open Access to Knowledge in the Sciences and Humanities. In July 2008, the Executive Board adopted an open-access policy for ETH Zurich. ETH E-Collection, the university's document server, has been chosen by ETH Zurich as the primary instrument for active implementation of its open access strategy.
http://swissinnovation.org/news/web/2013/02-130301-64.html

Vocational Baccalaureate Rate Rising

(SERI, March 01, 2013)

The vocational baccalaureate (VB) is a Swiss school-leaving qualification generally obtained at age 21. The VB rate indicates the percentage of 21-year-olds permanently resident in Switzerland who have achieved the qualification, and thus measures the potential of highly skilled workers in the working population. In 2011, 13.2% of 21-year-olds qualified, although cantonal VB rates vary greatly. The highest rate of 19.1% was recorded in Schaffhausen, then Zug at 18.1%, up from the highest rate of 14% recorded in Schaffhausen and Appenzell Ausserrhoden in 2000. The lowest rates (<10%) are currently found in Geneva, Basel-City, Vaud and Appenzell Innerrhoden, with the greatest increases from 2000-2011 recorded in Obwalden, Geneva and Appenzell Innerrhoden (annual growth rates of 17.0%, 12.4% and 11.3%).
http://swissinnovation.org/news/web/2013/02-130301-e7.html

No Imminent Study Fee Rise at ETH Zurich and EPFL

(ETH Zurich, March 07, 2013)

Following a parliamentary initiative signed by members of several political parties, the ETH Council has frozen its plans to increase study fees. Originally scheduled for winter 2015/2016, the proposed gradual doubling in fees at ETH and EPFL was intended to raise funds for teaching. The initiative calls for rates to be set according to the tax domiciliation of parents and/or students. Fees for Swiss taxpayers would be indexed to inflation, whereas fees for those paying tax abroad could triple. While several parties question the social acceptability of fee increases, the Federal Council stresses the importance of equal educational opportunities even though responsibility for setting fees lies with the ETH Council. ETH governing bodies and student associations are exploring various options.
http://swissinnovation.org/news/web/2013/02-130307-a5.html

Fields' Medalist Joins ETH Zurich

(ETH Zurich, March 08, 2013)

ETH Zurich will welcome into its ranks a holder of the Fields Medal, the "Nobel Prize for Mathematics". This is awarded to mathematicians under age 40 who make outstanding discoveries that extend the frontiers of mathematics. The German probability theorist Wendelin Werner considers the ETH an ideal location for his further research, thanks to its excellent students and researchers and outstanding working conditions that make it one of the world's leading scientific institutions. Specializing in probability theory, Professor Werner studies the structure of chance motions, like Brownian motion or heat motion of particles in liquids and gases. He is fascinated by how macro chance events result from multiple micro chance events, and his mathematical models describe the resultant interesting structures.
http://swissinnovation.org/news/web/2013/02-130308-47.html

New UZH Life Sciences Facilities in Schlieren

(UZH, March 12, 2013)

To overcome its current acute space shortage, the University of Zurich will rent new life sciences facilities in the biotechnology park in Schlieren. Around 200 staff at UZH, the University Hospital and the Psychiatric University Hospital will move there from late 2013, with the intention of moving back into buildings on the Irchel campus and in the university center once their renovation has been completed in 10-15 years' time. The shortage of laboratory space and areas for animal breeding and husbandry arose following cancelled land leases and the increase in stu-

dent numbers, professorships and available grants. The Schlieren site offers a good interim solution until the two new sites are ready. The space problem will likely be solved by 2025.
http://swissinnovation.org/news/web/2013/02-130312-85.html

Swiss Leading House for Science in Asia

(ETH Zurich, March 15, 2013)

ETH Zurich is the Swiss “Leading House” for research collaboration with China, Japan and South Korea. As an ambassador for Switzerland as a location for research and innovation, it will increase its scientific collaboration with these countries over the next few years and extend it to regions in the Asia-Pacific area that were previously less involved. Since 2008, ETH Zurich has been the “Leading House” for bilateral research collaboration with China, South Korea and Japan – and therefore an important ambassador for Switzerland as a location for science and higher education. As part of Swiss education, research and innovation policy, the Federal Council and Parliament have decided that ETH Zurich should continue to increase the collaboration between these three key countries and Swiss universities over the next four years.
http://swissinnovation.org/news/web/2013/02-130315-8f.html

3. Life Science / Health Care

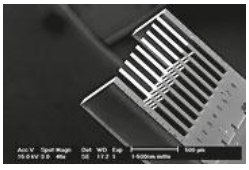
New Screening Technique Identifies Gene Regulators

(UNIGE, February 04, 2013)

Researchers at the University of Geneva have developed an original screening technique to identify transcription factors involved in gene regulation. These proteins bind to specific DNA sequences in the “promoter" area of the target gene. The technique, called the Synthetic Tandem Repeat PROMoter (STAR-PROM), shows how biochemical time signals in the blood, controlled by our brain’s master clock, act on peripheral organs and govern our body clocks. Studies undertaken with the CHUV in Lausanne and the London Research Institute show that transcription serum response factor (SRF) is activated by fluctuations in blood signals, causing changes to the structure and size of liver cells throughout the day. Potential STAR-PROM applications include developing drug treatments, exploring signaling pathways and identifying new regulators.
http://swissinnovation.org/news/web/2013/03-130204-0b.html

Cancer Diagnosing Nanosensors

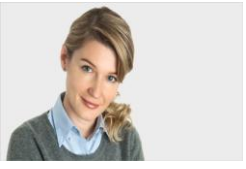
(UNIBAS, February 05, 2013)



Malignant melanoma is the most aggressive type of cancer. Half of melanoma cases are driven by a special gene mutation and, if this mutation is identified accurately, cancer can be diagnosed earlier and new targeted therapies provided. This can significantly prolong patients' lives. BRAF gene mutations are implicated in the uncontrolled cell growth that causes black skin cancer. Researchers at the University of Basel and the Ludwig Institute for Cancer Research in Lausanne have developed a new diagnostic method to detect BRAF mutations in RNA. Using nanosensors in the form of microscopic cantilever arrays, this sensitive method quickly identifies patients who could benefit from gene therapy. The technique can potentially be applied to other cancers caused by single gene mutations.
http://swissinnovation.org/news/web/2013/03-130205-74.html

Key Melanoma Gene Discovered

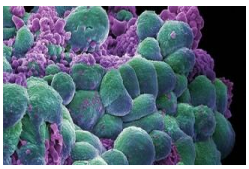
(UZH, February 07, 2013)



No effective therapy is currently available for advanced-stage black skin cancer, despite intensive research into this disease that affects mainly light-skinned people in industrialized countries. Now new therapeutic opportunities have opened up. Olga Shakhova, a postdoctoral student at the University of Zurich's Institute of Anatomy, has been awarded the 2013 Pfizer Research prize for identifying the Sox10 gene underlying black skin cancer. Collaboration between researchers and clinicians has revealed that tumors are a mix of harmful cancer stem cells and less aggressive tumor cells. Promising therapy should target primarily the cancer stem cells, particularly the Sox10 gene that controls their cell division and survival. Switching this gene off in mice prevents the formation and spread of melanoma.
http://swissinnovation.org/news/web/2013/03-130207-26.html

Cancer Researchers Rewarded

(EPFL, February 08, 2013)



The Pfizer prizes are awarded to young scientists for significant discoveries in medicine. In 2013, they have been won by Albert Santamaria Martínez from the EPFL in Lausanne for his research on cancer metastases, and by Tatiana Petrova, affiliated with CHUV, the University of Lausanne and the ISREC, for her discoveries about the formation and functioning of lymphatic valves. The first discovery opens up possibilities for developing new therapies to fight cancer, e.g. blocking the process of metastasis by inhibiting fibroblasts from producing matrix components. The second has improved understanding of mechanisms active in the formation of lymphedemas, the chronic accumulation of lymph in patients who have had lymph nodes removed as part of cancer treatment.
http://swissinnovation.org/news/web/2013/03-130208-e7.html

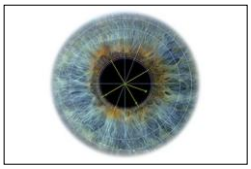
Biomaterials Speed Torn Tendon Recovery

(20min.ch, February 08, 2013)

Torn tendons usually put an abrupt end to the skiing season. But a new type of tissue implant may make that a thing of the past. A torn Achilles tendon frequently involves costly surgery to stitch the tendon together. To aid tendon regrowth, a tissue implant made of cornstarch-derived elastic material may be applied, but inflammation often develops as this material breaks down. Researchers at Empa, the Swiss Federal Laboratories for Materials Science and Technology, have solved this problem by developing a new bi-layered fiber weavable into very fine tissue. The conventional material core is coated with well-tolerated biomaterial, ensuring slower breakdown, reduced inflammation and faster regrowth. Empa is now seeking an industry partner to develop this technology further.
http://swissinnovation.org/news/web/2013/03-130208-d8.html

Laser-assisted Cataract Surgery

(UNIL, February 14, 2013)



Cataracts result from the loss of transparency of crystalline, the eye's natural lens, due to age. Cataract surgery involves removing the cloudy lens and replacing it with an artificial lens or intraocular implant. The first university hospital in Switzerland to offer laser-assisted cataract surgery is the Jules-Gonin Eye Hospital in Lausanne, which is investing in research and in training ophthalmologists in this technology of the future. As part of its series of public medical lectures on eye disorders and current forms of diagnosis and treatment, this hospital invites you to attend a lecture by Dr. Hana Abou Zeid Mer, Head of its Polyclinic and Cataract Unit.
http://swissinnovation.org/news/web/2013/03-130214-c5.html

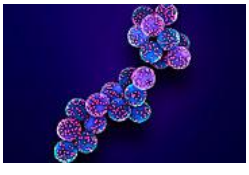
Fighting Leukemia with Killer Cells

(UNIBE, February 15, 2013)

Researchers at the University of Bern are the first to have investigated the effect of defense cells on leukemia stem cells. Their preclinical studies indicate that chronic myeloid leukemia (CML), characterized by an elevated white blood cell count, and may be treated successfully with killer cell therapy, if administered at early stages of the disease. CML therapy has been revolutionized and patient outcomes drastically improved in recent years by new targeted medication like tyrosine kinase inhibitors (TKIs). However, leukemia stem cells are highly resistant to TKIs, chemotherapy and radiotherapy, so no cure is available yet. Immunotherapies that could treat leukemia stem cells are currently in clinical development, but the interaction between killer T-cells and leukemia stem cells had previously been overlooked.
http://swissinnovation.org/news/web/2013/03-130215-77.html

Using Nanotechnology to Identify Viruses

(UNIBAS, February 20, 2013)



Researchers from the University of Basel and the University of Applied Sciences and Arts Northwestern Switzerland (FHNW) have developed a method to identify viruses using a new Nano-technological process. The process could be used to create new viruses, however it also enables the diagnosis and therapy of various illnesses. The big advantage of the new method is, that the scientists can recognize relatively big biomolecules with an increased accuracy. This is achieved by creating particles who have the pattern of the virus imprinted on the surface. This material is then able to identify and bind viruses with the same chemical properties.
http://swissinnovation.org/news/web/2013/03-130220-7c.html

The Internet as Addiction Therapist

(UZH, February 21, 2013)

The solution to many drug issues might be found in a place few would suspect: the Internet. The psychologist Michael Schaub investigates the diagnosis and therapy of substance addiction. He found that online therapy may well have positive effects. He is research manager at the Swiss Research Institute for Public Health and Addiction (ISGF), which is associated to the University of Zurich. The institute also offers an online therapy program to help cocaine users combat the drug. Through this program, the ISGF gains the data they use for their research. The anonymity offered by the internet is one of the big advantages of this approach, because many people who would not consider an established form of therapy are willing to participate in the online therapy.
http://swissinnovation.org/news/web/2013/03-130221-eb.html

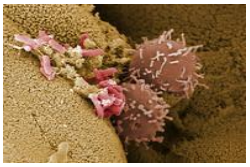
European Cancer Mortality Predictions

(UNIL, February 21, 2013)

Lung cancer may overtake breast cancer as the leading cause of cancer deaths among women in Europe by the middle of the decade. A study conducted by researchers at the University of Milan and the University Institute of Social and Preventive Medicine (IUMSP) in Lausanne estimates that in 2013 around 1.3 million people (737'747 men and 576'489 women) will die of cancer in the 27 EU countries. Although overall mortality rates have increased compared with 2009, cancer mortality rates have decreased by 6% among men and by 4% among women. However, deaths from lung cancer will likely increase by 7% among women, despite those from breast cancer declining. Fewer deaths from colorectal cancer are expected in 2013 than during 2005-2009.
http://swissinnovation.org/news/web/2013/03-130221-88.html

Teamwork against Mutated Free Riders

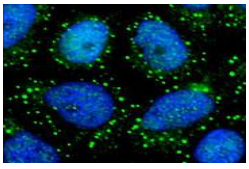
(ETH Zurich & Eawag, February 21, 2013)



The sickness inducing salmonellae depend on teamwork. One part takes care of the common interests, another part fights against other viral fee riders. This teamwork has similarities with the cooperation observed in ants and bees and is a major success factor for helping the salmonella create colonies in the intestines. The fact that there are two differing forms of salmonella in the intestines, was shown by scientists of the ETH Zurich and the Eawag a few years ago. The researchers were now able to describe the two different roles the salmonellae assume in a successful infection.
http://swissinnovation.org/news/web/2013/03-130221-86.html

New Insights into the Vital Protein mTOR

(UNIBAS, February 22, 2013)



Many illnesses are caused by malfunctions of the signal network of the protein mTOR. More knowledge about the different agents of this network could lead to new treatments for these illnesses. The team of Prof. Michael N. Hall of the Biocenter of the University of Basel has identified a number of the proteins regulated by mTOR, including an enzyme facilitating the production of the genetic material. The results of their research has now been published in the journal "Science".
http://swissinnovation.org/news/web/2013/03-130222-9f.html

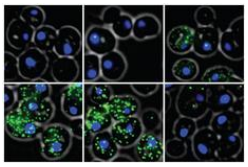
3-D Printing of Individualized Implants

(20min.ch, February 22, 2013)

3-D printers have already been used to create body implants. The newest machines are even capable of creating living tissue. This technology could revolutionize the way we perceive and modify our body: only recently, the face of a young Romanian was disfigured in an accident. Consequently, he received an artificial cheekbone. However, instead of molding the bone normally, it was printed with a 3-D printer in the research lab of the University of Applied Sciences and Arts Northwestern Switzerland (FHNW). The team there used a computer tomography to reconstruct the replacement cheekbone. This process yields significant advantages over the conventional way, because it is much more efficient to create individualized implants.
http://swissinnovation.org/news/web/2013/03-130222-df.html

Modelling the Dynamics of Gene Regulation

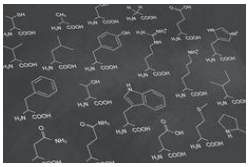
(ETH Zurich, February 25, 2013)



An international team of systems biologists at ETH Zurich in Basel and MIT in Boston has developed a new computer model based on real gene response measurements that can accurately predict how often yeast cells transcribe certain genes in specific stressful situations. This important step in understanding complex biological systems has been published in the journal “Science”. When subjected to stress, e.g. by suddenly raising external salt concentrations, yeast cells activate specific genes. These genes are linked to a signaling pathway initiated by transcription factor Hog1, which is transported within a stressed cell to its nucleus where the gene is transcribed. Hog1 activates certain genes that code for proteins, enabling the yeast cells to cope with salt-induced stress.
http://swissinnovation.org/news/web/2013/03-130225-2f.html

Investigation of Protein Evolution

(ETH Zurich, February 26, 2013)



ETH researchers have investigated how a primitive protein increased its amino acid bases from 7 to 20 as it evolved, giving an insight into evolutionary history from four billion years ago. They draw conclusions for innovations in the field of synthetic biology, particularly how organisms or protein functionality can be extended through synthetic molecules. Plenty of man-made enzymes are currently used in medicine and industry. In the future, these could be made of synthetic amino acids, not just naturally occurring ones. These new components could enhance the design of synthetic enzymes, e.g. improving catalytic functions. Their slower degradation would be advantageous in some medical or industrial applications. Even amino acids with slight differences from natural ones could be very useful.
http://swissinnovation.org/news/web/2013/03-130226-0c.html

Innovation in Accessing Clinical Trial Data

(Roche, February 26, 2013)

Swiss pharmaceutical company Roche provides patient data to third-party researchers, while ensuring patient confidentiality and avoiding publishing misleading results or causing public health scares. It works with an independent body of recognized experts to evaluate and approve requests to access anonymized patient-level data, and releases full clinical study reports (CSRs) for all its licensed medicines via regulatory authorities. This meets the best interests of patients and medicine, yet ensures health authorities remain the gatekeeper for drug assessment and approval. The company’s clinical trial results are published on its website and will soon be publicly available in the European Union database, EudraCT. Roche is also helping the European Medicines Agency (EMA) draft new data access guidelines for the industry.
http://swissinnovation.org/news/web/2013/03-130226-e7.html

Neuroscience Explores Taste and Smell

(UNIGE, March 04, 2013)

Researchers and practitioners met recently in Geneva to share current knowledge on smell and taste. Organized by the Neuroscience Center of the University of Geneva, the event entitled “Neurons in the dish” enabled the general public to explore pathways from the mouth to the brain, papillae to neurons, and nerves to genes. Scientists explained how these senses affect our daily lives, ensuring that we eat, remember, commit, learn and discover. Presentations covered numerous related topics, including: how the cerebral cortex represents different tastes and how our sensory experiences transform brain activity; how olfaction and gustation work, the origins of taste disorders and current treatment options; universality and variability of olfactory emotions; eating disorders and potential targets for obesity treatment.
http://swissinnovation.org/news/web/2013/03-130304-2c.html

Alarm Pheromones

(UNIL, March 05, 2013)

Scientists at University of Lausanne have identified the chemical structure of "alarm pheromones“, which mammals use to detect danger. Using their sense of smell and a specialized group of olfactory neurons, Grueneberg's ganglion, mice can detect pheromones emitted when other mice are in the presence of imminent danger, for example when confronted by a predator. By examining the structure of this pheromone, the researchers found that it bears similarities with the natural scents of different predators of small mammals, like the fox or the stoat. The mouse

thus can use its pheromones on one hand as camouflage from its predator, and on the other to communicate the presence of a predator to other individuals of its species.
http://swissinnovation.org/news/web/2013/03-130305-d7.html

Species Size Distribution Explained by Mathematical Rule

(EPFL, March 05, 2013)

Researchers at EPFL and Eawag have discovered what appears to be a universal mathematical function that may explain size distributions throughout various living systems. After observing 14 species of aquatic microorganisms including unicellular and multi-cellular organisms, Andrea Giometto – a researcher at EPFL – found that each species' body distribution aligned according to a mathematical expression. The study also showed that the mathematical expression remained unchanged despite the microorganisms' adaptation to new environmental conditions such as: the changing of water temperature, or, the presence or absence of competitors. If these observations continue to be valid beyond the microorganisms studied, these findings could lead to possible universal laws that may govern other natural ecosystems.
http://swissinnovation.org/news/web/2013/03-130305-e7.html

Mitochondria Ensure Optimal Energy Production in Cells

(UNIGE, March 05, 2013)

Mitochondria, which probably come from bacterial ancestors incorporated into our cells, are present in varying numbers in each cell and have their own DNA. However, little is known about how these organelles, which convert oxygen and nutrients into energy, regulate their own gene expression. A team of researchers at the University of Geneva, collaborating with researchers from the University of Newcastle, has discovered previously unknown mitochondrial compartments, comprising hundreds of different proteins. Here RNA molecules converge to be treated and start maturing. These 'mitochondrial RNA granules', or assembly plants, equipped with enzymes are described in the journal Cell Metabolism. The researchers aim to determine whether mutations in RNA granule machinery cause any of the numerous diseases associated with mitochondrial disorders.
http://swissinnovation.org/news/web/2013/03-130305-2e.html

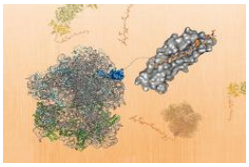
A Sausage a Day is One Too Many

(UZH, March 07, 2013)

Anyone eating more than 40 grams of sausage or other type of processed meat risks an early death. This risk increases by 18 percent with each additional 50 grams of processed meat consumed per day. This is the finding of a Europe-wide study involving more than 450,000 participants, undertaken by the University of Zurich's Institute of Social and Preventive Medicine and research partners, to examine the relationship between meat consumption and mortality. People who eat lots of processed meat products face a higher risk of dying from cardiovascular disease or cancer. The problem is caused by the production of carcinogenic substances like nitrosamines during processes like salting, pickling or smoking, as well as by the high cholesterol and fat content.
http://swissinnovation.org/news/web/2013/03-130307-be.html

Isolating Proteins Using Adhesive from Hairy Bacteria

(ETH Zurich, March 07, 2013)



ETH Zurich researchers have developed a more efficient way of isolating proteins. They modified adhesive parts of bacteria, like pili (hairlike appendages). The E. coli bacterium's "pilus proteins" FimF and FimG, which cause bladder infections by attaching to urogenital tract cells, bind more strongly than any other proteins. The bond's strength is demonstrated by its half-life of three billion years, unlike minutes or days for most protein complexes. The researchers applied these extraordinary properties in affinity chromatography, whereby proteins are separated in laboratories and the industrial manufacture of genetic engineering products. The new method isolates purer protein in higher yields than other methods and has uses in other applications, like diagnostic tests, that require fixing protein permanently on a carrier.
http://swissinnovation.org/news/web/2013/04-130307-c8.html

Leenaards Scientific Prizes 2013

(UNIL, March 07, 2013)

Two projects of the UNIL's Faculty of Biology and Medicine have been awarded prizes by the Leenaards Foundation. Each project will receive CHF 750,000 for three years. The first concerns the diagnosis and treatment of fungal infections. It aims to identify patients predisposed to Candida infections, of which there are an estimated

400,000 annual cases worldwide, and develop a test to facilitate early diagnosis. The second focuses on treating breast and ovarian cancers, which affect more than 2 million women worldwide each year. Current cancer treatments involve anti-angiogenic therapy or immunotherapy, each of which have limited efficacy. The project will investigate combining both treatments to regulate the formation of neo-vessels and facilitate access to the tumor by the immune system.
http://swissinnovation.org/news/web/2013/03-130307-81.html

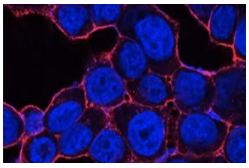
Controlling Hyperactive Immune Systems

(UNIL, March 07, 2013)

Within lymphocytes, the enzyme MALT1 is usually inert and activates other substances to unleash immune responses whenever needed. However, it sometimes becomes hyperactive, causing disease. A research team at UNIL's Faculty of Biology and Medicine has described this mechanism on a molecular level and suggests a new way of blocking it. When MALT protease remains active, it causes autoimmune diseases like multiple sclerosis or provokes organ transplant rejection. UNIL's study shows how this molecular mechanism causes hyperactivity in certain human lymphomas and has identified molecules that could block the effects of the protease. An enzyme transfers the ubiquitin protein to MALT, which is then modified. The MALT threat could be countered by preventing this transformation required for tumor cell growth.
http://swissinnovation.org/news/web/2013/03-130307-3c.html

Administering the Right Dosage for Oncology

(EPFL, March 08, 2013)



EPFL researchers are developing a tool for oncologists that may decipher the correct dosage for cancer patients by using the electrical signature of the cancer cells. Based on a simple principle, the tool measures a cell's electrical conductivity related to the chemotherapy being provided. Calibrating a cancerous cell's capacity to conduct electricity, enables researchers to assess the needed dosage and effect of the patient's treatment. Unlike methods based on biomarkers which can kill cells, the EPFL technology could be implemented easily in a medical environment. Overall, doctors can make better patient-specific decisions, thus personalizing treatment and dosage levels.
http://swissinnovation.org/news/web/2013/03-130308-9f.html

New Skin for Children

(UZH, March 08, 2013)

Researchers at the Tissue Biology Research Unit (TBRU) of the University Children's Hospital Zurich have succeeded in making complete human skin in vitro. The first children with severe skin damage will be treated with it this year. Most burn victims can be saved thanks to recent medical progress in this field, but preventing lifelong stigma from ugly scars has proved very difficult. Now there's hope. The new skin, grown in collagen, comprises outer and inner layers, including stem cells, blood vessels and pigment cells, which means it regenerates, is irrigated and looks natural. This could help people afflicted with vitiligo, an autoimmune disease causing depigmentation. Europe-wide clinical trials will be coordinated by TBRU and partly financed by the European Union.
http://swissinnovation.org/news/web/2013/03-130308-17.html

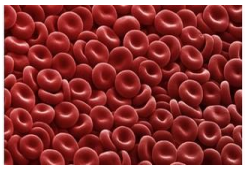
Precise Control over Protein Activity

(UZH, March 10, 2013)

Protein activity is strictly regulated in healthy bodies, and defective protein regulation can lead to uncontrolled growth and thus cancer or chronic inflammation. Veterinary biochemists at the University of Zurich have identified enzymes that can regulate the activity of medically important proteins and discovered how to reverse the inactivation of these proteins. One key protein modification is ADP-ribosylation, important in certain types of breast cancer, cellular stress responses and gene regulation. In this process, ADP-ribosyltransferase enzymes transfer the ADP-ribose molecule onto a target protein, thereby modifying its function. A new group of enzymes called ADP-ribo hydrolases, which can remove ADP-ribose, has been identified. This discovery makes it possible to precisely manipulate ADP-ribose, opening up new treatments for inflammation and cancer.
http://swissinnovation.org/news/web/2013/03-130310-b4.html

Discovering a Key Step in Identifying Red Blood Cell Growth

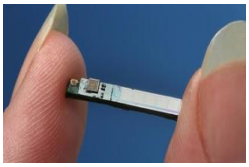
(EPFL, March 18, 2013)



Researchers at EPFL have discovered a new process of red blood cell growth which could reveal possible causes of blood disorders like Anemia, or even bridge a gap closer to manufacturing red blood cells for blood transfusion. Experiments showed that mice genetically modified to lack KAP1 quickly became anemic because they were unable to produce red blood cells. More specifically, researchers found the process of stem cell differentiation delayed to such a degree that mitochondria were degraded in erythroblasts, the precursors of erythrocytes. Eliminating KAP1 had a similar effect in human blood cells, indicating that its role in regulating mitophagy has been conserved throughout evolution. The KRAB/KAP1 system works by repressing repressors of mitophagy, a double negative, which activates the target process, inferring a possible link to mutations contributing to blood disorders.
http://swissinnovation.org/news/web/2013/03-130318-76.html

Implantable Blood Analysis Chip Lab

(EPFL, March 20, 2013)



Developed by EPFL scientists, this device placed under the skin analysis body fluids and detects compounds, while transmitting the results directly to a doctor's computer. The implants could emit notifications through radio waves via Bluetooth or mobile phone. Working towards personalized chemotherapy, doctors can better predict symptoms and decipher the need for medication through the implantable application. The device has demonstrated it's reliably by detecting five different proteins and organic acids through its five sensors which target substances such as lactate, glucose, or ATP. The research results will be published and presented March 20, 2013 in Europe's largest electronics conference, DATE 13. Researchers anticipate the system will be commercialized within 4 years.
http://swissinnovation.org/news/web/2013/03-130320-cf.html

New Center for Biomedicine on ETH Zurich Honggerberg Campus

(ETH Zurich, March 20, 2013)

After four years, the new building on ETH Zurich's Honggerberg campus stands as a hub for interdisciplinary research, life sciences, and individualized medicine having a "Molecular Health Sciences Platform." In the center of the platform stands the "ETH Phenomics Center" for animal facilities encompassing the latest international standards on breeding, welfare and treatment of mice used for experimental research. The building also promotes interaction with researchers from the University of Zurich, the University hospital and industry too- as part of Hochschulmedizin Zurich. The building is one of the three ETH Innovation and Entrepreneurship labs which will assist young researchers and entrepreneurs in developing their ideas into practical applications.
http://swissinnovation.org/news/web/2013/03-130320-74.html

Reconstructing Human Tissue in Vitro

(Empa, March 20, 2013)

The Swiss Federal Laboratories for Materials Science and Technology (EMPA) invited life science researchers and industry partners from Switzerland and abroad to discuss challenges and developments in modeling human tissues in vitro. Biological barriers are found throughout the body, mainly in the form of specialized tissue layers that are permeable only to specific substances in one direction, ensuring protection and adequate nutrient supply. Examples are skin, the blood-brain barrier, the placenta, blood vessels, and the respiratory and digestive tracts. To understand how barriers function and develop novel disease treatments, e.g. using biocompatible nanoparticles, experimental studies on human models are needed. It is, however, challenging to procure suitable cells for reconstructing barriers, and natural processes like circulation are hard to imitate.
http://swissinnovation.org/news/web/2013/03-130320-6d.html

Sleep Disorders Affect Depression Indicator BDNF

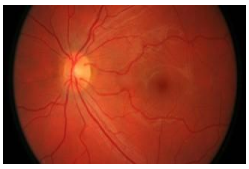
(UNIBAS, March 20, 2013)

The signal substance BDNF (Brain-derived neurotrophic factor) is a protein involved in forming nerve cells and synaptic connections in the brain. Since stress affects the body's secretion of BDNF, BDNF blood serum levels are widely considered possible indicators of stress-associated psychiatric disorders like depression. However, researchers from the University of Basel and its Psychiatric Clinics show that sleep disturbances, which occur frequently in depressive patients, also affect BDNF serum levels. Their findings, reported in "Molecular Psychiatry",

suggest that chronic stress disturbs the hypothalamic-pituitary-adrenal system, resulting in poor sleep and lower BDNF levels. Insomnia increases susceptibility to stress, reducing BDNF secretion and potentially causing depressive disorders. Future studies on depression should therefore investigate sleep disorders and treatment focus on improving sleep.
http://swissinnovation.org/news/web/2013/03-130320-41.html

Implantable Device Revolutionizes Treatment of Glaucoma

(EPFL, March 25, 2013)



Professor Nikos Stergiopulos's team at the EPFL Laboratory of Hemodynamics and Cardiovascular Technology (LHTC) has made an implantable "micro-tap" that can eliminate extra "aqueous humor" fluid in the eye, which if left untreated, could lead high intraocular pressure that can cause Glaucoma and blindness. The device prototype, known as "Glafkos" can be adjusted remotely with an embedded compass. This device contains a magnetic disk surrounded by a silicon tube which rotates around an eccentric axis. The implant functions like a miniature faucet. So far the "Glafkos" has been tested on rabbits only. Human clinical trials are expected to be approved before the end of this year. Currently, Glaucoma affects 1-2% of people in Switzerland and is the second leading cause of blindness world-wide after cataracts.
http://swissinnovation.org/news/web/2013/03-130325-bd.html

4. Nano / Micro Technology / Material Science

New Generation of Batteries

(PSI, March 06, 2013)

Lithium-ion batteries are one of today's best technologies for storing electrochemical energy. Nevertheless, the potential of the Li-ion battery is limited chemically and it will only be possible to achieve an even higher energy density, which is of critical importance for electric mobility in particular, by using other new types of batteries. One of the most promising alternatives is the lithium-sulfur battery. In this type of battery, the anode is made of metallic lithium, while the cathode is made of a composite comprising sulfur and carbon. From an environmental perspective, lithium-sulfur batteries also make it possible to avoid the use of heavy metals. PSI researchers, led by Petr Novák, Head of the Electrochemical Energy Storage Section of the Electrochemistry Laboratory at PSI, in cooperation with the German chemical company BASF, are looking for solutions which can be implemented industrially
http://swissinnovation.org/news/web/2013/04-130306-f7.html

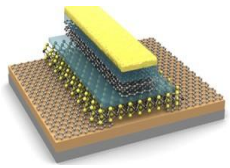
EU Aeronautic Technology Project Led by CSEM

(CSEM, March 11, 2013)

Fibrous composite materials have been used in civil aviation in small quantities from the 1970s. However, it is only with the advent of the latest generation of airliners (e.g. Airbus A380) that composite materials have been extensively used in the manufacturing of safety critical primary structures. The use of such materials helps reduce the fuel consumption per passenger, with regard to comparable aircraft, by up to 17%. The European Commission has recently launched the three-year, €1.55M effort named EVITA to develop advanced Phase Contrast X-ray Imaging detection tools for inspecting large areas of thick composite structures. Led by CSEM, the project consortium includes industrial partners, such as Dassault Aviation, GMI Aero (French SME), and academic partners like the University of Manchester and the National Technical University of Athens.
http://swissinnovation.org/news/web/2013/04-130311-a0.html

High Performance Flash Memory Combines Graphene and Molybdenite

(EPFL, March 22, 2013)



EPFL scientists have combined two materials with advantageous electronic properties – graphene and molybdenite – into a flash memory prototype that is very promising in terms of performance, size, flexibility and energy consumption. The transistor prototype developed by LANES was designed using "field effect" geometry, a bit like a sandwich. In the middle, instead of silicon, a thin layer of MoS2 channels electrons. Underneath, the electrodes transmitting electricity to the MoS2 layer are made out of graphene. And on top, the scientists also included an element made up of several layers of graphene; this captures electric charge and thus stores memory.
http://swissinnovation.org/news/web/2013/04-130322-77.html

Mold Free Concrete Casting

(ETH Zurich, March 25, 2013)

Casting concrete typically uses a lot of material to form a mold, a process that is both economically and ecologically inefficient. However, researchers at ETH Zurich now have a new method that doesn't require molds and that can create many different kinds of shapes. Concrete is poured into a metal tube, where it hardens partially. Once the concrete has hardened to the right viscosity, a robot raises and moves the tube according to a pattern that forms the desired shape. Finding just the right time window in the hardening process required a new viscosity measurement technique.
http://swissinnovation.org/news/web/2013/04-130325-f6.html

5. Information & Communications Technology

Celebrating 30 Years of Collaboration between CERN and Oracle

(CERN, February 04, 2013)

CERN and Oracle celebrated their 30th anniversary. CERN first approached Oracle in 1982, seeking assistance in database management, and for three decades the company has provided hardware and software to manage CERN's ever-burgeoning amounts of data. For ten years, Oracle has also participated in the CERN openlab, whose mission is to accelerate the development of cutting-edge solutions to be used by the worldwide Large Hadron Collider (LHC) community. By bringing together CERN's researchers and leading IT companies, the openlab is a model of successful public-private partnership in the IT field. It enables companies to showcase their products and services, gives researchers access to state-of-the-art technologies, and encourages all partners to be more creative and innovative.
http://swissinnovation.org/news/web/2013/05-130204-45.html

Sustainable Information Society

(UZH, February 06, 2013)

In the future, humankind will have to learn to use scarce resources in a sustainable way, says Lorenz Hilty, Professor for Computer Science and Sustainability. He develops software that can help us to achieve a sustainable information society. He envisions a personal software assistant who plans and organizes our consumption of natural resources. Professor Hilty has now organized the First International Conference on ICT for Sustainability from February 12 to 16 at the ETH Zurich. This conference provided a unique opportunity to meet world-leading experts in the field of sustainable design and use of Information and Communication Technologies.
http://swissinnovation.org/news/web/2013/05-130206-0b.html

ETH Zurich Computer Classes Awarded Google Prize

(ETH Zurich, February 14, 2013)

Google recognizes the ETH Zurich center for teaching IT (ABZ). The ABZ offers programming courses for the primary school children in Zurich. The ETH Professor Juraj Hromkovic founded the ABZ in 2006 in order to improve the informatics education in Swiss high schools. Later, the focus shifted to the primary schools, which children visit before going to high school or starting an apprenticeship. They give those teachers the opportunity to request a teacher from the ABZ who will then instruct the kids with the help of ETH Zurich students. The Google RISE award honors the work already done by the ABZ and will make an extension of the program possible.
http://swissinnovation.org/news/web/2013/05-130214-c1.html

Information Superhighway Map

(Swiss Government, February 14, 2013)

The Federal Office of Communications has published a map of telecommunications in Switzerland. The map can show television availability, upload and download speeds, connection types, and the number of providers, all at a resolution of 250 meters. The publication also provides a guide to broadband expansion projects taking place in Switzerland. The goal of the publication is to help plan broadband access projects and to help users make smart decisions regarding telecommunications.
http://swissinnovation.org/news/web/2013/05-130214-8a.html

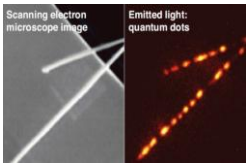
Super-Green Supercomputer

(EPFL, February 15, 2013)

Since January 28, researchers from EPFL and the Universities of Geneva and Lausanne have benefitted from a new supercomputer, the BlueGene/Q. With 1024 computation nodes, the BlueGene/Q has a calculation power of 172.7 teraflops, which means it can do 172,000 billion operations per second. That is four times more than the functioning capacity of BlueGene/P thus far. Water-cooled, it consumes only 82.2 kilowatts of electricity, the energy equivalent of a mere one-hundred household coffeemakers working continuously. This excellent energy efficiency places it in tenth position in the list of the world's greenest supercomputers.
http://swissinnovation.org/news/web/2013/05-130215-12.html

High Quality Light Source for Quantum Computers

(EPFL, February 20, 2013)



Researchers have discovered a new way of emitting photons one at a time. They have constructed semiconductor nanowires with "quantum dots" of unprecedented quality. In a future of quantum computing, data will be treated and transmitted by lasers. The quantum properties of light will endow machines with gigantic computing potential. However, much work remains to be done. In order to exploit the "quantum" potential of light it is necessary, among other things, to be able easily to emit single photons. At the heart of the Laboratory of Semiconductor Materials (LMSC) of Institute of Materials, the team of Anna Fontcuberta i Morral has discovered a new method for creating a miniscule and extremely high-performance single-photon source. The final structure can then emit photos one by one, after having absorbed light.
http://swissinnovation.org/news/web/2013/05-130220-6c.html

Swiss Domain Names

(Swiss Government, February 27, 2013)

Switzerland has adopted a strategy to protect attractive domain names on the Internet. It strives to protect domain names closely related to the Swiss Confederation and its offices. When deemed necessary, it attempts to acquire control of important domain names from current holders. Furthermore, with the expansion of allowed top-level domains (TLDs), Switzerland has applied for the .swiss TLD. The approval is still pending, and a decision is expected over the summer.
http://swissinnovation.org/news/web/2013/05-130227-bf.html

Parents Underestimate Risks to Children Using the Internet

(UZH, March 01, 2013)

Swiss parents underestimate their children's exposure to danger online, remaining unaware that about 50 percent of children have seen sexually explicit photos or experienced cyber-bullying. Research at the University of Zurich reveals that the older the child and the more time spent surfing, the higher the exposure to risks ranging from viewing sexual images and depictions of violence, to actual contact with Internet acquaintances or cyber-bullying. Of the 338,000 affected children in Switzerland, 65,000 reported feeling distressed. The "EU Kids Online Study" showed that most cyber-bullying and encounters with Internet strangers go unreported to parents, especially by older boys. A free brochure giving useful tips on using digital media safely is available from the national Youth and Media program.
http://swissinnovation.org/news/web/2013/05-130301-e2.html

IBM Beacon Award for Cloud Application

(AlpICT, March 07, 2013)

NViso has received an IBM Beacon Award, given in recognition of IBM Business Partners who deliver an outstanding product and customer experience. NViso sells a cloud application that performs emotion recognition in video. This capability can be used to measure customer reactions in real time and improve brand management and customer experience. NViso was aided by Alp ICT, an organization that helps ICT businesses in Western Switzerland network and grow.
http://swissinnovation.org/news/web/2013/05-130307-40.html

Queen Elizabeth Prize Goes to World-Wide Web Founders

(CERN, March 11, 2013)

Considered the founders of the World Wide Web, five engineers – Rob Kahn, Vinton Cerf, Louis Pouzin, Tim Berners-Lee, and Marc Andreessen – are sharing the £1 million Queen Elizabeth Prize for Engineering. The prestigious Queen Elizabeth Prize for engineering award recognizes individuals who contribute breakthrough innovations in engineering that change humanity. Robert Kahn, Vinton Cerf and Louis Pouzin found the protocols that make up the fundamental architecture of the internet while Tim Berners-Lee who created the World Wide Web at CERN in 1989, and finally Marc Andressesn who made the iconic Mosaic Browser. The announcement was made by Lord Browne of Madingley in the presence of HRH the Princess Royal at the Royal Academy of Engineering on 18 March 2013.
http://swissinnovation.org/news/web/2013/05-130311-fc.html

Cloud Infrastructure for Robots

(ETH Zurich, March 11, 2013)

Scientists from five European universities, including the ETH Zurich, have developed a cloud computing platform that enables robots to exchange information and experience. This allows for the robots to learn new abilities and tackle totally new tasks. The basis for this is the open online database "RoboEarth", a giant network and database repository where robots can share information and learn from each other about their behavior and their environment. The goal of RoboEarth is to allow robotic systems to benefit from the experience of other robots, paving the way for rapid advances in machine cognition and behavior, and ultimately, for more subtle and sophisticated human-machine interaction. RoboEarth offers a Cloud Robotics infrastructure, which includes everything needed to close the loop from robot to the cloud and back to the robot.
http://swissinnovation.org/news/web/2013/05-130311-a5.html

Air Quality – Smartphone Application

(EPFL, March 11, 2013)

EPFL's Distributed Systems Laboratory is prototyping a smartphone app, “Mobile Observatory" that determines air quality through real-time data. Currently, there are 10 sensors placed throughout Zurich located on bus roof tops which are measuring humidity, temperature, ozone levels, and pollutants including carbon dioxide and volatile organic compounds. The app provides extensive information giving instantaneous warnings when pollution levels change unexpectedly. "A person with asthma could check what time pollution will be at its lowest level in his or her neighborhood, and plan to run errands at that time, or a jogger could choose the place and time where ozone levels are lowest to go running,” suggests PhD student Julien Eberle. There's even a personalization aspect giving the user a pick on "favorite" street and bus stops and by adding a personal sensor to the smartphone, the user can obtain more information on indoor air quality.
http://swissinnovation.org/news/web/2013/05-130311-cf.html

Towards Petaflop Computing

(CSCS, March 20, 2013)

The new CSCS supercomputer named "Piz Daint" is the first and largest Cray XC30 system installed worldwide. Its procurement and installation marks an important milestone in the implementation of the national high performance supercomputing strategy. In the beginning of April the system will be made available to Swiss researchers. In a collaboration with Cray and NVIDIA, this supercomputer will be extended with GPU-accelerators making it possible for the first time in Switzerland to exceed the petaflop frontier. The next generation supercomputer has a peak performance of 750 Teraflops. It is based on the latest generation Intel Xeon E5 processors with a total of 36'096 compute elements. The internal communication network has been completely redesigned to enhance scalability of scientific applications.
http://swissinnovation.org/news/web/2013/05-130320-93.html

Mobile App on Swiss Dialects

(UZH, March 22, 2013)

The Swiss German dialect is not only a vessel for the heritage of a speaker - it also informs on his origin within Switzerland. As an example, there are almost 40 different names for the core of an apple, such as: "Huusini", "Bitzgi", or "Göitschi". Dialect Researchers at the Universities of Zurich and Bern have developed an app that determines the origin of Swiss German dialects. The data collected by the app will allow the researchers to create a more

exact map of the different dialects in Switzerland. It is freely available in the Apple App Store, and an Android version is also in development.
http://swissinnovation.org/news/web/2013/05-130322-53.html

Crowdfunded Computer Game

(20min.ch, March 22, 2013)

A team of Swiss game developers successfully crowdfunded their game "Train Fever" using the new platform Gambitious, the first success for the platform. Crowdfunding means development funds were raised from a large number of private individuals. Train Fever is a transportation simulation game. With the 250,000 Euros that were raised, the team hopes to finish development and release the game in May 2014. They are in talks with German and US publishers.
http://swissinnovation.org/news/web/2013/05-130322-e5.html

Increasing the Capacity of the Internet

(EPFL, March 27, 2013)

A new-generation analog-to-digital converter (ADC) developed by a joint IBM-EPFL team has the potential to greatly increase the speed and volume of data that can be transferred over the Internet. ADCs are essential to electronics. Integrated into the chips on our computers and into optical fiber networks, they translate analog signals – images and sounds from the physical world in which we live – into digital information. However, the total volume of data transferred over the Internet is exploding – it's estimated to be increasing by 60% every year. Current converters are simply not up to the task. The new ADC, developed by IBM and EPFL, is not only twice as rapid as other existing designs, but also holds the record for occupying the smallest area on the silicon chip, thus making it the most compact and energy efficient ADC to date.
http://swissinnovation.org/news/web/2013/05-130327-f5.html

6. Energy / Environment

Grokking Natural Climate Archives

(UNIBE, February 03, 2013)

Tree rings, ice cores and stalagmites are natural climate archives which allow us to reconstruct the environmental conditions of past epochs. However, reading those archives is no easy task: just now, scientists from the University of Bern; the Swiss Federal Institute for Forest, Snow, and Landscape (WSL); and the University of Mainz have demonstrated that the significance of yearly fluctuations, such as extreme temperatures and rainfalls, have been underestimated so far. They found, for example, that the growth of the tree rings was affected not only by the current weather, but also by the weather of the previous year and other growth factors. In general, stronger yearly fluctuations (e.g. the air temperature) have been underestimated, and longer lasting trends have been overestimated, the researchers found.
http://swissinnovation.org/news/web/2013/06-130203-03.html

Terrific Microphones to Monitor Road Traffic

(EPFL, February 03, 2013)

An EPFL doctoral student has designed a microphone-based system that functions as an automatic road traffic sensor. The technology can determine not just how much traffic there is, but also how fast vehicles are going and even their size. Traffic noise isn't just noise. It can also be a veritable data mine, as Patrick Marmaroli has shown. The Electromagnetics and Acoustics Lab (LEMA) PhD student has designed a dual microphone system that uses the sound produced when tires roll over pavement to determine traffic volume. The system can also track a vehicle's speed and even determine its approximate size (i.e., whether a passing vehicle is a station wagon, compact, truck, etc.). This information can then be used to provide traffic or air-pollution bulletins.
http://swissinnovation.org/news/web/2013/06-130203-91.html

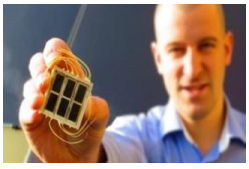
New Institute of Biomass and Resource Efficiency

(PSI, February 11, 2013)

The Institute of Biomass and Resource Efficiency (IBRE) was founded by the two institutions, the Paul Scherrer Institute (PSI) and the University of Applied Sciences Northwestern Switzerland FHNW, at the start of 2013. The aim of this new institute is to tackle the issue of resource efficiency throughout Switzerland, concentrating simultaneously on energy and materials for the first time, and to thus make a fundamental contribution to the Federal Government's "Energy Strategy 2050". The focus is on the sustainable use of biomass. Prof. Dr. Timothy Griffin has been appointed the new head of the institute.
http://swissinnovation.org/news/web/2013/06-130211-f9.html

World Efficiency Record for Thin Film Silicon Solar Cells

(EPFL, February 12, 2013)



EPFL's Institute of Microengineering has reached a remarkable 10.7% efficiency single-junction microcrystalline silicon solar cell, clearly surpassing the previous world record of 10.1% held by the Japanese company Kaneka Corporation since 1998. Such significant efficiency, independently certified by the Fraunhofer Institute for Solar Energy Systems (ISE CalLab PV Cells), was achieved in addition with less than 2 micrometers of photovoltaic active material. The record has been independently confirmed at Fraunhofer Institute for Solar Energy Systems (ISE CalLab PV Cells), Freiburg, Germany.
http://swissinnovation.org/news/web/2013/06-130212-74.html

Sustainable Recycling in Developing Countries

(Empa, February 13, 2013)

Recovery of raw materials from waste as a business model for developing countries: Empa, the Swiss Federal Laboratories for Materials Science and Technology, and the Swiss State Secretary for Economy Affairs (SECO) have been pursuing this approach since 2003. Since then, sustainable recycling systems for electrical and electronic waste (e-waste) have been developed successfully in various developing countries. Non-renewable raw materials such as copper and gold originate in many cases in developing countries. The availability of many metals, for example rare earth elements, is becoming noticeably more critical. Therefore, efficient management of these raw materials is more important than ever. The recycling of discarded consumer goods can make a big contribution; much of this recycling involves electronic devices and household equipment.
http://swissinnovation.org/news/web/2013/06-130213-44.html

Making Products More Climate-friendly

(ETH Zurich, February 17, 2013)

With research colleagues from The Netherlands and Norway, Bastien Girod from ETH Zurich's Management, Technology and Economics Department has shown how products could be made more climate-friendly to prevent the Earth's temperature from exceeding the critical two-degree threshold. Their pragmatic approach focuses on modifying consumer behavior rather than national greenhouse gas emissions. As populations grow, consumption will rise and increasing prosperity worldwide will considerably impact CO2-emissions. Consumption is estimated to double by 2050, so consumption-related emissions will need to fall by 80% to meet the two-degree target. The researchers have translated the target into precise emissions and reductions needed in five product categories, providing practical guidance for policymakers, consumers and product developers. All stakeholders can thus make a substantial contribution.
http://swissinnovation.org/news/web/2013/06-130217-99.html

Record for Efficient Flexible Solar Film

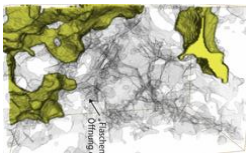
(Empa, February 18, 2013)

Flisom, a Swiss company developing technologies for manufacturing flexible thin film CIGS solar modules (copper-indium-gallium-(di)selenide), has secured funding to further develop its technology and build a production plant with an annual capacity of 15MW in Switzerland. This plant will serve as a blueprint for larger-scale plants to manufacture flexible solar modules at low cost. Flisom also signed a collaboration agreement with Empa, the Swiss Federal Laboratories for Materials Science and Technology, to obtain R&D support on high-efficiency flexible CIGS solar cell technology. Empa announced that its CIGS technology has achieved 20.4% pho-

tovoltaic conversion efficiency – a world record. The challenge is to now scale it up for large-area solar modules and adapt these complex innovative processes for industrial manufacturability.
http://swissinnovation.org/news/web/2013/11-130218-bc.html

Real-Time 3D Oil and Water Flow in Porous Rock

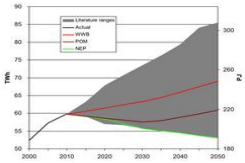
(PSI, February 25, 2013)



Experiments using fast computed tomography have allowed scientists to observe in 3D the real-time flow of oil and water in rock on an unprecedented scale. This pioneering research, conducted by a joint team of scientists from Shell, the Paul Scherrer Institute in Switzerland and the Johannes Gutenberg University in Germany, has improved understanding of multi-phase flow and transport in porous media – fluid behavior that was previously poorly understood. Results have been published in the Proceedings of the Swiss National Academy of Sciences. Conventional oil production leaves approximately 50-70% of the world's oil behind. This new insight into fundamental processes will enable the industry to develop new and safe methods to produce more oil from existing reservoirs.
http://swissinnovation.org/news/web/2013/06-130225-e9.html

Sustainable Electricity System

(PSI, February 26, 2013)



Switzerland is facing a potentially radical restructuring of its energy system in the light of the Federal Government's Energy Strategy 2050. One particular challenge associated with achieving the goals of the Strategy is realizing an electricity supply sector that responds to uncertain developments in electricity demand, national climate targets and the decision to phase out nuclear power. In order to investigate options for this transformation of the electricity sector, researchers at the Paul Scherrer Institute (PSI) are developing and analyzing a range of alternative scenarios of the future electricity system in Switzerland. These scenarios are developed, quantified and explored with an analytical tool built at PSI that simultaneously examines long-term developments (to 2050 and beyond) while accounting for seasonal and daytime fluctuations in electricity demand and supply.
http://swissinnovation.org/news/web/2013/06-130226-1e.html

The Unknowns of Ice and Snow

(PSI, February 27, 2013)

Even though ice and snow are common substances, a lot of molecular-level knowledge about them is still unknown. How chemicals react in snow and ice is not well known, nor is the atmospheric freezing process. These unknowns make it difficult to predict the effect ice and snow have on the atmosphere. For example, pesticides and poisons are spread through the atmosphere, and in cold region they become trapped in snow and ice. However, whether they stay trapped or easily react and work themselves back into the atmosphere is unknown. Researchers at the Paul Scherrer Institute are actively researching these questions in controlled environments.
http://swissinnovation.org/news/web/2013/06-130227-4f.html

Study on Electric Mobility

(ETH Zurich, February 28, 2013)

As the use of electric cars and plug-in hybrids increases, the electricity network needs to be able to handle the increased charging load. Researchers at ETH Zurich recently performed a study of the impact of increased electric mobility in the Zurich metropolitan area. Their computer model considered various scenarios with charging stations in residential, commercial, and/or public areas. The study concluded that over the next ten years the network would be able to adapt, but perhaps needed some guidance over the long term to avoid any local delivery bottlenecks.
http://swissinnovation.org/news/web/2013/06-130228-3d.html

Ice Age Carbon Dioxide and Temperature Rose in Tandem

(UNIBE, February 28, 2013)

During the transition between the end of the last Ice Age and the current Warm Period 20,000-10,000 years ago, atmospheric carbon dioxide (CO_2) levels and Antarctic temperatures rose simultaneously. This is the conclusion was reached by a European research team, with participation from the University of Bern, after calculating the age of bubbles in Antarctic ice cores. The Dome C ice cores were obtained via the European EPICA (European Project

for Ice Coring in Antarctica) project. This research, using nitrogen isotope N-15, has revealed that air in these new cores is much older than expected. There are apparently strong feedback mechanisms linking the two climatic variables, but further research on temperature change is required in other parts of the world.
http://swissinnovation.org/news/web/2013/06-130228-bd.html

Liquid Storage of Solar Energy

(20min.ch, March 08, 2013)

An ETH Zurich spin-off company, Sunbiotec, is developing a system that uses solar energy to heat biomass and convert it to liquid fuel. Although the chemical reaction to do this has been known, until now fossil fuels have typically been used for heating. The new solar-based approach is more energy efficient as well as environmentally friendly. An initial test facility was successfully run in Spain, and the company now wants to build a bigger one in Brazil.
http://swissinnovation.org/news/web/2013/06-130308-d0.html

Low Carbon Dioxide Fuel

(Empa, March 11, 2013)

The Federal Laboratories for Materials Science & Technology (Empa) is researching technologies to reduce carbon dioxide emissions of vehicles. One project is developing a natural gas and electric hybrid car. Another is researching the complete lifecycle impact of electric cars, including electricity generation. Others yet are looking at employing hydrogen as a fuel. Empa hopes to transition this technology to industry to meet the new emissions requirements in the coming decades.
http://swissinnovation.org/news/web/2013/06-130311-3d.html

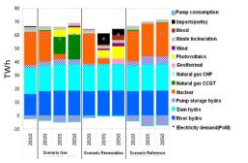
Global Grid for Renewable Electricity

(ETH Zurich, March 12, 2013)

Researchers at ETH Zurich are proposing a global electricity grid to supply the world with renewable wind and solar energy produced in areas with consistent winds or sunshine. Because these areas are typically far from inhabitants, long distance, high voltage undersea cables are needed. An example of such a project would be a windfarm off the coast of Greenland with cables to America and Europe. Despite the high initial investment, calculations show that with increasing cost of traditional energy, a global energy grid would pay back its investment in a reasonable amount of time.
http://swissinnovation.org/news/web/2013/06-130312-b4.html

Transformation of Electricity System

(PSI, March 14, 2013)



Researchers in the Energy Economics Group at the Paul Scherrer Institute PSI have used their model of the Swiss electricity system—STEM-E model—to analyze various electricity supply scenarios. They have concluded that alternatives to today's electricity supply are associated with different costs, risks and opportunities. Realizing sustainability objectives such as climate protection while phasing out nuclear generation and making Switzerland's electricity supply independent of foreign countries raises many challenges. Under these circumstances the analysis by the PSI scientists suggests that costs of electricity production are likely to increase by at least 50 percent by 2050.
http://swissinnovation.org/news/web/2013/06-130314-77.html

Climate Change Affecting Mountain Forests

(ETH Zurich, March 14, 2013)

Mountain forests in the Alps react very differently but noticeably to a warmer climate. Even if the target of limiting the Earth's average temperature increase to 2 degrees were met, this would already prove too much of a challenge for some mountain forests. Under the leadership of Harald Bugmann, Professor of Forest Ecology at ETH Zurich, researchers have used computer models to examine the extent to which, and speed at which, services derived from mountain forests are projected to change when the climate heats up. For the first time, climate scenarios were used that show how climate change would affect Switzerland if it were possible to restrict global warming to an increase of 2 degrees above pre-industrial conditions by the year 2100.
http://swissinnovation.org/news/web/2013/06-130314-75.html

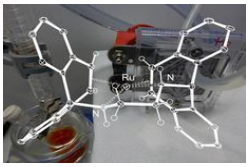
Sea Levels Rise as Greenland's Ice Melts

(UZH, March 18, 2013)

The melting of Greenland's ice is one of the major causes of rising sea levels worldwide. Glaciologists at the University of Zurich and their Danish colleagues have calculated ice loss, using laser measurements of ice height and Greenland's new cartographic glacier inventory, and shown that thousands of local glaciers on the edges of the Greenland Ice Sheet release about 30 gigatons of meltwater into the sea annually. The ice loss from local glaciers is 2.5 times larger than that from the ice sheet, and much higher than previously thought. The research was conducted as part of the "ice2sea" study, supported by the European Union, and the new calculations will help better predict how Greenland's ice impacts global sea levels.
http://swissinnovation.org/news/web/2013/06-130318-88.html

Alcohol-Water Fuel Cell at Top Efficiency

(ETH Zurich, March 18, 2013)



Chemists at ETH Zurich invented a catalyst that enables methanol and water to be converted in a fuel cell to create electricity, carbon dioxide, and hydrogen. Previously, this reaction required high temperatures and pressures, but this new catalyst opens the door to small, affordable fuel cells. The catalyst also makes the reverse reaction more efficient, which would allow energy to be stored as methanol for later use as fuel. The new catalyst, made from an organic molecule and a metal, also makes the reaction happen cleanly, with no carbon monoxide waste product, keeping the fuel cell operating at top efficiency.
http://swissinnovation.org/news/web/2013/06-130318-18.html

Methane to Methanol Conversion

(PSI, March 21, 2013)

Oil wells vent or burn off methane because it is economically unviable to transport or convert it. This results in huge waste and negative environmental impact. Scientists at the Paul Scherrer Institute have been working on an efficient process to convert methane into methanol, which is more useful and easier to transport. Traditional methods for the conversion are inefficient, but their new method uses a catalyst of copper-mordenite, and it can reuse the catalyst for multiple conversion cycles. The process was analyzed using the Swiss Light Source by obtaining X-ray images of the catalyst. The next step will including industrialization of the technology.
http://swissinnovation.org/news/web/2013/06-130321-17.html

Is the Polar Buffer Effect Weakening?

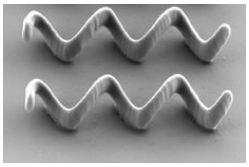
(ETH Zurich, March 21, 2013)

If global temperatures rise further, the southern polar oceans may absorb less carbon dioxide. ETH Zurich climate researchers have investigated ocean behavior, analyzing two sediment cores from the sea near Antarctica. Seas, especially cold polar oceans, provide a buffer that has absorbed about half of human-induced CO2 emissions over recent decades. However, evidence is growing that this buffering effect is weakening. By examining the biological productivity of these oceans over the last million years, the researchers demonstrated the link between the concentration of atmospheric CO2 and upwelling intensity in deep water. The colder the Earth, the less upwelling, and the more CO2 absorbed by water. As global temperatures rise, more CO2 will be absorbed by the atmosphere, accelerating global warming.
http://swissinnovation.org/news/web/2013/06-130321-35.html

7. Engineering / Robotics / Space

Record – Smallest Medical Robots

(ETH Zurich, February 04, 2013)



In the Multi-Scale-Robotics-Lab of the ETH Zurich, researchers are developing minuscule robots who may replace scalpels in the future and are capable of transporting drugs to a targeted location in the body. Important advances in applying the technology have now been made. The robots are controlled by magnetic fields and are modelled in a helical way, inspired by the way some bacteria move with the help of flagella. The robots also hold a record in the Guinness Book of Records 2012 for being the smallest medical robots.
http://swissinnovation.org/news/web/2013/07-130204-35.html

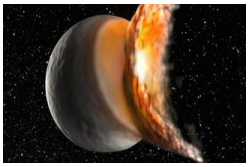
Robust Medical Devices for Developing Countries

(EPFL, February 07, 2013)

Medical imaging equipment in developing countries needs to be robust in the face of unreliable electricity, infrequent maintenance, and a general lack of support. In fact, one statistic shows that over 70 percent of high-tech medical equipment in Africa is never used. To overcome this, a Swiss university and industry team, working under the "EssentialTech" program, is developing an x-ray and ultrasound imaging machine especially for developing countries. The machine will be able to cope with power interruptions and work in difficult conditions. The team will also help educate users and maintainers, and initial deployment will be in Cameroon. Other medical devices are being considered for future development.
http://swissinnovation.org/news/web/2013/07-130207-ff.html

Simulation of the Inner Structure of an Asteroid

(EPFL & UNIBE, February 14, 2013)



Models boost the significance of image and measurement data from space missions and help to understand our solar system. A simulation of a double impact that occurred on the proto-planet Vesta one billion years ago allowed scientists to describe precisely the inner structure of the asteroid. A joint research from EPFL, University of Berne, France and the United States is on the cover of Nature this week. Using a three-dimensional computer simulation, Martin Jutzi from the Center for Space and Habitability (CSH) at the University of Bern has now accurately reconstructed how Vesta collided with other asteroids twice over a billion years ago. The models show that the protoplanet owes its elliptical shape to these collisions and that they also scarred its surface structure.
http://swissinnovation.org/news/web/2013/05-130214-32.html

Potential Protoplanet Discovered

(ETH Zurich, February 28, 2013)

Exoplanet researchers and cosmologists from the Institute of Astronomy at ETH Zurich have discovered a potential protoplanet – or planet in the making. This has never been observed before. Star HD100546 is around 337 light years away from Earth, visible in the southern sky in the constellation Musca and only a few million years old. What makes it special is its circumstellar disk. Gas and dust accumulate in such disks, encircling young stars, and are likely birthplaces of planets. Using the Very Large Telescope (VLT) of the European Southern Observatory (ESO), the researchers observed a mismatch between the star's brightness and mass. They hypothesize that the planet is young and growing, or it developed inside a disk and was ejected.
http://swissinnovation.org/news/web/2013/07-130228-e8.html

"Robots on Tour" in Zurich

(UZH, March 11, 2013)

On the occasion of the 25th Anniversary of the Artificial Intelligence Lab at the University of Zurich robot researchers from around the world presented their latest developments to a wide audience in Zurich. One highlight was the newest robot developed by Professor Rolf Pfeifer's team from the University of Zurich. "Roboy" has tendons and bones, just like a human. As "muscles" to move his limbs, numerous small motors are used. He can also wave and press hands, in addition to being able to speak. Another highlight was the brain-wave controlled wheelchair developed by the EPFL.
http://swissinnovation.org/news/web/2013/07-130311-94.html

Robots Mimic Fish and Salamanders

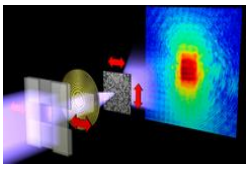
(20min.ch, March 20, 2013)

In order to better understand animals and to communicate with them, researchers at EPFL are developing robots that mimic fish and salamanders. The fish robot will swim like its live counterpart and join schools. The hope is to make the robot become part of the group dynamic and eventually influence it, thereby artificially steering schools of fish. This capability could be used to steer them away from polluted waters, for example. Another robot, mimicking a salamander, is being used to understand how the amphibian's movements are shaped by its environment, and perhaps how it evolved from fish to be able to live on land too.
http://swissinnovation.org/news/web/2013/07-130320-fb.html

8. Physics / Chemistry / Math

Imaging Fluctuations with X-Ray Microscopy

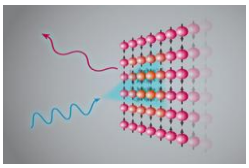
(PSI, February 07, 2013)



X-rays allow an inside look at structures that cannot be imaged using visible light. They are used to investigate nanoscale structures of objects as varied as single cells or magnetic storage media. Yet, high-resolution images impose extreme constraints on both the X ray microscope and the samples under investigation. Researchers at the Technische Universität München, and the Paul Scherrer Institute now showed how to relax these conditions without loss of image quality. They further showed how to image objects featuring fast fluctuations, such as the rapid switching events that determine the life time of data storage in magnetic materials. They demonstrated their method with an experiment at the Swiss synchrotron SLS and with computer simulations.
http://swissinnovation.org/news/web/2013/08-130207-b4.html

Superconductors with Intriguing Properties

(PSI, February 12, 2013)



PSI-Scientists demonstrate that magnetic interactions are of fundamental importance for iron-based high-temperature superconductors. For a long time, scientists and engineers have longed for a material that would conduct electricity at room temperature without any losses. More than 25 years ago scientists first discovered materials that were superconducting at relatively high temperatures: the cuprate-superconductors (copper-based superconductors). Iron-based high-temperature superconductors – a new class of materials discovered only a few years ago – also have this property. Together with Chinese and German collaborators, scientists at the Paul Scherrer Institute in Villigen (Switzerland) have now gained new insights into these superconductors. The experimental results indicate that magnetic interactions are of fundamental importance in the phenomenon of high-temperature superconductivity. This knowledge could contribute to the development of superconductors with improved technical properties in the future.
http://swissinnovation.org/news/web/2013/08-130212-e4.html

CERN Courier Goes Digital

(CERN, February 13, 2013)

The CERN Courier dates back to August 1959, when the first issue appeared, consisting of 8 black-and-white pages. Since then it has seen many changes in design and layout, leading to the current full-color editions of more than 50 pages on average. It went on the web for the first time in October 1998, when IOP Publishing took over the production work. Now another step forward with a digital edition provides yet another means to access the content beyond the web and print editions, which continue as before.
http://swissinnovation.org/news/web/2013/08-130213-b2.html

Ageing Process of Fuel Cells

(PSI, February 13, 2013)

Hydrogen fuel cells are an attractive technology for energy conversion, as they are considered to be a clean technology, particularly for motor cars. However, several technological challenges still need to be overcome if they are to gain a significant market presence. These include their service lifespan, which depends, amongst other things, on the robustness of the polymer membrane that acts as the electrolyte in a cell. Researchers at the Paul Scherrer Institute PSI have gained valuable insights into one of the most common mechanisms of degradation in these membranes.
http://swissinnovation.org/news/web/2013/08-130213-e7.html

Supernova Particle Accelerator

(UNIBE, February 14, 2013)

Cosmic radiation comes from many sources outside of our solar system, including supernovas. Researchers at the University of Bern recently took another step towards a better understanding of the mechanisms that create this radiation. Using integral field spectroscopy on images from the Very Large Telescope at the European Southern Observatory, they could show that the shockwave of a supernova remnant accelerates protons. Although this isn't the immediate source of cosmic radiation, it does create the required seed particles. The researchers hope to apply their methods to a variety of follow-on projects.
http://swissinnovation.org/news/web/2013/08-130214-c1.html

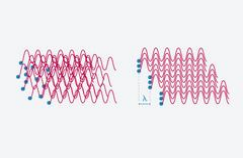
Three Years Anniversary of LHC

(CERN, February 14, 2013)

The Large Hadron Collider at CERN has reached its three-year anniversary and is being shut down for planned maintenance. Although the LHC is being shut down, some data from the last three years, totaling over 100 petabytes, still have to be analyzed. The last experiments before the shutdown are trying to understand how matter behaved right after the Big Bang. During the shutdown, the LHC will be upgraded so that when it comes online again in 2015, it will run at an energy of 7 TeV. Furthermore, while the LHC is being shut down, other experiments at CERN will continue to operate.
http://swissinnovation.org/news/web/2013/08-130214-7e.html

SwissFEL X-Ray Light Takes on New Insights in Wide Variety of Applications

(PSI, March 06, 2013)



The SwissFEL X-ray laser emits short pulses of X-Ray light with laser-like properties of only 20 to 60 femtoseconds in duration (1 femtosecond = 0,000 000 000 000 001 second). These properties will enable novel insights into the structure and dynamics of matter illuminated by the X-ray flashes. It will give scientists a visualization of fast processes such as: how new molecules are created in a chemical reaction, determining the detailed structure of vital proteins, or understanding the relationship between electronic and atomic structure in materials. This new knowledge will lead to many practical applications from new pharmaceuticals, more efficient processes in the chemical industry, new materials for electronics, or alternative processes in energy production.
http://swissinnovation.org/news/web/2013/08-130306-d7.html

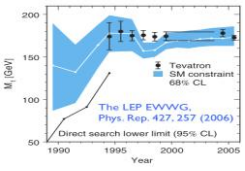
Higgs Particle Spin

(CERN, March 06, 2013)

Scientists from CERN are continuing their analysis of the Higgs-like particle that was identified last year. The Higgs particle is the last particle needed to complete the Standard Model of particle physics. The aspect that is being analyzed now is the particle's spin. Data indicates that it has spin-zero, which would confirm it as the Higgs particle, but another spin is possible too. Beyond determining whether or not the particle is a Higgs particle lies the question of whether it is a standard Higgs particle that explains the visible part of the universe, or a Higgs particle related to dark matter. To determine this, the interactions between particles are carefully analyzed.
http://swissinnovation.org/news/web/2013/08-130306-5a.html

Consistency of the Standard Model

(CERN, March 13, 2013)



As researchers continue to discover information about the new particle suspected to be the Higgs boson, they are also checking the consistency of the Standard Model of particle physics with their measurements. This check is done in two ways. With one method, the mass of the Higgs boson is predicted using the model, and then the actual mass of the particle is compared to the prediction and its uncertainty bound. With the second method, the mass of the new particle is assumed to be the Higgs boson, and a check is made if the other parameters still match with their measurements. Both methods show high confidence in having found the new particle.
http://swissinnovation.org/news/web/2013/08-130313-5c.html

New Results Back that CERN Particle Is a Higgs Boson

(CERN, March 14, 2013)

At the Moriond Conference, the ATLAS and CMS collaborations at CERN's Large Hadron Collider (LHC) presented preliminary new results that further elucidate the particle discovered last year. Having analyzed two and a half times more data than was available for the discovery announcement in July, they find that the new particle is looking more and more like a Higgs boson, the particle linked to the mechanism that gives mass to elementary particles. It remains an open question, however, whether this is the Higgs boson of the Standard Model of particle physics, or possibly the lightest of several bosons predicted in some theories that go beyond the Standard Model.
http://swissinnovation.org/news/web/2013/08-130314-73.html

Antiproton Magnetic Moment Measurement

(CERN, March 25, 2013)

The European Center for Nuclear Research (CERN) recently made the most accurate measurements of antiproton magnetic moment to date in the ATRAP experiment. The goal of the experiment is to explain the matter-antimatter imbalance and test the Standard Model and CPT theorem of particle physics. The experiment is able to trap a sin-

gle antiproton, undisturbed by any other atoms, and measure its spin flips to very high accuracy. Although the newest measurements are an improvement of several orders of magnitude over previous ones, the team wants to continue experimenting to further improve results.
http://swissinnovation.org/news/web/2013/08-130325-b5.html

OPERA Beam Detector Discovers Rare Occurrence of a Muon Neutrino Oscillating into a Tau Neutrino

(CERN, March 26, 2013)

For the third time, scientists have witnessed the particle transformations that unlocks the mystery of the "missing neutrinos"-particles we anticipate to rain down from the Sun and Earth's atmosphere at higher rates than observed. Neutrinos are categorized in three types, or flavors, with a distinct subatomic particle: an electron, a muon, or a tau. Members of the OPERA experiment discovered in two rare events that a muon neutrino had converted into a tau neutrino. The OPERA experiment is the first neutrino experiment to examine a manmade beam of muon neutrinos containing a beam of 1,250-ton concentration of neutrinos. Opera scientists, based at Gran Sasso National Laboratory in Italy will continue to collect data for the next two years.
http://swissinnovation.org/news/web/2013/08-130326-9a.html

9. Architecture / Design

Augmented Reality by EPFL + ECAL in NYC

(EPFL, February 22, 2013)

For the first time, EPFL has been the guest of the renowned Eyebeam Art and Technology Center in New York. Throughout more than 500 square meters, the EPFL + ECAL Lab displayed its new works in augmented reality, where physical objects and digital representations were combined. The EPFL + ECAL Lab exhibited exceptional works carried out by, among others, the Designers Cem Sever, Thibault Brevet, Liron Kroll and Thomas Eberwein. The place of honor went to the Gimme More project, the Americanized version of the Give Me More exhibition, awarded the DMY International Design Festival prize in Berlin.
http://swissinnovation.org/news/web/2013/09-130222-30.html

10. Economy, Social Sciences & Humanities

Increasing Economic Performance by Investing in Education

(SERI, February 15, 2013)

Skills have become the global currency of 21st-century economies. People with poor skills face a much greater risk of experiencing economic disadvantage, and a higher likelihood of unemployment and dependency on social benefits. Moreover, they are 1.4 times more likely to report health problems and 1.5 times more likely to have low levels of general trust as individuals with the highest level of foundation skills. In the 2009 PISA tests of 15-year-olds, Switzerland is among the top performing OECD countries in reading (rank 14), mathematics (rank 8) and science (rank 15). Switzerland spent 6.0% of its GDP on education in 2009 (OECD average: 6.2%). In 2009, 50% of Swiss citizens participated in continuing non-formal education (OECD average: 34%).
http://swissinnovation.org/news/web/2013/10-130215-5b.html

Correlation between Bus Frequency and Passenger Number

(EPFL, February 18, 2013)

Scientists from the EPFL analyzed attendance data from bus transit. The researchers found that an increase in the frequency of lines can have double the impact on their use. As part of a research project on combined mobility launched in 2009 by PostBus and the Transportation Center at EPFL have addressed these issues. The researchers analyzed data collected over four years (2007-2010) on 147 lines in three areas served by PostBus: Valais, the east, and the north of the country. The results are clear: an increase in the rate of a route almost always results in an increase in passengers that exceeds the proportional increase. For all lines analyzed, a 7.5% increase in supply leads to an increase in passengers of nearly 15%.
http://swissinnovation.org/news/web/2013/10-130218-23.html

The Venice Time Machine: Science, Humanities and the Arts Unite

(EPFL, February 23, 2013)

EPFL and Ca' Foscari University have launched a trans-disciplinary center for education, research and public engagement in science and art in Venice. Venice itself is to become the subject of the research program Venice Time Machine – a historical and geographical simulation of the city that is one of the most well-documented in the world. The nascent project is in collaboration with Telecom Italia, the Center's first industrial partner and host for the center, offering office and lab space at its Future Center in Venice – a research center on the role of telecommunications in economic development.
http://swissinnovation.org/news/web/2013/10-130223-ac.html

How Social Networks Fail

(ETH Zurich, March 13, 2013)

Social networks can disband, if the investment a user has to make is higher than the resulting utility. This can lead to a cascade of people leaving the network, and ultimately doom the site. According to researchers from the ETH Zurich, even Facebook might not be immune to this. They investigated the decline of "Friendster", which boasted 100 million users in its prime time. However, the users left the network in an exponentially growing count until the network failed. The scientists found that after the redesign of the site in 2009, the users had to invest too much and got too little out of the network and chose to switch to better products offered by the competition.
http://swissinnovation.org/news/web/2013/10-130313-bf.html

Ancient Sundial Recovered

(UNIBAS, March 14, 2013)

During excavations in the Valley of the Kings in Egypt, a research team from the University of Basel found one of the oldest sundials. The artefact was recovered in the area of the stone huts, which were used by the workers in the 13th century BC. The clock may have been used to measure the working hours. The earliest sundials known from the archaeological record are the obelisks (3500 BC) and shadow clocks (1500 BC) from ancient Egyptian astronomy and Babylonian astronomy.
http://swissinnovation.org/news/web/2013/10-130314-ec.html

11. Technology Transfer / IPR / Patents

Cashflow Record for EPFL Spin-offs

(EPFL, February 01, 2013)

In 2012 ten EPFL spin-offs received nearly CHF 100 million from private investors, comprising 80% venture capitalists and 20% business angels. Biocartis raised half of the capital, but investments in the other companies doubled compared to 2011. Founded on EPFL technology, six of the companies specialize in medtech, one in robotics, and three in IT. For several of them (Abionic, Sensefly, Pix4D, Bicycle Therapeutics, and KB Medical), this was the first fundraising round, whereas others (Sensimed, Nexthink, and Aleva) had previously raised money. While startups in the medical field often raise large sums, because of existing infrastructure, more IT companies are now generating investment. These startups greatly benefit the Lausanne region, creating jobs, stimulating competition, and attracting other investors.
http://swissinnovation.org/news/web/2013/11-130201-a9.html

Recovery Signs for MEM Industries

(swissmem.ch, February 27, 2013)

The situation of the Swiss mechanical and electrical engineering industries (MEM industries) is showing some initial signs of recovery. While incoming orders in the MEM industries saw massive declines during the last 18 months or so, the 4th quarter of 2012 showed the first signs of recovery. According to Swissmem's quarterly statistics, incoming orders rose by 9.8% compared to the same period of the previous year. Sales figures also developed in a

positive direction: revenues rose by 6.5% in the 4th quarter of 2012 and by 3% over the full twelve months. Large companies (with over 250 employees) were the main contributors to this growth. The growth in revenues at SMEs was much more sluggish. In the short term the slight increase in export prices (+0.9%) is helping businesses to increase their competitiveness.
http://swissinnovation.org/news/web/2013/11-130227-50.html

Innovation and Entrepreneurship Lab Opened

(ETH Zurich, February 28, 2013)

A new laboratory at ETH Zurich, the Innovation and Entrepreneurship Lab (ieLab), was recently founded to help researchers transition their ideas from academia to industry. The ieLab provides mentors to students to help them develop their business plan, make connections in industry, and find funding. Additionally, limited funding helps them build prototypes of their ideas to show to potential customers. The ieLab currently has space on both the main campus and the Hönggerberg campus; a new location in Technopark Zürich will be opened soon.
http://swissinnovation.org/news/web/2013/11-130228-b2.html

New Nanoscopic Device Faces Asia Market Challenges

(EPFL, March 04, 2013)

Attolight's new device has made a few breaks in Asia, but cultural and economic differences still make its product positioning a major challenge. Certain unique advantages make Attolight's product stand out competitively, compared to other semiconductor applications. The device films moving electrons through an ultrafast laser and built-in electron microscope generating images through high resolution image quality while delivering an easy user experience. Likewise, the device provides information on material structure and evaluates long-term durability through an analysis on risk assessment, a promising attribute to some Asian prospects. A Singaporean based research institute placed its first order, while a Chinese company and Japanese distributer are undergoing negotiations. Though it's a work in progress, Samuel Sondregger-CEO of Attolight, plans to officially sell a machine this year and train culturally competent representatives who are assigned to continue cultivating relationships with prospective customers.
http://swissinnovation.org/news/web/2013/11-130304-59.html

Internet Startup Realizes Partial Exit

(AlpICT, March 13, 2013)

Silp and x28, a leading technology provider in the online recruiting industry, have entered into a strategic partnership. The management team of x28 invests in the social recruiting startup and two seasoned industry experts from x28 join Silp's board of directors. Silp, an Internet startup from Zurich, focuses on talent matching for passive candidates. Silp successfully opened its doors for candidates last August. X28 is one of the leading technology providers in the online recruiting industry and emerged 2008 out of OE GmbH (founded in 1999). X28's technology portfolio is broad and reaches from ontologies, a semantic job search engine, and career recommender systems to spidering, extraction, and matching algorithms. These technologies perfectly complement Silp's portfolio and allow improving the automatic aggregation of candidate profiles (crawling, extraction) as well as adding semantics to the matching.
http://swissinnovation.org/news/web/2013/11-130313-47.html

CTI Offers High-Profile Entrepreneurs "Business Creation" Program

(AlpICT, March 20, 2013)

Seventeen entrepreneurs were selected to participate in the first "Business Creation" training program which helps develop their ideas into a commercialized business. Three regional consortia in Switzerland hone the CTI Entrepreneurship Start-up Training "Business Creation" (module 3) and "Business Development" (module 4) programs. For their first day, entrepreneurs work on their venture's vision, the second day is dedicated to the product development process (from the idea to the prototype and initial commercialization) market analysis, and competitive intelligence phases, the third day focuses on marketing, sales and organization, and lastly the fourth day is dedicated to finance and legal management. Entrepreneurs are invited on the final day to present to a jury of experts a debriefing of what was learned, gained, and how their project will evolve in the anticipation of launching the business.
http://swissinnovation.org/news/web/2013/11-130320-0f.html

Spark Award for Flexible Electronics

(ETH Zurich, March 21, 2013)

ETH Zurich bestows its 'Spark Award' on the most innovative research idea developed at the university in the past year. This year's award goes to the inventors of a new material that has a very big stiffness gradient. This means that on one side the material is very stiff, while on the other side it is up to 100,000 times more flexible. Such a material is crucial for flexible electronics so that components can be mounted to a substrate without breaking off when the material flexes. It is based on a polyurethane composite manufactured in a novel way.
http://swissinnovation.org/news/web/2013/11-130321-c4.html

Swiss National Start-Up Team for 2013

(Venturelab, March 21, 2013)

Venturelab today announces the names of the 20 young promising entrepreneurs selected to join the Swiss National Startup team. This year again, the initiative has attracted a record number of applicants. More than 130 contenders have strived to be awarded the chance to join the team of startups that will be flown to Boston next June. The venture leaders program aims at promoting Swiss start-ups with a global potential by offering selectees a 10 day long U.S based business development program. The venture leaders program – the highlight of Venturelab, the national start-up training program – has been one of the keystones behind the success of numerous Swiss startups in the past 12 years.
http://swissinnovation.org/news/web/2013/11-130321-21.html

Strong IPR Growth in 2012

(SERI, March 25, 2013)

International filings for patents, trademarks and industrial designs under WIPO-administered intellectual property (IP) systems saw continued strong growth in 2012. In 2012, international patent applications filed under the Patent Cooperation Treaty (PCT) grew by 6.6% on 2011. With 4,194 applications, Switzerland accounted for 2.2% of the PCT applications filed in 2012 (8th slot). Chinese telecommunications company ZTE, with its 3,906 published PCT applications, was the largest filer in 2012. International trademark applications filed under the Madrid system grew by 4.1% in 2012. With 2,898 applications, Switzerland accounted for 6.6% of the Madrid applications filed in 2012 (4th slot). International industrial design applications filed under The Hague system grew by 3.3% on 2011. France, Germany and Switzerland accounted for 62.8% of total designs (Switzerland: 2,447 applications, 19.6%, 2nd slot).
http://swissinnovation.org/news/web/2013/11-130325-80.html

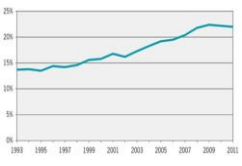
Swiss Technology Transfer Association
http://www.switt.ch/html/home.php

Swiss Federal Institute of Intellectual Property
https://www.ige.ch/en.html

12. General Interest

Increased Employment in Science & Technology

(SERI, February 23, 2013)



MONET is a system of indicators designed to measure progress towards sustainable development in Switzerland. Sustainable development implies in particular that the economic efficiency of a society and its productive, social and human capital are maintained or improved over time. According to MONET, the key indicator 'human resources in science and technology' is on the right track: The percentage of people educated and working in scientific and technical fields has grown steadily since the 1990s. In 2011, some 962,000 people had training and employment in scientific and technical fields, which corresponds to more than one fifth of working persons (22.0%, from 13.7% in 1993). This shows how well Switzerland is adjusting to increased competition worldwide. Switzerland is therefore slightly above the average of EU-27 countries (20.5%).
http://swissinnovation.org/news/web/2013/12-130223-d2.html

Swiss Public Finances 2011-2014: Balanced Accounts

(Swiss Government, February 28, 2013)

The public finance situation recovered slightly in 2011. The overall fiscal balance of the general government is set to remain more or less at breakeven in 2012 despite the economic slowdown. The Confederation, social security funds, cantons and communes should post balanced accounts in 2013. The overall fiscal balance of the general government should improve again from 2014 onward. Moreover, the debt ratio should continue to decline in all sectors over the next few years. Between 2010 and 2011, the general government's deficit/surplus ratio increased by 0.1 percentage points, and reached 0.3% of nominal GDP. The communes and cantons posted negative results, while the Confederation and social security funds achieved surpluses. This improvement was due primarily to the additional disability insurance receipts from VAT and the revision of the Unemployment Insurance Act.
http://swissinnovation.org/news/web/2013/12-130228-43.html

Nature's Publisher Investing in Prominent Swiss Open-Access Company

(EPFL, March 01, 2013)

The Nature Publishing Group, publisher of the prestigious Nature journal, has announced a majority investment in Frontiers, an EPFL-born company that publishes scientific journals under an open-access model. Frontiers was created by EPFL's scientists in 2007, gradually becoming one of the most prominent publishing companies in the world of open access (OA). Since its creation, the number of published articles has more than doubled per year. It now holds a portfolio of 14 open access journals in numerous scientific fields, publishing over 5000 articles in 2012. Frontiers, widely respected for its transparent and constructive peer-review process, will work closely with the Nature Publishing Group to develop new tools for open science and in the optimization of publication processes.
http://swissinnovation.org/news/web/2013/12-130301-80.html

Positive Trends for Gender Equality

(Swiss Government, March 04, 2013)

The educational level of women and men is trending towards equality while career and study choices remain gender-specific. The economic activity rate of women has risen considerably, in particular through part-time work. However the share of managerial and supervisory positions held by women has stagnated at around a third. Men are more likely to be victims of violence in the public sphere; women on the other hand suffer more from domestic violence. These are findings from the Federal Statistical Office's (FSO) gender equality indicators.
http://swissinnovation.org/news/web/2013/12-130304-d9.html

13. Calls for Grants/Awards

Apply for Google Science Fair 2013 in Partnership with CERN

(CERN, January 01, 2013)

The third annual Google Science Fair has been announced in partnership with CERN, National Geographic, LEGO and Scientific American. The Google Science Fair is the largest online science fair in the world. It is an international competition that encourages students between the ages of 13 to 18 all over the world to perform science experiments or create engineering projects to submit online, in order to compete for prizes, scholarships and once-in-a-lifetime experiences. CERN, in collaboration with Fermilab, is offering the prize of experiencing a week as an international particle physicist, shadowing a physicist mentor at Fermilab and then travelling with their mentor to CERN. The competition is open until 30 April.
http://swissinnovation.org/news/web/2013/13-130101-8e.html

Apply for Summer Programs of the Graduate Institute in Geneva

(GIG, February 04, 2013)

The applications are open for the Graduate Institute Summer Programmes to be offered at the Institute in June and July 2013. Participants wishing to take advantage of the unique opportunity to study international affairs in Geneva during summer can apply now. The following courses are offered: Summer Programme on International Affairs and Multilateral Governance, June 24 to July 12, 2013. Summer Programme on the WTO, International Trade and Development, July 1 to July 12, 2013. Both programmes are delivered by regular faculty and include visits and meetings with senior officials from Geneva-based international organizations. Participants can earn up to 9 European credits.
http://swissinnovation.org/news/web/2013/13-130204-f3.html

Apply for 2013 International Create Challenge

(AlpICT, February 05, 2013)

The goal of the 2013 International Create Challenge (ICC'2013) is to foster the creation of start-ups within the framework of Human & Media Computing. The ICC'2013 is an initiative supported by the National Centre of Competence in Research (NCCR) on Interactive Multimodal Information Management (IM2, www.im2.ch), via its association (AIM2), and the Idiap Research Institute (Idiap, www.idiap.ch). The ICC'2013 is a free of charge 3-week immersive technology transfer accelerator program giving entrepreneurs the unique opportunity to develop their original idea towards a "Minimum Viable Product" (e.g., demonstrator, product prototype) in collaboration with groups of entrepreneurs and researchers. The ICC'2013 combines the availability of state-of-the-art technologies, cutting edge research, mentor-led coaching, and micro-seed investment. Application deadline is June 14, 2013.
http://swissinnovation.org/news/web/2013/13-130205-7a.html

Apply Now for Geneva Summer Schools 2013

(UNIGE, March 01, 2013)

The University of Geneva is pleased to announce the Geneva Summer Schools 2013 course offering. Course enrollment is now open. The Geneva Summer Schools are a great opportunity to take short-term courses at a renowned university and to experience life in an international city! All courses are taught in English, and students may receive ECTS credits for their participation. The courses are designed for upper-year undergraduates or Master's degree students, but PhD students are also welcome to apply. The Geneva Summer Schools 2013 course offering includes the following 6 courses: Understanding Global Governance, International Law, Global Health and Human Rights, Cultural Heritage Law: Past, Present, Future, New Trends in 18th-Century Criticism, and International Education Policy and Governance.
http://swissinnovation.org/news/web/2013/13-130301-6d.html

Apply for the «Prix Média» 2013

(Swiss Academies, March 21, 2013)

It is the aim of the Swiss Academies of Arts and Sciences to advance the dialogue between science and society. With the «Prix Média», they support journalists and researchers who make complex subjects accessible to a wider audience. The amount of CHF 10'000.- is awarded annually in each of four disciplines: human and social sciences, natural sciences, medicine and engineering sciences. The Swiss Academies of Arts and Sciences price media publications of outstanding quality that are easily understandable and have been published in a Swiss medium appearing on a regular basis. Full consideration is given to publications that appeared between 16 June 2012 and 15 June 2013, and closing date is on 15 June 2013.
http://swissinnovation.org/news/web/2013/13-130321-ad.html

English Master Program in Health Sciences at the University of Lucerne

(UNILU, January 30, 2013)

The University of Lucerne will offer a new, completely English Master Program in Health Sciences starting September 2013. The Master program offers students from a wide range of disciplines the necessary knowledge and skills for a comprehensive understanding of health from a biopsychosocial perspective. Students will have the possibility to specialize in majors of interest, as well as to apply for a paid internship with a collaborating partner organization of the Department of Health Sciences and Health Policy of the University of Lucerne.
http://swissinnovation.org/news/web/2013/13-130130-ac.html

Upcoming Science and Technology Related Events

3rd World Tourism Forum Lucerne
April 17-19, 2013
http://wtflucerne.org/
Tourism
Lucerne

GOTO Zürich 2013
Apr 10-11, 2013
http://gotocon.com/zurich-2013
ICT
Zurich Marriott Hotel

Life Science Career Day 2013
May 3, 2013
http://www3.unil.ch/wpmu/lifesciencecareerday/
Life Science
Lausanne

Vertrauen zwischen Generationen in verschiedenen Kulturen
May 3, 2013
http://www.caux.ch/
International Relations
Lucerne

Swiss NanoConvention 2013
May 23-24, 2013
http://www.swissnanoconvention.ch/2013/
Nanotechnology
Messe Basel

Sustainable Post-Disaster Reconstruction: From Recovery to Risk Reduction
May 26 - 30, 2013
http://i-recconference2013.ch
Various
Centro Stefano Franscini, Ascona

Art Basel 2013
Jun 13-16, 2013
http://basel.artbasel.com
Art
Basel

Congress: Intl. Association for the Psychology of Religion
Aug 27-30, 2013
http://www3.unil.ch/wpmu/iapr2013
Medical / Religion
University of Lausanne

CERN Open Day
Sep 28-29, 2013
http://outreach.web.cern.ch/outreach/visites/index.html
Particle Physics
CERN, Geneva

XX WFN World Congress on Parkinsons Disease and Related Disorders
Dec 08, 2013
http://www2.kenes.com/parkinson/Pages/Home.aspx
Life Sciences
Palexpo Geneva Congress Center, Geneva

Science-Switzerland Back Numbers

http://www.swissinnovation.org/Science-Switzerland

Switzerland.

swissnex boston
Consulate of Switzerland