



Science-Switzerland, February – March 2010

News on Swiss science, technology, education and innovation

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1. Policy

Funding Policy Supports Excellent Junior Researchers

(SNSF, February 02, 2010)

With the SNSF Professorships, the Swiss National Science Foundation (SNSF) enables excellent junior researchers with several years of recognized research experience and wishing to perform an academic career to make a significant step forward. A SNSF Professorship funds the establishment of an independent team to implement a research project. In addition, it also enables researchers to resume their careers at a Swiss higher education institution on return from a stay abroad.

<http://tinyurl.com/01-100202>

Swiss-EU Bilateral Agreement On Education, Training And Youth Programs

(news.admin.ch, February 15, 2010)

A new Swiss-EU bilateral agreement was signed by Federal Councillor Didier Burkhalter, enabling Switzerland to officially take part in EU education, training and youth programs. It will also serve as an ideal complement to Switzerland's previous activities in the European Higher Education Area and the European Research Area. Thanks to the Swiss-EU bilateral agreement, Swiss and EU nationals will have the same legal right to take part in all mobility and cooperation projects carried out within the framework of the Youth in Action Program and Lifelong Learning Program. In addition, Swiss organizations will be able to launch and manage individual projects. Finally, Switzerland will be able to play an active role in program bodies, thereby contributing to strategic planning.



<http://tinyurl.com/01-100215a>

Information Exchange In Therapeutic Products Sector

(news.admin.ch, February 15, 2010)

Collaboration between the Swiss Agency for Therapeutic Products (Swissmedic) and the European Medicines Agency (EMA) is taking on concrete form. The Directors of the two authorities have signed an arrangement regarding the exchange of information relating to the A H1N1 influenza pandemic, which will come into force with immediate effect. The EMA and Swissmedic are now in a position to access each other's basis for decisions in the area of the A H1N1 pandemic. A further important aspect is collaboration in the area of market monitoring of the vaccines against A H1N1, for example concerning their adverse side effects.

<http://tinyurl.com/01-100215b>

Sharp Rise In R&D Expenditures

(myScience.ch, February 16, 2010)

Private enterprises spent almost CHF 12 billion on research and development activities (R&D) they conducted in Switzerland in 2008. This amount exceeds by CHF 2.3 billion (+24%) the expenditures posted in 2004 (9.6 billion),



the last year surveyed. This result enables Switzerland to remain at the top of the world ranking. Moreover, Swiss enterprises are rapidly globalizing their R&D activities.

<http://tinyurl.com/10-100216>

Funding Policy For Research Equipment

(SNF, February 18, 2010)

Under R'Equip (Research Equipment), the SNSF supports the purchase, development and modernization (upgrading) of research equipment, which is essential for the launch of new research facilities. In many research areas success is dependent on the availability of top-quality equipment. In recent years, investment in such research equipment at Swiss higher education institutions has declined to a relatively low level. The SNSF has set itself the objective with its R'Equip programme of forestalling this trend before any deficits become evident in the national research infrastructure.

<http://tinyurl.com/01-100218>

First Meeting For Chemicals And Waste Conventions

(news.admin.ch, February 19, 2010)

In recent years Switzerland has successfully lobbied for the strengthening of synergies in international policies on waste and chemicals. Now for the first time the United Nations Environment Program (UNEP) has organized joint sessions of the Conferences of the Parties to the Basel Agreement, the Rotterdam Agreement and the Stockholm Agreement. They will take place from 22 to 24 February 2010 on Bali, Indonesia. At the heart of the joint conference is the continued development of the process aimed at increasing synergies. Specific joint activities will now be decided on at the Conferences of the Parties on Bali. In addition the project for joint governance of the Conventions, also initiated by Switzerland, will be further developed.

<http://tinyurl.com/01-100219>

Basic And Applied Research

(ETH Zurich, March 03, 2010)

With an eye toward the future Federal Law to Promote Research and Innovation (LPRI), the ETH Board calls for basic research to be supported just as strongly as applied research. For the long-term success of science and innovation in Switzerland, the ETH Board deems it crucial that basic research be mentioned explicitly in the new law, its promotion on a par with that of applied research. As international research projects and transnational collaborations are becoming increasingly important for research and innovation in Switzerland, the ETH Board calls for the Swiss Innovation Promotion Agency to be granted the same authority in international research promotion as the Swiss National Science Foundation.

<http://tinyurl.com/01-100303>

Successful Funding-Policy For New Professors

(news.admin.ch, March 11, 2010)

In conclusion to its eleventh call for proposals, the Swiss National Science Foundation (SNSF) awarded 44 SNSF professorships to excellent junior researchers. The highly-qualified young researchers will be taking up their new SNSF professorships at nine different Swiss universities and both Federal Institutes of Technology. The average funding they will receive is 1.4 millions Swiss francs per person over a four-year period, which is sufficient for them to recruit teams and set up their own projects. For the first time and according to the new regulation introduced in 2009, the SNSF has granted seven subsidies in clinically oriented areas. The awardees will benefit from specific working conditions supporting their careers as clinical researchers.

<http://tinyurl.com/01-100311>

Handling Budget Cuts

(ETH Zurich, March 19, 2010)

The University Assembly of ETH Zurich dealt with the Swiss Federal Council's planned budget cuts for the ETH Domain and discussed the position paper on the appointment of permanent scientists and the result of the working group on the subject of appreciation. Definitive figures are not yet available, but Parliament had the last word, which means the policy for a budget increase of 3.2 percent for 2011, as originally promised, is no longer on the table.

<http://tinyurl.com/01-100319>

Funding Policy For Young Scientists

(SNSF, March 23, 2010)

In its new multi-year program, the Swiss National Science Foundation (SNSF) aims to make scientific careers in Switzerland more attractive to young scientists. It also wishes to strengthen the competitiveness of Swiss re-



searchers and secure Switzerland's opportunities for formative action in cross-border research activities. The SNSF is convinced that Switzerland must improve the attractiveness of scientific careers in order to stay in the running for the best minds. Its multi-year program therefore envisages measures to improve the working conditions for researchers. Publicly funded basic research promoted by the SNSF is also a fertile environment for applied research and for innovation and economic might. The SNSF will continue to focus on basic research and not fund research for direct commercial purposes.

<http://tinyurl.com/01-100323>

2. Higher Education

International Coaching Program

(University of St. Gallen, February 01, 2010)

The coaching program of the University of St. Gallen (HSG) provides impulses and support for personal development during degree courses. On 11 and 12 February, the program under the aegis of Prof. Thomas Eberle will again offer a platform for an exchange between international experts about the topic of "Coaching at university and at work". Introduced in 2001 along with the HSG mentoring program, it has developed into a pearl among the HSG's courses in just under ten years and the individual support of students by coaches at the Assessment Level is unique among European universities. It is supplemented by an extensive range of seminars and workshops, which provides students with additional support.

<http://tinyurl.com/02-100201>

Guide For After School Career

(University of St. Gallen, February 10, 2010)

What comes after the school-leaving exams? This is a difficult decision for many school leavers. The Institute of Business Education and Educational Management (IWP-HSG) of the University of St.Gallen (HSG) has therefore compiled a Curriculum Guide, which is intended to help prospective students to define their interests and skills and thus to make a deliberate decision about their career after they have left school. The Curriculum Guide is intended to help learners plan their careers in full awareness of what they are doing. It should also provide prospective students with the ability to cast a self-critical look at their own academic capabilities.

<http://tinyurl.com/02-100210>

3. Life Science / Health Care

Telomere Research

(ETH Zurich, February 01, 2010)

For a long time researchers were convinced that telomeres are only "silent" elements of a chromosome, i.e. the cell machinery does not transcribe them into RNA (ribonucleic acid) as it does with normal genes. Claus Azzalin was suspicious about this dogma, and, as it turned out, his good instinct was rewarded. During his post-doc at EPFL Lausanne, he discovered that the telomere regions produce RNA with a repetitive sequence. The researchers call this RNA TERRA (Telomeric Repeat-containing RNA).



<http://tinyurl.com/03-100201>

New Treatment Against Prostate Cancer

(Debiopharm, February 04, 2010)

Ipsen and Debiopharm Group announce the launch in France of Decapeptyl for the treatment of locally advanced or metastatic hormone-dependent prostate cancer. Decapeptyl is the new sustained-release 6-month formulation of a gonatropin releasing hormone agonist analogue developed by Debiopharm Group. Debiopharm has licensed the marketing rights to Ipsen for all territories where Ipsen currently commercializes triptorelin. Launches are planned shortly, notably in Germany and Portugal.

<http://tinyurl.com/03-100204a>

Anti-HIV Safety Trial

(Swisster.ch, February 04, 2010)

A research group attached to the University of Geneva receives CHF 4.5 mio from the UK's Wellcome Trust to pursue a safety trial for a 'microbicide' that promises to protect women and children in poor countries from AIDS. The microbicide has proved both in the test-tube and in experiments with monkeys conducted in the United States to be extremely effective at combating HIV, the AIDS virus. The Wellcome Trust grant will allow the Mintaka Foundation



to get the "necessary ethical and government approval" before the product can be tested in the field. This funding helps with the development of a solution that will ultimately take CHF 50 mio and many years to come to market.
<http://tinyurl.com/03-100204b>

Cancer Caused By Infections

(Swisster.ch, February 05, 2010)

One in every five cancers is caused by infection. To alert public opinion to this little-known fact, a massive campaign by the International Union against Cancer (UICC) on the theme of prevention updates us on the viruses and bacteria that can lead to the deadly disease. Under the umbrella slogan "Cancer can be prevented too" we are invited into a viral campaign, but not the kind that kills. We all know that getting plenty of exercise, keeping our weight down, limiting alcohol intake, avoiding smoking and exposure to sun are important to keep health odds on our side. What most of us don't realize is that the prevention of infections, either through safe behavior or vaccination programs, can also help keep cancer at bay.

<http://tinyurl.com/03-100205>

More Cancer With Aging Population

(Swissinfo.ch, February 07, 2010)

As the Swiss Cancer League marks its centenary, they expected rise in cancer cases will present never seen before challenges. Cases of the disease, already a leading cause of mortality - especially in the 45-64 age group - could double as the population ages. But lifestyle changes made now could prevent around 40 per cent of cancers. Research has shown that some cancers are caused by epigenetic changes, tiny chemical tags that accumulate over time and can turn genes on or off. It is thought that these changes can sometimes be reversed using milder treatments than currently offered.

<http://tinyurl.com/03-100207a>

New Vaccine Agent

(myScience.ch, February 07, 2010)

A team of scientists manipulated and disarmed a virus coming from a mouse, in order to convert it into a vaccine agent. This agent provides a never yet achieved immunity against "T killer" cells. This new technology opens a road to promising perspectives in the fight against mortal diseases like VIH/AIDS, C hepatitis, tuberculosis as well as some kind of tumors. Vaccines have to be safe and it was still to risky to test this virus as it was on a human being. In order to disarm it, researchers had to use a trick since it travels from a cell to an other making bubbles on a viral protein. The virus then uses this protein to attach itself to other cells before penetrating them, nest and finally reproduce.



<http://tinyurl.com/03-100207b>

Tranquilizing And Sleeping Pills Addiction

(myScience.ch, February 10, 2010)

Most of the tranquilizing and sleeping pills provoke functional modifications in the brain thus deactivating the reward system, which can induce a compulsory addictive behavior. A team of Swiss researchers has proven that it should be possible to avoid those effects in the future. Classified as benzodiazepines, drugs like Valium, Temesta or Dalmadorm present a risk of acquired tolerance under regular consumption. Researchers have now succeeded in decoding the molecular mechanism at the source behavior in the brain of mice. With their results, it should be possible to develop anxiolytics which doesn't induce a dependency.



<http://tinyurl.com/03-100210>

Psychological Data Recorded On Olympic Winner

(ETH Zurich, February 22, 2010)

ETH Zurich was right at the heart of the action when Simon Ammann leapt his way to two gold medals at the Olympic Winter Games in Vancouver: a miniature sensor attached to his body provided valuable information on the king of the hill's mental state. Using miniature sensors worn on the skin, two PhD students have been monitoring Ammann's heart activity and movement patterns during training and World Cup competition. The researchers' findings were successfully incorporated into the ski jumper's training program for the Games, including the two gold medal-winning jumps in Vancouver: probably for the first time ever in the history of the top-level sport, precise physiological data was successfully recorded for two Olympic victories.



<http://tinyurl.com/03-100222>



Gender Selectivity For Travel Infectious Diseases

(Swissinfo.ch, March 02, 2010)

On holidays men are more likely to get malaria and sexually transmitted diseases whereas women suffer from stomach problems, Swiss research has found. The study, by Zurich University, is the first one ever to give a broad profile of travel based infectious diseases from a gender point of view. Men just simply seem to be more prone to malaria and other mosquito-borne diseases. For sexually transmitted diseases, just over one per cent of the men visited a travel clinic for this reason, with males being one third more likely to do so than females. As for women, they may be biologically more susceptible to the pathogens that cause gastrointestinal illnesses.



<http://tinyurl.com/03-100302>

New Step In Alzheimer's Understanding

(myScience.ch, March 03, 2010)

A study from EPFL's Laboratory of Neuroenergetics and Cellular Dynamics in Lausanne may lead to new forms of treatment following a better understanding of how Amyloid-Beta found in cerebral plaques, typically present in the brain of Alzheimer's patients, may lead to neurodegeneration. Researchers have studied how the functions of certain cells called astrocytes— which normally protect, repair, and transfer energy to neurons—are impaired when “possessed” by aggregated Amyloid-Beta. This new understanding could lead to more effective therapies for Alzheimer's disease by trying to rescue astrocytic functions by deactivating the scavenger receptors.



<http://tinyurl.com/03-100303a>

Strategy Against Animal Disease Threat

(Swissinfo.ch, March 03, 2010)

As veterinary experts know, it's not a question of if the next big disease outbreak happens but when. Although Switzerland is widely regarded as a best practice example in the area of animal health, global developments make vigilance essential. The Federal Veterinary Office presented its strategy for 2010 to 2020 in Bern to farming, veterinary and food industry representatives in a five-point plan, with a focus on prevention. The strategy, developed in conjunction with the cantonal authorities, includes improved disease testing at all stages from farm to food plant, and prevention has to reach beyond the borders of well resourced countries in a mutual benefit.



<http://tinyurl.com/03-100303b>

Jumping Genes Root Of Reptile Diversity

(EPFL, March 04, 2010)

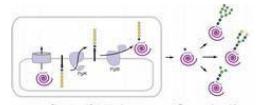
The squamates, which encompass 7'000 odd species, constitute a group of tremendous diversity. Understanding how the body plan of these animals has evolved and led to the formation of such drastically different organisms is a challenge. Researchers from EPFL reveal various subterfuges employed during the evolution of architect genes. The latter, named Hox genes, are essential for coordinating body patterning during embryonic development. Rearrangements and mutations discovered within these genes enable to visualise the transition between lizards and snakes. The geneticists also show that an invasion of transposons, genes capable of moving within the genome, may be at the root of the flexibility observed in the squamates' body plan.

<http://tinyurl.com/03-100304>

Engineered Bacteria Produces Glycoproteins

(ETH Zurich, March 05, 2010)

E. coli is a well-known biological workhorse that can be used to produce recombinant proteins, but it is missing many of the functions required to modify proteins with sugar molecules. Researchers at ETH Zurich recently discovered that Campylobacter can do something that only eukaryotes like human cells can: attach sugar molecules to proteins following synthesis to produce glycoproteins. This means that different glycoproteins can now efficiently be produced, thus helping researchers to analyze the structure and function of individual glycoproteins in a more precise manner. Glycoproteins play a crucial role in biology found more frequently on the surface of cells than “normal” proteins and they participate in numerous cellular processes, such as cell to cell communication.



<http://tinyurl.com/03-100305>



New Hope Of Childhood Leukemia Treatment

(Swissinfo.ch, March 08, 2010)

Zurich researchers have found a new treatment approach which they hope will help young leukemia patients who don't respond to conventional therapies. The Zurich University Children's Hospital team, led by Jean-Pierre Bourquin, conducted their research around acute lymphoblastic leukaemia (ALL), the most frequently occurring form, of which there are up to 70 cases a year in Switzerland and up to 1,000 cases in Europe. Chemotherapy normally triggers the cancerous cells to commit suicide. But in patients with a resistance to this treatment this doesn't happen. However, it was found that a low dose of obatoclax mesylate could influence the mechanism that controls programmed cell death, thus restoring the response to conventional anti-leukaemia drugs when given in combination.

<http://tinyurl.com/03-100308a>



Stress Level Detector

(ETH Zurich, March 08, 2010)

ETH-Zurich researchers are developing electronic stress assistants that monitors stress levels in everyday life. They used different indicators to determine stress levels, including the skin conductance on the fingers, the heart and breathing rates, and the amount of the stress hormone cortisol in saliva. They also measured leg, foot and arm movements and covered a chair with pressure sensors to record how often a person changes his or her posture while seated. In principle stress is a healthy reaction. In the short term, the stress reaction helps the body to adapt to the stressor. However, if the organism has no time to recover and the stress reaction proceeds over longer time, this can have adverse effects like cardiovascular diseases or mental illness.

<http://tinyurl.com/03-100308b>

Robot For Forensic Medicine

(SNSF, March 10, 2010)

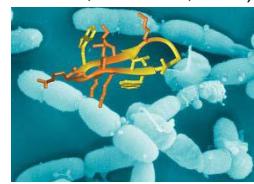


A high-mobility industrial robot by the name of Virtobot records the contours of a cadaver under examination. Using computed tomography at the same time, forensic doctors are provided with a three-dimensional image and can conserve corpses digitally. The coinage "virtopsy" stands for virtual autopsy and describes post-mortem examinations that are performed without cutting open the body of the deceased and solely on the basis of high definition magnetic resonance imagers (MRI) and computer tomography (CT).

<http://tinyurl.com/03-100310>

New Antibiotic Against Multi Drug-Resistant Pseudomonas

(Swissinfo.ch, March 13, 2010)



Swiss scientists have found a new class of antibiotics which target the multi drug-resistant and often deadly pseudomonas. Pseudomonas has a hard outer cell wall, making it difficult for a conventional antibiotic to penetrate it. What is more, if the antibiotic does manage the breach the cell's defenses, the bacterium uses a pump action to get rid of it. The new antibiotic actually hits a protein which is in the outer cell membrane, so it's a sort of battering ram direct onto this essential protein machinery in the outer membrane, which is responsible for building the outer membrane. Such bacteria account for an estimated 63 per cent of infections in hospital intensive care units. There is thus an urgent need for new drugs in the fight against this type of bacteria.

<http://tinyurl.com/03-100313>

World Center For Tuberculosis Study

(EPFL, March 16, 2010)

Tuberculosis still affects thousands of victims worldwide. And with the inauguration of a laboratory specializing in air-borne pathogens EPFL has become one of the world centers for research in the domain one week before the World Tuberculosis Day. With this new laboratory, EPFL disposes an indispensable research tool in the fight against tuberculosis. The lab is open to researchers from EPFL and nearby universities in order to study *in vivo* strains of *Bacillus anthracis*, the air-borne pathogen causing tuberculosis. It is a matter of utmost concern for around 70% of the patients do not survive in the absence of effective treatment.

<http://tinyurl.com/03-100316>

Stem Cell National Research Program With New Officer

(SNSF, March 19, 2010)

The SNSF research council has appointed Adrian Heuss as Implementation Officer of the "Stem Cells and Regenerative Medicine" National Research Programme (NRP 63). The Implementation Officer's main duty is to communi-



cate knowledge gained in NRP 63 to interested persons and organisations: doctors, regulatory and governmental agencies, NGOs, bio-ethicists, schools and media. NRP 63 focuses on basic research. Every NRP 63 project has potentials in terms of subsequent medical applications, e.g. for treating brain tumors or diabetes. The initial goal of the programme is to learn more about how stem cells work.

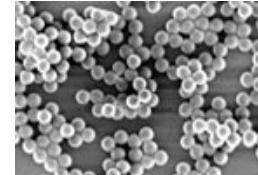
<http://tinyurl.com/03-100319b>

Barrier Capacity of Human Placenta

Over several years, Empa researchers have been studying the effects of numerous nanoparticles on human cells and tissue. These investigations will help scientists to understand what problems – if any – these tiny things might cause when released into the human body and in the environment. Recently, scientists from Empa and the University Hospital Zurich have investigated the human placenta, injecting into it particles of different sizes. The first result of the study was that the cutoff size of the beads was between 200 and 300 nanometers, particles smaller than this crossing the placental barrier and entering the fetal circulation while larger particles were held back.

<http://tinyurl.com/03-100319a>

(EMPA, March 19, 2010)



Disruptive Chemical In Baby Bottles

Bisphenol A (BPA) is the key element in polycarbonate synthetics and epoxy resins – about three million tons being produced annually all over the world. It is a hormonally active substance that acts like the natural hormone oestrogen and as an anti-androgen. Even small amounts of the substance can thus affect sexual development, especially for male foetuses and babies. The study revealed that babies and infants absorb the most BPA. Babies fed using PC bottles are the worst affected, on average taking in 0.8 micrograms of BPA per kilogram of body weight via bottles. This amount is well below the statutory minimum but the latest studies on rats have shown that even low doses can have a harmful impact on the development of the animals.

<http://tinyurl.com/03-100322>

(ETH Zurich, March 22, 2010)



Understanding Gene Interaction

Understanding how genes interact with each other is of paramount importance in developing better gene therapies. However, current gene screening techniques cannot directly inform us how genes interact with each other. In order to better understand the biological processes of gene interaction, the Laboratory of Intelligent Systems (LIS) at the Ecole Polytechnique Fédérale de Lausanne (EPFL), in collaboration with IBM, MIT and Harvard University, has developed a method to compare predictions and discovered a novel technique to find the best results.

<http://tinyurl.com/03-100324>

(EPFL, March 24, 2010)

Tumor Hiding System

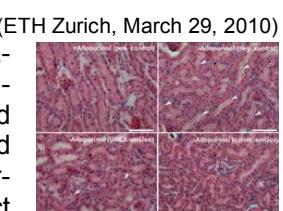
A new mechanism explaining how tumors escape the body's natural immune surveillance has recently been discovered at EPFL. The study shows how tumors can create a tolerant microenvironment and avoid attack by the immune system by mimicking key features of lymph nodes. The discovery underscores the role of the lymphatic system in cancer and may open up new possibilities for cancer treatment. The tumor tricks the body into thinking it is healthy tissue and the researchers set out to understand how immune tolerance is induced by tumors, allowing them to progress and spread. Since most tumors progress only if they have escaped the immune system, this new understanding of one mechanism by which the tumor can bypasses or hides from immune defenses is an important step towards future cancer therapies.

<http://tinyurl.com/03-100325>

(EPFL, March 25, 2010)

Gene Network Against Gout

Researchers from the ETH Zurich have devised a new method for preventing and permanently eradicating the cause of gout. It involves implanting a biological network that regulates the uric acid levels autonomously through a network of genes called UREX. A uric acid sensor constantly gauges and controls the concentration in the blood and if the uric acid level reaches an alarming concentration, the sensor relays the information to a genetic circuit. This then makes sure that the third component of the network releases the correct



(ETH Zurich, March 29, 2010)



amount of urate oxydase into the blood and that the uric acid level is restored to a healthy balance. The three components of the network thus communicate with each other and work independently and automatically – without any external assistance.

<http://tinyurl.com/03-100329>

First Premature Birth Rate

(news.admin.ch, March 30, 2010)

Switzerland registers a premature birth rate comparable to those recorded in Europe. Of the 76,691 live births in 2008, 91.9% were full-term births, i.e. between the 37th and 41st week of pregnancy, 7.5% were premature and 0.6% were post-term births. Thanks to the introduction of the gestational age in the birth register, this study by the Federal Statistical Office (FSO) is the first to present the premature birth rate as a percentage of all births.

<http://tinyurl.com/03-100330>

Novel Resin For Efficient Oxidative Protein Folding

(ETH Zurich, February-March, 2010)

A resin was developed for efficient and practical oxidative folding of disulfide bond-containing proteins. The resin, which can be simply separated from the refolded protein and easily recycled, has great potential for diverse protein folding applications.

<http://tinyurl.com/03-1002-03a>

Trigger-Inducible Drug Depot

(ETH Zurich, February-March, 2010)

A drug depot was developed which can be triggered by an orally available pill to release the embedded drug on demand in a dose-dependent way. The drug depot is expected to be applicable in many disease areas by the incorporation of specific payload drugs. A daily injection will be replaced by a daily pill.

<http://tinyurl.com/03-1002-03b>

4. Nano / Micro Technology / Material Science

First Swiss Nanotech Report

(EMPA, February 01, 2010)



Nanotechnology is widely considered a rapidly developing and, from an economic point of view, increasingly important field of technology. Swiss scientists and engineers were and are pioneers in the miniaturization of processes and structures, which shows in the early upswing of nanotechnology related patent applications from Swiss inventors and applicants. The country consistently ranks among the leaders in terms of innovation activity, as evidenced by the high number of patent applications per capita. Although groundbreaking manipulation techniques, such as the scanning tunneling microscope and the atomic force microscope, were developed in Switzerland, nanotechnology activities have clearly extended into other segments

<http://tinyurl.com/04-100201>

Nanosized Wear-Resistant Carbon Tip

(IBM Zurich, February 25, 2010)

Researchers at IBM Research-Zurich, the University of Pennsylvania and the University of Wisconsin-Madison have fabricated an ultra sharp, diamond-like carbon tip that is 3,000 times more wear-resistant at the nanoscale than silicon. The end result is a diamond-like carbon material mass-produced at the nanoscale that doesn't wear. Molded into the shape of a nanosized tip and integrated on the end of a silicon microcantilever for use in atomic force microscopy, the material has technological implications for atomic imaging, probe-based data storage and as emerging applications such as nanolithography, nanometrology and nanomanufacturing.

<http://tinyurl.com/04-100225>

3D Chip Stacking To Preserve Moore's Law

(IBM Zurich, March 09, 2010)

More than 50 years old, Moore's Law is still in effect, but to extend it as long as 2020 will require a change from mere transistor scaling to novel packaging architectures such as so-called 3D integration, the vertical integration of chips. Unlike current processors, the CMOSAIC project considers a 3D stack-architecture of multiple cores with a interconnect density from 100 to 10,000 connections per millimeter square. Researchers believe that these tiny



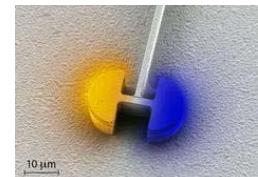
connections and the use of hair-thin, liquid cooling microchannels measuring only 50 microns in diameter between the active chips are the missing links to achieving high-performance computing with future 3D chip stacks.

<http://tinyurl.com/04-100309>

World's Smallest Microlaser

(ETH Zurich, March 19, 2010)

ETH-Zurich physicists have developed a new kind of laser that shatters the boundaries of possibility: it is by far the smallest electrically pumped laser in the world and one day could revolutionize chip technology. It's 30 micrometers long, eight micrometers high and has a wavelength of 200 micrometers, making the laser considerably smaller than the wavelength of the light it emits. Instead of the usual optic resonators, an electrical resonant circuit made up of an inductor and two capacitors was used. This means the size of the resonator is no longer limited by the wavelength of the light and can in principle be scaled down to whatever size one wants. This prospect especially makes the microlaser interesting.

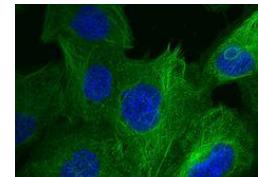


<http://tinyurl.com/04-100319>

Risk Matrix For Nano-Materials

(ETH Zurich, March 25, 2010)

The advantage of nanomaterials is that they possess properties different to those of the same material in "normal" size. However, the newly-emerging technology also harbours potential risks. Up to now, there is still very little known about the way synthetic nanoparticles act on living organisms over a prolonged period of time. Researchers developed a precautionary matrix for synthetic nano-materials. Close collaboration between different groups has now produced the precautionary matrix, which classifies the substances based on their harmfulness and application. The classification involves assessing the specific framework conditions, the potential for effect, human exposure and environmental pollution by nanoparticles.



<http://tinyurl.com/04-100325>

5. Information & Communications Technology

Fiber Optics Transmission Spreads

(Admin, February 05, 2010)

Optical fiber is a well-proven transmission medium for high data rates and will be necessary in the next few years as access networks evolve, because the old copper cables will no longer be adequate to meet the growing demand for high bandwidths for internet applications, especially high-definition television. Discussions with market players about this form of development were conducted in order to avoid the creation of monopolies which make access more difficult for other telecommunications providers and obstruct competition. At the same time, network construction must take place as efficiently as possible, to allow economically appropriate investment.

<http://tinyurl.com/05-100205>

High Speed Internet On Fixed Networks Favored

(OFCOM, February 09, 2010)

In terms of internet access from home, households in Switzerland favor high-speed connections on fixed networks. This was one of the findings of a survey of internet access and usage commissioned by the Federal Office of Communications (OFCOM). The study also revealed that when it comes to choosing an operator the main criterion is service quality. Once a provider has been chosen, users generally remain loyal and are satisfied with the services provided. They enjoy excellent connections and use the internet intensively but relatively conventionally.

<http://tinyurl.com/05-100209>

Secure Online Banking System

(IBM Zurich, February 23, 2010)

Banking giant UBS has started deploying a device from IBM that ensures online banking transactions aren't being interfered with by hackers. IBM's ZTIC (Zone Trusted Information Channel) is a smart-card reader that attaches to computer via a USB cable. During an online banking transaction, it bypasses the Web browser and makes a direct SSL (Secure Sockets Layer) connection with the bank. With that access, the ZTIC is able to show a banking customer what will actually happen during a transaction even if the computer is infected with malicious software. The ZTIC is designed to thwart man-in-the-middle attacks, where a hacker interferes with a transaction in real time and modifies data.

<http://tinyurl.com/05-100223>



Telecom Networks Overloaded

(Swisster.ch, February 25, 2010)

Industry leaders urge telecoms operators to pull back usage to prevent network collapses as the volume of data traffic increases across mobile wireless networks. Switzerland is not immune to the problem – more and more people are using handheld devices to download and send data – but Swisscom is handling the situation well according to analysts. Consumers are increasingly using their phones for online banking, tweeting and checking up on friends' activities on Facebook. The number of mobile surfers is increasing and with snazzy wireless phones selling like hot cakes, networks are under more pressure than market researchers initially anticipated.



<http://tinyurl.com/05-100225a>

Faster Energy Efficient Data Analysis Method

(IBM Zurich, February 25, 2010)

Research unveiled a breakthrough method based on a mathematical algorithm that reduces the computational complexity, costs, and energy usage for analyzing the quality of massive amounts of data by two orders of magnitude. This new method will greatly help enterprises extract and use the data more quickly and efficiently to develop more accurate and predictive models. In a record-breaking experiment, IBM researchers used the fourth most powerful supercomputer in the world to validate nine terabytes of data in less than 20 minutes, without compromising accuracy. Ordinarily, using the same system, this would take more than a day. Additionally, the process used just one percent of the energy that would typically be required.

<http://tinyurl.com/05-100225b>

Computer For Old People

(Swissinfo.ch, March 09, 2010)



In Switzerland a majority of those over 65 years old do not use the internet but one third of these "offline" might be encouraged to use the net if they had a bit of help. Experts say family support and more training are needed. The research was carried out by Zurich University's Centre for Gerontology concluded that only 38 per cent of people aged over 65 were online. This compares to more than 90 per cent of 14-19 year olds and almost 80 per cent of the 40-49 age group. This is a situation that Pro Senectute is keen to change. Family support is also very important, especially as the study revealed that older people were more likely to use the internet if someone in their close social circle did so.

<http://tinyurl.com/05-100309>

In Top Rank For Network Readiness

(Swisster.ch, March 26, 2010)



The ninth annual Global Information Technology Report for 2009-10 places Switzerland behind top-ranked Sweden, Singapore and Denmark and just ahead of the United States among a survey of the world's wealthiest 133 nations for its IT and communications development. The list praises the Swiss "innovation powerhouse" although it says high fixed and mobile telephone costs put the country at a disadvantage. Among the Swiss attributes is a high penetration of mobile phone use (118 subscriptions per 100 population) and Internet users (77 per 100). Unlike in Scandinavian countries, the government does not play as significant a role in network readiness but Switzerland offers an extremely conducive environment for ICT development with an extensive availability of quality soft and hard infrastructure, favorable regulations, and an excellent market environment.

<http://tinyurl.com/05-100326>

6. Energy / Environment

New Lab For Solar Technology

(Swisster.ch, February 02, 2010)



With use of solar power expected to grow by leaps and bounds over the coming years, multinational DuPont opens a research and development centre in Geneva that aims to make the technology more efficient. Among other inventions, the new laboratory is developing a photovoltaic panel that doubles as a roof tile, Philip Boydell, director of the facility. The five-million-dollar photovoltaic application laboratory is located in the American multinational's European Technical Center in Meyrin.

<http://tinyurl.com/06-100202a>

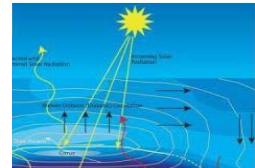


Global Warming Influenced By Water Vapor

Scientists find that a 10 percent drop in water vapor in the Earth's atmosphere has a considerable impact on global warming. However, they're not sure why it occurs or when it may shift in the opposite direction again. Dr Gian-Kaspar Plattner of the University of Bern and the Intergovernmental Panel on Climate Change and scientists reckon the discovery might help explain why surface temperatures have not risen as rapidly over the last decade when compared to the 1980s and 90s.

<http://tinyurl.com/06-100202b>

(Swisster.ch, February 02, 2010)



New Plants On Move From Coasts

A quiet change is happening on the verges of Switzerland's motorways: new plants are moving in, often transported over long distances in the wheels of trucks and cars. Furthermore, the salt used to de-ice roads in winter has had a severe impact on habitat, driving out such common wayside plants as daisies and dandelions, and enabling salt-tolerant plants to take root. As a result, some plants which used to be found only on the coast are moving inland. Over the past 50 years or so, some of the newcomers have moved gradually while others have appeared suddenly, far from any previously known location.

<http://tinyurl.com/06-100213>

(Swissinfo.ch, February 13, 2010)



Invasive Species Threatens Biodiversity

All over the world, invasive species are on the offensive. Invasive plants alter ecosystems and threaten native biodiversity. Researchers fear that alien plant species are also increasingly colonizing mountain regions and disrupting their sensitive ecological balances. This fear is not unfounded: in some mountains regions of the world non-native plants have outcompeted the indigenous species, sometimes with serious consequences for the ecosystems. A glance at the data from the ETH-Zurich-affiliated Mountain Invasion Research Network (MIREN) reveals that globally 1,500 plant species are known to be potentially invasive in the mountains of the world. 100 of them are now being contained, in many cases purely as a precautionary measure.

<http://tinyurl.com/06-100215>

(ETH Zurich, February 15, 2010)



A New Way To Fight Maize Root Borer

The larva of the maize root borer is a major pest in corn cultivation. For many years there was no stopping it until researchers in the NCCR Plant Survival and colleagues at the Max Planck Institute for Chemical Ecology discovered that corn is able to ward off the maize root borer larva by itself. When these larvae attack the maize roots, it secretes a scent that attracts tiny parasitical worms called nematodes which then destroy the pest. The genetic information that determines this ability, however, remained dormant in many modern strains of maize. Through genetic engineering, the international research team was able to restore this ability to the maize.

<http://tinyurl.com/06-100219>

(SNF, February 19, 2010)



Switzerland Second In Environmental Performance Index

When it comes to protecting the environment, Switzerland is among the leading nations in the world. In the 2010 Environmental Performance Index (EPI), the country is ranked a close second behind Iceland. Switzerland owes its great results to high scores in categories such as water quality, biodiversity and habitat, and air quality. Switzerland also receives excellent marks in climate protection. The top score reflects its long-term commitment to sustainability and maintaining a superior quality of life – which has become an important factor for companies scouting new markets and locations for expansion of their business.

<http://tinyurl.com/06-100223>

(Greater Zurich Area, February 23, 2010)

Cut In Greenhouse Gases

In the view of the Federal Council, the World Climate Conference in Copenhagen at the end of 2009 was an important step towards an effective climate agreement. By 2020, the country plans to cut its emissions by 20% from 1990 levels. This target is in line with that of the EU. If other industrialised countries and emerging economies also announce substantial efforts to cut their emissions, Switzerland will raise its target to 30%. One of the key channels

(news.admin.ch, February 24, 2010)



for environmental finance is the Global Environment Facility (GEF) and the Federal Council has agreed to the commencement of international negotiations on the 5th replenishment of the GEF and has authorised the Swiss delegation to offer CHF 132 million for the period 2010-2014. Switzerland is thus increasing its commitment by 50 per cent.
<http://tinyurl.com/06-100224>

Project For Meteorological Predictions

(Swisster.ch, February 25, 2010)

Anyone spending time in the mountains knows that one moment it can be blazing sunshine and the next, you're unknowingly headed towards the cliff edge in a white out. At the winter Olympic Games in Vancouver, an international team of scientists from nine countries assembled by the Geneva-based World Meteorological Organization conducts research to improve the prediction of winter weather. Including scientists and technology from Switzerland, the Science and Nowcasting of Olympic Weather for Vancouver 2010 (SNOW-V10) project aims to produce accurate forecasts of conditions up to six hours in advance.



<http://tinyurl.com/06-100225>

Smart Power Grids

(University of St.Gallen, March 03, 2010)

Using more renewable energies, thus paving the way towards a power supply, is the goal pursued by the Good Energies Chair for the Management of Renewable Energies at the University of St.Gallen (HSG). The entry into the new energy era is not only a question of technological progress and general political conditions, but also of management. Besides classic management issues, new technology trends will be presented: electro mobility and intelligent power grids, so-called "smart grids". These measuring instruments provide suppliers with detailed data about consumption and thus control energy requirements allowing consumers to recognize, and thus avoid, power guzzlers immediately. These intelligent meters will also enable power generators to record energy requirements optimally and thus to improve their grids.

<http://tinyurl.com/06-100303>

Measurements On Fracture Zones In Iceland

(ETH Zurich, March 11, 2010)

Once a year, the Swiss geophysicist Sabrina Metzger travels to Iceland to conduct geophysical fieldwork. She is researching just how dangerous a fracture zone on the Mid-Atlantic Ridge is for the population of the little Icelandic town of Húsavík. In Iceland, the submarine mountain range, or Mid-Atlantic Ridge as it is known, rises above the surface of the water, giving the island its special character. The scientist would like to know exactly what happens in this fault zone. This includes working out the exact size of the fracture zone and the rate at which the plates are moving in relation to one another.

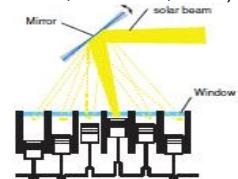


<http://tinyurl.com/06-100311>

Concentrated Solar Power Via Piston Engine

(ETH Zurich, March 16, 2010)

This novel reciprocating piston engine converts solar irradiation into electrical power. A concentrated solar beam is redirected between the engine's cylinders and absorbed in an efficient porous receiver in the cylinder heads. Due to the moving beam, thermal load on the components is reduced compared to stationary solar receivers.



<http://tinyurl.com/06-100316>

Wind Turbine Expansion

(Swisster.ch, March 26, 2010)

The government demands that cantonal authorities comply with new recommendations on the construction of wind turbines, to streamline the expansion of Switzerland's flagging wind energy system. Renewable energy targets require the country to increase wind energy use, but many planning applications remain in the pipeline due to bureaucratic differences across the cantons and delays in federal energy tariff schemes. New guidelines aim to un-block the passage of applications through the 26 cantonal authorities and municipal communes, which sign off planning permission for new turbines. Wind energy production must reach a rate of 600 million kilowatt hours per year by 2030, equivalent to the amount required to power 150,000 households. This will satisfy 10 percent of the government's overall target to increase renewable energy.



<http://tinyurl.com/06-100326>



7. Engineering / Robotics / Space

Dark Matter Measuring In Space

The obvious missing presence of anti-matter in the universe still remains one of the greatest mysteries of physics and cosmology. According to theoreticians, the Big Bang should have generated matter as well as anti-matter in its huge original production of energy. But the fact is, no test nor technology has yet been able to detect those original anti-particles. It is thus the role of the Alpha Magnetic Spectrometer (AMS), a high level measuring tool, to achieve this objective. Having successfully undergone the tests at CERN, the AMS should take off this autumn for the International Space Station.

<http://tinyurl.com/07-100209>

(UNIGE, February 09, 2010)



Solar Impulse Preparations

(Swissinfo.ch, February 10, 2010)

After a successful “flea hop” near Zurich, the Solar Impulse aircraft has moved home to Payerne in preparation for its first high-altitude and night flights. The first major test flight is due in mid-March with the long-term aim of flying around the world set for 2012. Of the 70 team members involved in the SFr100-million Swiss solar adventure, a dozen will be based permanently at Payerne, north of Lausanne, to oversee the testing. These include the test-flight team, led by former Swiss astronaut Claude Nicollier. Development work on the carbon fibre prototype will continue in parallel at the Dubendorf site. The solar plane has a huge wingspan, the equivalent of an A340 Airbus, but weighs only 1,600kg - less than the average car - and its four engines have the power of a small scooter.

<http://tinyurl.com/07-100210>

Green Cars At The Geneva International Motor Show

(Swisster.ch, February 25, 2010)

More than 60 green vehicles developed to use energies other than petroleum are on view at the 80th Geneva International Motor Show (March 4-14). The event's “Green Pavilion” also provides an opportunity to test drive some of the latest ecological cars. Green contenders for the public eye this year include the battery-powered HydroGen4 from Opel, a hybrid liquid natural gas and electric model from Korean firm KIA, and a city car powered by the latest generation of batteries developed by the Croatian company DOK-ING. Start-up group i-Volt's Italian-designed Tazzari-Zero (see photo), an electric-powered two-seater and the list goes on.

<http://tinyurl.com/07-100225a>



SA will present their

PlanetSolar Ready To Sail

(news.admin.ch, February 25, 2010)

Construction of the Swiss vessel PlanetSolar has now been concluded and was presented to the media at a shipyard in the German harbour town of Kiel. In the summer of 2010, the solar-powered catamaran will embark on the European leg of its mission - and beginning in 2011, on a trip around the globe - to draw the world's attention to the significance of renewable energies. The catamaran, sailing under the Swiss flag, is the result of a project supported by the Federal Department of Foreign Affairs and the Cantons of Vaud and Neuchâtel. With its length of 30 meters, width of 15 meters, and some 500m² of solar panels, the solar-powered vessel is the largest of its kind in the world. The solar energy generated enables the vessel to sail at an average speed of approx. eight knots (15 km/hr.).

<http://tinyurl.com/07-100225b>



Flexible And Strong Clever Materials

(EMPA, March 11, 2010)

Flavio Campanile, head of a research group in Empa's Mechanics for Modeling and Simulation Laboratory, is convinced that aircraft can be made which move more economically through the air. Somewhen it will be possible to make wings without ailerons, flaps and thousands of individual parts. They will have in principle only one component, which continually changes shape. A range of different industries are interested in so-called “smart” systems because they can be used to make low-maintenance products such as medical tools and robot gripper arms. So far, Campanile has succeeded in convincing diverse industrial partners from the medical technology and robotics fields of the advantages of these novel systems based on innovative materials.

<http://tinyurl.com/07-100311>





Trend Towards Small Cars

(Swissinfo.ch, March 14, 2010)

The fleet of new small cars at this year's Geneva motor show confirms a growing trend towards downsizing in the global motor industry. Almost all big carmakers, including premium brands, are betting their future on smaller models as they compete for a slice of the compact sector, which should account for more than half of the global market by 2016. The shift towards ever smaller cars is driven by various factors: growing urbanization, ageing populations in rich countries, and demand for entry-level cars in emerging markets, as well as the squeeze from CO₂ regulation around the world.

<http://tinyurl.com/07-100314>

8. Physics / Chemistry / Maths

First Results From LHC At CERN

(ETH Zurich, February 18, 2010)

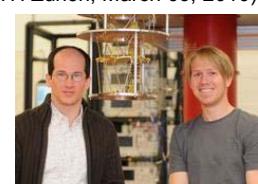
The exploitation of the data produced by the LHC, the largest accelerator, has started earlier than expected, and a first scientific publication was recently produced. The researchers have been waiting 15 years for this moment. Scientists were interested in charged particles resulting from the proton collisions, and quickly found interesting candidates for the sought events. After having analyzed the raw data in record time, scientists could establish how many particles were produced, determine their spatial distribution and average momentum, as well as how such quantities depend upon the centre-of-mass energy. The pixel detector, one of the components of CMS, played a major role in this analysis.



<http://tinyurl.com/08-100218>

(ETH Zurich, March 09, 2010)

The hybrid of microelectronic circuits and atoms which combines the best quantum mechanical characteristics of both systems, may help to realize a breakthrough in quantum computing. Andreas Wallraff, Professor for Solid State Physics at ETH Zurich, together with his research group is investigating how atoms can communicate in a controlled manner with an electronic circuit. The goal of the scientists on Wallraff's team is primarily to find out how information is written onto a quantum bit, how it can be read out again and how information is transferred. The initial aim is to develop basic components, on which quantum information can be stored for as long as possible and on the other hand it is possible to move between the components quickly and easily.



<http://tinyurl.com/08-100309>

LHC Shut Down Within Two Years For Upgrade

(Swisster.ch, March 10, 2010)

The Large Hadron Collider project at CERN is back on track, even if it will be closed for up to a year for maintenance and design improvements in the next 18 to 24 months. The temporary closure was planned early in 2009 and is needed to ready the LHC for particle collisions at record-setting energy levels. The shutdown is necessary to ensure the collider can withstand the high-energy collisions of sub-atomic particles planned in later phases of research. In what has been dubbed the "experiment of the century", the LHC aims to collide particle beams at higher levels of energy than have ever been achieved before. The collisions aim to duplicate the conditions of the Big Bang origins of the universe to allow scientists to understand more about the nature of matter.



<http://tinyurl.com/08-100310>

New Record For LHC At CERN

(myScience.ch, March 11, 2010)

Two 3.5 TeV proton beams successfully circulated in the Large Hadron Collider for the first time. This is the highest energy yet achieved in a particle accelerator, and an important step on the way to the start of the LHC research program. The first attempt to collide beams at 7 TeV (3.5 TeV per beam) will follow on a date to be announced in the near future. Getting the beams to 3.5 TeV is testimony to the soundness of the LHC's overall design, and the improvements made so far since 2008. Once 7 TeV collisions have been established, the plan is to run continuously for a period of 18-24 months. This will bring enough data across all the potential discovery areas to firmly establish the LHC as the world's foremost facility for high-energy particle physics.



<http://tinyurl.com/08-100311>



Mini Big-Bang At CERN

(Swissinfo.ch, March 30, 2010)

Scientists of CERN have successfully smashed proton beams together infused with record-breaking energy levels. The beams whizzing 11,000 times a second in opposite directions around the Large Hadron Collider (LHC) were smashed together in four bus-sized detector chambers. The multiple underground collisions each created mini Big Bangs, producing data to be analysed by thousands of scientists at Cern and in laboratories around the world. By crashing such high-energy beams of protons into each other, the scientists hope to gain key insights into the make-up of matter and the creation of the universe billions of years ago in the moments after the Big Bang.



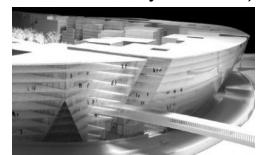
<http://tinyurl.com/08-100330>

9. Architecture / Design

Japan Architect For Zurich Airport Project

(Swisster.ch, February 11, 2010)

A blueprint from renowned Japanese architect Riken Yamamoto is selected for a billion-dollar, 200,000-square-metre complex at the Zurich Airport to incorporate hotels, apartments, offices and other business space. The Circle project is set to be built in two phases with completion by 2018. Yamamoto's design, featuring 40-metre-high glass-walled modules that sweep around a hillside linked by a "lattice of streets, plazas and passageways", was selected from more than 90 bids submitted by architecture firms from 21 countries. The complex is to include hotels, serviced apartments, offices and a range of businesses and services.



<http://tinyurl.com/09-100211>

Opening Of The Rolex Learning Center At EPFL

(EPFL, February 22, 2010)

The Rolex Learning Center, designed by the acclaimed Japanese architecture firm SANAA, opened its doors on the February 22, to EPFL students and the public. Stunningly designed and painstakingly engineered, the new campus hub is a social microcosm including a library, a lab for learning as well as several EPFL's departments and accommodations. With a 500,000 volumes library and an international cultural hub for EPFL, it spreads over one single fluid space of 20,000 sq meters and provides a seamless network of services, libraries, information gathering, social spaces, spaces to study, restaurants, cafes and beautiful outdoor spaces.



<http://tinyurl.com/09-100222>

New Monte Rosa Hut Exhibition

(ETH Zurich, February 25, 2010)

It gleams, is magnificent and looks uncannily like it, but it is ten times smaller than the real one: a 1:10 scale model of the new Monte Rosa Hut. Currently standing in the main hall of ETH Zurich's main building, it was modeled on the real hut, which was inaugurated over 2,880 meters above sea level, high above the Grenz and Gorner Glaciers, at the end of September 2009. The model is the centerpiece of the Monte Rosa Hut exhibition, which has been on display in the main hall of ETH Zurich's main building since February 24 following a vernissage in a packed Audi Max the day before anniversary of ETH Zurich.



<http://tinyurl.com/09-100225>

Pritzker Prize Won By EPFL Learning Center Japanese Architects

(EPFL, March 29, 2010)

The winners of this year's Pritzker Prize, architects Kazuyo Sejima and Ryue Nishizawa (SANAA), have expressed gratitude in a message sent to the Ecole Polytechnique Fédérale de Lausanne (EPFL), where SANAA's latest building, the Rolex Learning Center. SANAA officially recognized the importance of their last project at EPFL in obtaining the prize. The new EPFL library and campus hub was cited by the jury as an example of "SANAA's aesthetic of inclusion" and EPFL's vision of a public center for learning has become an emblem of public participation and appreciation of scientific excellence for Switzerland.



<http://tinyurl.com/09-100329>



10. Economy, Social Sciences & Humanities

Strategic Trends 2010

(ETH Zurich, February 04, 2010)

The Center for Security Studies, ETH Zurich has launched its inaugural Strategic Trends yearbook. 2009 was noted by their in-house policy experts as a year of crisis not just from an economic but also from a security perspective. 2010 remains a highly uncertain period for recovery, with global governance becoming increasingly complex. Geo-economic shifts eastwards, US policies towards South Asia and the Middle East, energy security, nuclear proliferation and a crisis of crisis management will be critical challenges hitting international headlines into 2010.

<http://tinyurl.com/10-100204>

Europe's Second Freest Economy

(Greater Zurich Area, February 28, 2010)

Switzerland is one of the most economically free countries in the world. It is ranked sixth in the 2010 Index of Economic Freedom, gaining 3 ranks compared to 2009. In Europe, the country is second only to Ireland. Switzerland owes its great result to high scores in various criteria, such as freedom of investment, property rights and freedom from corruption, as well as the country's achievements in the fields of freedom of trade or labor market. Switzerland's outstanding results in the 2010 Index of Economic Freedom emphasize the importance of a reliable and liberal economic policy.

<http://tinyurl.com/10-100228>

Fourth Most Globalized Country

(Greater Zurich Area, March 12, 2010)

Switzerland is amongst the most globalized countries, according to the current KOF Index of Globalization of the Swiss Economic Institute KOF of the ETH Zurich. Switzerland continues to be ranked a very good rank fourth. The economic dimension of the KOF Index quantifies not only actual trade and investment flows but also the extent to which countries protect themselves by imposing restrictions on trade and capital movements. The social dimension of globalization reflects the flow of ideas and information, while the political dimension examines the degree of political cooperation between countries. When it comes to social globalization Switzerland is best in class holding a good position (rank 8), and regarding economic globalization it is ranked 22nd.

<http://tinyurl.com/10-100312>

11. Technology Transfer / IPR / Patents

Swiss Federal Institute of Intellectual Property

<https://www.ige.ch/en.html>

Swiss Technology Transfer Association

<http://www.switt.ch/html/home.php>

ETH Zurich Licensing Opportunities

http://www.vpf.ethz.ch/transfer/technol/index_EN

12. General Interest

Swiss Start Ups Among World's Most Promising

(CTI, February 02, 2010)

Twelve Swiss start-up companies were listed among the top and most promising new companies in the world by Red Herring. Ten of these companies profited from Swiss Confederation's Innovation Promotion Agency CTI Start-up coaching. The jury of Red Herring had to narrow the list of 1'200 potentials companies around the world down to 200 finalists. Red Herring editors were among the first to recognize that companies such as Google, Yahoo, Skype, Netscape, YouTube, and eBay would change the way we live and work.

<http://tinyurl.com/10-100202>



World's Second Best Airport

(Greater Zurich Area, February 04, 2010)

The Airport Zurich has been ranked runner-up in the category «best international airport» at the Business Traveler Awards 2009 in Frankfurt. Zurich Airport is considered the best transit hub in Europe, ahead of Munich and London City. The ranking is based on criteria such as short distances for transit and to ground transportation, punctuality and general convenience of the airport. Furthermore Zurich Airport saw the first touchdown of a Singapore Airlines Airbus 380 and daily service between Singapore and Zurich is scheduled to start on March 28 2010, making Zurich the third European Airport after Paris Charles de Gaulle and London Heathrow to receive the A380.

<http://tinyurl.com/12-100204a>

Nobel Prize Winners Vs Students

(University of St. Gallen, February 04, 2010)

What will be the consequences of environmental changes for politics, the economy and culture in developing and industrialized countries? How can society react to the consequences of climate change? Forty students across Europe will discuss these issues with Nobel Prize winners and other outstanding personalities on the occasion of "Challenge the Best", a thinking contest that will take place at the University of St.Gallen (HSG) on 17 May 2010. This trans-generational dialogue is being organized by the Student Union of the HSG.

<http://tinyurl.com/12-100204b>

Trip Into A Nucleus

(NFS, February 05, 2010)



An exhibition in Geneva reveals the secrets of modern genetic research in an entertaining, accessible, and yet intellectually challenging way. Visitors are delighted. The secret to the Geneva genetics exhibition's success lies in the skilled realisation of this concept. The cell nucleus is 14 meters in diameter, bright purple and located at a prominent site on the Rhone island of Ile Rousseau. Aside from scientific information, a breathtaking 360° projection awaits visitors inside, a spectacle that invites visitors to playfully explore the genome, its key role in the history of life and its significance for medicine today and in the future.

<http://tinyurl.com/12-100205>

17 Hours Buried In Avalanche

(Swisster.ch, February 08, 2010)

A series of avalanches swept Alpine slopes in Europe this weekend killing seven people. In Switzerland, 11 people were buried but managed to free themselves or were located. One skier, aged 21, survived under the snow for some 17 hours thanks to an air pocket. Experts consider the first 45 minutes are crucial to the survival of engulfed victims. Suffering just mild hypothermia, the man's survival was due to an air pocket conveniently located above his face some 50 cm underneath the snow. Interment also sheltered him from more serious exposure to the elements.

<http://tinyurl.com/12-100208>

When Science Meets Art

(Swisster.ch, March 04, 2010)



Cultivating the frontiers between art and science, Lalie Schewadron uses sophisticated algorithms to draw the essence out of the beauty of nature. Her current exhibition is the result of an invitation from the UNESCO-backed art and culture program of the CHUV (Vaud university hospital in Lausanne) that includes a section dedicated to art & science. Schewadron's mixed media installations cover three types of works. White random etchings bite into large swaths of metal panelling, delicately printed layers of plexiglas play with textures and colours, tiny screens come alive with drifting shapes that dissolve and recompose. They share the ability to absorb and tantalize.

<http://tinyurl.com/12-100304>

Europe's Largest Ants Colony

(Swisster.ch, March 25, 2010)



With some 1,200 mega-anthills packed into an area estimated at a few square kilometers, the Col du Marchairuz in the Jura mountain range boasts Europe's largest super colony of the world's most industrious insect. With food difficult to come by in such an environment, the pragmatic ants decided to join forces over time whereas normally they will fight to the death. They are now able to exploit the surroundings in a much better fashion. Workers can go and get food and distribute it to the others. With a generous topping of insulating spruce needles, nests can maintain a central temperature which rarely dips below freezing point in winter.

<http://tinyurl.com/12-100325>



Upcoming Science and Technology Related Events

3rd European Conference for Clinical Nanomedicine

May 9-10, 2010

<http://www.clinam.org/>

Nanomedicine

Messe Schweiz, Basel

Challenge The Best

May 17, 2010

<http://www.challengethebest.org/>

University of St. Gallen, St. Gallen

Courses In Micro And Nanotech

May 05, 2010

Cantilever based Sensors for Nanoscience in Neuchatel

May 06, 2010

Laser Micromachining in Lausanne

June 10-11, 2010

CMOS Image Sensors in Zurich

<http://www.fsrcm.ch/e/formAgenda.php>

fsrcm

Information Security and Cryptography- Fundamentals and Applications

June 14-17, 2010

<http://www.idrc.info>

Information security / Information technology

Sunstar Parkhotel Davos, Davos

7th International Conference on Physical Modelling in Geotechnics (ICPMG 2010)

June 28-July1, 2010

<http://www.icpmg2010.ch/>

Physical modeling, design, geotechnics

ETH Zurich

9th European SOFC Forum

June 29-July 2, 2010

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

Solid oxide fuel cell

Kultur-und Kongresszentrum Luzern, Lucerne

Third International NanoBio Conference

August 24-27, 2010

<http://www.nanobio.ethz.ch/>

Nanobio, nanomedical, nanotoxicology

Hönggerberg Campus, ETH Zurich

Swisstech 2010

November 16-19, 2010

<http://www.swisstech2010.com>

Europe's central fair for the subcontracting industries

Messe, Basel

Science-Switzerland Back Numbers

www.swissinnovation.org/Science-Switzerland_DecJan_2009-2010.pdf

www.swissinnovation.org/Science-Switzerland_OctNov_2009.pdf

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