Science-USA (Boston+), May 2013

Table of Contents

swissnex Boston welcomes you to the 8th edition of the monthly newsletter *Science-USA (Boston+)*. This electronic publication is designed to report on trends in education, research, innovation and art. Created for busy people in Switzerland, the newsletter will consist of two spotlights on outstanding Swiss talents and a concise overview of the developments in the science and innovation industries on the US East Coast. Additionally, we will provide you with a taste of swissnex Boston activities throughout the year.

Swiss Spotlight

Scientist: Mitigating the Risks of Large-Scale Engineering Programs through Lean Enabling

(Andri Fritz, May 01, 2013)

Developing a new airplane (e.g. Airbus A380 or Boeing Dreamliner) or designing and building public infrastructure such as bridges, tunnels and road networks (e.g. Boston Big Dig) have at least one thing in common: They are large-scale, complex engineering programs, face serious technical and organizational risks, and run into considerable cost overruns of 50% - 150% and years of delays. However, many of these risks are manageable with the right set of tools. One such tool set exists in the form of a collection of best practices, called the “Lean Enablers for Managing Engineering Programs” and developed by Dr. Josef Oehmen at the Massachusetts Institute of Technology (MIT) in collaboration with INCOSE and PMI. How these Lean Enablers can be tailored and applied to a particular engineering program in order to mitigate its risks is currently studied by Andri Fritz during his Master thesis at the Sociotechnical Systems Research Center in the Engineering Systems Division at MIT. Andri is a Master student in Mechanical Engineering at ETH Zurich.
http://swissinnovation.org/newsUS/web/2013/00-130501-e2.html

Startup: Swiss coronary stent developer Qvanteq AG moves towards clinical proof of concept

(Qvanteq AG, May 02, 2013)

A novel bioactive and coating-free coronary stent against heart attacks was developed by Qvanteq AG, a Switzerland based medtech start-up company and spin-off from the Swiss Federal Institute of Technology. Pre-clinical in vivo studies with Qvanteq’s coronary stent have shown favorable in-growth behavior as compared to existing devices. As a consequence, Qvanteq’s novel device is considered to potentially reduce clinical risks that are associated with today’s devices, such as thrombosis, re-opening of previously stented vessels or bleeding complications. Preparations for a “First-in-Man” clinical proof of concept study have started recently. Qvanteq’s successful development was supported by the broad network of swissnex Boston to business and industry partners as well as to scientific institutions. One valuable contact was certainly CBSET, Lexington MA, where the in vivo studies were successfully conducted.
http://swissinnovation.org/newsUS/web/2013/00-130502-d1.html

swissnex Boston Events

Senator McGee, Transportation Committee Chairman meets with swissnex Director

(swissnex Boston, April 10, 2013)

Senator Thomas McGee and swissnex Director Dr. Felix Moesner met at the Massachusetts State House to exchange views in the field of transportation - a major focus for much of Senator McGee's political career. It is the Massachusetts Bay Transportation Authority that provides 1.1 million people with transportation each day. The current infrastructure needs improvement and the rolling stock of the subway need upgrades. Transportation plays a major role in Massachusetts' economy, so investments have a direct impact on the economy. Dr. Moesner touched upon a few practical examples from Switzerland's dense network of roads and railways. The Swiss population is investing in its future with large projects such as the 35-mile Gotthard Base Tunnel. Closing out the visit, Senator McGee and Dr. Moesner discussed the two Swiss solar projects in the US this summer: MS Tûranor PlanetSolar and Solar Impulse.
http://swissinnovation.org/newsUS/web/2013/00-130520-a8.html

Predicting future success of entrepreneurs through online social network structure

(esciencenews.com, May 09, 2013)

In a research collaboration between MIT's Center for Collective Intelligence and swissnex Boston, the success of Swiss entrepreneurs participating in two Swiss entrepreneurship-coaching programmes, venture leaders and VentureKick, was analysed. The study finds that the more central actors are in the different types of networks, the more successful they are, proximity to key people also correlates with success. In addition, the study also found that people with a connection to the ETH Zurich were more successful, confirming the value of pre-existing social capital acquired in a highly selective institution.
http://swissinnovation.org/newsUS/web/2013/00-130509-d2.html

World Premiere at swissnex Boston: Greater Boston Startup Culture Meetup

(swissnex Boston, May 14, 2013)

On May 14, the Greater Boston Startup Culture Meetup was held for the first time and kicked off a series on this fresh topic. Startup Cultures are evolving and everyone wants to know how they can use culture to maintain their competitive edge. More than 30 culture enthusiasts joined a lively panel discussion and networking event organized by Corey McAveeney (kulturenvy) and sponsored by swissnex Boston. The expert panelists included Jen Reddy, SVP Global Marketing at Communispace Corp; Paolo Gaudiano, President & CTO at Icosystem Corporation; and Melissa Ablett, General Manager at BostInno. With a diverse crowd, different strategies for building and sustaining a good startup culture throughout the growth of a company were discussed. The second event of this series is entitled "Walk the Walk: How To Communicate Your Culture" and planned on June 18.
http://swissinnovation.org/newsUS/web/2013/00-130514-0a.html

47th Stratton Prize awarded to Marc Redlich

(swissnex Boston, May 17, 2013)

On May 17, the Award Committee, consisting of successive Stratton Laureates, awarded the Stratton Prize to Marc Redlich, long-standing President of the Friends of Switzerland. The Prize is given to eminent persons in the USA and Switzerland, who exemplify the fruitfulness of the exchange of ideas and technologies between our two countries. Speeches were given by Larry Grob, current President of the Friends of Switzerland; Felix Moesner, Director of swissnex Boston; Faith Whittlesey, former US Ambassador to Switzerland; and the Honorable Daniel Crane, District Court Judge. Marc Redlich represented the Swiss Government in establishing swissnex Boston, the world's first Science Consulate in Cambridge in 2000. Former Stratton Laureates include Daniel Vasella, Josef H. von Rickenbach, Iris Bohnet, Jenö C.A. Staehelin, Alfred Defago, or Hans J. Bär.
http://swissinnovation.org/newsUS/web/2013/00-130517-a5.html

>> More past events at swissnex Boston:
http://www.yourswissnexboston.org/

Swiss-USA Bilateral News

USD 125 million to Harvard's Wyss Institute for Biologically Inspired Engineering

(Harvard, May 21, 2013)

The Wyss Institute for Biologically Inspired Engineering at Harvard University announced that Hansjörg Wyss (Harvard MBA, '65), the entrepreneur and philanthropist who enabled the Institute's creation in 2009 with a $125 million gift, has donated a second $125 million gift to the University to further advance the Institute's pioneering work. The Wyss Institute seeks to solve some of the world's most complex challenges in healthcare and the environment by drawing inspiration from Nature's design principles. In addition to uncovering new knowledge about how nature builds, controls, and manufactures, the Institute measures success in the ability of its faculty and staff to translate their discoveries into products that can have near-term impact.
http://swissinnovation.org/newsUS/web/2013/00-130521-b3.html

US top in World Competitiveness Ranking 2013

(IMD, May 30, 2013)

IMD announced its 25th anniversary world competitiveness rankings. In addition to ranking 60 economies for 2013, the IMD World Competitiveness Center also looks at the winners and losers since its creation. Top 3 are US, Switzerland and Hong Kong. The US has regained the No. 1 spot in 2013, thanks to a rebounding financial sector, an abundance of technological innovation and successful companies. The good performance of the US (1), Switzerland (2), Hong Kong (3), Sweden (4) and even Japan (24) – while the euro zone stagnates – calls austerity into question.
http://swissinnovation.org/newsUS/web/2013/00-130530-18.html

Novartis is able to make flu vaccines within one week

(The Boston Globe, May 16, 2013)

During the 2009 swine flu epidemic, vaccine manufacturers raced to produce a vaccine, yet by the time inoculations were ready months later, the pandemic had done most of its damage for the season. But the next time a severe flu hits, doctors may be ready with a vaccine within days, thanks to pathbreaking work by researchers at the Cambridge campus of the drug giant Novartis. Earlier this year, Novartis scientists were able to design a vaccine in less than a week for a new strain of flu that had appeared in China. After receiving details of its genetic code on Easter Sunday, the researchers were able to synthesize the virus by the following Tuesday and determine the best design for a vaccine by that Saturday. Details of the innovation were published in a scientific journal, Science Translational Medicine. The research follows another important advance in vaccines, a new and potentially faster manufacturing system, and together the two accelerated methods could prevent the spread of a dangerous flu strain.
http://swissinnovation.org/newsUS/web/2013/00-130516-c3.html

Merck Serono scouting for biotech talents with $128 million venture outlays

(The Boston Globe, May 23, 2013)

Stefan Oschmann came courting biotechnology start-ups, a trans-Atlantic visitor promising not only pharmaceutical industry expertise but also cash. Oschmann, who made his pitch to several dozen area life sciences insiders at the Charles Hotel, isn't an investment banker or venture capitalist. He's chief executive of Merck Serono, the German-based multinational drug maker that owns the EMD Serono biotech division in Rockland and life sciences toolmaker EMD Millipore in Billerica. Increasingly, however, Oschmann is playing a role as a partner to smaller biotechs — and also as an investor in them. Merck Serono said it was boosting its worldwide venture outlays from $51.4 million to $128.6 million, establishing a formal venture arm called MS Venture.
http://swissinnovation.org/newsUS/web/2013/00-130523-a5.html

1. Policy

New Federal Immigration Law supports hightech industries

(The Boston Globe, May 19, 2013)

The technology industry got much of what it wanted in a bill that would overhaul federal immigration law. The industry achieved its main goals in the draft Senate bill: easing the green card process and expanding the number of visas for skilled guest workers. That draft, though, includes language that it considers excessive regulatory oversight of when a company can hire a temporary foreign worker and lay off an existing American worker. High-tech companies say such language would effectively keep them from using the larger numbers of temporary work permits, known as H-1B visas. They also warn of more jobs being shipped overseas. They are backing proposed amendments that would reverse those provisions.
http://swissinnovation.org/newsUS/web/2013/01-130519-bc.html

Postponed decisions on gas exports

(The Boston Globe, May 21, 2013)

Energy Secretary Ernest Moniz said that he will delay final decisions on about 20 applications to export liquefied natural gas until he reviews studies by the Energy Department and others on what effect the exports would have on domestic natural gas supplies and prices. A study commissioned by the Energy Department concluded last year that exporting natural gas would benefit the US economy even if it led to higher domestic prices, while critics have said the study was flawed and relied on old data and unrealistic market assumptions. Many US energy companies are hoping to take advantage of an ongoing natural gas boom by exporting liquefied natural gas, or LNG, to Europe and Asia, where prices are far higher. About 20 applications to export LNG to countries that do not have free trade agreements with the United States are pending before the Energy Department. Business groups support LNG exports as a way to create thousands of jobs and spur more US production.
http://swissinnovation.org/newsUS/web/2013/01-130521-16.html

White House opposes student loan plan

(The Boston Globe, May 23, 2013)

President Obama threatened to veto legislation by House Republicans that would avert a doubling of student loan interest rates on July 1 but allow them to vary with the markets going forward. The White House issued the warning a day before the full House was scheduled to vote on the bill. Leaders from both parties expected the legislation to pass the House over the objections by Obama and many fellow Democrats, who argued that the lower rates would give way to higher ones later. Without congressional action, interest rates on new subsidized Stafford loans are set to double from 3.4% to 6.8% on July 1. Both parties want to avoid that increase but differ on how to do it.
http://swissinnovation.org/newsUS/web/2013/01-130523-e6.html

Commercial buildings in Boston to report energy, water use

(The Boston Globe, May 08, 2013)

The City Council approved an ordinance that will require large commercial and residential building owners to report annual energy and water use to the city, which in turn will make the information public. The measure was spearheaded by Mayor Thomas M. Menino and backed by environmental advocates in hopes it will lead property owners to make buildings more energy efficient. It passed on a 9-to-4 vote, despite opposition by real estate interests. The new law requires annual reports on energy and water usage from commercial buildings over 35,000 square feet and apartment buildings over 35 units. The law will be phased in through 2017, with the first properties, commercial buildings 50,000 square feet or larger, to start reporting next year.
http://swissinnovation.org/newsUS/web/2013/01-130508-f6.html

2. Education

Low-income high performers often avoid elite universities

(Harvard, May 01, 2013)

Every year on May 1 students face the final deadline for college commitment - the complex process otherwise known as the college admissions game. This spring, the conversation about the ever-more-fraught competition for a spot in one of America's top universities has shifted to an often-overlooked group, thanks to research by Christopher Avery, Roy E. Larsen Professor of Public Policy and Management at Harvard Kennedy School (HKS). If admission to elite colleges is a game, Avery and his longtime colleague Caroline Hoxby found, it's one that low-income students with high potential are too often sitting out. In their paper they report that

promising but poor high school students often do not apply to any selective universities — despite the fact that those colleges, on average, would be more affordable than less-selective schools thanks to their robust financial aid policies. In short, Avery and Hoxby found out that low-income high performers "exhibit behavior that is typical of students of their income rather than typical of students of their achievement."
http://swissinnovation.org/newsUS/web/2013/02-130501-4d.html

Russian Skolkovo Institute of Science & Technology designed by MIT

(The Boston Globe, May 05, 2013)

MIT is working with the Russians. Just 12 miles from the Kremlin, rising from a field once used for agricultural experiments, the Skolkovo Institute of Science and Technology will have a curriculum designed by MIT and financial backing from Russia's government. The school — nicknamed Skoltech — will offer graduate degrees only and teach in English, serving as the centerpiece of a $2.7 billion innovation hub. Russian officials say they aim to create tech start-ups and lure corporate research laboratories with tax breaks and relaxed visas and customs regulations. IBM Corp., Microsoft Corp., and Siemens AG have already agreed to locate there. MIT, which already has programs in Abu Dhabi, China, Portugal, and Singapore, sees advantages as well. Skolkovo will give it access to the most promising scientists in a country where it has had little contact, said Leo Rafael Reif, MIT's president.
http://swissinnovation.org/newsUS/web/2013/02-130505-26.html

Urban school teacher as Teacher of the Year

(The Boston Globe, May 07, 2013)

An English language arts teacher at Springfield Central High School was honored as the state's Teacher of the Year. Anne Marie Bettencourt said winning the award was a "huge, unexpected honor." Bettencourt, 31, who has taught English language arts since 2008, attended Syracuse University to pursue a bachelor's degree in screenwriting. But after volunteering in a local youth center and spending two summers teaching in Rhode Island while in college, she said, she realized her calling was in the classroom. Bettencourt said she hopes the award shines a spotlight on urban education. "There are so many negative things people think about urban schools," she said. "This is finally a positive. This is a really positive thing for this city."
http://swissinnovation.org/newsUS/web/2013/02-130507-dd.html

The power of distance education

(OnlineUniversities, May 08, 2013)

MIT professor and passionate open educator Walter Lewin says: "My goal is to educate the world. My dream is to reach out to one billion people on a time scale of about 10 years, and that all of the good universities in the United States, in Europe, in Japan, in India, that all of them will reach out to the world and give people an opportunity to, effectively, a free education. That will have a huge impact on the world." OnlineUniversities.com Blog provides you an overview about the growth of Distance Learning, the University Learning Resources, Distance and Mobile Learning Resources.
http://swissinnovation.org/newsUS/web/2013/02-130508-07.html

How to manage student loan debt - six tips

(The Boston Globe, May 08, 2013)

Finding a job in a slow-growing economy is daunting enough without new financial obligations. Yet that's the challenge many university students graduating over the next few weeks will face before too long. The clock on their student loans will begin counting down to their first payment due date. Both federal and private student loans give borrowers a six-month grace period before they're required to begin making payments. Graduates also have options to defer payments in certain situations, or even have their balance reduced if they qualify. Here are six tips on how new grads can manage their student loan debt: Understand your loans, Know your payment options, Consider deferments, Don't rack up missed payments, Pay more than the minimum, Weigh a loan consolidation.
http://swissinnovation.org/newsUS/web/2013/02-130508-1e.html

Campus health centers fight abuse of stimulants

(The Boston Globe, May 09, 2013)

Student health centers are a necessity to college life. On-campus medical staffs treat students, many living away from home and their regular doctors, for conditions that range from the common cold to severe depression. An increasing number of clinics, however, are opting out of diagnosing attention deficit hyperactivity disorder among their

students or are tightening rules on prescribing the much-misused stimulant medications used to treat it. This is a fair decision as long as schools refer students with legitimate needs to trusted off-campus providers.
http://swissinnovation.org/newsUS/web/2013/02-130509-6c.html

Summer Youth Employment Program at Harvard

(The Boston Globe, May 10, 2013)

For Bill Cain, assistant director of recruitment services for the Office of Human Resources, the bar for Harvard's Summer Youth Employment Program is pretty high. And he couldn't be happier about that. "Feedback is always positive, but last year, 100 percent of Harvard hiring managers said they would participate in the program again," he said. The program employs local high school students from Boston and Cambridge on Harvard's campus during the summer months. For some young people, it's their first job. Any department is eligible to participate in the program, whether the position is full-time or for just a few hours a week. "The student gets wonderful work experience, and Harvard gets a great employee for the summer," Cain said.
http://swissinnovation.org/newsUS/web/2013/02-130510-03.html

Massachusetts colleges offer good return on investment

(The Boston Globe, May 14, 2013)

Massachusetts colleges and universities offer a good return on investment, according to a new report from PayScale Inc., a Seattle data firm. Seven Massachusetts colleges ranked in the top 50 nationally, and Babson College in Wellesley finished at number one for business schools nationwide, and 25th overall. PayScale ranked more than 1,500 undergraduate programs based on how much graduates are projected to earn over a 30-year period, after subtracting the cost of the degrees. The report took into account such expenses as tuition, fees, room and board, books, supplies, and wages students might earn if they enter the workforce immediately after high school instead of going to college. The calculations did not include financial aid. "Massachusetts and California have excellent representation at the top of list because there are so many well-regarded, high-performing schools in the area".
http://swissinnovation.org/newsUS/web/2013/02-130514-21.html

MOOC edX doubles number of participating universities

(The Boston Globe, May 21, 2013)

A year after Harvard University and MIT launched edX, a not-for-profit initiative that offers online classes at no charge, the group announced that it is doubling the number of participating universities, with the Berklee College of Music and Boston University among the new members. Fifteen higher education institutions are joining, including many from Asia and Europe, bringing the total number of schools to 27. About 50 edX classes have already been offered or are currently enrolling students, and 930,000 people have registered to use the website. EdX offers massive open online courses, or MOOCs, free classes that combine video lectures and other online materials with quizzes and even assigned essays that might be graded by other students or computer software.
http://swissinnovation.org/newsUS/web/2013/02-130521-94.html

Very high ratings for Boston teachers

(The Boston Globe, May 23, 2013)

The Boston public schools has rated 92 percent of all teachers as proficient or exemplary under a new evaluation system, according to a School Department analysis that officials held up as evidence most students are receiving quality instruction. The School Department implemented the evaluation system last fall, modeled after a set of new state regulations. In Boston, the change marked a major shift in judging teacher performance. Under the new system, administrators can routinely drop into a teacher's classroom unannounced. Starting next year, evaluations will include multiple measures of student learning, such as test scores, in the judgment of a teacher's overall performance. Teachers can receive one of four ratings: exemplary, proficient, needs improvement, or unsatisfactory.
http://swissinnovation.org/newsUS/web/2013/02-130523-47.html

Record young Harvard Law graduate

(The Boston Globe, May 30, 2013)

22-year-old Cortlan Wickliff will be one of the youngest African-Americans ever to graduate from Harvard Law School. Wickliff was 19 when he graduated from Houston's Rice University with a degree in bioengineering in 2010. That fall he started law school. There is no age requirement for admission to Harvard Law; school administrators said the average age in the graduating Class of 2013 is 27. Students need strong test scores and grades. But more than anything, they must show an aptitude for advocating a point of view, something proven through work experience, extracurricular activities, volunteering, and leadership positions.
http://swissinnovation.org/newsUS/web/2013/02-130530-63.html

3. Life Science

Emergency contraception over-the-counter for 15 and older

(The Boston Globe, May 01, 2013)

After a federal judge ordered the Food and Drug Administration to make emergency contraception available over-the-counter without any age restrictions, the agency said that it would allow one product to be offered on drugstore shelves — but only to those age 15 and over. The agency said Plan B One-Step could be sold on shelves next to other family planning products such as condoms and pregnancy tests. Consumers will be required to show proof of age at the register. Emergency contraception contains high doses of the female hormone progestin and needs to be taken within three days of unprotected sex to prevent pregnancy; it's currently available without a prescription to those age 17 and over but is kept behind a pharmacy counter and dispensed only when the pharmacy is open.
http://swissinnovation.org/newsUS/web/2013/03-130501-cd.html

Stem cells made windpipe implanted in 2-year-old

(The Boston Globe, May 01, 2013)

A 2-year-old girl born without a windpipe has a new one grown from her own stem cells, the youngest patient in the world to benefit from the experimental treatment. Hannah Warren has been unable to breathe, eat, drink, or swallow on her own since she was born in South Korea in 2010. Until the operation at a central Illinois hospital, she had spent her entire life in a hospital in Seoul. The stem cells came from Hannah's bone marrow, extracted with a special needle inserted into her hip bone. They were seeded in a lab onto a plastic scaffold, where it took less than a week for them to multiply and create a new windpipe. About the size of a 3-inch tube of penne pasta, it was implanted in a nine-hour procedure.
http://swissinnovation.org/newsUS/web/2013/03-130501-f0.html

Genomic data on leukemia & endometrial cancer

(The Boston Globe, May 01, 2013)

Two large research teams have produced exhaustive genomic studies that reveal the most detailed catalog yet of the mutations that drive two deadly cancers — endometrial cancer and acute myeloid leukemia. The two studies of samples taken from hundreds of patients suggest new possible drug targets and ways to divide cancers into subtypes that might respond differently to treatment. The new data are the latest fruits of a major national effort to create an atlas of the DNA blueprints of at least 20 types of cancer. Genomic data have been churned out in the past few years for five other cancers, and more are expected.
http://swissinnovation.org/newsUS/web/2013/03-130501-95.html

New feathered dinosaur species discovered

(The Boston Globe, May 01, 2013)

A telltale jaw fragment unearthed from a 75 million-year-old rock formation in Big Bend, Texas, has led to the identification of a new dinosaur species, Leptorhynchos gaddisi. The species is a feathered dinosaur about the size of a turkey with a bird-like, toothless beak, part of a group called Caenagnathids. Nicholas Longrich, the Yale University paleontologist who helped make the identification, said that the differences that set apart this species -- named Leptorhynchos for its little jaw -- were subtle. The new species had a narrow jaw and a rounded chin.
http://swissinnovation.org/newsUS/web/2013/03-130501-3a.html

More food & skin allergies detected in children

(The Boston Globe, May 02, 2013)

Parents are reporting more skin and food allergies in their children, a big government survey found. Experts aren't sure what's behind the increase. It could be that children are growing up in households so clean that it leaves them more sensitive to things that can trigger allergies. It could also be that the parents are paying closer attention to rashes and reactions, and are more likely to call it an allergy. The CDC survey suggests that about 1 in 20 US children have food allergies. That's a 50 percent increase from the late 1990s. For eczema and other skin allergies, it's 1 in 8 children, an increase of 69 percent. It found no increase, however, in hay fever or other respiratory allergies.
http://swissinnovation.org/newsUS/web/2013/03-130502-b7.html

New antibiotics fast-track review

(The Boston Globe, May 07, 2013)

Federal regulators have granted fast-track review status of several uses for an experimental antibiotic drug developed by Cubist Pharmaceuticals Inc. The Lexington company said it got fast-track status from the Food and Drug Administration for ceftolozane/tazobactam, also known as CXA-201, in treating hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia, along with complicated urinary tract infections. In February, the FDA granted fast-track status for CXA-201 in treating complex intra-abdominal infections. If the drug is approved under the priority review, Cubist will get a five-year extension of exclusivity under an antibiotics incentive law signed by President Obama last year.
http://swissinnovation.org/newsUS/web/2013/03-130507-48.html

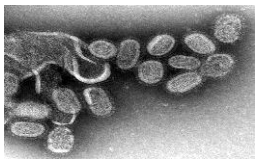
Rejuvenating the heart by specific protein

(Harvard, May 09, 2013)

Two Harvard Stem Cell Institute (HSCI) researchers have identified a protein in the blood of mice and humans that may prove to be the first effective treatment for the form of age-related heart failure that affects millions of Americans. When the protein, called GDF-11, was injected into old mice, which develop thickened heart walls in a manner similar to aging humans, the hearts were reduced in size and thickness, resembling the healthy hearts of younger mice. Even more important than the implications for the treatment of diastolic heart failure, the finding by Richard T. Lee, a Harvard Medical School professor at the hospital, and Amy Wagers, a professor in Harvard's Department of Stem Cell and Regenerative Biology, ultimately may rewrite our understanding of aging.
http://swissinnovation.org/newsUS/web/2013/03-130509-72.html

Influenza viruses circulating in pigs and birds endanger humans

(MIT, May 10, 2013)



In the summer of 1968, a new strain of influenza appeared in Hong Kong. This strain, known as H3N2, spread around the globe and eventually killed an estimated 1 million people. A new study from MIT reveals that there are many strains of H3N2 circulating in birds and pigs that are genetically similar to the 1968 strain and have the potential to generate a pandemic if they leap to humans. The researchers, led by Ram Sasisekharan, the Alfred H. Caspary Professor of Biological Engineering at MIT, also found that current flu vaccines might not offer protection against these strains.
http://swissinnovation.org/newsUS/web/2013/03-130510-d0.html

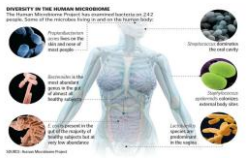
Mammalian Synthetic Biology workshop with engineering approach at MIT

(The Boston Globe, May 10, 2013)

More than 300 scientists gathered at MIT for the first international workshop devoted exclusively to exploring this idea: Approach diseases such as cancer and diabetes with an engineer's mind-set, including thinking about cells as if they were software and hardware that can be rewired, debugged, programmed, and hacked. Until recently, the audacious quest to build new forms of life had focused mostly on small-scale tinkering, such as building useful bacteria. But powerful new tools that allow researchers to edit the genes of mammalian cells, including human cells, have brought the field of synthetic biology to a turning point and a new emphasis on major human health problems. The workshop format provided a forum for exposition of the latest developments in the field and discussions of how experts from other fields can benefit from and contribute to mammalian synthetic biology.
http://swissinnovation.org/newsUS/web/2013/03-130510-fa.html

Using microbiome bacteria to treat diseases

(The Boston Globe, May 11, 2013)



Boston has been leading the way in understanding the composition of the microbiome — the collection of bacteria and other organisms that colonize the human body — at places like the Broad Institute of MIT and Harvard. And there are a handful of start-up companies working to develop new kinds of products that, by tweaking the makeup of that bustling metropolis of bacteria, might treat diseases like diabetes, psoriasis, or a range of intestinal disorders like colitis. These are still the early days for turning our understanding of the microbiome into medicines that doctors could prescribe, but as with all new scientific frontiers, the possibilities seem limitless right now.
http://swissinnovation.org/newsUS/web/2013/03-130511-3e.html

Artificial intelligence on Big Data for better health care

(The Boston Globe, May 12, 2013)

Collin Hill hopes a Kendall Square company he founded 13 years ago, GNS Healthcare, will eventually improve medical care by providing personalized treatment. GNS is among the leaders in using Big Data analytics to learn more about diseases, patients, and treatments. With data from thousands of cases, GNS uses artificial intelligence to determine what treatment made the crucial difference for each patient. The company is deploying enormous computing power to produce a more complete understanding of treatments for rheumatoid arthritis, diabetes, cancers, and other illnesses. For example, it is working with the Dana-Farber Cancer Institute and Mount Sinai Medical School to build a computer model of multiple myeloma, so researchers can better understand what works well for patients today, as well as develop more effective treatments for the blood cancer. It is involved in a similar collaboration with Brigham and Women's Hospital and several other partners to learn more about multiple sclerosis.
http://swissinnovation.org/newsUS/web/2013/03-130512-6a.html

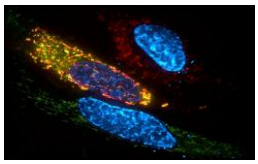
Massachusetts world class in biomedical research and physics

(The Boston Globe, May 12, 2013)

It's well known that Massachusetts fights above its weight when it comes to science. It rakes in more biomedical research funding per capita from the National Institutes of Health than any other state. A recent paper by Northeastern University scientists analyzed citations in scientific papers and found that Boston is the leading city in the production and consumption of physics research worldwide. Recently, more evidence of Boston's research strength arrived, as the Howard Hughes Medical Institute, a major funder of biomedical research, announced its new class of investigators — scientists whose salaries, benefits, and research budgets are fully covered for five years. Of the 27 new scientists who have won the coveted funding, a third are from Massachusetts — a greater concentration than any other region in the United States.
http://swissinnovation.org/newsUS/web/2013/03-130512-72.html

Killing cancer cells with a key protein for cell death

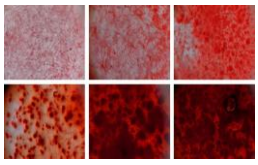
(MIT, May 14, 2013)



When cells suffer too much DNA damage, they are usually forced to undergo programmed cell death, or apoptosis. However, cancer cells often ignore these signals, flourishing even after chemotherapy drugs have ravaged their DNA. A new finding from MIT researchers may offer a way to overcome that resistance. The team has identified a key protein involved in an alternative death pathway known as programmed necrosis. Drugs that mimic the effects of this protein could push cancer cells that are resistant to apoptosis into necrosis instead. While apoptosis is a tightly controlled procedure that breaks down and disposes of the dying cell in a very orderly way, necrosis is a messier process in which the cell's membrane ruptures and its contents spill out.
http://swissinnovation.org/newsUS/web/2013/03-130514-74.html

Synthetic silicate turns stem cells into bone cells

(Harvard, May 15, 2013)



Researchers from Harvard-affiliated Brigham and Women's Hospital (BWH) are the first to report that synthetic silicate nanoplatelets (also known as layered clay) can induce stem cells to become bone cells without the need of additional bone-inducing factors. Synthetic silicates are made up of simple or complex salts of silicic acids, and have been used extensively for various commercial and industrial applications, such as food additives, glass and ceramic fillers, and anti-caking agents. The research was published in Advanced Materials.
http://swissinnovation.org/newsUS/web/2013/03-130515-3d.html

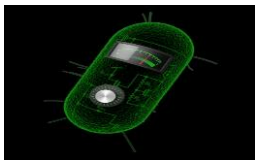
Improved imaging system for brain & nervous system

(Harvard, May 15, 2013)

The breakthrough technique that allowed scientists to obtain one-of-a-kind, colorful images of the myriad connections in the brain and nervous system is about to get a significant upgrade. A group of Harvard researchers, led by Joshua Sanes, the Jeff C. Tarr Professor of Molecular and Cellular Biology and Paul J. Finnegan Family Director, Center for Brain Science, and Jeff Lichtman, the Jeremy R. Knowles Professor of Molecular and Cellular Biology and Santíago Ramón y Cajal Professor of Arts and Sciences, has made a host of technical improvements in the "Brainbow" imaging technique.
http://swissinnovation.org/newsUS/web/2013/03-130515-e4.html

Bacteria cells as living calculators

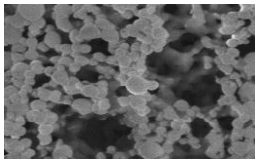
(MIT, May 15, 2013)



Using analog computation circuits, MIT engineers design cells that can compute logarithms, divide and take square roots. MIT engineers have transformed bacterial cells into living calculators that can compute logarithms, divide, and take square roots, using three or fewer genetic parts. Inspired by how analog electronic circuits function, the researchers created synthetic computation circuits by combining existing genetic "parts," or engineered genes, in novel ways. The circuits perform those calculations in an analog fashion by exploiting natural biochemical functions that are already present in the cell rather than by reinventing them with digital logic, thus making them more efficient than the digital circuits pursued by most synthetic biologists, according to Rahul Sarpeshkar and Timothy Lu, the two senior authors on the paper, describing the circuits in Nature online edition.
http://swissinnovation.org/newsUS/web/2013/03-130515-5e.html

Injectable nanoparticles to regulate diabetes blood-sugar levels

(MIT, May 16, 2013)



Injectable nanoparticles developed at MIT may someday eliminate the need for patients with Type 1 diabetes to constantly monitor their blood-sugar levels and inject themselves with insulin. The nanoparticles were designed to sense glucose levels in the body and respond by secreting the appropriate amount of insulin, thereby replacing the function of pancreatic islet cells, which are destroyed in patients with Type 1 diabetes. Ultimately, this type of system could ensure that blood-sugar levels remain balanced and improve patients' quality of life, according to the researchers.
http://swissinnovation.org/newsUS/web/2013/03-130516-13.html

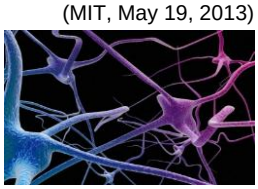
FDA approval for prostate cancer treatment

(The Boston Globe, May 16, 2013)

Norwegian drug maker Algeta ASA, which set up a US commercial office in Cambridge's Kendall Square in September, won Food and Drug Administration approval to sell a new treatment for prostate cancer that has spread to the bones. Algeta's drug, called Xofigo, treats castration-resistant prostate cancer, a disease that afflicts tens of thousands of men in the United States and many more worldwide. The drug works by releasing targeted alpha-particle-emitting radiation into the bones, killing cancer cells but doing limited damage to surrounding healthy tissue, extending patients' lives.
http://swissinnovation.org/newsUS/web/2013/03-130516-d0.html

Neurons that can multitask greatly enhance the brain's computational power

(MIT, May 19, 2013)



Over the past few decades, neuroscientists have made much progress in mapping the brain by deciphering the functions of individual neurons that perform very specific tasks, such as recognizing the location or color of an object. However, there are many neurons, especially in brain regions that perform sophisticated functions such as thinking and planning, that don't fit into this pattern. Instead of responding exclusively to one stimulus or task, these neurons react in different ways to a wide variety of things. In a new paper, MIT neuroscientist Earl Miller and colleagues at Columbia University report that these neurons are essential for complex cognitive tasks, such as learning new behavior. The Columbia team developed a computer model showing that without these neurons, the brain can learn only a handful of behavioral tasks.
http://swissinnovation.org/newsUS/web/2013/03-130519-09.html

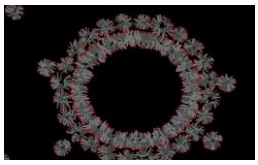
Personalizing cancer medicine

(The Boston Globe, May 20, 2013)

Advances in genetic profiling have allowed doctors to match more of their cancer patients with treatments that will target their particular illnesses. But for some about one-third of cancer patients, there are no good matches. Now Dr. Keith T. Flaherty, an oncologist, and his colleagues at Massachusetts General Hospital have developed a more sophisticated formula for analyzing tumors to find their vulnerabilities. The hospital unveiled a partnership with AstraZeneca to pair Flaherty's computer analysis with the company's growing library of drugs to identify combinations of treatments that would not otherwise have been considered.
http://swissinnovation.org/newsUS/web/2013/03-130520-5b.html

Simple chemicals make nucleotides at origin of life

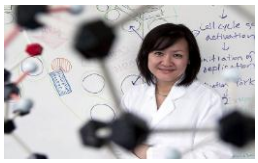
(ArsTechnica, May 21, 2013)



Origin of life researchers have made impressive progress in recent years, showing that simple chemicals can combine to make nucleotides, the building blocks of DNA and RNA. A lot of work has demonstrated that RNAs can perform all sorts of interesting chemistry. A set of papers that came out in the past several days support the case for life getting its start in an RNA world. A group at Georgia Tech has published a new paper showing that if you put a bunch of random RNAs into the same conditions, some of them can catalyze electron transfer reactions. The reactions they catalyze are very simple, but these RNAs don't normally function as a catalyst at all. Which suggests that the basics of a metabolism could have gotten started without proteins around.
http://swissinnovation.org/newsUS/web/2013/03-130521-43.html

Reducing caloric intake to prevent nerve cell loss

(MIT, May 21, 2013)



Activating an enzyme known to play a role in the anti-aging benefits of calorie restriction delays the loss of brain cells and preserves cognitive function in mice, according to a study from MIT. Previous studies have shown that reducing calorie consumption extends the lifespan of a variety of species and decreases the brain changes that often accompany aging and neurodegenerative diseases such as Alzheimer's. There is also evidence that caloric restriction activates an enzyme called Sirtuin 1 (SIRT1), which studies suggest offers some protection against age-associated impairments in the brain. The study not only confirmed that caloric restriction delays nerve cell loss, but also found that a drug that activates SIRT1 produces the same effects.
http://swissinnovation.org/newsUS/web/2013/03-130521-e4.html

3D-printed tracheal implant saves baby's life

(ArsTechnica, May 23, 2013)

Two doctors from the University of Michigan saved an infant with a life-threatening respiratory disorder using a custom-designed 3D-printed device. Printed with bio-absorbable plastic, the device is holding the child's airway open and allowing him to breathe normally. The child, Kaiba Gionfriddo, suffered from tracheobronchomalacia—a collapse of the airway to one of his lungs. The condition prevented him from breathing out carbon dioxide and getting sufficient oxygen. At six weeks old, he was out with his family at a restaurant when he started to turn blue. By the time he was two months old, he had to have a breathing tube inserted into his trachea to keep him alive. Dr. Glenn Green and Dr. Scott Hollister worked together to design a tracheal splint for Kaiba.
http://swissinnovation.org/newsUS/web/2013/03-130523-46.html

Patient screening for first leg transplant in the US

(The Boston Globe, May 26, 2013)

Boston surgeons who have successfully transplanted donor faces and hands onto badly disfigured patients are now evaluating several amputees for leg transplants, a highly experimental operation believed to have been done just twice around the world, and never in the United States. Brigham and Women's Hospital approved the leg transplant protocol in February. Surgeons initially would perform double-leg transplants only, because patients with one leg usually are able to walk well with a prosthesis. Doctors already had started screening candidates for the transplants and are now focusing on three patients who each lost their arms and legs when infections ravaged their bodies.
http://swissinnovation.org/newsUS/web/2013/01-130526-48.html

Artificial light impacts sleep cycle

(The Boston Globe, May 26, 2013)

A study of the circadian rhythms of a blind college student has shown that artificial light has a profound impact on the sleep cycle. Even among people who have no rods and cones, the cells that translate light into vision, have a subset of light-sensitive cells in the eye. Those cells don't allow them to see, but mean that even without the ability to discern whether a room is light or dark, a person's sleep schedule can be shifted. As technological advances allowed the cost of artificial light to decline, its use increased dramatically, shifting the peak of melatonin, a sleep-producing hormone, to 4 a.m. for most people instead of midnight.
http://swissinnovation.org/newsUS/web/2013/03-130526-08.html

4. Nano / Micro Technology / Material Science

Massive Materials Genome Initiative

(The Boston Globe, May 04, 2013)

The Obama administration has made material sciences a key component of its strategy to boost manufacturing, folding the Massachusetts Institute of Technology project into its Materials Genome Initiative, launched in the end of 2011 with $63 million in funding for the first year. The effort is building a massive database of compounds and their properties, aiming to do for manufacturing what the Human Genome Project is doing for the biopharmaceutical industry — providing the data, tools, and understanding that will lead to breakthrough products. The White House initiative now includes at least 60 universities, research institutions, and companies, which are testing materials, creating new computational tools and algorithms, building the database of compounds.
http://swissinnovation.org/newsUS/web/2013/04-130504-6b.html

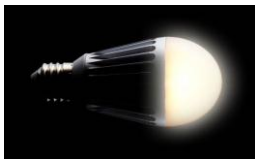
Super strong nanotube coated carbon fibers

(MIT, May 20, 2013)

For the next generation of commercial jets, researchers are looking to stronger and lighter materials, such as composites made with carbon fibers coated with carbon nanotubes. But a significant hurdle to achieving such composites lies at the nanoscale: Scientists who have tried growing carbon nanotubes on carbon fibers have found that doing so significantly degrades the underlying fibers, stripping them of their inherent strength. Now a team from MIT has identified the root cause of this fiber degradation, and devised techniques to preserve the fibers' strength. Applying their discoveries, the researchers coated carbon fibers with nanotubes without causing fiber degradation, making the fibers twice as strong as previous nanotube-coated fibers — paving the way for carbon-fiber composites that are not only stronger, but also more electrically conductive. The researchers say the techniques can easily be integrated into current fiber-manufacturing processes.
http://swissinnovation.org/newsUS/web/2013/04-130520-58.html

New observations disprove theory about LED brightness

(MIT, May 24, 2013)



Light-emitting diodes (LEDs) continue to transform technology, whether it's through the high-resolution glow of flat-screen televisions or light bulbs that last for years. The high efficiency and versatility of LEDs make them increasingly popular, but their full potential remains limited, in part because of remaining mysteries about the exact light-emission mechanism in the semiconducting materials. One significant controversy surrounds the reason for the high-intensity light output from a leading LED semiconductor material, indium gallium nitride (InGaN): Researchers have been split on whether or not indium-rich clusters form within the material and provide the LED's remarkable efficiency. Now, researchers from MIT and Brookhaven National Laboratory have demonstrated definitively that clustering is not the cause.
http://swissinnovation.org/newsUS/web/2013/04-130524-09.html

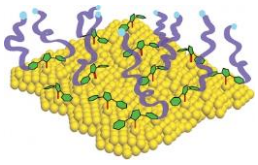
Towards extremely low-power magnetic data storage

(MIT, May 29, 2013)

Researchers at MIT have developed a new way of controlling the motion of magnetic domains — the key technology in magnetic memory systems, such as a computer's hard disk. The new approach requires little power to write and no power to maintain the stored information, and could lead to a new generation of extremely low-power data storage. The new approach controls magnetism by applying a voltage, rather than a magnetic field. It could lead to magnetic storage devices in which data is written on microscopic nanowires or tracks, with magnetic "bits" of data.
http://swissinnovation.org/newsUS/web/2013/04-130529-28.html

More efficient method for attaching molecules to gold surfaces

(MIT, May 30, 2013)



Over the past 3 decades, researchers have found various applications of a method for attaching molecules to gold; the approach uses chemicals called thiols to bind the materials together. But while this technique has led to useful devices for electronics, sensing and nanotechnology, it has limitations. Now, an MIT team has found a new material that could overcome many of these limitations. The new approach uses a family of chemicals called carbenes to attach other substances to gold.
http://swissinnovation.org/newsUS/web/2013/04-130530-80.html

5. Information & Communications Technology

Reducing server response delay through versatility

(MIT, May 01, 2013)

In a series of recent papers, researchers at MIT's Laboratory for Information and Decision Systems (LIDS) have shown that, in a number of different contexts, a little versatility can go a long way. Their theoretical analyses could have implications for operations management, cloud computing — and possibly even health-care delivery and manufacturing. The scientists from MIT model such problems as requests arriving at a bank of network servers. They showed that if a small percentage of servers can field any type of request, the result is an exponential reduction in delays. In a follow-up paper in which all the servers in the network have just a little versatility, the researchers find that servers that can each handle a few different types of requests can reduce delay time to near zero.
http://swissinnovation.org/newsUS/web/2013/05-130501-7a.html

Probability processing in computer chips

(Harvard, May 01, 2013)

While at MIT, Ben Vigoda patented technology that, in theory, allowed computer chips to calculate probabilities, enhancing computer processing speed and capabilities while reducing power consumption. Starting a company to help bring this technology to market, however, was the real challenge. That's where MIT came in: Using the Institute's entrepreneurial resources, Vigoda cofounded Lyric Semiconductor Inc. and set up shop in Kendall Square's startup haven, the Cambridge Innovation Center (CIC), located a few blocks from MIT. For years, Lyric worked quietly on its novel technology, dubbed probability processing, while raising more than $20 million in funding. After officially announcing its technology in 2010, the company gained rapid notoriety in tech circles and, in 2011, was acquired by tech giant Analog Devices Inc (ADI) for a substantial amount.
http://swissinnovation.org/newsUS/web/2013/05-130501-6d.html

SMS usage declining in the US

(The Boston Globe, May 02, 2013)

Americans are weaning themselves off text messaging, a wireless industry group says, as Internet-based applications such as Apple's Messages are starting to take over from what was once a cash cow for phone companies. CTIA — The Wireless Association reported that Americans sent 2.2 trillion text messages last year, down 5 percent from 2011, a figure that translates into about 19 text messages per person per day. Text messages vaulted into the US mainstream in 2007, despite often costing 10 cents each. Costs came down quickly as phone companies started selling monthly ''bundles'' of texts. Now, many phone companies give text messaging away for free as part of a plan that mainly meters the amount of data used. That has helped stave off mass migration to Internet chat applications and Facebook messaging in the United States.
http://swissinnovation.org/newsUS/web/2013/05-130502-cb.html

Google Glass app to snap photos with just a wink

(ArsTechnica, May 02, 2013)

An enterprising developer has created a Google Glass app that allows users to take photos by winking. The app uses functionality discovered in the Google Glass code last week that appears not to be enabled by default. The app, named Winky, works by rearranging the priority of the wink gesture within a user build. Google Glass comes with the wink gesture disabled within a user build and will tell itself to discount any wink gestures that it sees. Winky's developer, Mike DiGiovanni writes that the app "intercept[s] the wink with a higher priority than anything else," allowing users to use the gesture to snap a photo. Winky is available as source code at Github for owners of the Explorer Edition of Google Glass.
http://swissinnovation.org/newsUS/web/2013/05-130502-54.html

HTML5 demo game showcases powerful WebGL in the browser

(Epic Games, May 03, 2013)

The North Carolina based Epic Games has released a new version of its popular Epic Citadel tech demo that runs entirely using open HTML5 and JavaScript standards in order to show off the potential for plugin-free game development inside a Web browser. Epic made use of Emscripten, a tool that allows users to compile programs written in C and C++ into asm.js, a stricter subset of JavaScript that adds additional low-level functions and optimization.

While the new version of Epic Citadel could theoretically work in any browser that supports HTML5, the demo is only currently fully supported in the latest versions of Firefox Nightly. The Chrome development team is reportedly working on fixing a problem that currently crashes the demo, while Internet Explorer users are left out in the cold with no WebGL support at all.
http://swissinnovation.org/newsUS/web/2013/05-130503-bc.html

Understanding the use of smartphones after bombings

(The Boston Globe, May 04, 2013)

In the minutes after the Marathon bombings, phones began to ring and buzz as people checked on family members, friends, and distant relations in Boston. Researchers at Northeastern University are asking residents and visitors who used their cellphones to keep in touch with their social network after the bombings to download a smartphone app to help them understand how, exactly, we communicated in the aftermath of the tragedy. Did we call the people we are in touch with most frequently, or were we flooded with voicemails and messages from people we haven't spoken to in weeks or years? When people open the app, they will be asked to answer a survey and provide information from their cellphones' text and call logs. Researchers also plan to look at how information rippled outward on social media sites such as Facebook and Twitter.
http://swissinnovation.org/newsUS/web/2013/05-130504-a4.html

Tongue interface

(Newscientist, May 05, 2013)

Can you imagine feeling Earth's magnetic field on the tip of your tongue? Strangely, this is now possible, using a device that converts the tongue into a "display" for output from environmental sensors. Gershon Dublon of the Massachusetts Institute of Technology devised a small pad containing electrodes in a 5 × 5 grid. Users put the pad, which Gershon calls Tongueduino, on their tongue. When hooked up to an electronic sensor, the pad converts signals from the sensor into small pulses of electric current across the grid, which the tongue "reads" as a pattern of tingles. Dublon says the brain quickly adapts to new stimuli on the tongue and integrates them into our senses. For example, if Tongueduino is attached to a sensor that detects Earth's magnetic field, users can learn to use their tongue as a compass.
http://swissinnovation.org/newsUS/web/2013/05-130505-0e.html

Machine to machine communication conference

(The Boston Globe, May 11, 2013)

Many of the leading players in the field of Machine to Machine (M2M) communication met in Boston for the Axeda Connexion. It has been held in Boston for the past three years. The conference was organized by Axeda Corp., a Foxborough company that sells Cloud-based software to help firms use M2M, such as in ATMs or hospital equipment. For example, it can help make remote repairs by allowing computers to communicate with each other and diagnose problems. That kind of interaction can help companies build long-term relationships with their customers. An automaker, for example, might be able to tell a vehicle owner what type of gas to use or when to change the oil, based on actual driving habits chronicled by M2M technology.
http://swissinnovation.org/newsUS/web/2013/05-130511-e9.html

Bringing analog landlines into the mobile age

(The Boston Globe, May 20, 2013)

The Cambridge tech firm HeyWire Inc. has developed a way to send text messages, short audio clips, and photos to any landline phone number and have it redirected to the recipient's mobile device and computer. Essentially, it's making it possible to connect the old, wired phone that sits on virtually every desk in every office with the smartphone that many people carry. A handful of companies are making tools to get greater use out of a landline in a smartphone era. In HeyWire's case, business clients register their landline numbers with the company, which uses its mobile networking technology and connections with wireless carriers to enable a text to be sent to those digits. The service costs $10 a month per employee and includes an unlimited number of messages.
http://swissinnovation.org/newsUS/web/2013/05-130520-13.html

Yahoo acquiring Tumblr

(The Boston Globe, May 20, 2013)

The board of Yahoo Inc. agreed to buy the popular blogging service Tumblr for about $1.1 billion in cash, a signal of how the company plans to reposition itself as the technology industry makes a headlong rush into social media. For Yahoo and its chief executive, Marissa Mayer, buying Tumblr would be a bold move as she tries to breathe new life into the company. The deal, the seventh since Mayer defected from Google last summer, would be her biggest yet. It is meant to give her company more appeal to young people and to make up for years of missing out on the revolutions in social networking and mobile devices. Tumblr has more than 108 million blogs and many highly active users.
http://swissinnovation.org/newsUS/web/2013/05-130520-e4.html

New machine-learning algorithm outperforms predecessors

(MIT, May 29, 2013)

Reinforcement learning is a technique, common in computer science, in which a computer system learns how best to solve some problem through trial-and-error. Classic applications of reinforcement learning involve problems as diverse as robot navigation, network administration and automated surveillance. At the Association for Uncertainty in Artificial Intelligence's annual conference this summer, researchers from MIT's Laboratory for Information and Decision Systems (LIDS) and Computer Science and Artificial Intelligence Laboratory will present a new reinforcement-learning algorithm that, for a wide range of problems, allows computer systems to find solutions much more efficiently than previous algorithms did.
http://swissinnovation.org/newsUS/web/2013/05-130529-d9.html

6. Energy / Environment

Collapse of bee colonies due to many factors

(The Boston Globe, May 02, 2013)

The devastation of American honeybee colonies is the result of a complex stew of factors, including pesticides, parasites, poor nutrition, and a lack of genetic diversity, according to a comprehensive federal study. Honeybees are used to pollinate many crops, and the problems affect US agricultural products worth tens of billions of dollars a year.
http://swissinnovation.org/newsUS/web/2013/06-130502-b3.html

Nuclear power plant to increase storage capacity

(The Boston Globe, May 02, 2013)

State officials authorized the Millstone nuclear plant to significantly expand nuclear waste storage capacity over the next 30 years. Without a national site to take spent nuclear fuel, Millstone Power Station's owner, Dominion Resources Inc., turned to Connecticut for permission to increase storage at the Waterford site. The key problem facing nuclear plant operators and public officials is the inability in Washington to decide what to do with radioactive waste produced by nuclear power plants, with the state Department of Energy and Environmental Policy criticizing federal inaction on nuclear waste. Congress designated Yucca Mountain in Nevada for a nuclear waste dump, but the plan has been opposed by the state's elected officials.
http://swissinnovation.org/newsUS/web/2013/06-130502-31.html

City of Cambridge, Harvard and MIT to cooperate on sustainability

(Harvard, May 06, 2013)

Cambridge, Harvard University, and the Massachusetts Institute of Technology (MIT) signed the "Community Compact for a Sustainable Future," aimed at leveraging the intellectual and entrepreneurial capacity of the public-private sectors in Cambridge to build a healthy, livable, and sustainable future. The compact lays out a clear framework for how Harvard, MIT, and Cambridge, along with other partners, will collectively improve the health and well-being of the Cambridge community by addressing nine key areas of collaboration, including energy efficiency, renewable energy, climate mitigation and adaptation, storm water management, and green tech incuba-

tion. A steering committee will oversee the activities of the Community Compact and create a forum to provide an annual report to the community. The groups will also develop a shared process for collecting data to evaluate progress.
http://swissinnovation.org/newsUS/web/2013/06-130506-1c.html

Cheaper solar panels as part of Clean Energy Project

(Computerworld, May 06, 2013)

In a move that it hopes will help usher in an age of low-cost solar power, Harvard University's Clean Energy Project (CEP) plans to release a list of 20,000 organic compounds that could be used to make cheap, printable photovoltaic cells (PVC). The list, which the CEP will make available to solar power developers, could lead to the development of very low-cost PVCs. Using the compounds, a PVC that covers 1 square meter would cost about the same as the paint needed to cover the same area, according to Harvard. The compounds on the CEP's list could also improve the solar conversion rates of PVCs. Currently, the top solar conversion rate of silicon PVCs is about 12%, meaning that only 12% of the light that hits them is converted to energy.
http://swissinnovation.org/newsUS/web/2013/06-130506-36.html

Are clean energies causing global warming?

(MIT, May 07, 2013)

Researchers at MIT, using biofuels as a test case, recently released a study in Geophysical Research Letters. They found that land-use changes caused by a major ramp-up in biofuel crops — enough to meet about 10 percent of the world's energy needs — could make some regions even warmer. Researchers found that at a global scale, greenhouse-gas emissions increase, but this global warming is counterbalanced when the additional cropland reflects more sunlight, causing some cooling. Additionally, an increase in biofuels would replace some fossil fuel-based energy sources, further countering the warming. While the effects of large-scale expansion of biofuels seem to cancel each other out globally, the study does point to significant regional impacts — in some cases, far from where the biofuel crops are grown, with the Amazon Basin and central Africa potentially warming by 1.5 degrees Celsius.
http://swissinnovation.org/newsUS/web/2013/06-130507-4e.html

Largest clean energy startup competition

(MIT, May 07, 2013)

The sixth annual MIT Clean Energy Prize (CEP) competition, the nation's leading student-run energy business-plan competition, awarded a total of $320,000 to five teams that have developed clean-energy startups and innovations. More than 50 teams entered this year's contest; 15 semifinalists made it to the grand finale. One finalist was selected in each of three separate categories — renewable energy, energy efficiency, and infrastructure and resources — with each receiving $20,000. The winners of the Audience Choice Award earned $10,000. The competition, which past participants have gone on to raise a total of $130 million in funding, marked a culmination of the extensive clean-energy innovation and entrepreneurship events held at MIT over the course of the academic year.
http://swissinnovation.org/newsUS/web/2013/06-130507-11.html

Web-based service for home energy consumption

(The Boston Globe, May 07, 2013)

myenergy
- WHAT IT DOES: Online service for analyzing energy consumption
- FOUNDED: 2007
- LOCATION: Boston
- EMPLOYEES: 12
- VENTURE FUNDING RAISED: $4 million

On the heels of raising $80 million in venture capital funding earlier this year, the fast-growing high-tech thermostat maker Nest Labs Inc. has bought Boston start-up MyEnergy. The acquisition is the first one for Nest, which was founded by two former Apple Inc. executives in 2010 and has quickly grown into one of the hottest Silicon Valley technology start-ups. MyEnergy provides a Web-based service for consumers to track water, electricity, and gas usage over time, and compare their usage with that of neighbors or family members, so that users can find ways to lower energy bills. Nest plans to use MyEnergy's technology to provide customers with more information about their own home energy consumption. The deal is also expected to further Nest's partnerships with energy providers, so that utilities can share data about usage with their customers.
http://swissinnovation.org/newsUS/web/2013/06-130507-eb.html

Activists oppose garbage incinerators

(The Boston Globe, May 07, 2013)

State officials in Massachusetts issued a solid waste reduction plan that includes a provision to loosen a nearly quarter-century moratorium on new incinerators, a move that activists decried as harmful to the environment. Officials say the technologies, called gasification or pyrolysis, convert garbage into liquid fuels or gas that is clean and renewable, unlike traditional incineration, which emits a heavy amount of pollutants into the air. Environmental activists are adamantly opposed to the plan, insisting that the new technologies are unproven and environmentally unsound. Also, the state could find more space for garbage if it stopped allowing banned materials such as recyclables, yard debris, and wood into landfills and incinerators, activists contend.
http://swissinnovation.org/newsUS/web/2013/06-130507-d1.html

Mitigating the greenhouse gas emissions of the steelmaking industry

(MIT, May 08, 2013)

Steelmaking is one of the world's leading industrial sources of greenhouse gases, but remarkably, a new process developed by MIT researchers could change all that. The prevailing process makes steel from iron ore — which is mostly iron oxide — by heating it with carbon; the process forms carbon dioxide as a byproduct. Production of a ton of steel generates almost two tons of CO2 emissions, according to steel industry figures, accounting for as much as 5 percent of the world's total greenhouse-gas emissions. The MIT found that a process called molten oxide electrolysis could use iron oxide from lunar soil to make oxygen in abundance, and produce steel as a byproduct.. Lunar-like soil can be replicated by using an alloy of chromium and iron for bulk steel production on Earth.
http://swissinnovation.org/newsUS/web/2013/06-130508-b6.html

Dust in cirrus clouds

(MIT, May 09, 2013)

In a study funded by NASA and the National Science Foundation (NSF), an interdisciplinary team from MIT, the National Oceanic and Atmospheric Administration (NOAA), and elsewhere has identified the major seeds on which cirrus clouds form. Cirrus clouds — the thin wisps of vapor that trail across the sky — cover nearly one-third of the globe and influence global climate, cooling the planet by reflecting incoming solar radiation and warming it by trapping outgoing heat. Understanding the mechanisms by which these clouds form may help scientists better predict future climate patterns. The team found that the majority of cloud particles freeze, or nucleate, around two types of seeds: mineral dust and metallic aerosols. While mineral dust is generally regarded as a natural substance originating from dry or barren regions of the Earth, agriculture, transportation and industrial processes also release dust into the atmosphere, which hints towards a human effect on cloud formation.
http://swissinnovation.org/newsUS/web/2013/06-130509-45.html

Solar is the best form of alternative energy

(The Boston Globe, May 11, 2013)

Lyndon Rive runs SolarCity, one of the largest solar installers working in Massachusetts, and recently spoke about his entrepreneurial roots, why he thinks solar is the best form of alternative energy, and why he's not concerned about the recent failures of high-profile solar companies. He believes everybody was selling solar in a wrong way. The whole market was focused on selling solar equipment, while in order to get mass adoption, you mustn't sell equipment, you must sell electricity. The primary business was getting to install solar systems for free and sell electricity at a lower rate than you can buy it from the utility, with most customers seeing about a 10 to 15 percent savings off their electricity.
http://swissinnovation.org/newsUS/web/2013/06-130511-23.html

Carbon dioxide levels reach record

(The Boston Globe, May 10, 2013)

Carbon dioxide was measured at 400 parts per million, while the last time the worldwide carbon level was probably that high was about 2 million years ago according to the National Oceanic and Atmospheric Administration. The number 400 has been anticipated by climate scientists and environmental activists for years as a notable indicator, in part because it's a round number — not because any changes in man-made global warming happen by reaching it, as climate scientists say that the situation is no worse off at 400 ppm than at 399 ppm. The level of carbon dioxide in the air is rising faster than in the past decades, despite international efforts by developed nations to curb it. On average the amount is growing by about 2 parts per million per year. That's 100 times faster than at the end of

the Ice Age. Back then, it took 7,000 years for carbon dioxide to reach 80 parts per million, Tans said. Because of the burning of fossil fuels, such as oil and coal, carbon dioxide levels have gone up by that amount in just 55 years.
http://swissinnovation.org/newsUS/web/2013/06-130510-f9.html

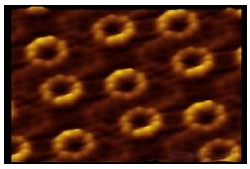
Real-time observation of lithium-air battery charging

(MIT, May 13, 2013)

One of the most promising new kinds of battery to power electric cars is called a lithium-air battery, which could store up to four times as much energy per pound as today's best lithium-ion batteries. But progress has been slow: The nature of the electrochemical reactions as these batteries are charged remains poorly understood. Researchers at MIT and Sandia National Laboratories have used transmission electron microscope (TEM) imaging to observe, at a molecular level, what goes on during a reaction called oxygen evolution as lithium-air batteries charge; this reaction is thought to be a bottleneck limiting further improvements to these batteries. The TEM technique could help in finding ways to make such batteries practical in the near future. The rate of lithium peroxide oxidation in these experiments was approximately 100 times faster than the charging time for laboratory-scale lithium-air batteries, and approaches what is needed for applications. This demonstrates that if these batteries' electron-transfer characteristics can be improved, it could allow for much faster charging while minimizing energy losses.
http://swissinnovation.org/newsUS/web/2013/06-130513-9e.html

Secret of efficient photosynthesis

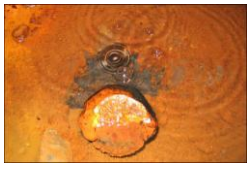
(MIT, May 14, 2013)



Purple bacteria are among Earth's oldest organisms, and among its most efficient in turning sunlight into usable chemical energy. Now, a key to their light-harvesting prowess has been explained through a detailed structural analysis by scientists at MIT. A ring-shaped molecule with an unusual ninefold symmetry is critical, the researchers found. The circular symmetry accounts for its efficiency in converting sunlight, and for its mechanical durability and strength. The molecular system in question, called light-harvesting complex 2 (LH2), operates in waterborne organisms that do not produce oxygen; such species consume sulfides, often found in volcanic hot springs or in deep-sea hydrothermal vents. LH2 molecules release energy when struck by photons; that energy is then stored as molecules of ATP that can later be used as fuel for metabolism.
http://swissinnovation.org/newsUS/web/2013/06-130514-ca.html

1.5 billion years old water could hold clues to life on Earth and Mars

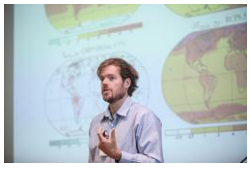
(20min.ch, May 16, 2013)



A team of Canadian and British scientists discovered 1.5 billion years old water locked up in rocks. The gases measured in that water hint at the possibility of life existing in the ancient water. They found that the water is rich in dissolved gases like hydrogen, methane and different forms – called isotopes – of noble gases such as helium, neon, argon and xenon. Indeed, there is as much hydrogen in the water as around hydrothermal vents in the deep ocean, many of which teem with microscopic life. Not just that, but the similarity between the rocks that trapped it and those on Mars raises the hope that comparable life-sustaining water could lie buried beneath the red planet's surface.
http://swissinnovation.org/newsUS/web/2013/06-130516-6f.html

Climate scientists and disaster relief workers meet for conference

(Harvard, May 17, 2013)



Climate scientists and disaster relief workers wrapped up a meeting in agreement about the importance of leveraging climate insights into improved disaster preparedness as the planet warms. Topics at the event, "2013 Humanitarian Action Summit: Climate and Crisis," included an overview of climate change as well as talks on climate change and food security, conflict and migration, humanitarian aid, climate predictions, and related initiatives in humanitarian organizations. A major hurdle remains the translation of long-term climate trends into predictions about regional weather events. Although there seemed to be little doubt of the growing relationship between human-induced climate change and extreme weather, speakers said that pinpointing trends precisely enough to be useful to relief organizations will be difficult.
http://swissinnovation.org/newsUS/web/2013/06-130517-d4.html

Boston's largest rooftop solar installation

(The Boston Globe, May 17, 2013)

One of the largest new solar projects in Massachusetts is now churning out power from the roof of a hulking industrial building in Hyde Park. The Boston/Dedham Commerce Park has installed 3,300 solar panels on the roof of its building, a mixed use office space that is home to companies such as Dancing Deer Baking Co. and the nonprofit Hyde Park Open Studios. The $4.2 million project is the largest solar roof installation in the city of Boston. The solar arrays will generate 974 kilowatts of power, enough to provide about two-thirds of the electricity needs of the building's tenants. The project's developer, Kathleen Doyle of FireFlower Alternative Energy of Boston, said that by displacing fossil fuels, the rooftop plant will avoid the release of some 366 tons of harmful carbon dioxide to the atmosphere. The project is among a number of solar farms that have come online in recent months and rapidly expanded the amount of electricity the state receives from this renewable source.
http://swissinnovation.org/newsUS/web/2013/06-130517-fa.html

MIT Fusion program is victim of sequester cuts

(The Boston Globe, May 19, 2013)

A longrunning Massachusetts Institute of Technology research experiment that explores nuclear fusion as a possible energy source will shut down within a year, as its already diminished federal funding has been cut. Unless Congress decides to step in, 70 employees will be laid off, including physicists, technicians, engineers, and support staff. The shutdown will leave only two fusion experiments in the United States, one at Princeton University and the other at General Atomics, a company in San Diego. Fusion produces energy when atoms combine. It has the potential to create massive amounts of energy, with ordinary helium as its waste product. In contrast, fission used in today's nuclear reactors, in which atoms are split, generates both energy and radioactive byproducts. The Alcator CMod uses a magnetic field to contain plasma — a charged, heated gas made up of deuterium atoms. Those atoms occasionally combine, producing energy. The pending shutdown will be the final chapter in a budgetary saga that also reflects the level of confusion and the strain on researchers caused by the gridlocked budget process in Washington.
http://swissinnovation.org/newsUS/web/2013/06-130519-78.html

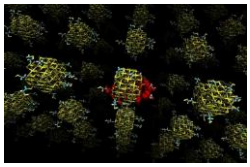
Less carbon footprint in footwear

(MIT, May 22, 2013)

A typical pair of running shoes generates 30 pounds of carbon dioxide emissions, equivalent to keeping a 100 watt light bulb on for one week, according to a new MIT led lifecycle assessment. But what's surprising to researchers isn't the size of a shoe's carbon footprint, but where the majority of that footprint comes from, as more than two thirds of a running shoe's carbon impact can come from manufacturing processes, with a smaller percentage arising from acquiring or extracting raw materials. The results will help shoe designers identify ways to improve designs and reduce shoes' carbon footprint, while the findings may also help industries assess the carbon impact of similar consumer products more efficiently.
http://swissinnovation.org/newsUS/web/2013/06-130522-e3.html

Towards low-cost quantum-dot solar cells

(MIT, May 24, 2013)

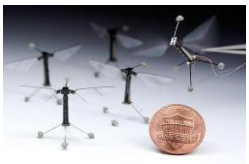


There has been great interest in recent years in using tiny particles called quantum dots to produce low-cost, easily manufactured, stable photovoltaic cells. But, so far, the creation of such cells has been limited by the fact that in practice, quantum dots are not as good at conducting an electric charge as they are in theory. For the most widely used type of quantum dots, researchers from MIT may have found the key: The limiting factor seems to be off-kilter ratios of the two basic components that make up the dots. In bulk quantities of lead sulfide, the material used for the quantum dots in this study, the ratio, known by chemists as "stoichiometry", of lead atoms to sulfur atoms is exactly 1-to-1. But in the minuscule quantities of the material used to make quantum dots, this ratio can vary significantly. When the stoichiometry is a perfect 1-to-1, the quantum dots work best, providing the exact semiconductor behavior that theory predicts.
http://swissinnovation.org/newsUS/web/2013/06-130524-3f.html

7. Engineering / Robotics / Space

First controlled flight of insect-sized robot

(Harvard, May 02, 2013)



In a Harvard robotics laboratory, an insect took flight. Half the size of a paper clip, weighing less than a tenth of a gram, it leapt a few inches, hovered for a moment on fragile, flapping wings, and then sped along a preset route through the air. The demonstration of the first controlled flight of an insect-sized robot is the culmination of more than a decade's work, led by researchers at the Harvard School of Engineering and Applied Sciences (SEAS) and the Wyss Institute for Biologically Inspired Engineering at Harvard.
http://swissinnovation.org/newsUS/web/2013/07-130502-02.html

Small, boxy robot for kids

(The Boston Globe, May 02, 2013)

Sparki is a small, boxy robot that with a bit of programming know-how will even play a game of chase-the-flashlight-beam. The brain behind Sparki is a tiny Cambridge start-up called ArcBotics, whose founders have turned to the crowdfunding website Kickstarter to finance their mechanical companion for kids. But Sparki isn't just a toy. Its builders hope the small bot will inspire a new generation of robot makers and computer whizzes. ArcBotics joins a growing field of companies making educational robots that includes LEGO Group, which sells a brand of programmable robots, and Aldebaran Robotics, a French company that produces an advanced humanoid robot used in US classrooms.
http://swissinnovation.org/newsUS/web/2013/07-130502-e9.html

NASA prepares for human mission to Mars

(NASA, May 06, 2013)

At the "Humans to Mars Summit" held at the George Washington University, Charles Bolden, NASA Administrator, underlined the efforts undertaken to send a human mission to Mars. He stated, "a human mission to Mars is today the ultimate destination in our solar system for humanity and it is a priority for NASA. Our entire exploration program is aligned to support this goal." First, NASA plans to continue to study how the human body reacts to long-duration missions in space. The space agency will be sending astronaut Scott Kelly on a one-year mission to the International Space Station in 2015. Bolden said this will help scientists gain a better understanding of the effects of microgravity on bone density, muscle mass, strength, vision and other aspects of human health.
http://swissinnovation.org/newsUS/web/2013/07-130506-96.html

Using drones to observe nature

(The New York Times, May 07, 2013)

An electric whir filled the air of this high desert valley as Jeff Sloan, a cartographer for the United States Geological Survey, hurled a small remote-controlled airplane into the sky. The plane, a four-and-a-half-pound AeroVironment Raven, dipped; then its plastic propeller whined and pulled it into the sky. Designed to monitor enemy positions from afar, the early Ravens, from about 2005, which cost $250,000 per system, were slated for destruction when an Army colonel thought they might be better used for scientific research and were donated to the Geological Survey. They were retrofitted for civilian life with new cameras and other gauges. Their first non-combat mission was counting sandhill cranes.
http://swissinnovation.org/newsUS/web/2013/07-130507-9e.html

NASA's system for saving satellites from collisions with space junk

(ArsTechnica, May 08, 2013)

In March last year, the people operating the Fermi Gamma-ray Space Telescope got a bit of a scare. Their hardware was one week away from a close encounter with a defunct Russian spy satellite. A week might seem like short notice for one-of-a-kind hardware like Fermi, but in some ways the team was lucky to have any warning at all. Prior to 2007, NASA didn't even have a policy in place to identify threats to unmanned hardware. That has now changed. Thanks to cooperation between the military and the Goddard Space Flight Center, everything that can possibly get out of the way of space junk is regularly tracked for potential collision risks. That system is what alerted Fermi's controllers to the danger and allowed them to use on-board thrusters for something they were never designed to do: move the satellite safely out of the way.
http://swissinnovation.org/newsUS/web/2013/07-130508-5f.html

Successful EVA resolves ISS ammonia leak

(NASA, May 11, 2013)

The extra-vehicular activity (EVA) was approved by NASA and astronauts Cassidy and Marshburn have replaced the PFCS module. It was unclear prior to today whether the initial EVA would simply be to put eyes on the source of the leak or to actually replace the module, but NASA elected to execute a number of contingency plans and have Cassidy and Marshburn pull a spare PFCS and install it. The original PFCS had no visible signs of damage, but the astronauts reported a "coffee stain" on the hardware. A spare PFCS was pulled from its stowage location on the P6 truss and installed, and the original PFCS was stowed in the spare's slot. The new unit was charged with ammonia and monitored by Mission Control and also visually observed by Cassidy and Marshburn; the coolant loop appeared to be holding pressure normally, with no evidence of any ammonia leakage.
http://swissinnovation.org/newsUS/web/2013/07-130511-5b.html

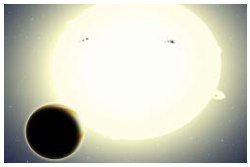
Flying hybrid car

(The Boston Globe, May 12, 2013)

The Woburn company Terrafugia unveiled a concept design for a product called the TF-X — well before it has delivered its first product, the Transition “roadable aircraft.” But Terrafugia’s chief executive, Carl Dietrich, says the TF-X could usher flying cars into the mainstream. It could take off and land vertically, outside of an airport. It would have “fly-by-wire” controls that would let you set your destination, and the vehicle would navigate to it with minimal pilot involvement. It would be a plug-in hybrid, presumably making it more fuel-efficient than most private aircraft, with a 500-mile range. Terrafugia anticipates a $279,000 base price.
http://swissinnovation.org/newsUS/web/2013/07-130512-21.html

First time, Einstein's theory of relativity helps to search for exoplanets

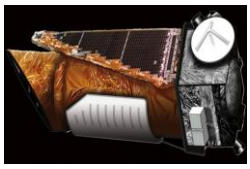
(Harvard, May 14, 2013)



Detecting alien worlds presents a significant challenge, as they are small, faint, and close to their stars. The two most prolific techniques for finding exoplanets are radial velocity (looking for wobbling stars) and transits (looking for dimming stars). A team at the Harvard-Smithsonian Center for Astrophysics (CfA) has just discovered an exoplanet using a new method that relies on Einstein’s special theory of relativity. Einstein’s “beaming” effect causes the star to brighten as it moves toward us, tugged by the planet, and dim as it moves away. The brightening results from photons “piling up” in energy, as well as light getting focused in the direction of the star’s motion due to relativistic effects. This is the first time that this aspect of Einstein’s theory of relativity has been used to discover a planet.
http://swissinnovation.org/newsUS/web/2013/07-130514-e5.html

Second reaction wheel failed on Kepler

(ArsTechnica, May 15, 2013)



Very few experiments have changed the way we perceive our Universe, but the Kepler exoplanet survey telescope is one such example. Simply by monitoring a single patch of the sky continuously, it provided a new understanding of how many planets exist in the galaxy. Since its launch in 2009, Kepler identified 115 exoplanets with over 2,700 other potential planet candidates—including a number that are comparable in size to Earth or orbiting within the habitable zone where liquid water might exist. However, Kepler is an orbiting telescope, unreachable by spacecraft for repairs. Today, NASA announced that a reaction wheel—required to keep the telescope pointed steadily in one direction—ceased functioning. This is the second reaction wheel failure, meaning Kepler can't continue to monitor the same stars and their exoplanets it has watched since 2009.
http://swissinnovation.org/newsUS/web/2013/07-130515-91.html

$3 billion project to track space debris

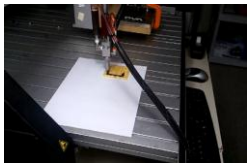
(The Boston Globe, May 20, 2013)

Even as spending is cut across the military, the final stage of a battle over billions of defense dollars is taking place at Hanscom Air Force Base in Bedford, where Waltham-based Raytheon and Maryland’s Lockheed Martin are locked in a competition to build a first-of-its-kind “Space Fence” to track orbital junk. The Space Fence project is expected to cost nearly $3 billion, not including the expense of operating it. The project would use a massive radar

beam, generated from a remote Pacific island and possibly another in Western Australia, that reaches into space to track debris.
http://swissinnovation.org/newsUS/web/2013/07-130520-49.html

NASA grant for 3D-printable food

(ArsTechnica, May 21, 2013)



NASA has bestowed a $125,000 grant upon a research corporation to pursue the development of 3D-printable food. Anjan Contractor, who runs Systems & Materials Research Corporation, hopes to design a system that will turn shelf-stable cartridges of sugars, complex carbs, and protein into edible food on demand. A modified RepRap 3D printer serves as Contractor's theoretical prototype design for printing food. Contractor plans to keep the printer open-source and envisions situations where recipes can be traded and tweaked by users. The printer could even theoretically produce foods based on the optimal nutritional makeup for the consumer, whether it's a young boy, old woman, or hung-over college student.
http://swissinnovation.org/newsUS/web/2013/07-130521-85.html

High-tech skills necessary for electricians

(The Boston Globe, May 26, 2013)

Always among the more technical of tradesmen, the electrician today has become a high-tech worker. Buildings are increasingly run by complex systems that use computer processors, sophisticated controls, fiber optics, and other networking gear. That means the electricians who install those systems, and the maintenance workers who monitor them, have to be almost as savvy as the people who designed the equipment. Some electrical contractors are even creating training facilities to further educate workers about the high-tech aspects of the job. J.M. Electrical has opened a facility in Saugus to teach its workers the finer points of working with building automation systems, which combine disparate functions such as lights, heating, ventilation and air conditioning, and fire and security alarms into one complex network run by a main control post.
http://swissinnovation.org/newsUS/web/2013/07-130526-f7.html

8. Physics / Chemistry / Math

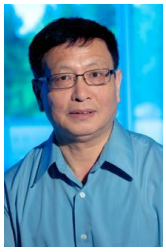
Growing beautiful flowers in a beaker

(Harvard, May 16, 2013)

With the hand of nature trained on a beaker of chemical fluid, the most delicate flower structures have been formed in a Harvard laboratory -- and not at the scale of inches, but microns. These minuscule sculptures, curved and delicate, don't resemble the cubic or jagged forms normally associated with crystals, though that's what they are. Rather, fields of carnations and marigolds seem to bloom from the surface of a submerged glass slide, assembling themselves a molecule at a time. By simply manipulating chemical gradients in a beaker of fluid, Wim L. Noorduin, a postdoctoral fellow at the Harvard School of Engineering and Applied Sciences (SEAS) has found that he can control the growth behavior of these crystals to create precisely tailored structures.
http://swissinnovation.org/newsUS/web/2013/08-130516-48.html

Discovery: Infinite number of prime numbers separated by 70 million

(The Boston Globe, May 23, 2013)



A soft-spoken, virtually unknown mathematician from the University of New Hampshire has found himself overnight a minor celebrity, flooded with requests to give talks at top universities as his work is debated and celebrated online by leaders in his field. For more than a century mathematicians have conjectured there are an infinite number of prime numbers separated by two. That would mean that there are an infinite number of pairs such as 3 and 5, or 41 and 43, or 269 and 271. What Zhang showed was actually that there were an infinite number of primes separated by 70 million. Zhang's proof excites mathematicians because it is the first time anyone has proven there are an infinite number of primes separated by an actual number.
http://swissinnovation.org/newsUS/web/2013/08-130523-96.html

Senators try to save MIT's nuclear fusion program

(The Boston Globe, May 26, 2013)

The plan to shut down a nuclear fusion experiment at the Massachusetts Institute of Technology in a year and news that half the project's employees have received layoff notices has prompted objections from the state's two US senators. Senators Elizabeth Warren and William M. Cowan wrote a letter to Ernest Moniz, the MIT physicist who was recently confirmed as the secretary of the Department of Energy, urging him to restore funding to the experiment. The letter is the latest effort to save the experiment, after a similar letter in April, signed by members of the Massachusetts congressional delegation.
http://swissinnovation.org/newsUS/web/2013/08-130526-d3.html

9. Architecture / Design

World Trade Center stands tall in New York

(The Boston Globe, May 02, 2013)

Adorned with an American flag, the last pieces of a silver spire were hoisted to the top of the World Trade Center. The final two segments of the 125 meter spire will rest on a construction platform for several weeks until the entire needle is permanently installed. With the spire as its crown, the trade center will soar to 541 meter in the air. With a beacon at its peak to warn aircraft, the spire will provide public transmission services for television and radio broadcast channels. An LED-powered light emanating from it will be seen from miles away. The building is rising at the northwest corner of the site where the twin towers were destroyed in the Sept. 11, 2001, terror attacks.
http://swissinnovation.org/newsUS/web/2013/09-130502-9e.html

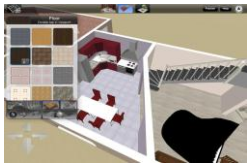
Surge of fashion start-ups from MIT

(The Boston Globe, May 04, 2013)

A handful of fashion-minded MIT students are creating companies targeting niche consumer styles and voids in the retail industry. The minisurge of MIT start-ups is driven by a budding category of fashion industry entrepreneurs. Aminata Kane, a second-year student at MIT's Sloan School of Management, is designing, manufacturing, and selling clothes for Africa's growing demographic of middle-class women. Another fashion venture called Modalyst, founded by 2012 business school graduate Jill Sherman, is aggregating orders for accessories from as many as 150 boutiques. Ministry of Supply, founded in 2010, uses thermal analysis, aerospace and robotic engineering, and new materials to design and sell better-fitting men's business attire. Asorti, a company created by MIT undergrads, developed a tool that takes into account texture, color, and price to automatically generate a matching ensemble.
http://swissinnovation.org/newsUS/web/2013/09-130504-cd.html

Apps for home designers

(The Boston Globe, May 05, 2013)



If you have ever sat on your couch and wondered how it would look across the room, that was your inner interior designer speaking. Now apps offer a quick and powerful way to indulge your home design fantasies. Home Design 3D is one of the better ones. It turns a two-dimensional view of your home into a three-dimensional graphic that you can view from any angle and even walk around as if inside. Build App Pro also has a plan-view design mode that lets you set out the layout of rooms and furniture items, plus a 3-D graphical view. A far simpler app is Houzz Interior Design Ideas, which will probably be more useful in the early stages of any redesign plans. The main feature is an extensive catalog of photos, listed by categories like Family Room, Wine Cellar, and Exterior.
http://swissinnovation.org/newsUS/web/2013/09-130505-8c.html

Engineering innovative fashion at Harvard

(The Boston Globe, May 08, 2013)

In a project-based engineering class at Harvard, the professor Kevin Kit Parker takes a team of engineers-in-training and throws them at a real-world problem, with a real-world client. A previous class developed a tool to aid police working to quell gang violence, taking a page from the principles used to defeat counterinsurgents in war zones. This year's theme was suitably broad, but required a real product at the end, too: use engineering techniques to create a new fashion. The result were garments that changed colors in response to various cues in the environment: one dress pulsed in time to a model's heartbeat, another changed color depending on where in Earth's magnetic field she was standing, and another lit up more stripes in response to the level of noise in the room.
http://swissinnovation.org/newsUS/web/2013/09-130508-5e.html

Art innovation award

(Harvard, May 10, 2013)

Sponsored by deans across Harvard University and hosted by the i-lab, the Deans' Cultural Entrepreneurship Challenge asked teams to spark innovations across the fields of music, visual arts, and performance. The winning team: Judy Fulton, Hokan Wong, Lucy Cheng '17, and Wes Thomas. The group developed an online platform called Musey. Musey helps people find art performances in their vicinity. Their vision is what captivated the judges and landed the team $30,000 and the grand prize. The three runners-up, who each took home $15,000 awards, were Midas Touch, which uses 3-D printing technology to make paintings an accessible, tactile art form for the visually impaired; Culturally, an online social discovery and engagement ecosystem for the arts; and Music+1, a mobile app that provides adaptive orchestral accompaniment in real time to musicians.
http://swissinnovation.org/newsUS/web/2013/09-130510-90.html

Website to inform population on building plans

(The Boston Globe, May 20, 2013)

A start-up from the TechStars Boston accelerator, CoUrbanize, is trying to inform people about building projects in their neighborhood and give them the opportunity to voice their opinion. The startup announced its first partnership, with the bike rental network Hubway. CoUrbanize will help Hubway get feedback about where to put stations. Cofounder Karin Brandt, a city planner educated at the Massachusetts Institute of Technology, says other partnerships with commercial real estate developers could be unveiled soon. CoUrbanize's Web-based software allows developers to "explain their projects and the impacts they can have on the surrounding areas, like shadows and traffic and parking," Brandt says.
http://swissinnovation.org/newsUS/web/2013/09-130520-43.html

10. Economy, Social Sciences & Humanities

Health insurance helps lower-income Americans

(MIT, May 01, 2013)

Enrollment in Medicaid helps lower-income Americans overcome depression, get proper treatment for diabetes, and avoid catastrophic medical bills, but does not appear to reduce the prevalence of diabetes, high blood pressure and high cholesterol, according to a new study with a unique approach to analyzing one of America's major health-insurance programs. The study, a randomized evaluation comparing health outcomes among more than 12,000 people in Oregon, employs the same research approach as a clinical trial, but applies it in a way that provides a window into the health outcomes of poor Americans who have been given the opportunity to get health insurance.
http://swissinnovation.org/newsUS/web/2013/10-130501-2a.html

Declining grants for humanities

(Harvard, May 02, 2013)

In 1979, federal grants for science were worth five times those for the humanities. By 1998, 33 times more. In 2011, 200 times more. Meanwhile, the number of American bachelor's degrees in disciplines such as language, history, and the classics has been declining for decades — from 14 percent in 1966 to 7 percent in 2010. In a world focused on solving problems, it is the business of the humanities to make problems, by asking ontological and even existential questions. The result is that humanists are typically pushed right to the

margins. On the other hand, there are many stories of those who study humanities, then go out into fields that may seem disparate. One Tufts alumnus studied English and went on to oversee Pfizer Inc. A Tufts alumna with a Dance major went on to be a senior manager at IBM.
http://swissinnovation.org/newsUS/web/2013/10-130502-e8.html

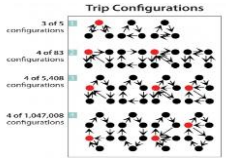
Ancient weapon 'atlatl'

(Harvard, May 02, 2013)

Students in Matthew Liebmann's "Encountering the Conquistadors" class recently got a feel for prehistoric life, trying their hands at an ancient weapon called the atlatl. "We've been studying first contacts in the New World from Columbus on, and this is a chance for students to get firsthand use of some of the technology they've been reading about," said Liebmann, an associate professor of anthropology. "I think there are a lot of assumptions about the superiority of European technology, and in some cases that was certainly an advantage in the conquest of the Americas, but Native Americans were using technology the Europeans weren't familiar with either, often with deadly results. The atlatl was a dominant weapon for centuries, until the rise of the bow and arrow after the arrival of Europeans.
http://swissinnovation.org/newsUS/web/2013/10-130502-6d.html

Population-level study discovers small-scale details about individuals' choices

(MIT, May 08, 2013)



The study shows that people in Chicago and Paris make their secondary trips — those in addition to their primary commutes — in a consistent and expeditious manner, using only 17 of more than 1 million possible trip sequences for up to five secondary locations. The most important aspect of the study is that because the 17 trip configurations hold true across the board, they represent "motifs" in network theory. Motifs are patterns that occur with such frequency that the statistical probability of their random occurrence is negligible. The motifs indicate that the study has uncovered a simple, basic principle that can be applied broadly in more complex models. Another pattern emerged from the data: With the addition of each flexible trip, the number of possible trip sequence configurations increased exponentially, but the number of configurations actually used did not increase by much, if at all.
http://swissinnovation.org/newsUS/web/2013/10-130508-7c.html

Luxembourg firm to launch financial innovation lab in Boston

(The Boston Globe, May 09, 2013)

Altisource Portfolio Solutions SA, a Luxembourg-based provider of services and technology to the financial industry, is opening an innovation lab in Boston's Financial District and plans to hire 100 software engineers and developers this year. The company said it will invest about $150 million in the lab at the Atlantic Wharf complex, where it will try to create new companies based on its proprietary technology. Company officials said the Bay State beachhead will enable Altisource to recruit from Boston's deep well of technical talent. Altisource intends to spin out independent, publicly traded software companies, but retain a large stake in them. The new companies would be headquartered in the Boston area, Hynes said.
http://swissinnovation.org/newsUS/web/2013/10-130509-7e.html

Photography from Papua New Guinea reveals a country in transition

(Harvard, May 15, 2013)

Photographer Stephen Dupont has spent years documenting dissonance. Dupont began working in Papua New Guinea in 2004, spending time with the gangs of Port Moresby, the nation's capital and one of the world's most crime-ridden cities. More recently, in 2011, Dupont traveled around the country, documenting a culture in transition as a Robert Gardner Fellow in Photography from Harvard's Peabody Museum of Archaeology and Ethnology. The fellowship, which supports a documentary photographer in an in-depth endeavor examining "the human condition anywhere in the world," was created by documentarian and author Gardner in 2007. Dupont's project examines the impact of globalism and the creep of Western lifestyles into a nation where traditional ways have long held sway.
http://swissinnovation.org/newsUS/web/2013/10-130515-eb.html

Modern-looking reading habits of 14th-century readers

(MIT, May 23, 2013)

Today we constantly switch from one text to another: news, blogs, email, workplace documents and more. But a new book by an MIT professor reveals that this is not a new practice: In the 14th century, for instance, many people maintained eclectic reading habits, consuming diverse texts in daily life. This was prior to the invention of the printing press, which was introduced in Europe in the middle of the 15th century. Before single books could be mass-produced more easily, manuscripts were copied out by hand, then bound together. This process led people to have many different types of texts bound together, rather than a single text being the entirety of a bound volume. Among other insights we can glean from reading medieval manuscripts is the polyglot culture that existed among learned people in the 14th century.
http://swissinnovation.org/newsUS/web/2013/10-130523-37.html

11. Start-ups / Technology Transfer / IPR / Patents

MIT accelerator program to include six international teams

(The Boston Globe, May 01, 2013)

The Massachusetts Institute of Technology is expanding a program for student entrepreneurs to include six teams from overseas that will come to the United States this summer to hone ideas for startups alongside collegians from the Cambridge school. Six international teams will join eight local teams that will each have at least one current MIT student or recent grad. Each team is eligible for $20,000 and will receive mentoring and tutelage from successful entrepreneurs and MIT professors. The global initiative — the first of its kind in an academic setting — comes as socalled accelerator programs. With the Global Founders' Skills Accelerator, MIT is tapping its vast resources and far reaching connections to build a program for students so they do not leave campus to find resources for starting businesses, while at the same time expanding its ties to international students and entrepreneurs.
http://swissinnovation.org/newsUS/web/2013/11-130501-80.html

IDEAS Global Challenge

(MIT, May 03, 2013)

Social entrepreneurs take home thousands of dollars from the IDEAS Global Challenge to help launch startups, develop inventions. The MIT IDEAS Global Challenge, organizers say, was founded in 2001 to help student-led teams make their humanitarian ventures a reality — through annual competition. And at its 12th annual awards ceremony, IDEAS presented 13 social enterprises a total of $72,000 to help develop startups and innovations that aim to solve issues such as infant mortality, pollution and unfair wages. Ten teams chosen by a panel of expert judges took home prizes of $5,000, $7,500 and $10,000. Three other teams, whose projects won the most online votes, received Community Choice Awards of $1,500 each. Each winning team delivered a brief presentation upon receiving its award.
http://swissinnovation.org/newsUS/web/2013/11-130503-b6.html

50th event at Mass Innovation Nights

(The Boston Globe, May 05, 2013)

A rough mix of product pitch events by entrepreneurs and schoolscience or crafts fairs, Mass Innovation Nights began in April 2009 as a way to highlight businesses while bringing more people to the Charles River Museum of Industry and Innovation in Waltham, where the first events were held. After the museum was flooded in 2010, Mass Innovation Nights became a nomadic networking event, holding meetings around the Boston area and in the process becoming a magnet for inventors, job hunters, venture capitalists, and early adopters seeking the next big thing. From its inception it has hosted 500 products. The 50th event, to be held at The Boston Globe in Dorchester, will feature displays from alumni such as Cuppow, which makes lids to turn canning jars into travel mugs, and Vsnap Inc., which provides an online videomessaging service.
http://swissinnovation.org/newsUS/web/2013/11-130505-01.html

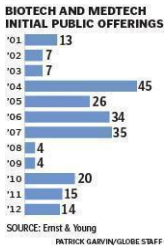
Angel investors at CIC attract startups

(The Boston Globe, May 05, 2013)

15 start-up teams headed north to make pitches to a roomful of Massachusetts angel investors at the Cambridge Innovation Center. The presenters were each hoping to raise from $175,000 to $2 million. It will be a few weeks, at least, before we see whether the Greyhound strategy has an impact. Here are some examples: - RaftOut: easy concert ticket purchase - ShutterCal: prompt you to elect best picture of te day - Spogo: app that invite to guess what will happen next - SunriseRide: delivers activities for kids - Designer material: help clothing designers find raw material - LocusPlay: help emerging lotteries - SkillHound: service that help recruiter better communicate with software developer - Bare Tree Media: help entertainment brands develop mobile apps and sell virtual goods
http://swissinnovation.org/newsUS/web/2013/11-130505-1b.html

Markets favorable for start-ups in Life Sciences

(The Boston Globe, May 09, 2013)



More than two dozen life sciences companies, including at least nine in Massachusetts, could go public this year, the biggest coming-out class since at least 2007 and a sign investors are excited about the prospects for new life-extending drugs and medical devices. Initial public offerings have been rare in the sector since the economic collapse of 2008, but industry insiders say soaring financial markets have helped make it feasible for cash-starved start-ups to consider raising large amounts of money through the sale of stock. About 25 companies contemplating going public have confidentially registered for stock offerings or are preparing documents to do so, according to Boston-area lawyers, accountants, and investment bankers working with the firms.
http://swissinnovation.org/newsUS/web/2013/11-130509-d6.html

Winner of 2013 MIT $100k Entrepreneurship Competition

(MIT, May 16, 2013)

3dim earned the grand prize at this year's MIT $100K Entrepreneurship Competition after successfully pitching its business plan to merge two of today's most popular, and profitable, technological phenomena: gesture-recognition and smart devices. A panel of entrepreneurs, venture capitalists, scientists and industry professionals chose 3dim based on the strength of the team's technology, business plan and presentation. 3dim, founded by a team of MIT engineers, has patented 3-D gesture-recognition technology — such as what's used in the Nintendo Wii and Microsoft Kinect — to be implemented into devices such as smartphones, tablets or Google Glass. This would allow users to interact with their devices through thin air, rather than having to touch a screen.
http://swissinnovation.org/newsUS/web/2013/11-130516-7b.html

Social Entrepreneurship prize at Harvard's i-Lab

(Harvard, May 22, 2013)

President Drew Faust named Team Nucleik the grand prize winner of the Harvard University President's Challenge for social entrepreneurship, hosted by the Harvard Innovation Lab (i-lab). Faust developed the challenge last year to support students from across the University who were interested in developing entrepreneurial solutions to some of the world's most important social problems. This year's competitors tackled five topic areas: learning, energy and the environment, health, disaster preparation and relief, and the arts. Team Nucleik will receive $70,000 to support its emerging business based on the software management information system team members developed while at Harvard for law enforcement officers. Three other student-led teams — Flume, PlenOptika and TerraTek — were recognized in the President's Challenge for winning solutions to pervasive societal problems. The three runners-up will each receive $10,000 to support the development of their ventures.
http://swissinnovation.org/newsUS/web/2013/11-130522-be.html

Menino visits Innovation District hub

(The Boston Globe, May 23, 2013)

The new one-story, steel-clad building on Northern Avenue is part clubhouse for the tech set and part monument to Mayor Thomas M. Menino's efforts to transform the South Boston Waterfront into the Innovation District. Dubbed District Hall, the building will serve as the social hub of the Innovation District, hosting public gatherings and events, and offering hangout space for the new wave of workers in the neighborhood — those who know their way around computers and smartphones instead of the warehouses that once dominated the area.
http://swissinnovation.org/newsUS/web/2013/11-130523-8a.html

12. General Interest

Gay marriage approved in New England

(The Boston Globe, May 02, 2013)

As more than 1,000 ecstatic supporters looked on, Governor Lincoln Chafee signed legislation making Rhode Island the 10th state in the nation to permit gays and lesbians to wed, and establishing gay marriage as the law of the land throughout all of New England. As other New England states began to legalize gay marriage, beginning with Massachusetts in 2004, similar bills in Rhode Island generated little momentum. The November 2010 election of Chafee, a former moderate Republican US senator who left the party to become an independent, proved a major turning point. Upon taking office on Jan. 4, 2011, Chafee immediately signaled a new political climate, calling in his inaugural address for the legalization of same-sex marriage.
http://swissinnovation.org/newsUS/web/2013/12-130502-9b.html

Suicide rate rising, especially among baby boomers

(The Boston Globe, May 02, 2013)

Suicide rates among middle-aged Americans have risen sharply in the past decade. More people die of suicide than in car accidents, according to the Centers for Disease Control and Prevention. From 1999 to 2010, the suicide rate among Americans ages 35 to 64 rose by nearly 30 percent, to 17.6 deaths per 100,000 people, up from 13.7. Although suicide rates are growing among both middle-aged men and women, far more men take their own lives. The suicide rate for middle-aged men was 27.3 deaths per 100,000, while for women it was 8.1 deaths per 100,000. The most pronounced increases were seen among men in their 50s, a group in which suicide rates jumped by nearly 50 percent, to about 30 per 100,000. For women, the largest increase was seen in those ages 60 to 64.
http://swissinnovation.org/newsUS/web/2013/12-130502-b7.html

PSY speaks at Harvard's Korea Institute

(Harvard, May 06, 2013)

Korean pop trailblazer PSY gave a lecture at Harvard. The event was moderated by Carter Eckert, Yoon Se Young Professor of Korean History, with Alex Zahlten, assistant professor of East Asian languages and civilizations, as discussant. Best known for his 2012 smash hit “Gangnam Style,” the multiplatinum single that merged Korean flavor with global pop panache, PSY has mesmerized critics and fans worldwide with his enigmatic dance moves and unforgettable presence. The first music video in history to surpass 1 billion views on YouTube, the song went on to become both the “most-viewed” and “most-liked” on the site. His 2013 follow-up “Gentleman” has nearly 300 million views in three weeks and set a new YouTube record with 38 million views in a single day.
http://swissinnovation.org/newsUS/web/2013/12-130506-37.html

World Bank President lectures at Harvard

(Harvard, May 06, 2013)

Shortly after the World Bank Governors approved a major push to end poverty, Jim Yong Kim, M.D. ’91, Ph.D. ’93, president of the World Bank Group, described the plan to a Harvard audience in the Asia Center’s annual Tsai Lecture at the Science Center. Within 17 years, the bank seeks to reduce the proportion of people living on $1.25 a day or less to 3 percent, the lowest possible figure given natural disasters. “It’s the first time in history that the world has said we can end poverty as we know it,” said Kim, co-founder of Partners In Health, the Boston-based nonprofit working with the poor on four continents. Kim is a former president of Dartmouth College and also served as director of the World Health Organization’s HIV-AIDS department.
http://swissinnovation.org/newsUS/web/2013/12-130506-70.html

Giant globe displayed in the State House

(The Boston Globe, May 07, 2013)

A giant globe filled Nurses Hall at the State House to publicize and garner support for Geography Education Bill S.200, which would create a Geography Education Commission. The globe, known as the Earth View Globe, belongs to Bridgewater State University and was installed only for one day.
http://swissinnovation.org/newsUS/web/2013/12-130507-ef.html

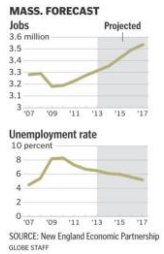
Rising home prices across the US

(The Boston Globe, May 07, 2013)

A survey shows US home prices rose 10.5% in March, compared with a year earlier, the biggest gain since March 2006. Core Logic, a real estate data provider, said annual home prices have now increased for 13 straight months. Prices are rising in part because more buyers are bidding on a limited supply of homes for sale. Prices increased in 46 states over the past year — 11 of them posting double-digit gains. And when excluding distress sales, which include foreclosures and short sales, prices rose in every state. A short sale is when a home sells for less than what is owed on the mortgage.
http://swissinnovation.org/newsUS/web/2013/12-130507-cb.html

Economic growth with 6.4% unemployment in Massachusetts

(The Boston Globe, May 22, 2013)



The Massachusetts economy is expected to grow slowly before accelerating in early 2014, benefiting from a boost from the manufacturing sector. Although Massachusetts is in the midst of a slowdown in hiring, the five-year forecast by the New England Economic Partnership shows the state's economy adding jobs at a significant pace beginning next year. Employers will add about 30,000 jobs this year, about 50,000 next year, and more than 70,000 in 2015, according to the forecast. The state's unemployment rate, 6.4 percent in April, is expected to average 6 percent in 2015 and fall to about 5.2 percent by the end of 2017, the report said.
http://swissinnovation.org/newsUS/web/2013/12-130522-36.html

William Galvin to become Lieutenant Governor

(The Boston Globe, May 26, 2013)

When Lieutenant Governor Timothy P. Murray resigns on June 2, Galvin, the veteran secretary of state, will be second-in-line for the highest office in Massachusetts and will serve as acting governor when Deval Patrick travels out of state. If Patrick were to join the Obama administration or vacate his office, Galvin would serve as acting governor until the end of Patrick's term in early 2015. Galvin insists that he has not given any thought to that possibility, pointing out that Patrick has vowed repeatedly to serve out the remainder of his term. Galvin has filled this role under previous Republican governors and won praise for staying out of the limelight and tending quietly to the necessary functions of the office.
http://swissinnovation.org/newsUS/web/2013/12-130526-2f.html

Harvard awards 9 honorary degrees

(Harvard, May 30, 2013)

Thomas M. Menino, Boston's longest-serving mayor received an honorary degree as a Doctor of Laws from one of the nation's most prestigious institutions, Harvard University. He was joined by 8 others, amongst them Oprah Winfrey, José Antonio Abreu, Sir Partha Dasgupta, Donald R. Hopkins, Lord May of Oxford, Elaine Pagels, C. Dixon Spangler Jr. and JoAnne Stubbe.
http://swissinnovation.org/newsUS/web/2013/12-130530-da.html

13. Calls for Grants / Awards

Opportunity to participate in the 2013 Life Science Nation Investment Forum

(Life Science Nation, April 09, 2013)

Life Science Nation (LSN) is now accepting applications from innovators at emerging companies developing therapeutics, diagnostics, medical devices, and unique service platforms to participate in the 2013 LSN Early Stage Life Science Investment Forum. A select group of firms will be chosen to present their groundbreaking technologies to an exclusive investor audience. LSN sources, validates and maintains the largest global database of investor profiles and mandates in the life science arena. LSN has defined and actively tracks six categories of Life Science Investors.
http://swissinnovation.org/newsUS/web/2013/13-130409-16.html

> **SNSF Project Funding**
>
> The Swiss National Science Foundation (SNSF) accepts applications for project funding on April 1 and October 1 each year. Applications must be submitted directly by researchers.
> http://www.snf.ch/E/funding/projects/Pages/default.aspx

Upcoming Science and Technology Related Events

Nanotherapeutics & Diagnostics Wyss Institute symposium on medical nanotechnologies inspired by Nature
June 6, 2013
www.regonline.com/Register/Checkin.aspx?EventID=1215786
Life Science
Joseph B. Martin Conference Center, Amphitheater

Symposium on Translation of Regenerative Bioscience and Engineering
June 10, 2013
https://www.wpi.edu/academics/Research/BEI/Seminars/index.html
Life Science
The Bioengineering Institute at WPI

Red Hat Summit
June 11-14, 2013
www.redhat.com/summit/
Information & Communications Technology
Boston, MA

International Society for Stem Cell Research, 11th Annual Meeting
June 12-15, 2013
www.isscr.org/home/annual-meeting
Life Science
Boston, MA

PlanetSolar DeepWater in Boston!
June 27, 2013
http://tinyurl.com/planetsolar-deepwater-in-BOS
Energy / Environment
swissnex Boston

Conference on Uncertainty in Artificial Intelligence
July 11-15, 2013
www.auai.org/uai2013/
Artificial Intelligence
Bellevue, Washington, USA

JEC Composites - JEC Americas 2013
October 02-04, 2013
www.jeccomposites.com/events/jec-americas-2013
Material Science / Engineering
Boston, MA

Small Business Expo 2013 - Boston
October 17, 2013
http://smallbusinessexpoboston.eventbrite.com/
Innovation / Entrepreneurship
Boston, MA

2013 Molecular Targets and Cancer Therapeutics conference
October 19-23, 2013
http://tinyurl.com/molecular-targets
Life Science
Boston, MA

American Society of Human Genetics 2013 Annual Meeting
October 22-26, 2013
www.ashg.org/2013meeting/
Life Science
Boston, MA

2013 Advancing Ethical Research Conference
November 7-9, 2013
www.primr.org/aer13/
Life Science
Boston, MA

10th Massachusetts STEM Summit
November 13, 2013
www.mass-stem-summit.org/
Science & Technology
Foxborough, MA

ArchitectureBoston Expo
November 19-21, 2013
http://abexpo.com/register/
Architecture
Boston, MA

Materials Research Society 2013 Fall Meeting & Exhibit
December 1-6, 2013
www.mrs.org/fall2013/
Material Science
Boston, MA

>> More events at swissnex Boston: www.swissnexboston.org/activities/events-inhouse