Science-USA (Boston+), March 2013

Table of Contents

swissnex Boston welcomes you to the 6th 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 consists of two spotlights on outstanding Swiss talents and a concise overview of the trends and 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: Human 2.0 – Biomimetic prosthesis

(Oliver A Kannape, March 07, 2013)

Although state-of-the-art prostheses have intrinsic controllers capable of matching the behaviour of the biological ankle-foot complex, this biomimicity is currently limited to level-ground walking at stable speeds. Oliver Kannape's research focuses on granting transtibial amputees volitional control over their prostheses by combining electromyographic (EMG) activity from the amputees' residual limb muscles with intrinsic controllers on the prosthesis. The mid-term goal of this project is to generalize biomimetic behavior of the prosthesis, making it independent of walking terrains and transitions. The long-term goal is to replace surface electrodes with implantable sieve electrodes, capable of conveying both motor and sensory information, to further integrate the prosthesis with the peripheral nervous system. Oliver A Kannape is a postdoctoral fellow at the Biomechatronics Group of the MIT Media Lab, sponsored by the Swiss National Science Foundation.
http://swissinnovation.org/newsUS/web/2013/00-130307-f4.html

Startup: QualySense - Excellence in grains, seeds, and beans sorting

(Dr. Francesco Dell'Endice, CEO QualySense, March 07, 2013)

QualySense is the worldwide industry leader for advancing the development of high-capacity and efficient sorting analysis technology in grains, seeds, and beans. We manufacture breakthrough devices to deliver high-speed individual kernel analysis for biochemical, nutritional and external traits of grains, seeds, and beans. Serving inspection agencies and food processors worldwide, Swiss-based QualySense is focused on delivering innovative sorting or high-end sorting solutions to provide the optimal processing, quality and safety control of agricultural products. swissnex Boston is helping QualySense in preparing its strategic expansion into the United States market. The company benefits by the large network of professionals the swissnex Boston can access to.
http://swissinnovation.org/newsUS/web/2013/00-130307-30.html

swissnex Boston Events

Liechtenstein Ambassador Claudia Fritsche visits swissnex Boston and Cambridge

(swissnex Boston, March 07, 2013)

Ms. Claudia Fritsche, Ambassador of Liechtenstein to the United States paid a visit to Cambridge MA on March 7, 2013. During her one-day visit, Ambassador Fritsche attended the swissnex Boston Advisory Board Meeting and learned firsthand about the many activities, projects, events and visiting delegations. Ambassador Fritsche took time to exchange views with Patrick Ballmer, the Chairman of the AmCham Boston Chapter. Another highlight was a meeting with Dean Iris Bohnet, Academic Dean of the Harvard Kennedy School. Following the meeting, Ambassador Fritsche attended a roundtable discussion at the school's Women and Public Policy Program on "Women in Politics".
http://swissinnovation.org/newsUS/web/2013/00-130307-63.html

Art Soirée 2013

(swissnex Boston, March 08, 2013)

The 3rd edition of swissnex Boston's "Art Soirée" featured two musicians, Swiss violin and viola player Mirjam Tschopp, and German born pianist Babette Hierholzer, who performed a recital of classical and contemporary pieces by Robert Schumann, Ernest Bloch, Ernst Pfiffner and Ludwig van Beethoven on Friday, March 8, 2013. The concert was followed by a networking reception and a small display of the current photography exhibition by Joel Tettamanti at the MIT Museum. The objective of the Art Soirée is to bring together the larger swissnex community and the citizens of Cambridge who appreciate the effort of swissnex being an important part in the Cambridge society.
http://swissinnovation.org/newsUS/web/2013/00-130308-a0.html

Zurich Art students visit Boston

(swissnex Boston, March 13, 2013)

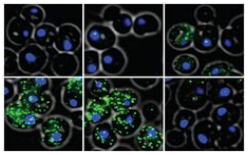
The Research Group Transdisciplinarity of the Zurich University of the Arts (ZHdK) is working on and with models as a transdisciplinary practice between the arts and sciences. Within this work, Professors Florian Dombois and Reinhard Wendler are cooperating with Prof. Gediminas Urbonas (MIT–ACT) and the MIT Museum on an exhibition project on models that shall take place in 2015/16. One part of the exhibition will be realized with students from Zurich and Boston. It will have its own major room in the museum and will test for MIT's new forms of interaction between cultural producers and audience. To conceptualize the new working space within the exhibition, a model workshop took place at swissnex Boston on March 13, 2013.
http://swissinnovation.org/newsUS/web/2013/00-130313-c0.html

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

Swiss-USA Bilateral News

ETH Zurich and MIT are modeling the dynamics of gene regulation

(ETH Zurich, March 01, 2013)



An international team of systems biologists at ETH Zurich in Basel and MIT in Boston has developed a new computer model based on real gene response measurements that can accurately predict how often yeast cells transcribe certain genes in specific stressful situations. This important step in understanding complex biological systems has been published in the journal "Science". When subjected to stress, e.g. by suddenly raising external salt concentrations, yeast cells activate specific genes. These genes are linked to a signaling pathway initiated by transcription factor Hog1, which is transported within a stressed cell to its nucleus where the gene is transcribed. Hog1 activates certain genes that code for proteins, enabling the yeast cells to cope with salt-induced stress.
http://swissinnovation.org/newsUS/web/2013/03-130301-2f.html

Swissbäkers open on Harvard Allston Campus

(Harvard, March 15, 2013)

Swissbäkers opened for business in Barry's Corner in Allston. Serving Swiss breads, pastries, cookies, cakes, sandwiches and coffee, Swissbäkers is the newest of several businesses that are helping to foster vibrant shared spaces for campus and community in the area. The new café seats about 100 people. Lisa Hogarty, vice president for Harvard campus services, said that Barry's Corner is a vital part of the Allston/Harvard community. Over time, that space will include School of Engineering and Applied Sciences (SEAS) researchers, faculty, and staff in the Science Center. That development will bring more people and activity, and even more customers for area businesses.
http://swissinnovation.org/newsUS/web/2013/00-130315-4b.html

Switzerland Today

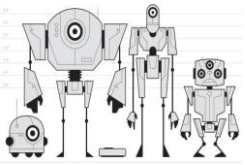
(Embassy of Switzerland, March 15, 2013)

Switzerland Today is a fresh newsletter produced by the Swiss Embassy in the United States. It informs on major developments in Swiss politics, democracy, science, technology and innovation, culture and lifestyle. It provides a succinct source for everybody who is interested into knowing more about new developments in the Swiss society.
http://swissinnovation.org/newsUS/web/2013/00-130315-48.html

1. Policy

Robot ethics and liability

(The Boston Globe, March 01, 2013)



As machines get smarter — and sometimes cause harm —a legal system that can handle them is needed. With most robot-like machines that exist today, any serious problems can be easily traced back to a human somewhere, whether because the machine was used carelessly or because it was intentionally programmed to do harm. But experts in artificial intelligence and the emerging field of robot ethics say that is likely to change. With the advent of marvels like the self-driving car and increasingly sophisticated drones, they say we'll soon be seeing the emergence of machines that are essentially autonomous. Once these machines behave in ways unpredictable to their makers, it will be unclear who should be held legally responsible for their actions.
http://swissinnovation.org/newsUS/web/2013/01-130301-43.html

Sequester in force

(The Boston Globe, March 02, 2013)

Furlough notices began arriving at federal agencies on March 1 as the government prepared to cope with automatic spending cuts required by the so-called sequester, which went into effect hours after President Obama and Republican leaders held another fruitless session at the White House. Obama said during a White House press conference that he can't force Republicans to come to the negotiating table. Mixing elements from Star Wars and Star Trek, the president said he couldn't "do a Jedi mind meld with these folks and convince them to do what's right." The prospect of absorbing $85 billion in reductions caused waves of anxiety across the country. In Massachusetts, university researchers were warned that their grants may be cut midway through their projects, and that labs may have to let workers go.
http://swissinnovation.org/newsUS/web/2013/01-130302-57.html

MIT's Ernest J. Moniz nominated Secretary of Energy

(MIT, March 04, 2013)

President Barack Obama announced that he intends to nominate MIT's Ernest J. Moniz to head the U.S. Department of Energy (DOE). Moniz is the Cecil and Ida Green Professor of Physics and Engineering Systems, as well as the director of the MIT Energy Initiative (MITEI) and the Laboratory for Energy and the Environment. At MIT, Moniz has also served previously as head of the Department of Physics and as director of the Bates Linear Accelerator Center. His principal research contributions have been in theoretical nuclear physics and in energy technology and policy studies. He has been on the MIT faculty since 1973.
http://swissinnovation.org/newsUS/web/2013/01-130304-88.html

$2 billion plan for clean-vehicle program

(The Boston Globe, March 15, 2013)

With few options available for financing his clean-energy ambitions, President Obama proposed diverting $2 billion in revenue from federal oil and gas leases over the next decade to pay for research on advanced cleaner-running vehicles. Obama visited the Argonne National Laboratory near Chicago to tour its state-of-the-art research facilities and to promote his idea, first proposed in last month's State of the Union address, to use oil and gas money to find ways to replace hydrocarbons as the primary fuel for the nation's cars, trucks and buses.
http://swissinnovation.org/newsUS/web/2013/01-130315-77.html

Powerhouse research institutions' budget remains untouched

(The Boston Globe, March 17, 2013)

Harvard, MIT, and a coalition of other powerhouse research institutions have thwarted a reform proposal by the Obama administration to slash the amount of government research money each school receives for overhead costs. The result is that about $10 billion a year, roughly a quarter of the nation's university research budget, will continue to be channeled into such things as administrative salaries and building depreciation instead of directly into scientific studies. Critics say the system lacks accountability, unfairly rewards the biggest schools, and is an ineffective use of taxpayer research dollars in an era of fiscal austerity.
http://swissinnovation.org/newsUS/web/2013/01-130317-f7.html

Massachusetts firm to advise on marijuana law

(The Boston Globe, March 18, 2013)

Washington state has tentatively chosen a Massachusetts-based firm led by a University of California, Los Angeles, professor to be its official marijuana consultant. Botec Analysis Corp. is based in Cambridge, Mass., and has evaluated government programs and provided consulting relating to drug abuse, crime, and public health. If the contract stands, Botec will advise Washington state officials as they develop rules for the state's new industry in legal, taxed marijuana. Botec is headed by Mark Kleiman, a professor of public policy at UCLA.
http://swissinnovation.org/newsUS/web/2013/01-130318-dc.html

More flexible marijuana rules

(The Boston Globe, March 30, 2013)

Proposed rules for medical use of marijuana in Massachusetts, issued by the state Department of Public Health, largely sidestep the thorny matter of who will qualify for treatment with the drug and instead leave it up to doctors to decide. The regulations say patients must have a debilitating condition — defined as causing weakness, wasting syndrome, intractable pain or nausea, or impairing strength or ability and limiting major life activities — to receive written certification from their doctor to buy the drug. The rules also list qualifying conditions, including cancer, glaucoma, HIV/AIDS, hepatitis C, and amyotrophic lateral sclerosis, or ALS, but ultimately allow doctors and their patients to decide what other conditions would qualify for treatment.
http://swissinnovation.org/newsUS/web/2013/01-130330-37.html

2. Education

Strategic reduction of applications at Boston College

(The Boston Globe, March 02, 2013)

Harvard is up. MIT is up. Northeastern is up. UMass Amherst is up. Boston University is up. But at Boston College, the number of applications received for its incoming freshman class is down. And that's just the way the school wants it. BC saw its applications decline by 26 percent after it made a strategic effort to raise admissions requirements. The school added a supplementary essay to its application, university officials said, with a goal of attracting more serious students and deterring less interested ones from applying. In 2012, 34,061 students applied to BC; this year, the number dropped to about 25,000. The college admits about 2,270 to its freshman class. High school counselors and education observers say the less-is-more approach by BC and other schools reflects a growing trend as colleges confront an applications "arms race."
http://swissinnovation.org/newsUS/web/2013/02-130302-5c.html

Low increase of tuition at MIT

(MIT, March 05, 2013)

MIT plans to increase its undergraduate tuition and fees by 3.4 percent for the next academic year, which is among the lowest increases in recent decades, college officials announced. For the 2013-2014 school year, tuition and fees will cost $43,498, compared to $42,050 for this year. The higher cost will be offset by increasing the undergraduate financial aid budget to a record $97.6 million, according to a statement released by MIT. The statement said that the Massachusetts Institute of Technology has "more than tripled its spending on financial aid since 2000, a rate of growth that far exceeds tuition and fee increases during that same period, as part of the institute's ongoing efforts to shield students and families from the impact of price increases."
http://swissinnovation.org/newsUS/web/2013/02-130305-28.html

College students demand funding at Lawmakers' offices

(The Boston Globe, March 05, 2013)

Hundreds of Massachusetts college students, many of them saddled with debt, flooded lawmakers' offices at the State House on March 12, to lobby for an increase in financial aid funding. The event, titled Public Higher Education Advocacy Day, started with a pep rally inside the auditorium. Governor Deval Patrick made a brief appearance, telling the students that more money in public higher education is crucial to make it affordable for all. "If we're going to keep the public in public higher ed, then the public has to step up, too," Patrick added. Patrick's proposed $1.9 billion tax increase would raise money to bolster education from pre-kindergarten through college, including a significant increase in the MASSGrant Program.
http://swissinnovation.org/newsUS/web/2013/02-130305-ab.html

150 years UMass Amherst

(UMass, March 06, 2013)

The University of Massachusetts is turning 150 years old this April. And in honor of its sesquicentennial, a vast array of campus and state events are being planned and finalized. The festivities will continue through both 2013 fall and spring semesters. Beginning the week of April 22, deemed "Founder's Week," events will occur on campus at UMass, including Chancellor Kumble Subbaswamy's official inauguration. Many events are also planned to occur off campus at other vicinities located around Massachusetts. The events will provide an "opportunity for us to celebrate the achievements and importance of our university," UMass spokesman Ed Blaguszewski said, and that each activity is "a way to celebrate our partnership with the commonwealth for the past century and a half."
http://swissinnovation.org/newsUS/web/2013/02-130306-fe.html

Future of online education initiative edX

(MIT, March 07, 2013)

At the MIT Media Lab, MIT and Harvard University, the founders of the online-learning initiative edX, convened a group of academic leaders and other online-learning experts for a daylong summit meeting titled "Online Learning and the Future of Residential Education." As several speakers pointed out, educators are only beginning to scratch the surface of the possibilities presented by online-learning technologies. But the mere fact that the rapid proliferation of online-learning tools has forced universities to reexamine their pedagogical assumptions may be a step forward in itself.
http://swissinnovation.org/newsUS/web/2013/02-130307-d7.html

Colleges hurt students by rescinding financial aid

(The Boston Globe, March 08, 2013)

Scholarship programs funded by some of the nation's biggest donors including Gates, Coca-Cola, and Michael Dell, are taking aim at practices used by wealthy colleges, such as Boston College, which has a $1.65 billion dollar endowment, Amherst, with a $1.64 billion fund and Barnard, with $216.4 million. They say the schools hurt poor and minority students by rescinding aid once they find out they have awards from outside sources or by banning use of the funds to cover some student contributions. Donors complain that their gifts are boosting a school's bottom line rather than students. College policies rescinding or cutting funding because of outside scholarships "takes away a reward that the student earned through hard work and concentrated effort," according to a report to be released by the National Scholarship Providers Association.
http://swissinnovation.org/newsUS/web/2013/02-130308-c2.html

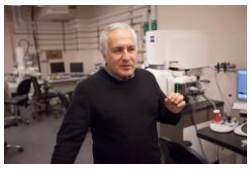
UMass building projects as innovation and economic catalyst

(The Boston Globe, March 09, 2013)

The University of Massachusetts hailed the sale of $284 million in construction bonds as a boost to the state economy, saying the building projects the bonds will fund on all five campuses will be “a catalyst for innovation and economic development". Bonds sold this week will help fund projects with a collective price tag of $1.2 billion, including the new Emerging Technologies and Innovation Center at UMass Lowell and a biomanufacturing facility at UMass Dartmouth expected to open this summer. “Our building program will help our economy in the short term as a result of creating construction projects across the state and will yield long-term economic benefits by producing the people and ideas that will drive the commonwealth’s innovation economy,” said UMass president Robert L. Caret.
http://swissinnovation.org/newsUS/web/2013/02-130309-be.html

New professorship in modern neuroscience awarded

(Harvard, March 11, 2013)



Jeff Lichtman, the Jeremy R. Knowles Professor of Molecular and Cellular Biology and a world leader in using advanced imaging techniques to study the wiring of the brain and nervous system, has been appointed the inaugural Santiago Ramón y Cajal Professor of Arts and Sciences. The position is intended to recognize a member of the Faculty of Arts and Sciences (FAS) for groundbreaking research. Arts and Sciences professorships will be awarded in the future by FAS Dean Michael D. Smith, the John H. Finley Jr. Professor of Engineering and Applied Sciences. Created through a gift from Kewsong Lee ’86, M.B.A. ’90, and his wife, Zita J. Ezpeleta ’88, J.D. ’91, the five-year appointment is named for Santiago Ramón y Cajal, whose drawings of nerve cells provided the earliest foundation for modern neuroscience.
http://swissinnovation.org/newsUS/web/2013/02-130311-d9.html

Record low 8.2% of applicants accepted by MIT

(The Boston Globe, March 15, 2013)

MIT admitted 8.2 percent of students who applied this year, marking the lowest ever acceptance rate in the history of the university. Stu Schmill, the dean of admissions, said the Massachusetts Institute of Technology received 18,989 applicants, and accepted 1,548. The admittance rate has been cut in half over the past ten years, Schmill said. The number of applicants to Boston-area colleges and universities continued to rise this year, with one prominent exception – Boston College, which made a strategic effort raise its requirements and saw its applications drop by 26 percent. MIT saw a 5 percent increase from last year to this year.
http://swissinnovation.org/newsUS/web/2013/02-130315-4d.html

Limiting funds to for-profit colleges

(The Boston Globe, March 17, 2013)

Attorneys general from more than a dozen states, including Massachusetts, are pushing Congress to restrict federal funding to for-profit colleges, which face growing complaints that they often leave students with piles of debt but not enough training to find high-paying jobs. The 14 attorneys generals urged congressional leaders in a letter last week to pass legislation that would bar institutions from using money from federal grants or student loans to market their programs and recruit students. “This bill will ensure that scarce federal education dollars are used to educate students rather than to finance marketing campaigns and recruitment operations at schools more focused on making a profit than assisting students,” said Attorney General Martha Coakley of Massachusetts in a statement.
http://swissinnovation.org/newsUS/web/2013/02-130317-13.html

Record donation to Berklee College of Music

(The Boston Globe, March 21, 2013)

For years, a Cambridge man quietly sat in the recital halls at the Berklee College of Music, where he immersed himself in the sounds of student jazz performances. He made no fuss. No one at the college even knew his name. But Oliver Dyer Colvin Jr. held on to a secret that Berklee learned only after his death: In his will, he left the school the largest financial gift it has ever received. Colvin, who died in summer 2011, donated an estimated $8.1 million, college officials said. The money will be used for campus renovations and student scholarships.
http://swissinnovation.org/newsUS/web/2013/02-130321-ee.html

Twitter cheaters during MCAS test

(The Boston Globe, March 22, 2013)

During testing, a staff member scours the popular micro-blogging service for the MCAS hashtag, trolling for students who might be sharing pictures of answer booklets or discussing questions with other test-takers. “Twitter . . . is something we need to be aware of, to be vigilant about,” said JC Considine, spokesman for the state Department of Elementary and Secondary Education. The state is on high alert for Twitter cheaters this month, as about 500,000 students take the English-language portion of the Massachusetts Comprehensive Assessment System exam. Education officials began keeping tabs on tweets last June during the science MCAS given to 76,000 students, and it caught 10 tweeting during the exam. Their tests were invalidated.
http://swissinnovation.org/newsUS/web/2013/02-130322-78.html

First female president of Babson College

(The Boston Globe, March 25, 2013)

Former Massachusetts lieutenant governor Kerry Healey was named the next president of Babson College, making her the first woman to lead the college since it was founded nearly 100 years ago. Healey said she hopes to turn the small business school in Wellesley into a global institution by forging relationships with colleges around the world, and to work to make undergraduate education more affordable and accessible. Healey, long a major player in the state and national Republican party, said she will step away from partisan politics and plans to resign her current position as the national committeewoman from Massachusetts on the Republican National Committee.
http://swissinnovation.org/newsUS/web/2013/02-130325-89.html

Massachusetts plans to invest in early education

(The Boston Globe, March 26, 2013)

Governor Patrick’s plans to expand access to early education is a potential game-changer for poor children, working parents, and even the state budget. The plan aims to reduce the 30,000-child waiting list for state-funded child care by providing more vouchers to child care providers. But it also aims to make that care far more educational. About half of the proposed $131 million increase for 2014 would go toward boosting salaries, funding professional development, and making competitive grants to innovative programs that want to expand. Improving quality is essential. Studies show that reaping the benefits of early learning requires the work of educators, not babysitters.
http://swissinnovation.org/newsUS/web/2013/02-130326-24.html

Scholarships for degrees in fast-growing fields

(The Boston Globe, March 25, 2013)

In a renewed effort to boost the number of college graduates in fast-growing fields, Massachusetts has awarded $2 million in scholarships to public college students pursuing degrees in science, business, and health care. The initiative, the first time the state has broadly encouraged career choices through financial aid, seeks to help students complete their education and enter professions that often face critical shortages of skilled employees. Governor Deval Patrick will announced the program at a ceremony at the University of Massachusetts Boston. Out of some 5,000 applicants, 800 students across the state learned that they had received as much as $3,250 for this semester to defray their tuition and fees.
http://swissinnovation.org/newsUS/web/2013/02-130325-9d.html

Harvard College financial aid budget increases by $10 million

(Harvard, March 26, 2013)

To keep Harvard College affordable for students from every financial background, Harvard College will increase its financial aid budget for the 2013–14 academic year by $10 million, or 5.8 percent, bringing the total to a record $182 million. Since 2007, Harvard’s investment in financial aid for undergraduates at the College has increased by 88 percent. More than 60 percent of Harvard College students annually receive need-based scholarship aid, paying on average $12,000 toward the cost of tuition, room, and board. As a result, approximately 20 percent of families pay nothing and many College students graduate debt-free.
http://swissinnovation.org/newsUS/web/2013/02-130326-de.html

$934 million budget for Boston schools approved

(The Boston Globe, March 27, 2013)

The Boston School Committee unanimously approved a $934.6 million budget for the next school year that strives to bolster school quality and accommodate a rise in student enrollment. The budget represents a 7 percent increase in funding over this school year’s amount and follows several years of tight finances. “This is an investment

in the future," Superintendent Carol R. Johnson said before the vote, noting that the money would go a long way in turning around low-achieving schools, helping students excel in the classroom, and developing new school leaders. The budget now heads to Mayor Thomas M. Menino, who will present it to the City Council next month as part of his city spending proposal for next year. Sam Tyler – president of the Boston Municipal Research Bureau, a watchdog group funded by businesses and nonprofits – said that the 7 percent increase was generous and that other city departments would not see a hike anywhere near that amount.
http://swissinnovation.org/newsUS/web/2013/02-130327-4c.html

Record low admission rate at Harvard

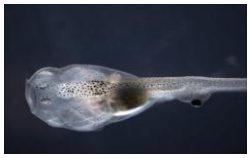
(Harvard, March 28, 2013)

Letters and email notifications of admission were sent today to 2,029 students, 5.8 percent of the applicant pool of 35,023. Slightly more than half (53.4%) of those admitted are men, reflecting the fact that more men than women applied. Foreign citizens make up 10.3 percent of the admitted students. More than 14,400 in the applicant pool scored 700 or above on the SAT critical reading test; 17,400 scored 700 or above on the SAT math test; 14,900 scored 700 or higher on the SAT writing test; and 3,400 were ranked first in their high school classes. More than 27 percent intend to concentrate in the social sciences, 23 percent in the biological sciences, nearly 18 percent in the humanities, 15 percent in engineering and computer science, 9 percent in the physical sciences, 7 percent in mathematics, and the rest are undecided.
http://swissinnovation.org/newsUS/web/2013/02-130328-4c.html

3. Life Science

Eye on tadpole tail

(The Boston Globe, March 01, 2013)



Now, a pair of serious Tufts University biologists have carefully done the experiment, demonstrating for the first time that a blind tadpole can see with an eye bulging from its tail. Researchers showed the eye can detect changes in colored light and guide the tadpole's behavior, even though the nerves from its eye connect only to the spinal cord. Remarkably, that means signals sent from the displaced eye through the central nervous system were correctly interpreted by the brain. Understanding how the auxiliary eye becomes a source of vision in a frog could help guide scientists who want to build prosthetics.
http://swissinnovation.org/newsUS/web/2013/03-130301-e2.html

Delicate DNA patents

(The Boston Globe, March 01, 2013)

The nation's highest court said it would consider a legal challenge to patents that biotechnology company Myriad Genetics holds on genes linked to risk of breast cancer. Eric Lander – a leader in the human genome project, a scientific adviser to President Obama, and the head of the Broad Institute in Cambridge – has weighed in. Although the brief is filed "in support of neither party," it is a strong critique of the reasoning that has been used to protect the gene patents that Myriad holds. In his brief, Lander proposes a thought experiment, asking the court to consider what would have occurred if such restrictive patents had been taken on HIV.
http://swissinnovation.org/newsUS/web/2013/03-130301-7a.html

Study on anesthesia induced neural activity

(MIT, March 04, 2013)

Since the mid-1800s, doctors have used drugs to induce general anesthesia in patients undergoing surgery. Despite their widespread use, little is known about how these drugs create such a profound loss of consciousness. In a new study that tracked brain activity in human volunteers over a two-hour period as they lost and regained consciousness, researchers from MIT and Massachusetts General Hospital (MGH) have identified distinctive brain patterns associated with different stages of general anesthesia. The findings shed light on how one commonly used anesthesia drug exerts its effects, and could help doctors better monitor patients during surgery and prevent rare cases of patients waking up during operations.
http://swissinnovation.org/newsUS/web/2013/03-130304-00.html

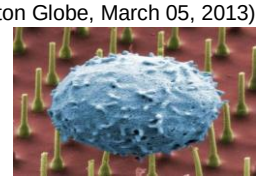
Cured newborn with HIV

(The Boston Globe, March 04, 2013)

Doctors announced that a baby had been cured of an HIV infection for the first time, a startling development that could lead to more aggressive treatment of babies infected at birth and a sharp reduction in the number of children living with the virus that causes AIDS. The baby, born in rural Mississippi, was treated with antiretroviral drugs starting around 30 hours after birth, something that is not usually done. If further study shows this works in other babies, it will almost certainly change the way newborns of infected mothers are treated all over the world. The United Nations estimates that 330,000 babies were newly infected in 2011, the most recent year for which there is data, and that more than 3 million children globally are living with HIV.
http://swissinnovation.org/newsUS/web/2013/03-130304-5c.html

Salt increases autoimmune diseases risk

(The Boston Globe, March 05, 2013)



What started as a detailed study of the inner workings of one kind of immune cell has led two teams of researchers from New England to a surprising insight: A high-salt diet may increase risk of autoimmune diseases, such as multiple sclerosis and psoriasis. The scientists found an enzyme that, when exposed to salt, causes a regular immune cell to transform into a pathogenic one, spewing out inflammatory proteins that have been linked to autoimmune illnesses. Mice genetically prone to develop a form of multiple sclerosis had more severe disease when fed a high-salt diet, the researchers reported. Daniel Cua, a senior principal scientist at Merck Research Laboratories in Palo Alto, Calif., called the studies “remarkable,” but added that the diseases are complex and salt may be just one of many risk factors.
http://swissinnovation.org/newsUS/web/2013/03-130305-e6.html

Medical marijuana business opportunities

(The Boston Globe, March 06, 2013)

When states start medical marijuana programs, the business impact extends far beyond dispensaries and cultivation operations, said Chris Walsh, editor of the Medical Marijuana (MMJ) Business Daily, a trade publication based in Denver. Denver Relief is one of several companies in Colorado — the epicenter of the nation’s medical marijuana industry — eager to capitalize on the expected “green rush” as Massachusetts’ medical marijuana program gets off the ground this year. There is lots of money to be made by the ancillary businesses — including consulting, accounting, law, and marketing — as well as in the treatment centers. Many other types of companies crop up to provide services, including hydroponics shops, software firms, and packaging vendors.
http://swissinnovation.org/newsUS/web/2013/03-130306-aa.html

Antiaging ability of red wine

(The Boston Globe, March 07, 2013)

Harvard Medical School biologist David Sinclair and his colleagues showed 10 years ago that a red wine ingredient, resveratrol, can extend life. Meanwhile, research progressed along two streams. One confirmed the importance of the ingredient and the other raised major questions about how resveratrol worked — or if it even did. A new study by David Sinclair details at a precise molecular level how resveratrol and related substances can activate an enzyme called a sirtuin. These enzymes are thought to be involved in DNA repair, inflammation, circadian clocks, and the creation of mitochondria, the power plants of the cell. Increasing the activity of sirtuins has been shown in some animal experiments to lengthen lifespan — though not in humans.
http://swissinnovation.org/newsUS/web/2013/03-130307-9d.html

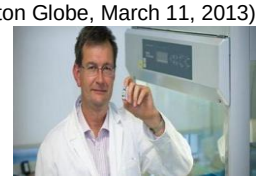
Honeybees like a shot of caffeine

(The Boston Globe, March 08, 2013)

Talk about a caffeine buzz: A new study says that honeybees get a shot of caffeine from certain flowers and that it perks up their memory. That spurs them to return to the same plant, boosting its prospects for pollination and the future of the species. Maybe it should not be a surprise that one of the flowers is the coffee plant. Its nectar offers about as much caffeine concentration as a cup of instant coffee. But some citrus plants serve caffeine too. It is found in the nectar of orange and grapefruit blossoms. The caffeine helps a bee remember that the flower’s scent promises a tasty payoff, so the bee will seek out those flowers, transferring their pollen, the researchers said.
http://swissinnovation.org/newsUS/web/2013/03-130308-3b.html

Vaccine to cure celiac

(The Boston Globe, March 11, 2013)



An autoimmune disease triggered by gluten proteins in wheat, barley, and rye, celiac disease affects some 3 million Americans. Untreated, it can destroy digestive tract tissue and can lead to anemia, osteoporosis, infertility, neurological dysfunction, or even cancer. Currently, the only solution is to avoid gluten altogether. Dr. Robert Anderson explained how his research into celiac disease promised to render the destructive disorder obsolete. His company ImmusanT is headquartered in the biotech boomtown of Kendall Square in Cambridge and is conducting clinical trials for its vaccine to cure celiac, NexVax2. Moreover, because celiac disease is currently the most well understood autoimmune disorder, many scientists believe the research could serve as a springboard to drugs for larger markets.
http://swissinnovation.org/newsUS/web/2013/03-130311-eb.html

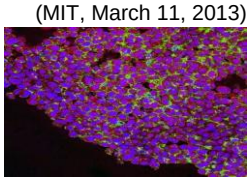
New AIDS research center

(The Boston Globe, March 11, 2013)

A leading AIDS research center unveiled its new $30 million laboratory building in Cambridge, where it aims to push ahead with efforts to develop an HIV vaccine and to study tuberculosis, which has affected hundreds of thousands of HIV patients in African and other developing countries. MIT engineers working at Ragon used a mathematical model often used in the finance world to locate more stable regions of the virus that could serve as targets for a new vaccine. Vaccines developed from that research could be tested using 3-D imaging microscopes that can show an immune cell in action, attacking the virus. The opening of the Ragon Institute's new home comes at a difficult moment for AIDS and other biomedical scientists, as they brace for possible cuts in their federal research grants driven by sequestration of the federal budget and shows the growing importance of private support.
http://swissinnovation.org/newsUS/web/2013/03-130311-64.html

Nanoscale medicine

(MIT, March 11, 2013)



New approaches to drug delivery offer hope for new, more targeted treatments. With the recent launch of MIT's Institute for Medical Engineering and Science, MIT News examines research with the potential to reshape medicine and health care through new scientific knowledge, novel treatments and products, better management of medical data, and improvements in health-care delivery. Researchers at MIT, are working on new ways to deliver RNA and DNA to treat a variety of diseases. Cancer is a primary target, but deliveries of genetic material could also help with many diseases caused by defective genes, including Huntington's disease and hemophilia. One promising avenue is RNA interference (RNAi), a naturally occurring process that allows cells to fine-tune their gene expression.
http://swissinnovation.org/newsUS/web/2013/03-130311-dd.html

Easier FDA approval for Alzheimer's drugs

(The Boston Globe, March 13, 2013)

The Food and Drug Administration plans to loosen the rules for approving new treatments for Alzheimer's disease. Drugs in clinical trial would qualify for approval if people at very early stages of the disease subtly improved their performance on memory or reasoning tests, even before they developed any obvious impairments. Companies would not have to show that the drugs improved daily, real-world functioning. For more than a decade, the only way to get Alzheimer's drugs to market was with studies showing that they improved a patient's ability not only to think and remember, but also to function day to day at activities like feeding, dressing or bathing themselves.
http://swissinnovation.org/newsUS/web/2013/03-130313-cf.html

Possible pancreas risks for diabetes drugs

(The Boston Globe, March 14, 2013)

The Food and Drug Administration is looking into new evidence that suggests a group of recently approved diabetes drugs can increase the risk of pancreatitis and other problems. The agency said that samples of pancreas tissue taken from a small number of patients showed inflammation and cellular changes that often precede cancer. Academic researchers took the samples from diabetes patients who were taking the new medications, after they died from various causes. While the FDA has issued previous alerts about the pancreatitis risk, the agency had not notified the public about precancerous cell changes seen with the drugs. ''At this time, patients should continue to take their medicine as directed until they talk to their health care professional," the agency said.
http://swissinnovation.org/newsUS/web/2013/03-130314-5c.html

Multiple mutations in single gene

(Harvard, March 14, 2013)

For deer mice living in the Nebraska Sandhills, color can be the difference between life and death. When the dark-coated mice first colonized the region, they stood out starkly against the light-colored, sandy soil, making them easy prey for predators. Over the next 8,000 years, however, the mice evolved a system of camouflage, with lighter coats, changes in the stripe on their tails, and changes in body pigment that allowed them to blend into their habitat. Harvard postdoctoral fellow Catherine Linnen, now an assistant professor at the University of Kentucky, and led by Hopi Hoekstra, Harvard professor of organismic and evolutionary biology and molecular and cellular biology, were able to show that the changes in mouse coat color were the result not of a single mutation but of at least nine mutations within a single gene.
http://swissinnovation.org/newsUS/web/2013/03-130314-c7.html

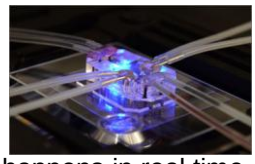
Promising Multiple Sclerosis pill

(The Boston Globe, March 16, 2013)

Biogen Idec's application to sell its first MS pill, called Tecfidera, has been approved by the FDA. Most drugs that treat the autoimmune disorder have to be injected by needle or taken through an infusion. Tecfidera has been highly anticipated by doctors and patients with MS, a disease affecting the brain and central nervous systems of about 400,000 people in the United States and 2.5 million globally. Analysts believe Tecfidera, a capsule taken twice a day, could become the top-selling MS drug to date. Its effectiveness and safety in trials compare favorably with other treatments on the market, they say, but with less severe side effects.
http://swissinnovation.org/newsUS/web/2013/03-130316-30.html

Human organs-on-chips

(Harvard, March 18, 2013)



The Wyss Institute for Biologically Inspired Engineering at Harvard University and Sony DADC announced a collaboration that will harness Sony DADC's global manufacturing expertise to further advance the Institute's Organs-on-Chips technologies. Human Organs-on-Chips are composed of a clear, flexible polymer about the size of a computer memory stick, and contain hollow microfluidic channels lined by living human cells -- allowing researchers to recapitulate the physiological and mechanical functions of the organs, and to observe what happens in real time. The goal is to provide more predictive and useful measures of the efficacy and safety of new drugs in humans -- and at a fraction of the time and costs associated with traditional animal testing.
http://swissinnovation.org/newsUS/web/2013/03-130318-0e.html

One in 50 students has autism

(The Boston Globe, March 19, 2013)

A government survey of parents says 1 in 50 US schoolchildren has autism, surpassing another federal estimate for the disorder. Health officials say the new number doesn't mean autism is occurring more often. But it does suggest that doctors are diagnosing autism more frequently, especially in children with milder problems. The earlier government estimate of 1 in 88 comes from a study that many consider more rigorous. For decades, autism meant kids with severe language, intellectual, and social impairments and unusual, repetitious behaviors. But the definition has gradually expanded and now includes milder, related conditions.The new statistic comes from a phone survey of more than 95,000 parents in 2011 and 2012. Less than a quarter of the parents contacted agreed to answer questions, and it is likely that those with autistic kids were more interested than other parents, officials said.
http://swissinnovation.org/newsUS/web/2013/03-130319-ec.html

Messenger RNA stimulate body's therapeutic proteins

(The Boston Globe, March 20, 2013)

Moderna Therapeutics Inc., a Cambridge biotechnology start-up launched with venture capital funding last year, is set to disclose that it will receive a $240 million upfront payment to license its protein-stimulating technology to drug giant AstraZeneca PLC. Under the agreement, AstraZeneca will use Moderna's "messenger RNA" technology — which stimulates the body's ability to produce therapeutic proteins — to develop as many as 40 drugs over the next five years to combat cardiovascular diseases and cancer. Moderna will be eligible for another $180 million in milestone payments if the drug programs meet certain technical goals. Eventually, it could also receive royalty payments if the drugs are approved by regulators in the United States and abroad.
http://swissinnovation.org/newsUS/web/2013/11-130320-f2.html

15-year patent for promising MS drug

(The Boston Globe, March 20, 2013)

Federal officials Tuesday gave Biogen Idec Inc. 15-year patent protection for its multiple sclerosis pill Tecfidera, which is awaiting US regulatory approval. The biotechnology company, based in Weston, said the US Patent Office granted a patent covering the 480-milligram daily dose for dimethyl fumarate, the active ingredient in Tecfidera, through 2028. That is the dosing amount sought in Biogen Idec's new drug application, which the Food and Drug Administration is expected to rule on this month. If the FDA grants approval, Tecfidera would become Biogen Idec's third MS drug on the market in the United States.
http://swissinnovation.org/newsUS/web/2013/03-130320-46.html

New, effective cancer treatment to alter immune cells

(The Boston Globe, March 20, 2013)

A treatment that genetically alters a patient's own immune cells to fight cancer has, for the first time, produced remissions in adults with a deadly type of acute leukemia that resisted chemotherapy and left little hope of survival, researchers are reporting. In one patient who was severely ill, all traces of leukemia vanished in eight days. "We had hoped but couldn't have predicted that the response would be so profound and rapid,'' said Dr. Renier J. Brentjens, the first author of a new study of the therapy and a specialist in leukemia at Memorial Sloan-Kettering Cancer Center in Manhattan. The treatment is experimental and has been used in only a small number of patients, but cancer specialists consider it a highly promising approach for a variety of cancers.
http://swissinnovation.org/newsUS/web/2013/03-130320-80.html

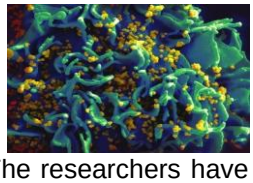
Gene therapy against blindness

(The Boston Globe, March 20, 2013)

Hemera Biosciences, a Boston start-up company working on a treatment for age-related blindness, has raised $3.8 million from investors to pursue its gene therapy for the affliction. Age-related macular degeneration typically affects people over age 55 and is the leading cause of blindness in the United States and Europe, according to groups that advocate for the blind. Approximately 8 million Americans have a form of the disease, the company said. Hemera's founders are doctors and faculty members at the Tufts University School of Medicine in Boston who have been working on the therapy for several years and started the company in 2010. Among them are Jay Duker, chairman of ophthalmology at Tufts, and Elias Reichel, vice chairman of the department.
http://swissinnovation.org/newsUS/web/2013/03-130320-34.html

New approach to discover HIV vaccine targets

(MIT, March 21, 2013)



Ragon Institute researchers develop a method to identify weak points in viral proteins that could be exploited for vaccine development. Decades of research and three large-scale clinical trials have so far failed to yield an effective HIV vaccine, in large part because the virus evolves so rapidly that it can evade vaccine-induced immune responses. Researchers from the Ragon Institute of MGH, MIT and Harvard University have now developed a new approach to vaccine design that may allow them to cut off those evolutionary escape routes. The researchers have developed and experimentally validated a computational method that can analyze viral protein sequences to determine how well different viral strains can reproduce in the body. That knowledge gives researchers an unprecedented guide for identifying viral vulnerabilities that could be exploited to design successful vaccine targets.
http://swissinnovation.org/newsUS/web/2013/03-130321-85.html

Genetic sequencers to search for more risks

(The Boston Globe, March 21, 2013)

Patients may soon find out more about their genetic risks than they wanted to — such as whether they are at higher risk for breast cancer or a heart condition — if doctors heed the advice in a long-awaited report. The report's authors, led by a Boston medical geneticist, urge doctors who sequence a patient's full set of genes for any medical reason to also look for two dozen unrelated genetic conditions, and to tell the individual if they find any of those conditions lurking in the DNA. The recommendation by a national organization of genetics specialists is the first real effort to delineate how broadly testing laboratories should look for, and reveal, additional potential genetic problems. The conditions are only ones in which advance knowledge could be used in prevention or treatment.
http://swissinnovation.org/newsUS/web/2013/03-130321-1a.html

Protein research in space

(The Boston Globe, March 24, 2013)

A Bedford biotech company is going a long way in the search for lifesaving drugs: 240 miles straight up. Emerald BioSystems Inc. is part of team of researchers using the low-gravity atmosphere of the International Space Station to develop a more complete understanding of the intricate structure of proteins, which in turn would give drug makers more insight into treating diseases. The experiment involves turning proteins into crystals, which allows scientists to make extremely detailed three-dimensional images of a protein's structure. Protein crystals are also cultivated in labs on terra firma, but gravity can cause liquids to settle or circulate in ways that prevent the formation of well-ordered crystals. That problem is largely eliminated in space, where the pull of gravity is much weaker. This "microgravity" environment should produce picture-perfect crystals.
http://swissinnovation.org/newsUS/web/2013/03-130324-98.html

Blood cleansing with coated magnetic nanobeads

(Harvard, March 25, 2013)

The Wyss Institute for Biologically Inspired Engineering at Harvard University announced today that it was awarded a $9.25 million contract from the Defense Advanced Research Projects Agency (DARPA) to further advance a blood-cleansing technology developed at the Institute with prior DARPA support, and help accelerate its translation to humans as a new type of sepsis therapy. The device will be used to treat bloodstream infections that are the leading cause of death in critically ill patients and soldiers injured in combat. To rapidly cleanse the blood of pathogens, the patient's blood is mixed with magnetic nanobeads coated with a genetically engineered version of a human blood 'opsonin' protein that binds to a wide variety of bacteria, fungi, viruses, parasites, and toxins.
http://swissinnovation.org/newsUS/web/2013/03-130325-9e.html

Complications from robot-assisted surgery

(The Boston Globe, March 25, 2013)

Reports of complications from robot-assisted surgery are rising, according to Massachusetts health officials who sent hospitals an "advisory" letter last week alerting them about their safety concerns. In some cases, it appears that doctors have used the aggressively marketed robots to perform hysterectomies and colorectal operations that were too complex for the technology, or for the surgeons' skill level in directing the robots' actions. The patient safety division urged hospitals to make sure that surgeons are proficient in robotic surgery before allowing them to operate and that doctors carefully screen patients for risk factors. It also advised hospitals to establish multidisciplinary committees to monitor results of the surgeries.
http://swissinnovation.org/newsUS/web/2013/03-130325-bc.html

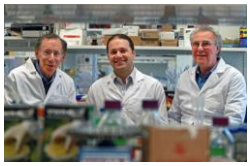
International study doubles genetic factors linked to cancers

(The Boston Globe, March 27, 2013)

A massive collaboration between cancer researchers at more than 160 institutions worldwide has nearly doubled the number of genetic regions known to be associated with three major cancers: breast, ovarian, and prostate. Individually, each of the 74 new genetic risk factors identified has very little predictive power, each increasing a person's cancer risk by a tiny amount. Collectively, however, the results reported in 13 papers represent a major step forward. Researchers said using a composite of the risk factors now known for the cancers could conceivably lay the basis for tests that could be used to stratify the population into high- and low-risk groups. Those tests could help determine who is at greatest risk from cancers discovered in 2.5 million people worldwide each year and therefore might benefit from aggressive screening, preventive treatment or lifestyle changes.
http://swissinnovation.org/newsUS/web/2013/03-130327-f4.html

Using capsules instead of needles

(The Boston Globe, March 31, 2013)



The Boston biotech community shows up at work every Monday to nudge forward new treatments for diseases like rheumatoid arthritis, Parkinson's, and macular degeneration, a major cause of blindness. And almost all of them will need to be delivered through the business end of a sharp needle, either just under the skin, or directly into a vein. Within the biopharma industry, this class of injectable drugs is growing faster than any other. That's why an idea from a new company, Entrega Inc., could represent a giant leap. It promises to deliver many of these "large molecule" drugs inside a capsule. Currently, they can't be offered in capsules because the body's digestive process would break down the drugs, and not enough would make it into the bloodstream.
http://swissinnovation.org/newsUS/web/2013/03-130301-06.html

4. Nano / Micro Technology / Material Science

Boston 3-D pen

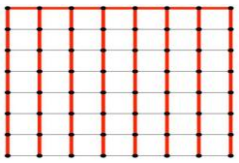
(The Boston Globe, March 04, 2013)

Somerville toy creators Peter Dilworth and Max Bogue struck Internet gold just two days after they posted a project on the crowd-funding website Kickstarter to pay for their latest - invention: a three-dimensional printer in the form of a hand-held pen. Their gadget, known as the 3Doodler, attracted so many pledges — with many people offering the minimum of $75, or more, to eventually get their hands on one of the pens — that it quickly generated $2 million in funding. The project is on track to generate well over that amount on the site, which would easily make it one of the most successful campaigns in the short history of Kickstarter.
http://swissinnovation.org/newsUS/web/2013/04-130304-f4.html

5. Information & Communications Technology

New short, fast algorithm for solving 'graph Laplacians'

(MIT, March 01, 2013)



At this year's ACM Symposium on the Theory of Computing, MIT researchers will present a new algorithm for solving graph Laplacians that is not only faster than its predecessors, but also drastically simpler. The MIT researchers — Kelner; Lorenzo Orecchia, an instructor in applied mathematics; and Kelner's students Aaron Sidford and Zeyuan Zhu — believe that the simplicity of their algorithm should make it both faster and easier to implement in software than its predecessors. But just as important is the simplicity of their conceptual analysis, which, they argue, should make their result much easier to generalize to other contexts.
http://swissinnovation.org/newsUS/web/2013/05-130301-26.html

CareCloud - Web health records

(The Boston Globe, March 11, 2013)

While many large hospital systems and multispecialty practices still opt for proprietary electronic medical systems that they can control in-house, Internet-based "cloud" systems are the fastest-growing segment of the market, analysts said. They are especially attractive to young physicians accustomed to doing work through websites and smartphones. Unlike older systems that are hosted locally, CareCloud can continuously update its software to accommodate changing health care delivery practices, payment models, and new technology. The company issues monthly updates, including lists of new features. Four years after its founding and three years after releasing an Internet-hosted software platform for sale to doctors, Miami start-up CareCloud Corp. already has become one of the fastest-growing and most disruptive players in the electronic health records business and CareCloud is planting its flag in Boston.
http://swissinnovation.org/newsUS/web/2013/05-130311-dd.html

Goldwasser and Micali win Turing Award

(MIT, March 13, 2013)

MIT professors Shafi Goldwasser and Silvio Micali have won the Association for Computing Machinery's (ACM) A.M. Turing Award for their pioneering work in the fields of cryptography and complexity theory. The two developed new mechanisms for how information is encrypted and secured, work that is widely applicable today in communications protocols, Internet transactions and cloud computing. They also made fundamental advances in the theory of computational complexity, an area that focuses on classifying computational problems according to their inherent difficulty.
http://swissinnovation.org/newsUS/web/2013/05-130313-dd.html

Control theory methods applied to computer science

(MIT, March 19, 2013)

Researchers from MIT's Laboratory for Information and Decision Systems (LIDS) and a colleague at Georgia Tech show how to apply principles from control theory — which analyzes dynamical systems ranging from robots to power grids — to formal verification. The result could help computer scientists expand their repertoire of formal-

verification techniques, and it could be particularly useful in the area of approximate computation, in which designers of computer systems trade a little bit of computational accuracy for large gains in speed or power efficiency.
http://swissinnovation.org/newsUS/web/2013/05-130319-2f.html

New software to help police

(The Boston Globe, March 17, 2013)

At a recent intelligence briefing in Springfield, State Trooper Stephen Gregorczyk learned that a local drug dealer had been robbed and was looking for revenge. Knowing little about the dealer, Gregorczyk turned to a new software tool that gathers all intelligence and background information about a suspect onto a single platform. Every known location for the dealer, every brush with law enforcement, and every person ever linked to him popped up in one neat view on Gregorczyk's computer screen. Called Nucleik, the software is being tested by Gregorczyk and his gang unit. Nucleik is the brainchild of three Harvard University engineering students who hatched it as a class project for a professor with friends in law enforcement. The students were struck by how little technology was used by police to organize all the information they gather in their surveillance of gangs.
http://swissinnovation.org/newsUS/web/2013/05-130317-8a.html

Big bet on Mobile Wallet

(The Boston Globe, March 20, 2013)

Some of the world's largest financial institutions and dozens of small tech start-ups are making big bets on the adoption of the so-called mobile wallet. Many them gathered Wednesday at Harvard University to hash out the future of buying and selling via smartphones and other Internet-connected gadgets during a two-day forum that includes MasterCard, PayPal, and the Boston mobile payments start-up Scvngr Inc. Even a former vice president showed up: Al Gore. Consumers have for years been able to use smartphone apps to pay for items in stores and restaurants. But only recently has the technology started catching on, and start-ups — many of them in Boston — as well as financial service giants, are racing to capture the emerging market. So far, acceptance of mobile wallet technology is split along generational lines, with many young people more willing to use their devices to pay for everything from a cup of coffee to a taxi ride.
http://swissinnovation.org/newsUS/web/2013/11-130320-f4.html

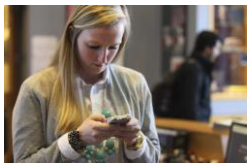
New formula to "de-anonymize" cellphone data

(MIT, March 27, 2013)

A new formula that characterizes the privacy afforded by large, aggregate data sets may be discouraging, but could help sharpen policy discussion. The proliferation of sensor-studded cellphones could lead to a wealth of data with socially useful applications — in urban planning, epidemiology, operations research and emergency preparedness. Of course, before being released to researchers, the data would have to be stripped of identifying information. However, according to a new paper, this might be more difficult than previously thought. Researchers at MIT and the Université Catholique de Louvain, in Belgium, analyzed data on 1.5 million cellphone users in a small European country over a span of 15 months and found that just four points of reference, with fairly low spatial and temporal resolution, was enough to uniquely identify 95 percent of them.
http://swissinnovation.org/newsUS/web/2013/05-130327-cc.html

Email usage declining

(The Boston Globe, March 30, 2013)



With billions of e-mails shooting around the world every day, clogging Gmail and Yahoo accounts everywhere, many are recoiling from the torrent. The young set has bypassed it altogether, seizing on social media tools such as Twitter, or texting, as their primary means of electronic chatter. Some big companies find e-mail outdated, and instead are using more sophisticated internal messaging networks that filter out outside noise. And some busy professionals say it isn't convenient anymore — a time-waster, in fact. With Twitter, Facebook, and other social media now established as everyday tools, more people are finding that they can turn down or turn off e-mail altogether. In fact, the amount of consumer e-mail traffic fell 9.5 percent between 2010 and 2012, and is projected to keep declining for the near future, according to the Radicati Group, a Palo Alto, Calif., technology research firm.
http://swissinnovation.org/newsUS/web/2013/05-130330-a2.html

6. Energy / Environment

Solar-to-fuel roadmap for crystaline silicon

(MIT, March 04, 2013)

A team of researchers at MIT is bringing the concept of an "artificial leaf" closer to reality. Their analysis lays out a roadmap for a research program to improve the efficiency of current artificial systems, and could quickly lead to the production of a practical, inexpensive and commercially viable prototype. The goal is to produce an inexpensive, self-contained system that could be built from abundant materials. Such devices could bring electricity to billions of people, mostly in the developing world, who now have little or no access to it.
http://swissinnovation.org/newsUS/web/2013/06-130304-10.html

Bridging the gap from labs to markets on energy innovation

(MIT, March 05, 2013)

A student-run conference featured several panel discussions led by leaders from energy industries and academia, as well as keynote addresses by former energy secretary Bill Richardson and by David Crane, the CEO of NRG Energy, America's leading independent power generator. The theme of the eighth annual MIT Energy Conference was how to find better ways to get ideas out of the laboratory and into the marketplace in order to make improvements in the energy landscape for the United States and for the world. According to Crane, the current problem is that "we exist in an industry of Neanderthals … the least innovative industry in history."
http://swissinnovation.org/newsUS/web/2013/06-130305-6f.html

Boston is building a greener city

(The Boston Globe, March 18, 2013)

City of Boston officials are asking developers to design and build small communities of ultra-efficient buildings that collectively will produce more energy than they consume. Proposals are due by mid-June, with city officials hoping to select a winner by year's end and have construction underway in 2014. 1.3 acres of land would be filled with a mix of dozens of housing units and communal gardens, and could include space for retail, commercial, or light industrial use in order to build an "E+ Community" The buildings will have to be energy positive, which means that through the use of solar panels and other sustainable building elements, they actually generate more energy than the occupants consume and will have to meet the industry's highest standard for energy efficiency.
http://swissinnovation.org/newsUS/web/2013/06-130318-ce.html

New England's troublesome gas dependency

(The Boston Globe, March 19, 2013)

The region's growing dependence on natural gas to generate electricity is a serious threat that could cause more frequent power outages and increase energy prices, according to Gordon van Welie, head of New England's power grid operator. Natural gas is used by power plant operators to generate more than half of the region's electricity, largely replacing a diversified mix of oil, coal, gas, and nuclear power. Nuclear now accounts for about one-third of the region's electricity production. However, while natural gas is much cleaner than fuel oil and coal, New England's limited natural gas pipeline capacity is constraining supplies, leading the region to experienced price spikes during periods of high demand. Part of the solution lies in redesigning the wholesale electric market.
http://swissinnovation.org/newsUS/web/2013/06-130319-c2.html

How the Earth once lost 76% of its living species

(MIT, March 21, 2013)

Some 200 million years ago, an increase in atmospheric CO2 caused acidification of the oceans and global warming that killed off 76 percent of marine and terrestrial species on Earth, marking the end of the Triassic period and the onset of the Jurassic, clearing the way for dinosaurs to dominate Earth for the next 135 million years. At the time, massive volcanic eruptions from a large region known as the Central Atlantic Magmatic Province (CAMP) spewed forth huge amounts of lava and gas, including carbon dioxide, sulfur and methane. This sudden release of gases into the atmosphere may have created intense global warming and acidification of the oceans that ultimately killed off thousands of plant and animal species. Scientists are working ever harder in identifying volcanism and the changes it brings in the atmosphere as factors of extinction.
http://swissinnovation.org/newsUS/web/2013/06-130321-e2.html

Quantum dot solar cells with 35% efficiency

(MIT, March 25, 2013)

Using particles called quantum dots as the basis for a photovoltaic cell is not a new idea, but attempts to make such devices have not yet achieved sufficiently high efficiency in converting sunlight to power. However, a new wrinkle added by a team of researchers at MIT promises to provide a significant boost. By embedding traditional quantum cells within a forest of nanowires, it creates an advantage over the traditional way of making photovoltaics. These nanowires are conductive enough to extract charges easily, but long enough to provide the depth needed for light absorption. This produces a 50 percent boost in the current generated by the solar cell, and a 35 percent increase in overall efficiency. The process produces a vertical array of these nanowires, which are transparent to visible light, interspersed with quantum dots.
http://swissinnovation.org/newsUS/web/2013/06-130325-f9.html

7. Engineering / Robotics / Space

SpaceX delivers capsule to space station

(The Boston Globe, March 04, 2013)

To NASA's relief, the SpaceX company's Dragon capsule pulled up to the orbiting lab with all of its systems in perfect order. Station astronauts used a hefty robot arm to snare the pilotless Dragon. The Dragon's arrival came a full day late. The 250-mile-high linkup above Ukraine culminated a two-day chase that got off to a shaky start. Moments after the Dragon reached orbit, a clogged pressure line or stuck valve prevented the timely release of the solar panels and the firing of small maneuvering rockets. Flight controllers struggled for several hours before gaining control of the capsule.
http://swissinnovation.org/newsUS/web/2013/07-130304-0c.html

MIT robots challenge animal running efficiency

(MIT, March 08, 2013)

A 70-pound "cheetah" robot designed by MIT researchers may soon outpace its animal counterparts in running efficiency: In treadmill tests, the researchers have found that the robot — about the size and weight of an actual cheetah — wastes very little energy as it trots continuously for up to an hour and a half at 5 mph. The key to the robot's streamlined stride: lightweight electric motors, set into its shoulders, that produce high torque with very little heat wasted.
http://swissinnovation.org/newsUS/web/2013/07-130308-28.html

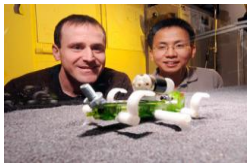
Mars environment habitable in the past

(The New York Times, March 13, 2013)

Several billion years ago, Mars may well have been a pleasant place for tiny microbes to live, with plenty of water as well as minerals that could have served as food, NASA scientists said at a news conference on the latest findings from their Mars rover. But they have yet to find signs that actual microbes did live in that oasis. "We have found a habitable environment that is so benign and supportive of life that probably if this water was around and you had been on the planet, you would have been able to drink it," said John P. Grotzinger, the California Institute of Technology geology professor who is the principal investigator for the NASA mission.
http://swissinnovation.org/newsUS/web/2013/07-130313-53.html

Off-Road robot inspired by nature

(AAAS, March 21, 2013)



Researchers can learn a lot from a lizard scampering across the hot desert sand or an insect crawling atop a pile of plant litter. Chen Li and colleagues from the Georgia Institute of Technology took cues from such creatures and designed a robot that uses six legs to traverse a bed of dry, loose grains. The robotic design isn't as effective as a lizard's but it can move through sand at a reasonable pace without getting stuck, and it may help to boost the performance of roving and walking robots, such as the Mars rovers, the researchers said. They noted that previous studies of objects moving through air and water have led to improvements of industrial products such as aircraft wings and underwater robots.
http://swissinnovation.org/newsUS/web/2013/07-130321-53.html

Better asteroid detection necessary

(The New York Times, March 21, 2013)

Making a case for the need to detect asteroids before they hit Earth, a former astronaut said that the number of casualties would have been enormous had the space rock that exploded in Russia last month blown apart directly over New York City instead. About 1,500 people were injured when the roughly 18m diameter meteor exploded high in the atmosphere near the Russian city of Chelyabinsk on Feb. 15. Most of the injuries were caused by flying glass from shattered windows when a shock wave from the explosion — estimated to have been about 30 times more powerful than the atomic bomb that destroyed Hiroshima — hit the city a minute and a half later. Had that shock wave been a lot closer to a city, it would have caused a lot more damage.
http://swissinnovation.org/newsUS/web/2013/07-130321-c3.html

Two-way Dragon cargo ship returns to Earth

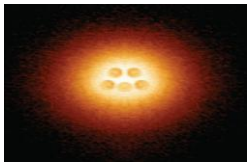
(The Boston Globe, March 26, 2013)

The SpaceX Dragon capsule returned to earth with a full science load from the International Space Station. The privately owned cargo ship splashed down in the Pacific right on target, 250 miles off the coast of Mexico's Baja Peninsula, five hours after leaving the orbiting lab. SpaceX confirmed the Dragon's safe arrival via Twitter. The capsule brought back more than 1 ton of science experiments and old station equipment, as well as 13 toy sets of Lego building blocks that were used by space station crews over the past couple of years to teach children about science. The Dragon is the only supply ship capable of two-way delivery. With the space shuttles retired, NASA is paying SpaceX more than $1 billion for a dozen resupply missions.
http://swissinnovation.org/newsUS/web/2013/07-130326-e5.html

8. Physics / Chemistry / Math

Predicted state of atomic collapse seen for first time

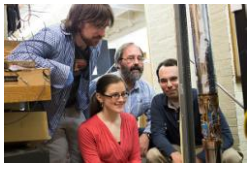
(MIT, March 14, 2013)



Atomic collapse, a phenomenon first predicted in the 1930s based on quantum mechanics and relativistic physics but never before observed, has now been seen for the first time in an "artificial nucleus" simulated on a sheet of graphene. The observation not only provides confirmation of long-held theoretical predictions, but could also pave the way for new kinds of graphene-based electronic devices, and for further research on basic physics. Leonid Levitov, a professor of physics at MIT and a co-author of the paper, says this work follows up on an early success of quantum mechanics that showed why matter is stable: It detailed how the positive charge of an atomic nucleus, and the negative charge of its surrounding electrons, balance each other out, preventing the atom from collapsing or flying apart.
http://swissinnovation.org/newsUS/web/2013/08-130314-33.html

1000 times more accurate measurement of magnetism - breakthrough

(Harvard, March 25, 2013)



In a breakthrough that could one day yield important clues about the nature of matter itself, a team of Harvard scientists has measured the magnetic charge of single particles of matter and antimatter with unprecedented precision. The team led by Gerald Gabrielse, the George Vasmer Leverett Professor of Physics, was able to capture individual protons and antiprotons in a "trap" created by electric and magnetic fields. By tracking the oscillations of each particle, the team was able to measure the magnetism of a proton 1,000 times more accurately than any proton had been measured before. Similar tests with antiprotons produced a 680-fold increase in accuracy in the size of the magnet in an antiproton.
http://swissinnovation.org/newsUS/web/2013/08-130325-cd.html

9. Architecture / Design

Modelling ancient Egyptian architecture

(Harvard, March 08, 2013)

The Temple of Amun-Ra at Karnak isn't the most famous ancient site in Egypt — that honor goes to the Pyramids at Giza — but newly developed reconstructions using 3-D virtual reality modeling make clear its architectural importance and rich history. Elaine Sullivan, a visiting assistant professor of Harvard, worked with her colleagues from the University of California, Los Angeles, to digitize 100 years of analyses and excavation records to create an interactive historical document of the architectural phases of the Karnak temple. Sullivan presented her work in a Science Center lecture titled "The Temple of Amun-Ra at Karnak: 2000 Years of Rituals and Renovations in 3-D."
http://swissinnovation.org/newsUS/web/2013/09-130308-63.html

Floating cities to cope with rising sea levels

(Harvard, March 19, 2013)

By the end of this century, sea levels could rise worldwide by more than 1m, inundating coastal cities and spurring catastrophic storms roughly every three years. In Africa, at least 20 cities — including Cairo, Egypt; Cape Town, South Africa; and Kinshasa, Democratic Republic of the Congo — are especially vulnerable to rising seas. At the top of the list is Lagos, Nigeria, a fast-growing, low-lying coastal city of 13 million. In the face of that watery future, Nigerian architect Kunlé Adeyemi, founder of the firm NLÉ and a recent visitor to Harvard, proposes a solution: Build houses that float. His African Water Cities Project envisions a future in which modular coastal dwellings are built on platforms stacked with flotation devices.
http://swissinnovation.org/newsUS/web/2013/09-130319-46.html

10. Economy, Social Sciences & Humanities

Predicting the progress of technology

(MIT, March 06, 2013)

Researchers at MIT and the Santa Fe Institute have found that some widely used formulas for predicting how rapidly technology will advance offer superior approximations of the pace of technological progress. The new research is the first to directly compare the different approaches in a quantitative way, using an extensive database of past performance from many different industries. The analysis indicates that Moore's Law is one of two formulas that best match actual technological progress over past decades. The top performer, called Wright's Law, was first formulated in 1936: It holds that progress increases with experience — specifically, that each percent increase in cumulative production in a given industry results in a fixed percentage improvement in production efficiency.
http://swissinnovation.org/newsUS/web/2013/10-130306-1b.html

Political stasis following Fukushima in Japan

(MIT, March 11, 2013)

After an earthquake and tsunami struck Japan on March 11, 2011, soon followed by the slow-motion meltdown of a nuclear reactor in Fukushima, many observers expected to see a wave of political or social change sweep Japan as well. Instead, as Richard Samuels, a professor in MIT's Department of Political Science, reflects, there was "nothing on the scale that most of us expected." After a hiatus, several of Japan's nuclear power plants came back on line, and long-standing limitations on the role of the military were not lifted. Much-discussed changes in government structures did not come to pass. This is the subject of a new book by Samuels. The book, titled "3.11," after the initial date of the event, is being published by Cornell University Press.
http://swissinnovation.org/newsUS/web/2013/10-130311-01.html

Global Night Light Patterns Reveal Economic Shift to the East

(MIT Technoloy Review, March 15, 2013)

The amount of light produced by a society is closely correlated with its economic status–rich developed countries tend to be brighter at night than poor developing ones. So an interesting question is how the distribution of light

across our planet is changing over time. The authors look in particular at the dynamics of night lights. They calculate the planet's mean center of light and measure how it has moved in the last couple of decades. "Over the past 17 years, the center of light has been gradually shifting eastwards over a distance of roughly 1000 km, at a pace of about 60 km per year," they say.
http://swissinnovation.org/newsUS/web/2013/10-130315-aa.html

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

Commercially linking art and science

(The Boston Globe, March 03, 2013)

David Edwards is the scientific founder of two companies developing new approaches to drug delivery, and of two working on consumer products. Civitas, the first biotech company, is developing an inhaler that delivers an approved drug for Parkinson's sufferers in a faster-acting, more convenient way than pills. The other biotech, Pulmatrix, is conducting trials of an inhalable drug for children with cystic fibrosis. Edwards also has his eye on less regulated markets, that can influence human health. This has led him to start companies like WikiCell, which is developing edible and allnatural food packaging. WikiCellshares an office in Kendall Square with AeroDesigns, a company that makes an energy product called the AeroShot. Inside a lipsticksized tube is a powdery mixture of caffeine and Vitamin B. When you put it in your mouth and inhale, the powder coats the inside of your cheeks and dissolves.
http://swissinnovation.org/newsUS/web/2013/11-130303-2a.html

Hopper: a new kind of travel package site

(The Boston Globe, March 04, 2013)

The company Hopper was founded in 2007. It has raised $22 million and has more than 20 employees in Cambridge and Montreal. And the founder says there is still no firm target date for launching the company's product. The travel search site's ambitions are lofty: to help consumers plan trips better than any tool that has come before. Hopper's goal is to let you search for what you actually want to do on your trip, as opposed to cobbling together an airline ticket and hotel and rental car reservations. Punch in "surfing lessons in Mexico in May," and Hopper will return ratings of various surfing schools; prices for hotels, B&Bs, and vacation home rentals; and real time air fares.
http://swissinnovation.org/newsUS/web/2013/11-130304-9a.html

MIT Media Lab creates mechanisms to invest in student start-ups

(The Boston Globe, March 10, 2013)

Joi Ito, director of the highest profile research group at MIT, the MIT media Lab is creating mechanisms to invest in student start-ups. An as-yet-unnamed fund would collect money from Media Lab sponsors and use it to support students who want to start companies based on their research at the lab. One key purpose of the new fund, Ito explained, will be to encourage students to finish their degrees before they start companies. But once they are done, the fund will provide a six-month stipend to lay the groundwork for the company and help make sure the new venture has clear rights to the intellectual property developed at the lab.
http://swissinnovation.org/newsUS/web/2013/11-130310-cf.html

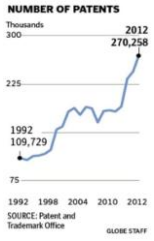
Innovation Economy Index

(Massachusetts Technology Collaborative, March 15, 2013)

The Index of the Massachusetts Innovation Economy, published annually since 1997, is the premier fact-based benchmark for measuring the performance of the Massachusetts knowledge economy. Emerging from the recession, much of the Massachusetts innovation economy is growing. Most of its cluster industries are adding jobs—some of them faster than their counterparts in other leading technology states (LTS), while some industries are not faring as well. However, important indicators of economic health, such as wages, productivity and exports, are on the rise. Massachusetts' research and development (R&D) assets, which help fuel innovation, remain strong. And, the Commonwealth continues to be a leader in turning R&D funding into ideas, technologies and companies, with strong performances on indicators such as technology licensing, patents and business formation.
http://swissinnovation.org/newsUS/web/2013/11-130315-ec.html

IP Clinic

(The Boston Globe, March 16, 2013)



Suffolk Law's nine-month-old Intellectual Property, or IP's clients include start-ups developing apps for mobile devices, film companies seeking copyright permission for photos used in documentaries, a dance company looking to trademark choreography, and other small business owners and entrepreneurs who can't afford the often large legal bills associated with intellectual-property issues. The intent of the clinic — certified under a Massachusetts Supreme Judicial Court rule that allows students to practice law under the supervision of law school faculty — is to provide Suffolk students with real-life cases and clients grappling with intellectual property matters. The seven students in Suffolk's IP Clinic help draft trademark filings, technology licensing contracts, employment agreements, and other legal documents, in addition to providing legal research and other services for clients. The clinic also aims to meet a growing demand by companies for assistance in increasingly thorny and contentious intellectual property disputes.
http://swissinnovation.org/newsUS/web/2013/11-130316-94.html

Angel investors rush into tech startup investment

(The Boston Globe, March 16, 2013)

	ANGEL INVESTORS	VENTURE CAPITALISTS
Who	Wealthy individuals with a net worth over $1 million	Professional investors
Source of funds	Use their own money for the youngest start-ups	Funds from institutions to more seasoned entrepreneurs
Size of stake	Typically between $10,000 and $50,000	$7 million on average
Role	Usually not active in day-to-day management	Close oversight and active board member
Success rate	52 percent of deals usually lose money	40 percent eventually fail

SOURCES: Angel Capital Association, National Venture Capital Association

Angel investors have long been part of the tech ecosystem. Usually they are successful entrepreneurs themselves, who after making a big score selling their own company, become a grey eminence to the next generation of tech whizzes, doling out money and business wisdom in equal parts. Now though, as their numbers around Boston multiply, many of the newest angel investors are neophytes when it comes to technology's undiscovered possibilities. But they bring their own form of experience and acumen to a start-up, as well as the equally crucial ingredients of money and a willingness to bankroll the bleeding edge of the business world. While hard to quantify on a broad basis, angel investors have indisputably become integral players in the local tech economy, seeding many of the one-, two- and four-person start-ups that are crowding the many innovation centers that provide shared-working spaces to newly born companies.
http://swissinnovation.org/newsUS/web/2013/11-130316-99.html

Crashpad - shared homes for entrepreneurs

(The Boston Globe, March 17, 2013)

Two local tech entrepreneurs who have done a bit of real estate investing recently opened CrashPad, the first "co-housing" facility for entrepreneurs. It's already full, and they have plans for similar facilities in other cities. The furnished house not only comes with two kitchens, a living room, and high-speed Wi-Fi but also a programming director who will arrange guest speakers and events such as wine tastings and an in-house "resident facilitator" who does things like coordinate dinner. Interestingly, there's no TV.
http://swissinnovation.org/newsUS/web/2013/11-130317-1b.html

Canada opens tech accelerator in Kendall Square

(The Boston Globe, March 17, 2013)

Now that the world's biggest tech companies have opened there, foreign governments are trying to get in on the action in Kendall Square, too. The Canadian government has launched a business accelerator program in Cambridge to help its most promising young start-ups tap into the expertise and energy of the growing innovation economy around the Massachusetts Institute of Technology, and ideally return home with new customers, connections, and ideas. Its program, beginning later this month, will include eight companies that each will spend three months rubbing shoulders with other entrepreneurs, tech executives, and venture capitalists at the Cambridge Innovation Center, which is home to about 500 start-ups and organizations.
http://swissinnovation.org/newsUS/web/2013/11-130317-34.html

Kendall Square - the hotspot of the innovation economy

(MIT, March 20, 2013)

At 8 Cambridge Center — in the heart of Kendall Square, a stone's throw from MIT — sits the headquarters of Akamai Technologies, a web-services company that provides one of the world's largest distributed-computing platforms. Much as nearby Biogen Idec got its start during Kendall's rebirth as a life-sciences hub in the 1970s and 1980s, Akamai opened during the tech boom of the late 1990s. Akamai has moved its operations to several different locations in Kendall Square since its 1998 founding, but never more than a few blocks from MIT.
http://swissinnovation.org/newsUS/web/2013/11-130320-92.html

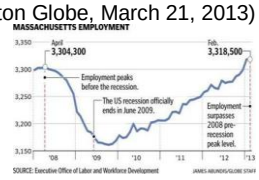
Rebounding IPOs

(The Boston Globe, March 21, 2013)

A pair of Watertown biotechnology start-ups together raised more than $130 million through initial public offerings, a sign that the long-sluggish IPO market may be rebounding. But investor appetite for the newly public companies - diverged. Shares of Enanta Pharmaceuticals Inc., which is developing drugs to combat the hepatitis C virus, climbed nearly 23 percent on the company's first day of trading. But the stock price of Tetraphase Pharmaceuticals Inc., which is working on antibiotics to treat abdominal and urinary tract infections, edged up just 0.7 percent from the offering price.
http://swissinnovation.org/newsUS/web/2013/11-130321-bf.html

Mass regained jobs lost in last recession

(The Boston Globe, March 21, 2013)



Massachusetts has regained all the jobs lost in the last recession after a steady recovery that has progressed faster than the nation's. Massachusetts has regained all the jobs lost in the last recession after a steady recovery that has progressed faster than the nation's. The state unemployment rate fell to 6.5 percent last month, from 6.7 percent in January. Massachusetts has recovered from the last recession better than the nation, which still has 3 million fewer jobs than it had when the national downturn began in December 2007 and an unemployment rate of 7.7 percent. But the state's employment remains 66,500 jobs below the record high, reached in February 2001 before the dot-com bubble of that era burst.
http://swissinnovation.org/newsUS/web/2013/11-130321-67.html

One of largest health-care VC firms favors startups

(The Boston Globe, March 25, 2013)

Third Rock Ventures, a Boston venture capital firm, has closed a new $516 million fund and plans to begin investing in innovative life-sciences start-ups in the next couple of months. The fund is Third Rock's third and biggest to date, bringing the total it has raised over the past six years to about $1.3 billion. Third Rock raised the money for its new fund in just five months, company executives said. Third Rock, one of the largest venture capital firms targeting the health care sector, has an unusual model for investing, often preferring to launch companies rather than to fund existing companies.
http://swissinnovation.org/newsUS/web/2013/11-130325-9b.html

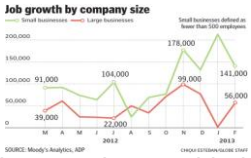
Report on effect of governement investment on local economy in life sciences

(The Boston Globe, March 25, 2013)

Halfway through a decade of investment promised by Governor Deval Patrick's 10-year, $1 billion life-sciences initiative, launched in 2008, the state has spent only about a third of the money targeted to promote the biotechnology and medical device industries in Massachusetts. The authors of a report by the Boston Foundation say the effort has helped stimulate a key sector of the state's economy, creating more than 8,000 jobs through capital grants, tax incentives, and business loans. They said the $300 million spent by the state so far has spurred more than $1 billion in spending by private companies. Those businesses include eight of the world's 10 largest pharmaceutical companies that have set up shop in the state — and created thousands of additional jobs. The 8,000 jobs created, as cited in the report, are fewer than the 8,750 estimated by the center last year. In 2008, when the initiative was launched just before the economic slowdown, the governor suggested it could generate 250,000 jobs over 10 years.
http://swissinnovation.org/newsUS/web/2013/11-130325-04.html

Optimistic hiring

(The Boston Globe, March 26, 2013)



Small businesses, defined as those with fewer than 500 workers, employ about half of private-sector workers in both Massachusetts and the nation, and generated about 65 percent of all new jobs across the country over the last 17 years, according to the Small Business Administration. After setting records for pessimism in recent years, small business optimism in February increased for the third straight month, according to the National Federation of Independent Business, a small business advocacy group based in Washington. Small businesses have added nearly 1.3 million jobs nationally over the past year, and in the last six months, they have hired nearly twice as many workers as in the previous six months, according to the forecasting firm Moody's Analytics and the national payroll company Automatic Data Processing Inc., known as ADP.
http://swissinnovation.org/newsUS/web/2013/11-130326-6e.html

12. General Interest

Egyptian mummy examined by CT scan

(The Boston Globe, March 06, 2013)

The team at Massachusetts General Hospital hoisted the patient off the gurney and gingerly guided him inside the massive cavern of a CT scanning machine. The patient did not move. He is a 2,500-year-old mummy named Padihershef, wrapped tight in ancient Egyptian linen, most of the details of his life a mystery. The goal, officials said, is to better understand Padihershef's state of health at the time of his death, his state of preservation, and his mummification process. What little is known of Padihershef was gleaned by experts from the heilographics on his inner and outer coffins. He was an unmarried stonecutter from Necropolis who tunneled into cliffs to make tombs for the nobles. He was the son of Her-ibes-enes and Iref-iaen-Hershef, his father. And he lived a simple life, dying sometime in his 40s.
http://swissinnovation.org/newsUS/web/2013/12-130306-64.html

The heart of darkness revisited

(Harvard, March 07, 2013)

At the Carr Center for Human Rights Policy at the Harvard Kennedy School, an exhibit, "Congo on the Wire," is ongoing through June 30. It is the work of photojournalist Finbarr O'Reilly, a fellow this year at the Nieman Foundation for Journalism at Harvard. The images are a gift to the Carr Center from Thomson Reuters, the news agency for which O'Reilly is the chief photographer in West and Central Africa. The photos also summarize the tragedy and travail of the Democratic Republic of the Congo (DRC), a central African nation riven by war. Since 1998, the death toll — from combat, disease, and starvation — has numbered about 5.4 million, making it the world's deadliest conflict since World War II.
http://swissinnovation.org/newsUS/web/2013/12-130307-97.html

Jobless rate at new low of 7.7%

(The Boston Globe, March 09, 2013)

Employers created more jobs than expected in February, pushing the US unemployment rate down to 7.7 percent, its lowest level in four years. The 236,000 new jobs were well ahead of forecasts, signaling broad improvement in the economy, with the strongest hiring in business and professional services, construction, and health care, according to the US Department of Labor. They helped bring the unemployment rate down from 7.9 percent in January. In February, the number of long-term unemployed people — those who have been out of work for 27 weeks or longer — was unchanged at 4.8 million. Those people accounted for 40 percent of all the unemployed.
http://swissinnovation.org/newsUS/web/2013/12-130309-e5.html

History on human impact on the ocean

(The Boston Globe, March 19, 2013)

A University of New Hampshire associate professor of history has been honored for his book on the history of the human impact on the ocean. W. Jeffrey Bolster has written ''The Mortal Sea: Fishing the Atlantic in the Age of Sail.'' While overfishing is often thought of as a contemporary problem, Bolster examines how fishermen were transforming the sea long before fishing became an industrial enterprise. The western Atlantic's fishing banks, stretching from Cape Cod to Newfoundland, have attracted fishermen for more than 500 years. Bolster has won the annual Bancroft Prize established at Columbia University.
http://swissinnovation.org/newsUS/web/2013/12-130319-cc.html

6-month funding bill passed

(The Boston Globe, March 21, 2013)

Congress approved a shortterm funding bill that ends the possibility of a federal government shutdown next week. But a broader budget battle about taxes and spending for the year is just beginning. The stopgap spending resolution, approved on a broad bipartisan vote in the House, locks in the $85 billion across-the-board spending cuts known as the sequester through the Sept. 30 end of the fiscal year. But the legislation includes provisions that will blunt their impact. That will give officials time to see whether the new budget will still require

22 unpaid days or could result in fewer lost days for workers. The House vote, which provides funding for the government for the six months starting March 28, came a day after the Senate approved the bill.
http://swissinnovation.org/newsUS/web/2013/12-130321-bb.html

Higher US growth projections

(The Boston Globe, March 30, 2013)

US consumers stepped up spending in February after their income jumped, aided by a stronger job market that offset some of the drag from higher taxes. The gains led economists to predict stronger economic growth at the start of the year. Consumer spending rose 0.7 percent in February from January, the Commerce Department said. It was the biggest gain in five months and followed a revised 0.4 percent rise in January, which was double the initial estimate. Americans spent more because their income rose 1.1 percent last month. After seeing the report, Paul Ashworth, chief US economist at Capital Economics, raised his growth forecast for the first quarter by a full percentage point. Ashworth now expects growth in the January-March quarter increase to an annual rate of 3 percent.
http://swissinnovation.org/newsUS/web/2013/12-130330-ef.html

13. Calls for Grants / Awards

2013 ThinkSwiss Research Scholarships

(Swiss Government, March 13, 2013)

For the seventh consecutive year ThinkSwiss will select 15 to 20 highly talented and motivated students from all fields of study who are currently enrolled at a U.S. university. The awardees will receive a monthly stipend of about $1,000 for a period of up to three month. Find out yourself what the ThinkSwiss Research Scholarships are all about by reading the Brainstorm Blog (http://thinkswiss.org/brainstormblog/), the online platform where you find impressions, experiences and thoughts of U.S. students who are visiting Switzerland. For instance, Agnes S., ThinkSwiss Research Scholar 2011, recently said: If someone were to ask me to describe my summer to them using only five words, I would tell them: “best summer of my life”.
http://swissinnovation.org/newsUS/web/2013/13-130313-62.html

Summer internships in clean technology start-ups

(Greentown Labs, March 14, 2013)

Greentown Labs offers 1700 square metres of office and prototyping space to over 20 clean-technology start-up companies. Various companies located in Greentown Labs have open positions. One of these companies is Altaeros Energies, an early-stage company working to bring the first airborne wind turbine to market. Another company is Energy Intelligence, developing the first cost-effective road-based energy harvesting solution. More positions are available at Cleantech Open, the world’s oldest and largest cleantech startup accelerator program with the mission of finding, funding, and fostering the most successful cleantech startups. Lastly, there is Dynamo Micropower, a small power products company that is developing a cost competitive small gas turbine for use in small distributed generation applications.
http://swissinnovation.org/newsUS/web/2013/13-130314-e1.html

Upcoming Science and Technology Related Events

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