

Science-USA (Boston+), June 2013

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swissnex Boston welcomes you to the 9th edition of the monthly newsletter *Science-USA (Boston+)*. This electronic publication is designed to report on trends in education, research, innovation and art. Created for busy people in Switzerland, the newsletter will consist of two spotlights on outstanding Swiss talents and a concise overview of the developments in the science and innovation industries on the US East Coast. Additionally, we will provide you with a taste of swissnex Boston activities throughout the year.

Swiss Spotlight

Scientist: Elucidating the Molecular Pathways behind Leukemia

(Jascha Forster, June 01, 2013)

Jascha Forster works in a team at the Dana-Farber Cancer Institute that investigates the role of an AMPK-family member protein in the development of hematologic tumors. A better understanding of the driving forces behind tumor growth will eventually lead to more effective cancer treatments. Jascha is currently pursuing a master's degree in management, technology and economics (MTEC) at ETH Zurich. He received a fellowship of the Swiss Study Foundation ("Schweizerische Studienstiftung") that enabled him to carry out his MSc thesis in the laboratory of Prof. Jean Zhao at the department of biological chemistry and molecular pharmacology at Harvard Medical School.

<http://swissinnovation.org/newsUS/web/2013/00-130601-19>



Startup: Venture Leaders 2013

(swissnex Boston, June 11, 2013)

From June 11 to June 21, 19 selected entrepreneurs from Switzerland visited Boston for a bootcamp on entrepreneurship. For 10 days, the "Swiss National Startup Team" dived into the East coast entrepreneurial ecosystem and mindset. The entrepreneurs were carefully selected from a pool of more than 100 candidates in Switzerland. About three fourths of the finalists are linked to one of the Swiss Technology Institute (ETH Zurich or EPFL). This 10-day bootcamp is called Venture Leaders, and was organized for the 13th time in 2013. It is created by Venturelab (IFJ) represented by Beat Schillig and Jordi Montserrat in cooperation with swissnex Boston. The program consists of several building blocks to introduce the participating companies to gain insights in the different facets of entrepreneurship. Those include lectures by business professors from Babson and MIT; and workshops, expert sessions and execution workshops with successful entrepreneurs of the Greater Boston Area. The program is rounded off by a pitching competition and meetings with VCs.

<http://swissinnovation.org/newsUS/web/2013/00-130611-69>





swissnex Boston Events

Swiss-Initiative: World's largest solar boat visits Boston

(swissnex Boston, June 23, 2013)

The world's largest solar-powered boat, the MS Tûranor PlanetSolar, successfully docked at Boston's Fan Pier today and will remain anchored in Boston through Wednesday, June 26. Currently conducting scientific climate change research along the Gulf Stream for the University of Geneva's DeepWater Expedition, the PlanetSolar boat was welcomed to Fan Pier by the swissnex Boston team and the city of Boston's chief of energy and environment, Mr. Brian Swett. The first boat to travel around the world exclusively powered by solar energy, the PlanetSolar features more than 5,500 square feet of solar panels and produces zero gasoline or CO2 emissions. The PlanetSolar DeepWater expedition is allowing researchers from the University of Geneva to take advantage of the exclusive features of the solar boat. The researchers are taking physical and biological measurements along the Gulf Stream which will improve our understanding of the interactions between the ocean and the atmosphere. Boston is PlanetSolar's final American destination after making prior stops in Miami and New York.

<http://swissinnovation.org/newsUS/web/2013/00-130623-39>



Swiss Style Reboot

(swissnex Boston, June 01, 2013)

The Swiss Style Reboot exhibition presents the graphic design principles developed by the pioneers of Swiss Style, which is characterized by clear, functional and highly crafted visual communication. It explores their particular relevance for today's infographics, data visualizations and interactive interfaces. The first part of the exhibition showcases masterpieces by mid-20th century pioneers of Swiss Style, including Josef Müller-Brockmann, Max Bill and Karl Gerstner. The second part of the exhibition measures the significance of Swiss Style within today's information-design community. It presents video interviews with well-known information architects from the U.S. and elsewhere, focusing on if and how they apply this style's principles in everyday practice. The third part showcases new research by international designers who are currently extending the Swiss legacy into infographics, data visualization and interaction design.

<http://swissinnovation.org/newsUS/web/2013/00-130601-bf>



Water Diplomacy Workshop

(swissnex Boston, June 24, 2013)

swissnex Boston was pleased to partner again this year with the organizing universities of the Water Diplomacy Workshop 2013 (Tufts University and MIT). 30 participants from 17 countries participated in the workshop which aims at training the trainers in negotiation on trans-border water issues. Switzerland as "Water Tower" for Europe puts Global Water Management high on the agenda of Swiss Foreign Policy. This year's special guest was Dr. Gete Zeleke who is a research associate of the university of Berne, Switzerland. He is the director of the Water and Land Resource Center in Addis Ababa, Ethiopia. This center is fully financed by the Swiss Development Agency, a directorate of the Federal Department of Foreign Affairs. The projects of the Center are coordinated by and affiliated with the University of Berne.

<http://swissinnovation.org/newsUS/web/2013/00-130624-9f>



>> More past events at swissnex Boston:

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

1. Policy

Cybersecurity talks between US and China

(The Boston Globe, June 02, 2013)

The United States and China have agreed to hold regular, high-level talks on how to set standards of behavior for cybersecurity and commercial espionage, the first diplomatic effort to defuse the tensions over what the United States says is a daily barrage of computer break-ins and theft of corporate and government secrets. However, the recent leaks exposing top-secret U.S. surveillance programs came at an opportune time for China: the leaks revealed the NSA has been secretly spying on Chinese targets for years.

<http://swissinnovation.org/newsUS/web/2013/01-130602-12>

No patents on naturally occurring DNA segments

(The Boston Globe, June 13, 2013)

The US Supreme Court unanimously ruled that human genes are “a product of nature” and cannot be patented. The ruling came in a challenge to patents that Utah-based biotechnology company Myriad Genetics Inc. holds. “A naturally occurring DNA segment is a product of nature” and can’t be patented, Justice Clarence Thomas wrote on behalf of the court, which struck down five of Myriad’s claims for patent protection. Myriad Genetics holds patents on gene mutations that have been shown to increase the risk of breast and ovarian cancer. Patents are awarded for inventions and new ways of making things, and Myriad argued that pinpointing the location of mutated genes, and isolating and sequencing those genes, amounted to information that was eligible for patent protection. The court disagreed.



<http://swissinnovation.org/newsUS/web/2013/01-130613-b9>

Massachusetts aims to raise taxes for infrastructure by \$500M

(The Boston Globe, June 25, 2013)

House and Senate leaders struck a deal to raise taxes by \$500 million to fund short- and long-term investments in the state’s aging highway and transit system, directing enough new revenue to the MBTA to forestall immediate fare increases and providing what lawmakers consider to be enough new funding to facilitate future expansion projects. The conference committee proposal, which is not subject to amendment by lawmakers, would raise the gas tax by 3 cents a gallon and tie future increases to inflation. The per-pack tax on cigarettes would increase by \$1, and lawmakers hope to collect \$161 million by applying the state’s 6.25 percent sales tax to computer system design services and \$83 million from changes to the utility classification and sales sourcing for tax reporting.

<http://swissinnovation.org/newsUS/web/2013/01-130625-e7>

2. Education

Master degrees' popularity increase

(The Boston Globe, June 01, 2013)

The nation’s colleges and universities are churning out master’s degrees in sharply rising numbers, responding to a surge in demand for advanced credentials from young professionals who want to stand out in the workforce and earn more. From 2000 to 2012, the annual number of master’s degrees issued jumped 63 percent, federal data show, growing 18 percentage points more than the number of bachelor’s degrees. The master’s degree, often priced starting at \$20,000 to \$30,000, is seen by some universities as a moneymaker in a time of fiscal strain. It is seen by students as a ticket to promotions or new careers. For them, potentially increasing their salary by many thousands of dollars a year outweighs the risk of taking on large tuition bills and possibly debt.

<http://swissinnovation.org/newsUS/web/2013/02-130601-34>

MOOCs more disruptive than textbooks

(The Boston Globe, June 01, 2013)

Today it might seem that there’s nothing more boring or conventional than textbooks, but 200 years ago they were a radical idea. Before textbooks, learning typically happened through direct exchanges between students and professors. But beginning in the 18th century, scholars began redacting blocks of information into standardized books that laid out content in logical, easily digestible fashion. Today debates about textbooks are alive and well, but the



revolution is over: Textbooks stayed and became central to education. Today's democratized college system is very different from the 18th-century version where only the elite went on to higher education, and given that, it's possible MOOCs could be far more disruptive than textbooks ever were. But teaching survived the challenge of the textbook, even as these heavy volumes accomplished what their inventors hoped: delivering all the important knowledge in the world, whether people like it or not.

<http://swissinnovation.org/newsUS/web/2013/02-130601-99>

Automated grading for MOOCs

Researchers at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL), working with Microsoft Research, have developed a new software system that can automatically identify errors in students' programming assignments and recommend corrections. Teaching assistants at MIT have already begun using the software. But some variation on it could help solve one of the biggest problems faced by massive open online courses (MOOCs) like those offered through edX, the online learning initiative created by MIT and Harvard University: how to automate grading.

<http://swissinnovation.org/newsUS/web/2013/02-130603-7e>

(MIT, June 03, 2013)



Declining interest in humanities at Harvard

(The Boston Globe, June 05, 2013)

Amid declining enrollment in the humanities in favor of more career-oriented paths, Harvard University is seeking to rekindle interest in literature, philosophy, and the classics, a broad effort that will focus on first-year students. As students gravitate toward economics and other social sciences, often as springboards to business careers, advisers need to emphasize that majoring in the humanities can lead to any number of careers, Harvard faculty wrote. Harvard takes aim at the declining number of students who major in the humanities, which also include English, religion, and romance languages. Since 2003, the number majoring in the humanities dropped from 21 percent to 17 percent, and the number who considered such majors has fallen off sharply.

<http://swissinnovation.org/newsUS/web/2013/02-130605-49>

Learning from MOOCs

(The Boston Globe, June 09, 2013)

David E. Pritchard has dedicated his life to physics, conducting pioneering work in atom optics and mentoring Nobel Prize winners at the Massachusetts Institute of Technology. But now Pritchard has dropped his physics research. A new frontier of human knowledge has captivated him and others in academia: studying how people learn and finding ways to teach more effectively. Fueling their enthusiasm is the explosion of massive open online courses, or MOOCs, the new species of free classes prestigious universities are offering to students around the world. As educators debate what the classes mean for the future of traditional universities, one thing is clear — they provide a vast laboratory to study learning, using a trail of electronic data to examine what resources or study habits best help students, whether they take courses online or in traditional classrooms.

<http://swissinnovation.org/newsUS/web/2013/02-130609-6f>



Push for mandatory computer classes

(The Boston Globe, June 11, 2013)

Executives from Google Inc., Microsoft Corp., and other leading firms want to require all Massachusetts public schools to teach computer science, so local tech companies don't have to rely on foreign workers to fill future programming and engineering jobs. The plan would compel the teaching of computer science classes as early as the eighth grade, add computing questions to the state's standardized tests, and create a statewide curriculum for technology instruction throughout high school. Massachusetts would be the second state to mandate the classes, after South Carolina.

<http://swissinnovation.org/newsUS/web/2013/02-130611-05>



Battle against interest hike on student loans

(The Boston Globe, June 11, 2013)

US Senator Elizabeth Warren and Representative John Tierney rallied Northeastern University students to speak out against a looming interest rate hike on student loans. If Congress fails to act by July 1, the rate on federally subsidized Stafford loans, need-based funds for undergraduates, would double from 3.4 to 6.8 percent. With de-

bate over student loan legislation in Congress heating up, Warren and Tierney urged students to put pressure on their representatives to support bills that would halt the increase. They highlighted their own Bank on Students Loan Fairness Act, which Warren recently introduced in the Senate and Tierney cosponsored in the House.

<http://swissinnovation.org/newsUS/web/2013/02-130611-72>

New chief risk officer for Harvard \$30 billion fund

(The Boston Globe, June 19, 2013)

Harvard University's endowment managers have hired a new chief risk officer for the \$30.7 billion fund, tapping Jake Xia from Wall Street's Morgan Stanley. Xia will take a lead role in helping set policies and procedures to analyze and monitor risks in the nation's largest endowment fund, according to Harvard Management Co., the Boston firm that manages the university's money. Xia succeeds Neil Mason, who will return to England for family reasons after July 1, Harvard Management said. Mason joined the group in early 2010, one of Mendillo's hires as she sought to shore up the operation after the financial crisis.

<http://swissinnovation.org/newsUS/web/2013/02-130619-15>

IMF to offer Online Economics and Financial Courses on edX

(edX, June 19, 2013)

The International Monetary Fund (IMF) and edX, the not-for-profit online learning initiative composed of the leading global institutions of the xConsortium, announced a collaboration to strengthen economic expertise worldwide. The collaboration will extend the reach of the IMF's training courses in macroeconomics and finance to governments and the public through the edX platform. EdX's open learning platform is used by universities worldwide to develop innovative online, on-campus, and blended teaching and learning models, and was chosen for this first-of-its-kind initiative because of its cutting-edge online learning environment, educational expertise, and global reach. The collaboration marks the first time edX has been used as the educational platform of an international governmental organization.

<http://swissinnovation.org/newsUS/web/2013/02-130619-93>

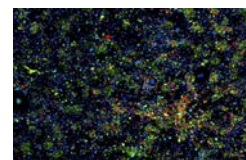
3. Life Science

Chemical compounds help grow artificial liver

(MIT, June 02, 2013)

Researchers have generated mature liver cells from induced pluripotent stem cells. The researchers from MIT's Koch Institute for Integrative Cancer Research and Institute for Medical Engineering and Science collaborated with the Broad Institute, Harvard Medical School and the University of Wisconsin. Together, they have identified a dozen chemical compounds that can help liver cells not only maintain their normal function while grown in a lab dish, but also multiply to produce new tissue. Cells grown this way could help researchers develop engineered tissue to treat many of the 500 million people suffering from chronic liver diseases such as hepatitis C, according to the researchers.

<http://swissinnovation.org/newsUS/web/2013/03-130602-5c>



Public health ministers from developing countries get training

(Harvard, June 05, 2013)

More than a dozen serving health ministers from Africa, Southeast Asia, Latin America, and the Caribbean gathered at the Harvard Kennedy School (HKS) this week for a three-day gathering that is a key part of a broader program to enhance the effectiveness of such officials in developing and middle-income countries. The aim of the Ministerial Health Leaders' Forum, jointly convened with the Harvard School of Public Health (HSPH), is not to improve the ministers' technical knowledge of health topics, but to help them become more effective leaders. The sessions were participatory, allowing attendees to share their experiences and learn from each other as well as from faculty.

<http://swissinnovation.org/newsUS/web/2013/03-130605-04>

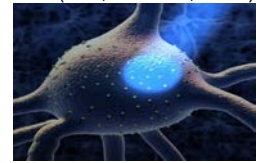




Optogenetics to control neuron activity with light

(MIT, June 06, 2013)

By activating a brain circuit that controls compulsive behavior, MIT neuroscientists have shown that they can block a compulsive behavior in mice — a result that could help researchers develop new treatments for diseases such as obsessive-compulsive disorder (OCD) and Tourette's syndrome. For this study, the MIT team used optogenetics to control neuron activity with light. This technique is not yet ready for use in human patients, but studies such as this one could help researchers identify brain activity patterns that signal the onset of compulsive behavior, allowing them to more precisely time the delivery of deep brain stimulation.



<http://swissinnovation.org/newsUS/web/2013/03-130606-03>

Largest life sciences grant for UMass Amherst

(The Boston Globe, June 07, 2013)

Two Western Massachusetts projects have won state grants totaling \$100.5 million, including a \$95 million award to the University of Massachusetts Amherst that is the largest so far under the \$1 billion life sciences initiative launched by Governor Deval Patrick six years ago. UMass Amherst already spent \$157 million — raised through state and university bonds — to build a Life Sciences Laboratories building that will formally open this summer. But about half of the building remains empty “shell space.” The new grant will be used to fill several floors with research equipment, ranging from instruments that identify drug targets to machines for manufacturing biosensor devices to analyze people's health and fitness.

<http://swissinnovation.org/newsUS/web/2013/03-130607-06>

Drug tests without consent for emergency treatment

(The Boston Globe, June 08, 2013)

A group of Boston doctors is proposing to join a study that would provide emergency treatment for brain-injured patients without obtaining the trauma victims' consent, arguing that they often arrive at the hospital unconscious or without family members who can speak on their behalf. Federal law and the generally accepted ethics of medical research require that patients or their surrogates be told about any risks of participating in a study and have the chance to refuse enrollment. But the law allows for an exemption in certain cases involving emergency care. This would be the first study using the exemption at a Boston hospital since the Food and Drug Administration created the rules allowing it in 1996, said Dr. James Feldman, an investigator and the chairman of a Boston University Medical Campus panel that reviews research.

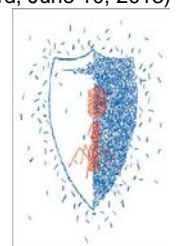


<http://swissinnovation.org/newsUS/web/2013/03-130608-36>

Viruses in gut confer antibiotic resistance to bacteria

(Harvard, June 10, 2013)

Bacteria in the gut that are under attack by antibiotics have allies no one had anticipated, a team of Wyss Institute scientists has found. Gut viruses that usually commandeer the bacteria, it turns out, enable them to survive the antibiotic onslaught, most likely by handing them genes that help them withstand the drug. What's more, the gut viruses, called bacteriophage or simply phage, deliver genes that help the bacteria to survive not just the antibiotic they've been exposed to, but other types of antibiotics as well. That suggests that phages in the gut may be partly responsible for the emergence of dangerous superbugs that withstand multiple antibiotics, and that drug targeting of phages could offer a potential new path to mitigate development of antibiotic resistance.



<http://swissinnovation.org/newsUS/web/2013/03-130610-0e>

International alliance for sharing of genomic data

(The Boston Globe, June 10, 2013)

In an effort being compared to the international collaboration that created the standards for the World Wide Web, 70 major research and health care organizations from dozens of countries announced that they will work together to make medicine more effective by building a framework to share genomic data. At this point, the project is in its earliest stages — a signed letter of intent to join a global alliance and a white paper describing the efforts. But the work of the global alliance could profoundly alter medicine and research, by taking information that today is siloed away in individual hospital or research databases, and making it available to clinicians and researchers across the world. Seven hospitals and research institutions from the Boston area have signed the letter.

<http://swissinnovation.org/newsUS/web/2013/03-130610-1e>

Trillion dollar impact from human genome project

(The Boston Globe, June 12, 2013)

In his state of the union address this year, President Obama cited a study that estimated that taxpayers got a whopping \$796 billion return from the \$3.8 billion investment in sequencing the human genome. That larger than life number was laid out as an important reason to invest in basic science. Now, an update to the report has been issued, finding the economic benefits of the government's investment in the field over a longer time frame, between 1988 and 2012, were even more vast—a \$1 trillion return. The initial analysis raised some criticism and skepticism from economists due to issues with the methodology, and the new report seems destined to do the same. The report has attributed every economic activity that has any association with the genome to the initial investment by the NIH, drawing criticism from economic experts.

<http://swissinnovation.org/newsUS/web/2013/03-130612-b7>

Designing wearable tactile displays

(MIT, June 14, 2013)

In the near future, a buzz in your belt or a pulse from your jacket may give you instructions on how to navigate your surroundings through vibrations from a wearable, GPS-linked device. Such a device could free drivers from having to look at maps, and could also serve as a tactile guide for the visually and hearing impaired. Lynette Jones, a senior research scientist in MIT's Department of Mechanical Engineering, designs wearable tactile displays. Through her work, she's observed that the skin is a sensitive medium for communication. To investigate how people perceive skin stimuli, Jones has built an array that precisely tracks a motor's vibrations through skin in three dimensions.

<http://swissinnovation.org/newsUS/web/2013/03-130614-3c>



3D printing bone with synthetic material

(MIT, June 17, 2013)

Researchers working to design new materials that are durable, lightweight and environmentally sustainable are increasingly looking to natural composites, such as bone, for inspiration. While researchers have come up with hierarchical structures in the design of new materials, going from a computer model to the production of physical artifacts has been a persistent challenge. Now researchers at MIT have developed an approach that allows them to turn their designs into reality. In just a few hours, they can move directly from a multiscale computer model of a synthetic material to the creation of physical samples. Using computer-optimized designs of soft and stiff polymers placed in geometric patterns that replicate nature's own patterns, and a 3D printer that prints with two polymers at once, the team produced samples of synthetic materials that have fracture behavior similar to bone.

<http://swissinnovation.org/newsUS/web/2013/03-130617-07>



New drugs through synthesis of tetracycline-likes

(partnering360, June 17, 2013)

Tetraphase's approach develops fully-synthetic analogs of tetracycline—one of the world's safest drugs—that yield new, completely different molecules that are effective even against intransigent pathogens, including such multi-drug resistant gram-negative bacteria as klebsiella—"a tough bug involved in a lot of difficult-to-treat infections," Macdonald noted—as well as against MRSA, E. coli and other pathogens. The fully-synthetic process enables researchers to modify tetracycline's structure at positions in its four-ring structure that otherwise couldn't be opened in a time frame that was practical or scalable.

<http://swissinnovation.org/newsUS/web/2013/03-130617-99>

Developing novel drugs through epigenetics

(partnering360, June 17, 2013)

RaNA Therapeutics is leveraging 20 years of oligonucleotides research to target a new, unexplored, druggable space. RaNA's approach selectively activates therapeutic protein expression to treat or prevent disease. Specifically, the company is the first to selectively target a diverse array of genes based on a breakthrough approach that uses single-stranded oligonucleotides to target the repressive interactions of long non-coding RNA (lncRNA) with specific endogenous genes of interest, thus increasing expression of the encoded protein by upregulating mRNA.

<http://swissinnovation.org/newsUS/web/2013/03-130617-28>



Biotech company raises \$101M in IPO

(The Boston Globe, June 19, 2013)

Shares of the Cambridge life sciences company bluebird bio Inc. soared almost 60 percent on their first day of trading, an impressive debut for a business that endured years of stagnation and another encouraging sign for the biotechnology industry. The local gene therapy company raised \$101 million in an initial public offering priced at \$17 per share, higher than the \$14 to \$16 estimated by investment bankers. Bluebird shares closed at \$26.91 per share on their first day of trading. The IPO came after a long wait and a name change. The company was founded 21 years ago under the name Genetix Pharmaceuticals Inc. with a focus on treating rare diseases.

<http://swissinnovation.org/newsUS/web/2013/03-130619-2b>

Silver-containing compound boosts old antibiotics

(Harvard, June 20, 2013)

Low doses of silver make bacteria more susceptible to antibiotic attack, paving the way for new therapies for drug-resistant and recurrent infections. Slipping bacteria some silver could give old antibiotics new life, scientists at the Wyss Institute for Biologically Inspired Engineering at Harvard University reported. Treating bacteria with a silver-containing compound boosted the efficacy of a broad range of widely used antibiotics and helped them stop otherwise lethal infections in mice. It helped make an antibiotic-resistant strain of bacteria sensitive to antibiotics again. And it expanded the power of an antibiotic called vancomycin that is usually only effective in killing pathogens called Gram-positive bacteria, such as Staph and Strep. Silver allowed vancomycin for the first time to penetrate and kill Gram-negative bacteria, a group that includes microbes that can cause food poisoning and dangerous hospital-acquired infections.

<http://swissinnovation.org/newsUS/web/2013/03-130620-40>



Algorithm detects heart rate in video data

(MIT, June 20, 2013)

Researchers at MIT's Computer Science and Artificial Intelligence Laboratory have developed a new algorithm that can accurately measure the heart rates of people depicted in ordinary digital video by analyzing imperceptibly small head movements that accompany the rush of blood caused by the heart's contractions. In tests, the algorithm gave pulse measurements that were consistently within a few beats per minute of those produced by electrocardiograms (EKGs). It was also able to provide useful estimates of the time intervals between beats, a measurement that can be used to identify patients at risk for cardiac events.

<http://swissinnovation.org/newsUS/web/2013/03-130620-6d>



Cells control the direction in which DNA is read

(MIT, June 23, 2013)

MIT biologists have discovered a mechanism that allows cells to read their own DNA in the correct direction and prevents them from copying most of the so-called "junk DNA" that makes up long stretches of our genome. Only about 15 percent of the human genome consists of protein-coding genes, but in recent years scientists have found that a surprising amount of the junk, or intergenic DNA, does get copied into RNA. Scientists have been trying to figure out just what this RNA might be doing. In a paper Phillip Sharp and colleagues describe how cells initiate but then halt the copying of RNA in the upstream, or non-protein-coding direction, while allowing it to continue in the direction in which genes are correctly read. The finding helps to explain the existence of many recently discovered types of short strands of RNA whose function is unknown.

<http://swissinnovation.org/newsUS/web/2013/03-130623-00>



4. Nano / Micro Technology / Material Science

De-icer for car windshield

(The Boston Globe, June 03, 2013)

In a laboratory at the Massachusetts Institute of Technology, a materials science and engineering professor and his team are reviving a technology that last peaked in the 1970s that may finally be ripe for use in the real world, albeit with an unexpected application: de-icing a car windshield. The researchers are creating a solar thermal fuel — a fuel triggered by light to store energy in chemical bonds, which can then release that energy in the form of heat.



Instead of thinking of the solar thermal fuel as a literal fuel, however, MIT has teamed up with German car maker BMW to examine the possibility of embedding the fuel in a windshield and using its heat-generating capabilities to rapidly and efficiently clear windshields in winter.

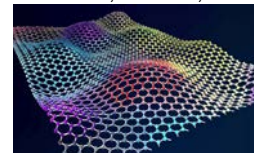
<http://swissinnovation.org/newsUS/web/2013/04-130603-f5>

Gigahertz graphene oscillator

It is likely that the future of electronics is going to include graphene and some electronic devices involving graphene have already been built in the lab. However, graphene still offers unsolved challenges. It's not naturally a semiconductor, and most devices based on it have had poor performance due to current leakage. Now, researchers have put together a simple graphene-based test device that can operate at over 1.2GHz, and they used it as the basis for an all-graphene frequency mixer. The device in question is called a ring oscillator. It has a few uses in actual devices, but the authors of the new paper say it is "the most important class of circuits used to evaluate the performance limits of any digital technology."

<http://swissinnovation.org/newsUS/web/2013/04-130617-6c>

(ArsTechnica, June 17, 2013)

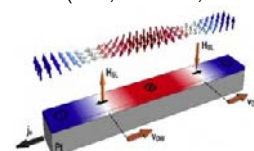


Unexpected effect for efficient control of magnetic data storage

A magnetic phenomenon newly discovered by MIT researchers could lead to much faster, denser and more energy-efficient chips for memory and computation. The findings could reduce the energy needed to store and retrieve one bit of data by a factor of 10,000. The team discovered an unexpected effect that alters how magnetic domains switch from one orientation to the other. Normally, when the spin orientation changes from one domain to the other (say, from "up" to "down"), the direction of that change is random. By depositing a thin film of ferromagnetic material on a layer of platinum or tantalum, the spin rotations became aligned. The researchers showed that because of this peculiar effect, current can push domains with much more force than in conventional materials.

<http://swissinnovation.org/newsUS/web/2013/04-130618-2d>

(MIT, June 18, 2013)

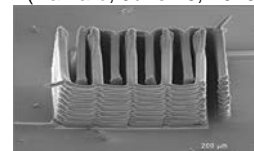


3D printing of tiny batteries

3D printing can now be used to print lithium-ion microbatteries the size of a grain of sand. The printed microbatteries could supply electricity to tiny devices in fields from medicine to communications, including many that have lingered on lab benches for lack of a battery small enough to fit the device, yet provide enough stored energy to power them. To make the microbatteries, a team based at Harvard University and the University of Illinois at Urbana-Champaign printed precisely interlaced stacks of tiny battery electrodes, each less than the width of a human hair.

<http://swissinnovation.org/newsUS/web/2013/04-130618-06>

(Harvard, June 18, 2013)

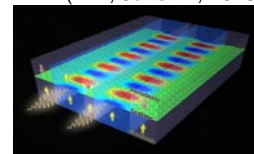


New ferroelectric-graphene hybrid for superior memory and computer chips

Researchers at MIT have proposed a new system that combines ferroelectric materials — the kind often used for data storage — with graphene, a two-dimensional form of carbon known for its exceptional electronic and mechanical properties. The resulting hybrid technology could eventually lead to computer and data-storage chips that pack more components in a given area and are faster and less power-hungry. The new system works by controlling waves called surface plasmons. These waves are oscillations of electrons confined at interfaces between materials; in the new system the waves operate at terahertz frequencies. Such frequencies lie between those of far-infrared light and microwave radio transmissions, and are considered ideal for next-generation computing devices.

<http://swissinnovation.org/newsUS/web/2013/04-130621-3a>

(MIT, June 21, 2013)



5. Information & Communications Technology

Music Game based on Disney classic Fantasia

(The Boston Globe, June 05, 2013)

Harmonix Music Systems Inc., the Cambridge company that launched the music video game craze with "Guitar Hero" and "Rock Band," is developing a new game inspired by the 1940 animated Disney classic "Fantasia." In the movie, sorcerer's apprentice Mickey Mouse tries to conjure magic to a classical soundtrack. In the new game, "Fantasia: Music Evolved," players will be able to use hand gestures and body movements to modify and remix classical music, as well as popular songs from artists like Bruno Mars, Queen, Kimbra, and Fun. "'Fantasia' is a very ambitious title," said Christopher Nicholls, the game's executive producer at Disney. "We're doing some really spectacular things." The game is set for release in 2014. It will be available only for Microsoft Corp.'s upcoming Xbox One video game console and the Xbox 360 with Kinect motion-control technology.



<http://swissinnovation.org/newsUS/web/2013/05-130605-cb>

Revolutionary face-recognition software identified bomb suspects in test

(The Boston Globe, June 05, 2013)

Facial recognition flunked a major test, when the system used by investigators in the Boston Marathon bombing failed to identify the two suspects in photos from the scene. But a New Hampshire company, Animetrics Inc., has an image-enhancement program that it said would have cleaned up the grainy photos and improved the chances for authorities to find a match to the suspects Tamerlan and Dzhokhar Tsarnaev. Animetrics is now offering its software, already in use by police in New York and Pennsylvania, to police departments nationwide over the Internet. Animetrics' software, called ForensicaGPS, takes an imperfect photo of a suspect and creates a three-dimensional model of the entire face. The system allows investigators to correct missing or blurry features and rotate the model to a frontal view.

<http://swissinnovation.org/newsUS/web/2013/05-130605-5f>

Coaching software for social interactions

(MIT, June 14, 2013)

A new software developed at MIT can be used to help people practice their interpersonal skills until they feel more comfortable with situations such as a job interview or a first date. The software, called MACH (short for My Automated Conversation coach), uses a computer-generated onscreen face, along with facial, speech, and behavior analysis and synthesis software, to simulate face-to-face conversations. It then provides users with feedback on their interactions.

<http://swissinnovation.org/newsUS/web/2013/05-130614-1e>

Big-data crunching for local Life Sciences

(The Boston Globe, June 16, 2013)

Long missing from the biotech and high-tech map of the region, Holyoke is finally finding an advantage in its location on the western end of the Massachusetts Turnpike: It's much faster to reach than some of the most connected places on the Internet. Beginning this summer, life-sciences companies in the Boston area will be able to send troves of data to a new state-affiliated computing facility in Holyoke in a fraction of the time it would take to ship it to a commercial data center. Located at the new Massachusetts Green High Performance Computing Center, the life-sciences facility could lead to breakthrough drugs and other products by making it easier, faster, and even cheaper for companies to investigate leads involving large amounts of data.

<http://swissinnovation.org/newsUS/web/2013/05-130616-4c>

New approach towards cheap color holographic-video displays

(MIT, June 19, 2013)

Researchers at MIT's Media Lab report a new approach to generating holograms that could lead to color holographic-video displays that are much cheaper to manufacture than today's experimental, monochromatic displays. The same technique could also increase the resolution of conventional 2-D displays. Using the new technique, Daniel Smalley, a graduate student in the Media Lab, is building a prototype color holographic-video display whose resolution is roughly that of a standard-definition TV and which can update video images 30 times a second, fast



enough to produce the illusion of motion. The heart of the display is an optical chip, resembling a microscope slide, that Smalley built, using only MIT facilities, for about \$10.

<http://swissinnovation.org/newsUS/web/2013/05-130619-77>

World's largest travelsite TripAdvisor

(The Boston Globe, June 24, 2013)

The world's largest travel website, founded in Needham in 2000, will be leaving its current headquarters in Newton in 2015. The company signed a long-term lease that will give it more than 26,000 m2 of space in Needham, more than double the size of the 11,000 m2 office it currently occupies. The company plans to relocate more than 500 jobs and is experiencing 30 percent employee growth annually, said Julie M.B. Bradley, its chief financial officer. TripAdvisor will be the anchor of Center 128, an office park in Needham near Route 128 that is being redeveloped. The custom-built office, with green space in front and an amphitheater-shaped courtyard, may help draw other companies to the park, which has 77,000 m2 of space available for development.

<http://swissinnovation.org/newsUS/web/2013/05-130624-bd>

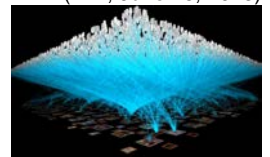


BigData startup on "Social TV Analytics" acquired by Twitter

(MIT, June 25, 2013)

In 2008, MIT's Deb Roy and his former doctoral student Michael Fleischman PhD '08 began developing algorithm-based technology that could track and analyze social-media comments about television content. They began commercializing this novel technology, which they dubbed "Social TV analytics," through their startup, Bluefin Labs. Over the next five years, as social media rose in popularity, the importance of Bluefin's technology as a data-analysis platform became clear: The startup quickly gained big-name clients — such as CBS, Fox, Procter & Gamble, Pepsi and various advertising agencies — and eventually caught the eye of Twitter. In February, Twitter acquired Bluefin, and its technology, for a reported \$100 million, which would make Bluefin Twitter's largest acquisition to date. With Bluefin's technology, the social-media giant aims to introduce new capabilities to benefit both advertisers and users, Roy says.

<http://swissinnovation.org/newsUS/web/2013/05-130625-2a>



Low-Power WiFi signal tracks human movement behind walls

(MIT, June 28, 2013)

A system being developed by Dina Katabi, a professor in MIT's Department of Electrical Engineering and Computer Science, and her graduate student Fadel Adib, could give all of us the ability to spot people in different rooms using low-cost Wi-Fi technology. The system, called "Wi-Vi," is based on a concept similar to radar and sonar imaging. But in contrast to radar and sonar, it transmits a low-power Wi-Fi signal and uses its reflections to track moving humans. It can do so even if the humans are in closed rooms or hiding behind a wall.

<http://swissinnovation.org/newsUS/web/2013/05-130628-5a>



6. Energy / Environment

Smart meters face opposition on potential health issues

(The Boston Globe, June 01, 2013)

Utilities across the country are installing so-called smart meters in homes and businesses to allow them to better track and manage energy use by their customers, aiming to increase efficiency, lower costs, and reduce pollution. But the advanced meters, which use wireless and digital technologies to send frequent consumption data to utilities, face opposition from customers and others who see them as a threat to health, privacy, and security. Smart grid proponents hope to incorporate information technology and advanced communications into the production, distribution, and consumption of electricity to make the power system more efficient, less costly, and more environmentally friendly. However, utilities face opposition from people who see threats to health, privacy, and the security of the nation's power grid. Opponents say the meters emit dangerous levels of radiation through the radio frequencies that allow communications between the meters, utilities, and "smart" appliances, including thermostats.

<http://swissinnovation.org/newsUS/web/2013/06-130601-23>



Grocery store offers own rooftop produce

(The Boston Globe, June 03, 2013)

The soon-to-open Whole Foods Market in Lynnfield will offer its customers something the company says no other major grocery chain has offered before: "rooftop produce," picked from a field atop the store. Various produce will be sown in more than 300 tons of soil contained in a rooftop planter over a space of 17,000 square feet, and is expected to yield 10,000 to 11,000 pounds of produce a year. Whole Foods and its contractors say the commercial roof garden is an experiment that, if it succeeds, could encourage other grocers to do the same, boosting efforts to expand rooftop gardening. Such gardens not only insulate buildings, lowering heating and cooling costs, but also decrease storm-water runoff, which can overwhelm sewer systems and carry pollutants into waterways. A green roof, however, is not cheap. It can cost up to 60 percent more than a traditional roof, according to the Sustainable Cities Institute, a program of the National League of Cities.



<http://swissinnovation.org/newsUS/web/2013/06-130603-6c>

Massachusetts ranks 2nd in clean tech index

(The Boston Globe, June 05, 2013)

Massachusetts finished second, behind California, in the annual survey by the industry research firm Clean Edge Inc. The state edged out Oregon for the first time in the four-year history of the rankings and beat New York and Colorado, as well. A commitment to energy efficiency, success in attracting private investment, and state policies that support alternative energy sources have helped Massachusetts develop one of the nation's leading clean technology industries, according to the study. Massachusetts has long been recognized as a leader in the emerging alternative energy sector because of its research universities, entrepreneurial culture, active venture capital industry, and is "one of the few states to consistently compete with California for the US clean tech crown," the index noted, adding that "the state should remain an integral clean tech innovation hub for years to come."

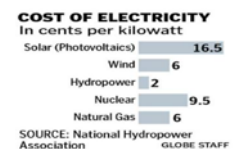


<http://swissinnovation.org/newsUS/web/2013/06-130605-b4>

New England to increase hydropower

(The Boston Globe, June 15, 2013)

Hydropower could play a larger role in New England's energy mix as five of the region's states, including Massachusetts, move to import more of it — most likely from Canada — and at least one has passed a law that could allow electricity from large-scale hydroelectric dams to be classified as green as wind or solar energy. Part of the goal, state leaders say, is to diversify an energy mix that in recent years has become increasingly dominated by natural gas, which now generates about 34% of the region's electricity. Massachusetts energy officials are expected to detail a plan under which the state will work with Connecticut, Maine, Rhode Island, and Vermont to bring more hydropower into the region.



<http://swissinnovation.org/newsUS/web/2013/06-130615-01>

Clues to climate change found in ocean's sediments

(The Boston Globe, June 16, 2013)

Deep in the ocean's sediments dwell half of the microorganisms on Earth. Little has been known, however, about what these bacteria and fungi are up to. It is a question that matters in understanding global climate change because there are lots of nutrients deep in the open floor — including carbon. If those microbial deep-sea inhabitants are dormant, carbon and other nutrients are likely to stay put. If they are alive and active, the microbes may be cycling back into the ocean. Now, researchers have a clue. Scientists from the Woods Hole Oceanographic Institution and the University of Delaware used genomic tools to analyze material from samples collected from sediment off the coast of Peru. Instead of sequencing the genomes of the microscopic organisms, which would have told them only what bacteria were down there, the researchers analyzed which genes were switched on. They found about 300,000 active genes, many involved in the process by which cells multiply, suggesting they are, indeed, active.

<http://swissinnovation.org/newsUS/web/2013/06-130616-13>

Making alternative fuels cheaper

(MIT, June 17, 2013)

MIT chemical engineers have devised a cheaper way to synthesize a key biofuel component, which could make its industrial production much more cost-effective. The compound, known as gamma-valerolactone (GVL), is attractive because of its versatility, has more energy than ethanol and could be used on its own or as an additive to other fuels. GVL could also be useful as a "green" solvent or a building block for creating renewable polymers from sus-



tainable materials. MIT's new process generates GVL in yields exceeding 70 percent from biomass, but the researchers are now working on tweaking the reaction to further improve its efficiency.

<http://swissinnovation.org/newsUS/web/2013/06-130617-e4>

Higher heat transfer in power plants

(MIT, June 21, 2013)

Researchers at MIT have developed an innovative approach to improving heat transfer in power plants and cooling systems. The new system could provide a 100 percent improvement in the efficiency of heat transfer over conventional systems, the researchers say. Heat transfer by condensation is key to the operation of today's power plants, where fossil fuels are used to boil water and the resulting steam drives turbines to generate electricity. The steam must then condense back to water, which is collected and sent back to the boiler to start the cycle again. The new system is an improvement of the condensers used to turn steam back into water. The same principle might also be used to improve condensers in desalination plants and in thermal-management systems.

<http://swissinnovation.org/newsUS/web/2013/06-130621-8f>

Trash-to-energy incinerator celebrates 25 years anniversary

(The Boston Globe, June 23, 2013)

The Wheelabrator Bridgeport plant recently marked its silver anniversary and honored its employees with a celebration, lunch, and guided tours of the facility. The plant converts 2,200 tons of the region's waste into more than 67,000 kilowatts of electricity daily. Over the last 25 years, the plant has processed 18.5 million tons of waste — enough to fill tractor-trailer trucks lined up from Bridgeport to Honolulu — and generated 13 million megawatts of electricity, enough to power more than 2 million Xbox gaming systems for a year. In the last five years, the company has expanded internationally with operations in the United Kingdom and China. Future plans are in the works to expand the business' scope, which employs many Bridgeport residents, in the city by using the heat left over after the trash is converted to energy to heat homes and businesses downtown.

<http://swissinnovation.org/newsUS/web/2013/06-130623-aa>

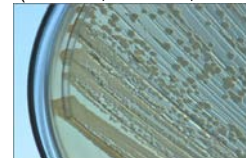


Specific bacteria to create high-octane biofuel

(Harvard, June 25, 2013)

New lines of engineered bacteria can tailor-make key precursors of high-octane biofuels that could one day replace gasoline, scientists at the Wyss Institute for Biologically Inspired Engineering at Harvard University and the Department of Systems Biology at Harvard Medical School report. The same lines can also produce precursors of pharmaceuticals, bioplastics, herbicides, detergents, and more. New biofuels are needed for cars and other vehicles. Ethanol, the most popular biofuel on the market, packs only two-thirds the energy of gasoline, and ethanol-containing fuels also corrode pipes, tanks, and other infrastructure used to transport and store gasoline.

<http://swissinnovation.org/newsUS/web/2013/06-130625-53>

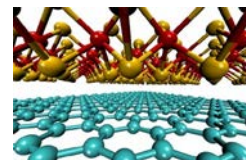


Molecule-thin solar cells

(MIT, June 26, 2013)

Most efforts at improving solar cells have focused on increasing the efficiency of their energy conversion, or on lowering the cost of manufacturing. MIT researchers are opening another avenue for improvement: aiming to produce the thinnest and most lightweight solar panels possible. Such panels, which have the potential to surpass any substance other than reactor-grade uranium in terms of energy produced per pound of material, could be made from stacked sheets of one-molecule-thick materials such as graphene or molybdenum disulfide. Using two layers of atom-thick materials such as graphene leads to 1 to 2 percent efficiency in converting sunlight to electricity. That's low compared to the 15 to 20 percent efficiency of standard silicon solar cells, but it's achieved using material that is thousands of times thinner and lighter than tissue paper, while typical silicon solar cells can be hundreds of thousands of times that. The stacking of several of these two-dimensional layers could boost the efficiency significantly.

<http://swissinnovation.org/newsUS/web/2013/06-130626-fe>



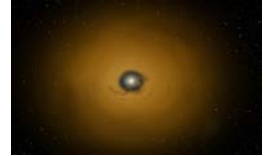


7. Engineering / Robotics / Space

Observing a young star

(The Boston Globe, June 10, 2013)

To understand the deep history of our solar system, Harvard-Smithsonian Center for Astrophysics scientists are observing an orange star about 190 light-years away. The young star, called TW Hydrae, can provide a window into our sun's past because it is similar and is still forming. The star, about 10 million years old, is still growing as it draws in material from a surrounding disk. Data from NASA's Chandra X-ray Observatory and ground-based telescopes have allowed the researchers to observe the star grow, and to draw parallels between it and our sun about 4.5 billion years ago. TW Hydrae is not growing at a steady, even rate, but in spurts of activity. Astronomers think that our own sun would have gone through the same kind of growth, switching abruptly between rapid and slow growth.



<http://swissinnovation.org/newsUS/web/2013/07-130610-e9>

Harvard biologist accepted for astronaut training out of 6'000 applicants

(The Boston Globe, June 19, 2013)

Biologist Jessica U. Meir has devoted her life to studying animals that thrive in Earth's most extreme environments, hoping to unlock the secrets of high-flying geese that soar over Mount Everest and emperor penguins that dive thousands of feet under the Antarctic ice. But all the while, the 35-year-old Meir has hoped, too, that she would have a chance to explore the most extreme environment of them all: outer space. This week, Meir, an assistant professor of anesthesia at Harvard Medical School and Massachusetts General Hospital, has at last found her chance to travel to the final frontier as she joins the ranks of NASA's newest class of potential astronauts. She was one of eight astronaut trainees selected by NASA from more than 6,000 applicants, the second-largest pool ever.



<http://swissinnovation.org/newsUS/web/2013/07-130619-0c>

8. Physics / Chemistry / Math

Moving a 15-ton magnet to Fermi lab for Muon experiment

(The Boston Globe, June 16, 2013)

Scientists on Long Island are preparing to move a 15 metre wide electromagnet 5000 km over land and sea to its new home at the Department of Energy's Fermi National Accelerator Laboratory in Illinois. The trip is expected to take more than a month. The electromagnet, which weighs at least 15 tons, was the largest in the world when it was built by scientists at Brookhaven in the 1990s. Brookhaven scientists no longer have a need for the electromagnet, so it is being moved to the Fermi laboratory, where it will be used in a new experiment called Muon g-2. The experiment will study the properties of muons, subatomic particles that live only 2.2 millionths of a second. The results of the experiment could create new discoveries in the realm of particle physics.

<http://swissinnovation.org/newsUS/web/2013/08-130616-f6>

9. Architecture / Design

Boston building a skyline

(The Boston Globe, June 05, 2013)

From North Station to the Back Bay, towers are being planned that would stretch the city's boundaries, both vertically and culturally. In some cases, the projects would demolish overbearing developments from the past that sapped life from core neighborhoods and commercial districts. One developer proposed replacing the hulking Government Center Garage — a universally derided structure on Congress Street — with a huge complex of high- and mid-rise buildings, including a 600-foot office tower that would be one of downtown's tallest. At the Christian Science Plaza in the Back Bay, another developer is pitching a 700-foot hotel and residential building that would bring a new level of height to the edge of an iconic, if outdated, civic space.



<http://swissinnovation.org/newsUS/web/2013/09-130605-f1>



3D printing lab for students

(The Boston Globe, June 10, 2013)

Along with researching papers or studying for exams, Northeastern University students will soon be able to go to the library and create their own iPhone cases or dorm room lamps. The school is opening a 3D printing lab within its library to give all students access to this trendy manufacturing technology, which has been tucked away in engineering and design labs. The ongoing evolution of 3D printers — they are becoming smaller, cheaper, and easier to use — has prompted universities, high schools, and local governments to add these devices as their libraries push into the digital age.



<http://swissinnovation.org/newsUS/web/2013/09-130610-60>

3D printer revolution by startups

(The Boston Globe, June 28, 2013)

Formlabs from MIT's Media Lab is spearheading the 3D printer revolution, and many start-ups are jumping on to the craze. A Boston start-up, GrabCAD, wants to streamline the process of sketching and sharing 3D designs. GradCAD is partnering with Autodesk, the largest CAD software company in the world, to bring two of its new apps, AutoCAD 360 and Fusion 360, to view, edit, and comment on models of anything from a small engine to a plane from the comfort of any browser — without traditional, expensive design software. The Techstars Boston alumnus has already built up a community of more than 700,000 members who share files in the public Library or in private Workbench projects. More than new 2,000 users sign up every day to collaborate on 2-D and 3D plans. The aim is to incorporate people without CAD software experience into the design process as it's happening to improve communication.

<http://swissinnovation.org/newsUS/web/2013/09-130628-cf>

10. Economy, Social Sciences & Humanities

Superlinear scaling of productivity in cities explained

(MIT, June 04, 2013)

In 2010, in the journal Nature, a pair of physicists at the Santa Fe Institute showed that when the population of a city doubles, economic productivity goes up by an average of 130 percent. Not only does total productivity increase with increased population, but so does per-capita productivity. Researchers from the MIT Media Laboratory's Human Dynamics Lab propose a new explanation for that "superlinear scaling": Increases in urban population density give residents greater opportunity for face-to-face interaction. The new paper builds on previous work by the same group, which showed that increasing employees' opportunities for face-to-face interaction could boost corporations' productivity.



<http://swissinnovation.org/newsUS/web/2013/10-130604-72>

Modest growth of productivity in first quarter 2013

(The Boston Globe, June 05, 2013)

US worker productivity grew a modest amount from January through March after having declined in the previous quarter. Weak productivity growth could boost hiring if consumers and businesses spend more. Productivity rose at a seasonally adjusted annual rate of 0.5 percent in the first quarter, following a 1.7 percent decline in the October to December period, the Labor Department reported.



<http://swissinnovation.org/newsUS/web/2013/10-130605-4a>

Declining unemployment benefit applications

(The Boston Globe, June 07, 2013)

The number of Americans seeking unemployment benefits fell 11,000 last week to a seasonally adjusted 346,000, a level consistent with steady job growth. The Labor Department says applications dropped from 357,000, which was revised up from an initially reported 354,000. The less volatile four-week average rose 4,500 to 352,500. Weekly applications are a proxy for layoffs. They have fallen 7 percent in the past six months and hit a five-year low of 338,000 in early May.

<http://swissinnovation.org/newsUS/web/2013/10-130607-e9>

Blueprint of climate change measures

(The Boston Globe, June 26, 2013)

President Obama unveiled a comprehensive blueprint to combat rising seas and more frequent severe weather caused by climate change, including a long-awaited promise to regulate carbon dioxide as a pollutant at existing power plants. The 21-page plan would expand production of solar and wind energy and includes billions of dollars in loan guarantees to develop cleaner fossil-fuel and other energy technologies. It also funds new efforts to armor communities against flooding, wildfires, and drought, and puts more emphasis on working with countries such as India and China to jointly lower emissions of gases that warm the atmosphere. In a surprise, Obama also said the controversial Keystone pipeline that would bring oil extracted from Canada's tar sands to Gulf Coast refineries should not be built if the overall result is more greenhouse gases.



<http://swissinnovation.org/newsUS/web/2013/10-130626-fd>

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

Strong IPO's of biotech companies

(The Boston Globe, June 01, 2013)

Shares of Cambridge biotechnology company Epizyme Inc. soared by more than 50 percent on their first day of trading Epizyme, which aims to develop treatments targeting genetic-based cancers, raised \$77.1 million in the IPO priced at \$15 per share — the high end of a range estimated by investment bankers. The shares closed at \$22.99 each. Epizyme is the third Bay State biotech company to go public this year — following TetraPhase Pharmaceuticals and Enanta Pharmaceuticals — and another half dozen could follow as the industry's IPO market thaws from a deep freeze. The Globe reported last month that roughly 25 biotech companies nationwide could go public this year, which would be the most since 2007.

<http://swissinnovation.org/newsUS/web/2013/11-130601-98>

Textbook giant McGraw Hill expanding to Boston

(The Boston Globe, June 05, 2013)

Textbook giant McGraw-Hill Education is opening a research-and-development lab in Boston to further advance its push into digital publishing and educational software. The New York company, one of the biggest educational publishers in the country, plans to open the office in the coming weeks in the city's Innovation District that has become a magnet for big software companies and small Internet start-ups. Over the past several months, McGraw-Hill has built up its technology division with key hires from competitors such as Pearson Education, which has a large local presence, and Boston-based Houghton, Mifflin, Harcourt, as well as by hiring Harvard Business School's former chief information officer, Stephen Laster, to lead its digital endeavors. He will be based out of the new Boston office.

<http://swissinnovation.org/newsUS/web/2013/11-130605-8c>

Accounting giants move to Boston innovation district

(The Boston Globe, June 07, 2013)

At first, the migration of companies to Boston's Innovation District was about as fast as a prairie wagon train. Fidelity Investments and Manulife Financial opened offices over a decade ago, but it wasn't until Vertex Pharmaceuticals Inc. and State Street Corp. made commitments to move there, too, that the land rush was on. Now, another big name is entering the mix: The accounting giant PricewaterhouseCoopers LLP is negotiating to occupy a 16-story building that would be built along Seaport Boulevard, according to a source with knowledge of the transaction. If finalized, the deal would allow construction of the building to proceed this year, replacing a large swath of windswept parking lots with a major office and retail complex designed for more than 2,000 employees. Pricewaterhouse would occupy more than 28'000 m2 of the office tower.



<http://swissinnovation.org/newsUS/web/2013/11-130607-8a>

European company says it is crucial to be in MA to innovate

(The Boston Globe, June 12, 2013)

Danish doctor-turned-businessman Flemming Ornskov's first decision after taking over as chief executive of Shire PLC April 30 was to move himself to Massachusetts, about 3,000 miles and an ocean away from the Irish drug company's headquarters. Ornskov, 55, brought a message for the Boston area's biotechnology entrepreneurs. Shire is one of more than a





dozen global biopharmaceutical giants — many of the from Europe —that have set up shop in the region, hoping to sprinkle stardust from the area's famed research and development laboratories on their own drug-discovery efforts. By taking up residence here, Ornskov aims to use a more hands-on approach than his competitors while establishing the Lexington campus, which has 1,400 employees, more than a quarter of Shire's global workforce, as the \$18 billion company's research heart.

<http://swissinnovation.org/newsUS/web/2013/11-130612-e2>

12. General Interest

Ultimate, complete computer workstation

(ArsTechnica, June 02, 2013)

The latest "modern working environment" from Carpentier's Quebec City-based MWE Lab is the Emperor 1510 LX. With a retractable monitor stand that can support up to five monitors (three 27-inch and two 19-inch), a reclining seat with thigh rest, a Bose sound system, and Italian leather upholstery, the Emperor 1510 LX looks more like a futuristic vehicle than a workstation. And it's priced like a vehicle, too—it can soon be yours for a price of \$21,500.

<http://swissinnovation.org/newsUS/web/2013/12-130602-7e>



Symposium, report on healthy, ecological menus at Harvard

(Harvard, June 13, 2013)

The three-day leadership summit "Menus of Change: The Business of Healthy, Sustainable, Delicious Food Choices" featured a broad spectrum of speakers. Harvard School of Public Health's Walter Willett (right) said the American diet has improved "but everyone does need to redouble their efforts." The event also featured the release of the Menus of Change 2013 Annual Report, which provided an update on how the industry is doing in 13 key areas — scoring better in some than in others, but not great in any — as well as 24 principles that can guide chefs in designing healthier, more environmentally sustainable menus.

<http://swissinnovation.org/newsUS/web/2013/12-130613D4>



13. Calls for Grants / Awards

> SNSF Project Funding

The Swiss National Science Foundation (SNSF) accepts applications for project funding on April 1 and October 1 each year. Applications must be submitted directly by researchers.

<http://www.snf.ch/E/funding/projects/Pages/default.aspx>

Upcoming Science and Technology Related Events

Conference on Uncertainty in Artificial Intelligence

July 11-15, 2013

www.auai.org/uai2013/

Artificial Intelligence

Bellevue, Washington, USA

JEC Composites - JEC Americas 2013

October 02-04, 2013

www.jeccomposites.com/events/jec-americas-2013

Material Science / Engineering

Boston, MA

BioPharm America

September 17-18, 2013

<http://www.ebdgroup.com/bpa/index.php>

Life Science

Boston, MA, USA

Small Business Expo 2013 – Boston

October 17, 2013

<http://smallbusinessexpoboston.eventbrite.com/>

Innovation / Entrepreneurship

Boston, MA



2013 Molecular Targets and Cancer Therapeutics conference

October 19-23, 2013

<http://tinyurl.com/molecular-targets>

Life Science

Boston, MA

ArchitectureBoston Expo

November 19-21, 2013

<http://abexpo.com/register/>

Architecture

Boston, MA

American Society of Human Genetics 2013 Annual Meeting

October 22-26, 2013

www.ashg.org/2013meeting/

Life Science

Boston, MA

Materials Research Society 2013 Fall Meeting & Exhibit

December 1-6, 2013

www.mrs.org/fall2013/

Material Science

Boston, MA

2013 Advancing Ethical Research Conference

November 7-9, 2013

www.primr.org/aer13/

Life Science

Boston, MA

TechConnect WORLD

June 15-19, 2014

<http://www.techconnectworld.com/World2014/>

Global Innovation

Washington, DC

10th Massachusetts STEM Summit

November 13, 2013

www.mass-stem-summit.org/

Science & Technology

Foxborough, MA

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

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