

*Extra links that we couldn't fit in this month's newsletter...*



## What's Emerging

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### Genes help explain who gets fit

When you put in hours at the gym, you expect to get fitter. It turns out, that assumption doesn't hold true for everyone. A new study suggests specific genes may determine, at least in part, how much we really benefit from exercise. [Read more...](#)

### Graphene transistors that can work at blistering speeds

IBM has created graphene transistors that leave silicon ones in the dust. The prototype devices, made from atom-thick sheets of carbon, operate at 100 gigahertz--meaning they can switch on and off 100 billion times each second, about 10 times as fast as the speediest silicon transistors. [Read more...](#)

### Quantum mechanics at work in photosynthesis: Algae familiar with these processes for nearly two billion years

A team of University of Toronto chemists have made a major contribution to the emerging field of quantum biology, observing quantum mechanics at work in photosynthesis in marine algae. [Read more...](#)

### Mobile touch screens could soon feel the pressure

Forget swiping or pinching--the next generation of portable touch-screen devices will be able to distinguish between a gentle touch and a hard poke. [Read more...](#)

### RFID data reveals London's polycentric pattern of commuting

Data from London's commuters reveals travel patterns in unprecedented detail. It also raises privacy fears. [Read more...](#)

### Aardvark publishes a research paper offering unprecedented insights into social search

In 1998, Larry Page and Sergey Brin published a paper titled Anatomy of a Large-Scale Hypertextual Search Engine, in which they outlined the core technology behind Google. Now, the team behind social search engine Aardvark has drafted its own research paper that looks at the social side of search. Dubbed Anatomy of a Large-Scale Social Search Engine, the paper has just been accepted to WWW2010. [Read more...](#)

### Beware of Geoengineering using volcanoes' tricks

WE HACK the climate at our peril. Volcanoes spewed so much sulphate into the atmosphere 94 million years ago that the oceans were starved of oxygen and 27 per cent of marine genera went extinct. Geoengineering our climate could inflict a similar fate on some lakes. So claims Matthew Hurtgen at Northwestern University in Chicago, who with his colleagues measured sulphur isotopes in sediments on the floor of the Western Interior Seaway. [Read more...](#)

### **Acid syringe 'could spell an end to dentist's drill'**

It's the main reason so many of us feel such trepidation when faced with a trip to the dentist. But the dreaded drill could soon be a thing of the past thanks to a new technique in which teeth are treated with acid gel squirted from a syringe. [Read more...](#)

### **Why thinking too much can damage your performance in sports**

A study shows that the masters of sport use less grey matter when in action than novices. [Read more...](#)

### **Google's handheld translator seeks to cross language barriers**

The Internet search giant has begun development on a voice recognition and automatic translation system for cell phones. [Read more...](#)

### **Genetic disorder turns risk-averse into gamblers**

The brains of people who risk everything when gambling may be wired up differently to those of the naturally cautious, according to a study that appears to have discovered a neurological basis for reckless behaviour. [Read more...](#)

### **Ageing gene found by scientists could be key to longer lifespan**

A longevity gene has been identified for the first time in a breakthrough that could eventually help people live longer, a new study suggests. [Read more...](#)

### **Can battlefield robots take the place of soldiers?**

Can war be fought by lots of well-behaved machines, making it "safer for humans"? That is the seductive vision, and hope, of those manufacturing and researching the future of military robotics. [Read more...](#)

### **Botox may deaden not just nerves, but emotions, too**

A new study suggests that by paralysing the frown muscles that ordinarily are engaged when we feel angry, Botox short-circuits the emotion itself. [Read more...](#)

### **Mediterranean diet may lower risk of brain damage that causes thinking problems**

A Mediterranean diet may help people avoid the small areas of brain damage that can lead to problems with thinking and memory, according to a study that will be presented at the American Academy of Neurology's 62nd Annual Meeting in Toronto April 10 to April 17, 2010. [Read more...](#)

### **Twitter: Now more than 1 billion tweets per month**

Twitter is as of December processing more than one billion tweets per month. January passed 1.2 billion, averaging almost 40 million tweets per day. This is significantly more than Twitter was processing just a few months ago. [Read more...](#)

### **Should we seed the universe with life "starter kits"**

Hitching rides on chunks of rock blasted into space by meteorite impacts or gliding through space on a comet, it turns out that "life as we know it" has an astonishing knack of surviving in the most extreme environments. But what if mankind could purposefully launch space probes packed with little biological "starter kits" toward star systems that appear to have the potential to nurture life? We have lots of life down here, isn't it our duty to spread our seed amongst the stars? [Read more...](#)

### **Robot hand could protect soldiers on the battlefield**

A robot hand that could defuse bombs, luminous goo that flows around soldiers' moving bodies but hardens to protect them if they are hit and a uniform that conducts electricity are among the first fruits of the Ministry of Defence's version of the Dragons' Den. [Read more...](#)

### **New camera system takes the guesswork out of baseball stats**

This could be the year that baseball-stat freaks finally crack the "Derek Jeter enigma." A panel of coaches has awarded the New York Yankees' shortstop four of the past six Gold Glove awards for fielding excellence. That drives statisticians nuts, because nearly every statistical model ranks Jeter's defense below average. **Paul Higgins: I thought that this was interesting because emerging technologies are causing us to**

**question our assumptions. Ultra-slow cameras are showing us stuff we never saw before - like a cricket bat turning in the players hands as they hit a ball. More interestingly continual data flows from sensors attached to mobile phones or new ticketing systems are enabling us to see information and patterns in information that we have never seen before - allowing new insights into complicated phenomena. [Read more...](#)**

### **New DNA findings show that human genetic mutations are more recent, more rapid than once thought**

Conventional wisdom holds that if you could bring back someone from 40,000 years ago, he or she would blend perfectly well with today's population. After all, the fossils show that our ancestors were "anatomically modern" by 100,000 years ago, and by 40,000 B.C., they were creating complex tools and art. It was easy to assume our species hadn't evolved much since then. Now molecular biology is overturning that assumption. [Read more...](#)

### **Thirty-eight percent of world's surface in danger of desertification**

Researchers have measured the degradation of the planet's soil using the Life Cycle Assessment (LCA), a scientific methodology that analyses the environmental impact of human activities, and which now for the first time includes indicators on desertification. [Read more...](#)

### **CSIRO rings warning on biochar**

BIOCHAR is hailed by the coalition as a key plank of Australia's climate change response but the CSIRO says there are still unanswered questions, including whether it could contaminate food and water with dangerous toxins. [Read more...](#)

### **Plug your iPod into your t-shirt for power?**

Could powering an iPod or cell phone become as easy as plugging it into your tee shirt or jeans, and then recharging the clothing overnight? [Read more...](#)

### **With new battery tech, future cars could be powered by their bodywork**

New battery technology could help cars of the future use their own bodywork as a battery. Researchers from Imperial College London and European partners that include Volvo are developing a prototype material that's strong and light enough to be used as a car's skin but can store and discharge electrical energy. [Read more...](#)

### **Online advertising revenues ramp up 10.2 percent in fourth quarter**

Online advertising revenues among the four largest Web advertising companies (Google, Yahoo, Microsoft, and AOL) ramped up 10.2 percent in the fourth quarter to \$9 billion. This marks the second quarter of positive growth following last year's advertising recession, and growth accelerated from 1.2 percent in the third quarter. [Read more...](#)

### **Virtual museums gain curators, viewers**

The economic downturn has taken its toll on traditional museums with cutbacks and closings, but one corner of the collecting world is flourishing. Virtual museums, just a few years ago seen as a curiosity, are gaining legitimacy as collectors open online galleries to share their passions. [Read more...](#)

### **100 must-read blog posts on the future of learning**

This collection offers 100 of these blog posts speculating on the future of learning. [Read more...](#)

### **Scientists turn light into electrical current using a golden nanoscale system**

The system, an array of nano-sized molecules of gold, respond to electromagnetic waves by creating surface plasmons that induce and project electrical current across molecules, similar to that of photovoltaic solar cells. [Read more...](#)

### **Zero emissions possible - at \$40bn a year**

AUSTRALIA could move to 100 per cent renewable energy within a decade if it spent heavily on cutting-edge solar thermal and wind technology, according to an analysis released as part of a community bid to redirect the flailing climate policy debate. [Read more...](#)

### **Wi-Fi at the speed of light**

Wireless optical networks could provide gigabit-per-second data transfer. [Read more...](#)

### **Nanoparticles to clean drinking water**

BEIJING: Scientists have developed nanotechnology that purifies water using only visible light, it continues working in the dark and it kills the tougher microbes to boot. [Read more...](#)

### **Online voyeurs flock to the random thrills of Chatroulette**

A new website that has been described as "surreal", "addictive" and "frightening" is proving a sensation around the world – and attracting a reputation as a haven for no-holds-barred, explicit material. Chatroulette, which was launched in November, has rocketed in popularity thanks to its simple premise: internet video chats with –random strangers. [Read more...](#)

### **SocGen's Edwards sees euro breakup as feldstein predicts change**

The Greek budget crisis is a symptom of imbalances that will lead to the breakup of the euro region, according to Societe Generale SA strategist Albert Edwards, and Harvard University Professor Martin Feldstein said monetary union "isn't working" in its current form. [Read more...](#)

### **The long tail of video sites capture half of all viewing minutes**

According to comScore's 2009 U.S. Digital Year in Review , more than half of all time spent watching videos on the Web (52 percent) last year was on Long Tail video sites beyond the top 25. What you see is a real barbell distribution, with Youtube on one end and the Long Tail sites on the other. [Read more...](#)

### **Google street view snowmobile gives a slopes-eye-view of winter Olympics resort**

First there was the Google car, which roamed the roads of Britain to build up a Street View perspective of the nation. Then came the Google Trike, powered by super-strong employees to chart harder to reach areas such as Stone Henge. Now the internet search giant has headed to the mountains with the Google snowmobile. [Read more...](#)

### **Anesthetic approach stops pain without affecting motor function**

One of the holy grails of local anesthesia is the ability to achieve a long-lasting nerve block that eliminates pain sensation while not affecting motor function. Now, researchers at Children's Hospital Boston have discovered an anesthetic approach that seems to do just that. [Read more...](#)

### **"Melting" drywall keeps rooms cool**

Building materials that absorb heat during the day and release it at night, eliminating the need for air-conditioning in some climates, will soon be on the market in the United States. The North Carolina Company National Gypsum is testing drywall sheets--the plaster panels that make up the walls in most new buildings--containing capsules that absorb heat to passively cool a building. [Read more...](#)

### **A gene for Alzheimer's makes you smarter**

A GENE variant that ups your risk of developing Alzheimer's disease in old age may not be all bad. It seems that young people with the variant tend to be smarter, more educated and have better memories than their peers. It also suggests why the variant is common despite its debilitating effects in old age. Carriers of the variant may have an advantage earlier in life, allowing them to reproduce and pass on the variant before its negative effects kick in. "From an evolutionary perspective it makes sense," says Duke Han at Rush University Medical Center in Chicago. [Read more...](#)

### **Scientists discover the secret of ageing**

One of the biggest puzzles in biology – how and why living cells age – has been solved by an international team based at Newcastle University, in north-east England. The answer is complex, and will not produce an elixir of eternal life in the foreseeable future. [Read more...](#)

### **Life from a test tube? The real promise of synthetic biology**

Scientists are closing in on the ability to make life from scratch, with potential consequences both good and bad. [Read more...](#)

### Red wine, chocolate among foods that fight cancer

Red grapes and dark chocolate join blueberries, garlic, soy, and teas as ingredients that starve cancer while feeding bodies, Angiogenesis Foundation head William Li said at the Technology Entertainment Design Conference in Long Beach, California. [Read more...](#)

### Verizon swallows hard and embraces Skype

VoIP applications like Skype's have gone from facing resistance from the carriers to a reluctant acceptance. Skype already offers one of the most popular apps on the iPhone, and at least it encourages more data usage, which subscribers do pay for. [Read more...](#)

### Makerbot 3 D printers

Makerbot now makes a 3D printer that you can assemble yourself. It is called the cupcake and its costs US\$750. It uses layers of plastic to build 3 dimensional objects to your own design. [Read more...](#)

### Robots display predator-prey co-evolution, evolve better homing techniques

The Swiss scientists placed within the robot's operating system both basic instructions, and some random variations that changed every generation in virtual mutations. After each trial, the code for the more successful robots got passed on to the next generation, while the code for the less successful robots got bred out. This time, however, the researchers designed a whole new menagerie of robots, including a set of hunter robots that pursue prey-bots, maze-running robots, and robots designed to deposit a token in a given area. [Read more...](#)

### Genetic testing heads to the pharmacy

Even though nearly 2,000 genetic tests are available today, most Americans have never taken one. (Save, perhaps, for newborn screening.) That may soon change, as the nation's largest businesses responsible for managing prescription benefits, Medco and CVS Caremark, delve into the DNA testing business. Taken together, the two companies cover more than 100 million Americans. [Read more...](#)

### Super Velcro

General Motors researchers have made an extremely strong adhesive that comes apart when heated. The adhesive is 10 times stickier than Velcro and the reusable gecko-inspired glues that many research groups have been trying to perfect. [Read more...](#)

### With new design, a pint glass fit for a bar brawl

A British ad agency has designed two updated versions of the classic pint glass with the intention of making bars (and sports arenas) a bit safer. If you think redesigning a near-national symbol is easy, think again. The "Glass Plus" and "Twin Wall" pint glasses, designed by London-based Design Bridge, eschew traditional alternatives such as plastic — which people either fear or don't prefer — or toughened glass, which is expensive to produce and explosive when broken. **Paul Higgins: Amazed with the statement that : "there are some 87,000 glass attacks each year in the U.K., ending with an estimated National Health Service bill of £2.7 billion, or approximately \$4.2 billion U.S."** [Read more...](#)

### Busting blood clots with sound waves

New technology being tested could provide a non-invasive approach to treating stroke. [Read more...](#)

### Medical potential of IPS stem cells exaggerated says world authority

The medical potential of reprogrammed stem cells that do not require the destruction of embryos has been exaggerated, according to the head of one of the world's leading regenerative medicine companies. [Read more...](#)

### Please rob me makes foursquare super useful for burglars

Location-based services are all the rage right now. Even everyone seems to agree that the controversial Google Buzz did at least one thing right in adding a location element to its mobile site. But as great as these services are for connecting social networking with actual social activity, there is a downside we're all well aware of too: privacy. A new site throws this issue back into the spotlight in a humorous way. Please Rob Me is a stream of updates from various location-based networks that shows when users check-in somewhere that is not their

home. The idea, of course, is that if they're not home, you can go rob them. [Read more...](#)

### **The climate changers: How wind turbines make their own clouds**

They are billed as vast sentinels that will protect our world from climate change. But, at the same time, these wind turbines are creating a new little climate of their own. The 196ft structures whipped up the sea mist which blankets them in this photograph. [Read more...](#)

### **Why fish hold the key to increasing wind farm power**

The way schooling fish swim reveals how to squeeze more power from the wind over a given area of land. [Read more...](#)

### **America's wind energy potential triples in new estimate**

The amount of wind power that theoretically could be generated in the United States tripled in the newest assessment of the nation's wind resources. [Read more...](#)