

@ Emergent Futures | New Around the World | What Are We Writing About

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



## What's Emerging

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### **We are happiest at 74, says new report**

Seventy-four year-olds are the most contented people in the population, according to new research. [Read more...](#)

### **DARPA orders smart robotic terminator hands for a better tomorrow**

National Defense reports that the DARPA program aims to create inexpensive robotic hands that can perhaps also replace existing prosthetics for amputees. [Read more...](#)

### **Bloom energy promises cheap, emissions-free power from a small box**

A boxy power plant that could one day produce efficient, inexpensive, clean energy in every home might sound like a pipe dream, but it's the very real product of a Silicon Valley startup called Bloom Energy. Twenty large corporations that include Google, FedEx, Walmart and eBay have already purchased and begun testing the Bloom Boxes. [Read more...](#)

### **The bloom is of the rose**

**Paul Higgins: A typically acerbic but informed commentary by my friend Lindsay Leveen on the Bloom Power Box that is in the previous link.** [Read more...](#)

### **High-tech armour protects Olympic skiers**

Made by the British firm d3o and adapted by U.S. ski wear designer Spyder for the U.S. and Canadian ski teams, the material is soft and flexible under most conditions, but instantly hardens when a skier hits a gate. [Read more...](#)

### **NSF puts up \$25 million to research biological machines**

The Emergent Behaviours of Integrated Cellular Systems Centre (EBICS), will not only advance research in the emerging experimental discipline of engineered biological systems, but will lay an extensive educational groundwork for research in the field going forward. [Read more...](#)

### **Interval training can cut exercise hours sharply**

By working out in intense intervals, people can squeeze a week's worth of exercise into less than an hour. **Paul Higgins: Having utilised interval training for my cycling program I agree that it works but the evidence is that dropout rates are high because it hurts a lot more than normal exercise. In my case there is certainly a psychological block on the days I set up to do interval training.** [Read more...](#)

### **Optical system promises to revolutionize undersea communications**

In a technological advance that its developers are likening to the cell phone and wireless Internet access, Woods

Hole Oceanographic Institution (WHOI) scientists and engineers have devised an undersea optical communications system that -- complemented by acoustics -- enables a virtual revolution in high-speed undersea data collection and transmission. [Read more...](#)

### **Apple's iTunes store serves up 10 billionth songs**

'Guess Things Happen That Way' by Johnny Cash Reportedly 10 Billionth Song. [Read more...](#)

### **Tiny ear listens to hidden worlds**

A micro-ear could soon help scientists eavesdrop on tiny events just like microscopes make them visible. [Read more...](#)

### **Makeshift shelter of future: Sewer pipes, balloons?**

Picture a tent that could be dropped from a helicopter and kept aloft by balloons with computer-controlled rotors attached. It might sound like some kind of offbeat interactive media installation, but Canadian designer Richard Kuchinsky imagines his structure more practically: as a cheap, easy-to-deploy emergency shelter. [Read more...](#)

### **Genetically engineered mosquitoes with disabled wings join fight against dengue fever**

Dengue fever, a painful and potentially deadly virus that causes joint pain extreme enough to earn the nickname "bonecrusher disease", infects upwards of 100 million people every year. University of California, Irvine professor Anthony James believes he can turn the very mosquitoes that spread the virus into the vector for prevention. [Read more...](#)

### **Rail patronage to double in 7 years**

Melbourne rail operator Metro says it will need extra Government assistance over the long term, to cope with booming patronage. [Read more...](#)

### **New research at Argonne could help you save on gas (petrol) bills**

Over the next year, the team will be partnering with Chrysler, Fiat, Ohio State University and others to create a Dodge Caravan prototype that's 25 percent more fuel efficient than the current model. A second team at the lab, which is near Lemont and operated by the Department of Energy, will be partnering with truck company Navistar and a dozen other universities and companies on a five-year project to develop a Class 8 truck that's 50 percent more fuel-efficient than models now on the road. [Read more...](#)

### **The U.S. in 2050: Bigger, younger, less white, less urban**

In Joel Kotkin's new book, *The Next Hundred Million: America in 2050*, he explores how the United States will evolve in the next four decades. [Read more...](#)

### **The great tradition of bungling boffins**

As recent events have shown, all scientists can make mistakes. Michael Brooks recounts their most heroic failures across the ages. [Read more...](#)

### **Biological clock' could be a key to better health, longer life**

If you aren't getting a good, consistent and regular night's sleep, a new study suggests it could reduce your ability to handle oxidative stress, cause impacts to your health, increase motor and neurological deterioration, speed aging and ultimately cut short your life. [Read more...](#)

### **Detroit homes sell for \$1 amid mortgage and car industry crisis**

One in five houses left empty as foreclosures mount and property prices drop by 80%. [Read more...](#)

### **Learning keeps brain healthy: Mental activity could stave off age-related cognitive and memory decline**

UC Irvine neurobiologists are providing the first visual evidence that learning promotes brain health -- and, therefore, that mental stimulation could limit the debilitating effects of aging on memory and the mind. [Read more...](#)

### **What's wrong with venture capital?**

The old mechanism for funding the commercialization of new technologies is in trouble. A decade ago, venture capitalists seemed like genuine alchemists, able to turn even startup dross into purest gold. In recent years, however, the industry has seemed less magical than mundane. Since 2004, its average five-year return has oscillated around zero. [Read more...](#)

### **The self-charging cellphone**

YOUR cellphone need never again run out of juice while you're on the go. So says Nokia of Finland, which filed a US patent last week for a handset that recharges itself by harvesting energy from the owner's motion. [Read more...](#)

### **Androids will challenge the iPad**

Tablets powered by Google's mobile operating system are set to debut. Like the iPhone OS, which will power the iPad, Android was originally developed for cell phones. This means it will be fast and low-power. "Android is very responsive; it's instantly available," says Jeff Orr, a senior analyst for mobile devices at ABI Research. [Read more...](#)

### **Giant Antarctic iceberg could affect global ocean circulation**

Ice broken off from Mertz glacier is size of Luxembourg and may decrease oxygen supply for marine life in the area. [Read more...](#)

### **Shields down! Earth's mag field may drop in a flash**

Our planet's magnetic field has reversed polarity from time to time throughout its history. Some models suggest that a flip would be completed in a year or two, but if, as others predict, it lasted decades or longer we would be left exposed to space radiation. This could short-circuit satellites, pose a risk to aircraft passengers and play havoc with electrical equipment on the ground. [Read more...](#)

### **Artificial intelligence brings musicians back from the dead, allowing all-stars of all time to jam**

Zenph is working on a means to not only recreate old performances, but to dissect a style to the point that it can manifest an artist's personal touch into pieces he or she never performed in life. Meaning the software could potentially lift Jimmy Page out of Black Dog and replace him with, say, Jimi Hendrix, just so see how it sounds. [Read more...](#)

### **Japan's new hovering hummingbird bot has four wings weighs under 3 grams**

Weighing only 2.6 grams and controlled by an infrared sensor, the tiny four-winged 'bot bobs and weaves through the air like a hummingbird, going as high as ten feet for up to six minutes at a time. [Read more...](#)

### **To Mars in 39 days**

A journey from Earth to Mars could eventually take just 39 days - cutting current travel time nearly six times - according to a rocket scientist who has the ear of U.S. space agency NASA. [Read more...](#)

### **Tons of water ice at the Moon's North Pole could sustain a lunar base**

Radar results from a lunar probe have revealed that the moon's north pole could be holding millions of tons of water in the form of thick ice, raising the possibility that human life could be sustained on Earth's silvery satellite. [Read more...](#)

### **In an age of classroom multitasking, scholars probe the nature of learning and memory**

"Heavy multi-taskers are often extremely confident in their abilities," says Clifford I. Nass, a professor of psychology at Stanford University. "But there's evidence that those people are actually worse at multitasking than most people." [Read more...](#)

### **Global Smartphone app download market could reach \$15 billion by 2013: Report**

Research reports forecasting future market sizes should always be taken with a grain of salt, but it occasionally helps to see the estimates of research organizations in order to gain some perspective on the current and upcoming trends for those markets. **Paul Higgins- glad to see someone saying that forecasting should be taken with a grain of salt.** [Read more...](#)

### **Exotic antimatter detected at relativistic heavy ion collider: heaviest known antinucleus heralds new frontier in physics**

An international team of scientists studying high-energy collisions of gold ions at the Relativistic Heavy Ion Collider, has published evidence of the most massive anti-nucleus discovered to date. "This antimatter pushes open the door to new dimensions in the nuclear chart -- an idea that just a few years ago, would have been viewed as impossible." The discovery may help elucidate models of neutron stars and opens up exploration of fundamental asymmetries in the early universe. [Read more...](#)

### **The future for UAVs in the U.S. air force**

When the Air Force recently mapped out a game plan to 2047, its report contained a big surprise: Fewer pilots and more robotic planes acting on their own. Will the airman-centric service accept a future with fewer cockpits? And are we ready for UAVs that can fire their weapons without human permission? [Read more...](#)

### **With artificial photosynthesis, a bottle of water could produce enough energy to power a house**

One of the interesting side effects of last year's stimulus bill was \$400 million in funding for ARPA-E, the civilian, energy-focused cousin of DARPA. And in this week's first ever ARPA-E conference, MIT chemist Dan Nocera showed how well he put that stimulus money to use by highlighting his new photosynthetic process. Using a special catalyst, the process splits water into oxygen and hydrogen fuel efficiently enough to power a home using only sunlight and a bottle of water. **Paul Higgins: I think that these sorts of claims should always be taken with a grain of salt and examined very critically.** [Read more...](#)

### **Globe-warming methane is gushing from a russian ice shelf**

Behind the ongoing back-and-forth fights over climate change that usually focus on carbon, there has lingered the threat of the powerful greenhouse gas methane being released into the atmosphere and causing even worse trouble. This week in Science, a team reports seeing this during thousands of observations of the East Siberian Arctic Shelf on Russia's north coast, which is even more worrisome because it's a huge methane deposit. [Read more...](#)

### **Ice once covered the equator**

Sea ice may have covered the Earth's surface all the way to the equator hundreds of millions of years ago, a new study finds, adding more evidence to the theory that a "snowball Earth" once existed. [Read more...](#)

### **DARPA seeks prosthetics directly controllable through brain implants**

The Pentagon agency has kicked off a new phase of its "Revolutionizing Prosthetics" program that sets the hefty goal of creating a fully-functional human limb directly controlled by the brain within five years, according to Wired's Danger Room. [Read more...](#)