

News in Brief

Designing Solution to Crime

A slash-proof backpack, an alarmed laptop case and a chair with space to hide your handbag inside are among the creations of a research center fighting crime with design.

The Design Against Crime center devises innovative gadgets and adapts everyday items to make theft as difficult as possible, BBC wrote.

Based at London fashion college Central Saint Martins, the center has devised enough items to make James Bond and Batman envious since its inception in 1999.

Its latest invention—an M-shaped cycle stand which aims to reduce bike theft—will be used by councils nationwide from May 22.

"Our crime-proof designs make products more sustainable," says center director Lorraine Gamman. "They become harder to steal so we don't need to keep replacing them."

Take its 'karrysafe' bag, which emits a deafening scream if pulled from the shoulders, forcing the thief to abandon it seconds later.

Or the center's anti-theft chair, with space inside its seat for a handbag. "It encourages you to literally sit on your valuables," says Professor Gamman.

Green Tea Beats Cognitive Deficits

Chemicals found in green tea may be able to stave off the cognitive deficits that occur with obstructive sleep apnea (OSA), according to a new study.

Researchers examined the effects green tea polyphenols (GTP), administered through drinking water, on rats who were intermittently deprived of oxygen during 12-hour 'night' cycles, mimicking the intermittent hypoxia (IH) that humans with OSA experience, ScienceDaily reported.

People with OSA have been reported to have increased markers of oxidative stress and exhibit architectural changes in their brain tissue in areas involved in learning and memory. Chronic IH in rats produce similar neurological deficit patterns.

"OSA has been increasingly recognized as a serious and frequent health condition with potential long-term morbidities that include learning and psychological disabilities [...]," wrote David Gozal, M.D., lead author of the article.

"A growing body of evidence suggests that the adverse neurobehavioral consequences imposed by IH stem, at least in part, from oxidative stress and inflammatory signaling cascades."

Efficiency of Dragonflies Discovered

Scientists have discovered how dragonflies use their four wings to make flying more efficient and faster.

According to Telegraph, they may now look to use the same aerodynamic tricks used by the insect for 300 million years to help develop artificial insects for use on the battlefield.

While other flying insects have evolved one pair of wings, the dragonfly operates each wing independently. Dr. Jim Usherwood and Dr. Fritz-Olaf Lehmann used a specially designed robot dragonfly to examine the aerodynamics of four winged flight.

The findings show that as well as allowing backward, nimble and high acceleration flight, four wings can be more efficient too.

Dr. Usherwood said, "We found that two pairs of wings can allow the dragonfly to produce higher forces, allowing acceleration and climbing, while, if the wings flap with the right timing, the lower wings are able to reduce the energy wasted."

Breast-Prostate Cancer Link Found

Men from families where the women have high rates of breast cancer could face a heightened risk of prostate cancer, Australian researchers said.

A mutated gene seen as a factor in breast cancer can also expose men to a four times higher risk of prostate cancer, the scientists said, describing confirmation of the link as a world first, AFP wrote.

The research was funded by Australia's National Breast Cancer Foundation and carried out by researchers at kConFab, an Australian and New Zealand consortium for research into familial breast cancer.

The consortium has been investigating families with multiple cases of breast and ovarian cancer for 10 years and noticed that prostate cancer was also common in some of the families, said kConFab national manager Heather Thorne.

Those families carried a mutation in the BRCA2 gene, which is passed from one generation to the next, and "this led us to explore whether these prostate cancers were caused by the genetic fault running in the family," she said.

Causes of Morning Sickness Revealed

As irritating as morning sickness may be for pregnant women, it may protect embryos.

According to LiveScience, doctors have long known that morning sickness—the nausea and vomiting usually experienced in early pregnancy—is actually a good sign of a healthy pregnancy, despite the discomfort it brings.

However, scientists have debated whether morning sickness actually helps pregnancies succeed. It could just be an annoying byproduct of a healthy pregnancy, as pregnant women and their embryos carry out a tug of war over the body's resources.

If morning sickness was just the byproduct of a healthy pregnancy, then it should accompany all healthy pregnancies. "But it doesn't," said researcher Samuel Flaxman, an evolutionary biologist at the University of Colorado. Although two-thirds of pregnant women do experience morning sickness, the rest often carry their pregnancies to term.

Morning sickness is usually triggered in specific circumstances—in response to: the sight, smell, or taste of meats and strong-tasting vegetables, which were historically likely to contain food borne microbes or birth-defect-inducing chemicals.

This all suggests morning sickness serves a useful function, evolving to protect mothers and embryos from things that may be dangerous.

Junk Computers Could Fuel Cars

Potentially toxic computer waste could instead wind up fueling your car one day.

A simple and efficient technique can recycle discarded circuit boards into environmentally friendly raw materials for use in fuel, plastic and other useful consumer products, LiveScience said.

As electronics make their way everywhere around the world, heaps of outdated, unwanted devices are piling up in junkyards. This is creating one of the world's biggest environmental headaches.

Computers and other electronics are more hazardous than normal household trash, loaded as they are with toxic materials such as arsenic, mercury and lead or certain flame retardants.

Now scientists in Romania and Turkey are seeking ways to remove toxic materials from electronics so these scrap materials can be safely recycled.

The researchers collected printed circuit boards from discarded computers. They employed a special combination of catalysts, high temperatures and chemical filtration to destroy flame-retardant additives in the plastics.

This removed nearly all the toxic substances from the scraps, resulting in oils that could be safely used as fuel or raw materials called feedstocks for a wide range of consumer products.

Hurricanes to Decline



A sea surface temperature above 26.5C (79.7F) is one of the key factors in the formation and feeding of a hurricane.

Hurricanes and tropical storms will become less frequent by the end of the century as a result of climate change, US researchers have suggested.

But the scientists added their data also showed that there would be a "modest increase" in the intensity of these extreme weather events, BBC said.

The findings are at odds with some other studies, which forecast a greater number of hurricanes in a warmer world. The researchers' results appear in the journal Nature Geoscience.

The team from the National Oceanic and Atmospheric Administration's (Noaa) Geophysical Fluid Dynamics Laboratory (GFDL) said its findings do not support the notion that human-induced climate change was causing an increase in the number of hurricanes and tropical storms.

"There have been some studies that have suggested that this is the case, but this modeling study does not support that idea," observed lead author Tom Knutson.

"Rather, we actually simulate a reduction in hurricane frequency in the Atlantic."

Although the study projected that there would be fewer extreme weather events in the future, Dr. Knutson said that these storms were likely to be more powerful.

"The model is simulating increased intensity of the hurricanes that do occur, and also increased rainfall rates.

"This is something that has been seen in previous studies, and the IPCC use this [scenario] as a likely projection for future climate warming." These changes in intensity are still fairly modest in size."

A previous study by Noaa scientists showed a 4 percent increase in storm intensity for every 1C (1.8F) increase in sea surface temperature. Yet, he explained, this study suggested only a 1-2 percent increase.

A sea surface temperature (SST) above 26.5C (79.7F) is one of the key factors in the formation and feeding of a hurricane.

Over recent decades, the surfaces of most tropical oceans have warmed by up to 0.5C (0.9F), which the Intergovernmental Panel on Climate Change (IPCC) believes has been caused by an increase in greenhouse gas concentrations in the atmosphere.

In November 2006, the global community of tropical cyclone researchers gathered at a workshop organized by the World Meteorological Organization to consider the impact of human activity on the frequency and intensity of cyclones.

In a concluding statement, the researchers said that although there was evidence both for and against the existence of a detectable anthropogenic signal in the tropical cyclone climate record, no firm conclusion could be made.

One reason for the uncertainty is the changes in observation methods used to record Atlantic hurricanes—a record that dates back to 1850.

From 1944, air reconnaissance flights were used to monitor tropical storms and hurricanes. This development allowed researchers to monitor a much greater area and not rely on ships' logs and storms reaching land.

And from the late 1960s, satellite technology has been used to monitor and track hurricanes.

Therefore, a reliable record of past hurricane activity only stretches back about 35 years.

Natural variations that affect SSTs—such as El Nino and La Nina episodes and the Atlantic Multi-decadal Oscillation—add to the difficulty of identifying the influence of human-induced climate change on the frequency and intensity of hurricanes.

Dr. Knutson's colleague and co-author, Isaac Held, said the team's model used a different approach to previous efforts, which gave them a high degree of confidence in their results.

"Most of the literature to date on hurricanes and climate change has used statistical techniques," he said.

"You've had time series of hurricane activity and time series of sea surface temperatures, and people correlate them."

Because there was a high degree of confidence that the sea surface temperature trend was going to continue to rise, Dr. Held explained, people had "tried to conclude that hurricane activity will increase rather dramatically in the future."

"We tried to simulate the fundamental fluid dynamics and thermodynamics that control hurricane genesis in the Atlantic in a numerical model to a very high resolution."