

# The Latest In Homeland Defense & Security News

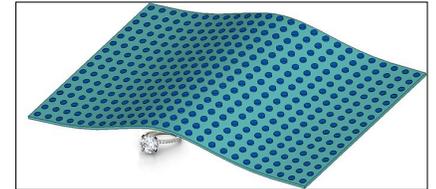
July 13, 2015

## Highlight:

### [Engineers Give Invisibility Cloaks A Slimmer Design](#)

Researchers have developed a cloaking device that is thin and does not alter the brightness of light around a hidden object.

Typically, cloaking devices need many layers of materials to hide an object and the cloak ends up being much thicker than the size of the object that is being covered. Image: L. Hsu/Jacobs School of Engineering/UC San Diego



## Alternative Energy

### [Successful Test For Open-Sea Pilot Connecting Power Generated From Waves, Tides, And Currents To The Grid](#)

Researchers at the University of Hawaii are monitoring, evaluating, and testing the nation's first grid-connected wave energy converter (WEC) device in the open ocean. The WEC was developed by the U.S. Department of Energy and the U.S. Navy.

### [New Design Could Dramatically Boost Efficiency Of Low-Cost Solar Panels](#)

Researchers have changed the assembly of the components of solar panels to more closely resemble the natural systems that plants use to capture energy from the sunlight. The new design retains energy longer and is more environmentally friendly than the current technology for solar panels.

### [Wearable Electronics: Tiny Wires Could Provide A Big Energy Boost](#)

The biggest limitation to wearable electronics is the capacity of its batteries. Researchers have developed a method to make the supercapacitors utilizing a coating of conductive polymer over yarn made of niobium nanowires.

## Biometrics

### [Singapore Airport To Install Facial Recognition Technology In New Terminal](#)

"Singapore's Changi Airport will install facial recognition technology at the new Terminal 4 to eliminate the need for security staff to manually identify passengers at various check points."

July 9, 2015

### [Israeli Cyber Experts Call On Government To Cancel Planned Biometric ID System](#)

Seventy four Israeli cyber experts have sent a letter to the Prime Minister Benjamin Netanyahu, the interior minister, and cabinet ministers "to halt the use of biometric devices and to disable the central database before the Israeli public suffers irreparable damage to their privacy and security."

### [LA County Sheriff's Department Invests In New Facial Recognition Technology](#)

The Los Angeles County Board of Supervisors has approved the procurement of mobile facial recognition technology for the deputy officers in order to identify people in the field.

### [New Research Proves That Fingerprint Accuracy Remains Unchanged Over Time](#)

According to a study by researchers, fingerprint recognition accuracy between two comparable fingerprints remains the same over time.

## CBRN

### [Animal Diseases Can Be Used As Biological Weapons](#)

According to the director general of the World Organisation for Animal Health (OIE), "sixty percent of human diseases come from animal agents and 80 percent of the agents that could be used for bio terrorism are of animal origin."

### [These Two Mutations Turned Not-So-Deadly Bacteria Into The Plague](#)

Researchers have discovered that through two mutations, the *Yersinia pseudotuberculosis* bacterium which causes an illness similar to scarlet fever mutated into *Yersinia pestis*, the bacterium that

caused the Black Plague.

## Critical infrastructure

### [St. Louis Prepares For A Warmer Future](#)

In an effort to raise awareness about climate change and its effect on the local infrastructure, researchers presented their findings of St. Louis, Missouri. Between 2041 and 2071, the average temperature is estimated to rise between 4.7 to 4.9 degrees.

### [Utility Drones Could Inspect Equipment, Scan For Outages](#)

Small drones are being tested to determine whether or not they are effective in inspecting transmission lines and equipment in power plant boilers. Other possible applications include security surveillance and the identification of storm damage.

## Cultural Studies

### [Social Engagement Helps In Disaster Preparedness](#)

According to a study based on household surveys in the tsunami-prone areas of Phang Nga, Thailand, people who participate in social activities in their community are more likely to plan and prepare for future disasters.

### [Number Of Syrian Refugees Climbs To More Than 4 Million](#)

In June, more than 24,000 additional people crossed into Turkey to escape the fighting in northern Syria. The number of people sheltered in neighboring countries is now past four million which is the largest refugee population from a single conflict in a generation.

## [Nepali Quake Survivors Reject Basic Shelter](#)

Although the technology to make superadobe shelters has been certified as resistant to earthquakes, floods, and hurricanes under the building codes of California in the United States, the Nepali people are not receptive to the new shelters for many reasons including cultural concerns.

## Homeland Defense and Security

### [Surprisingly High Geothermal Heating Beneath West Antarctic Ice Sheet](#)

Researchers studying the West Antarctic ice sheet, found that the amount of heat flowing from geothermal sources toward the base of the West Antarctic ice sheet was surprisingly high - 285 milliwatts per square meter. This was the first geothermal heat flux measurement below the West Antarctic ice sheet.

### [NRL Scientists Update Horizontal Wind Model With Eye Toward Next-Generation Space Weather Prediction Systems](#)

Scientists at the U.S. Naval Research Laboratory (NRL) have updated the Horizontal Wind Model (HWM) so that they can “plan and build the next generation of physics-based space weather prediction systems.”

### [Faster Detection Of Hidden Objects By Terahertz Sensor](#)

Researchers have invented a sensor to detect concealed objects by sensing radiation across the spectrum between microwaves and infra-red, known as the Terahertz (THz) region of the spectrum.

## Medical

### [Vets Used In Secret Tests Make Progress In Court](#)

Appellate judges ruled that the Army, not the Veterans Affairs Department, must keep veterans that were used as test subjects for chemical and biological tests during the Cold War apprised of developments related to their health. “The ruling came on a class-action lawsuit filed by Vietnam Veterans of America, Swords to Plowshares and individual veterans over medical care for troops who participated in research programs at Edgewood Arsenal and Fort Detrick, Maryland, from the early 1950s through the mid-1970s.”

### [Regular Exposure To Death, Trauma Causes Death Anxiety In Emergency Nurses](#)

“Nurses working in emergency settings should be made aware of the risks of death anxiety, or thanatophobia, and given access to interventions to prevent it from affecting their physical and mental health.”

### [Crystal Diagnostics Device Shows Ebola Reading Within 20 Minutes](#)

Crystal Diagnostics (CDx) has announced that its Xpress System successfully detected a live Ebola virus sample within 20 minutes at the University of Texas Galveston Medical Branch Biosafety Level 4 facility.

### [Drug Inhibits Infection That Causes Watery Diarrhea](#)

“Researchers have demonstrated that heparin, a type of sulfated polysaccharide,

inhibits infection with *Cryptosporidium parvum*, a protozoan that causes diarrhea in humans and other mammals. This will facilitate the development of anti-cryptosporidial agents.”

## WMD

### [Kim Jong Un Tours Pesticide Facility Capable Of Producing Biological Weapons: A 38 North Special Report](#)

“The North Korean assertion that its pesticide plant is intended to produce insecticides is an old and well-used cover for a biological weapons program.” “The modern equipment seen in the images reveal that North Korea is not only maintaining a biological weapons capability, but also has an active large-scale sanctions busting effort to illicitly procure the equipment for the Pyongyang Bio-technical Institute.”

### [NNSA, Air Force Complete Successful B61-12 Life Extension Program Development Flight Test At Tonopah Test Range](#)

“The United States Air Force (USAF) and National Nuclear Security Administration (NNSA) completed the first development flight test of a non-nuclear B61-12 gravity bomb at Tonopah Test Range in Nevada.” “The B61-12 LEP is a joint USAF and NNSA program that preserves a critical element of the U.S. Nuclear Triad and demonstrates continued support for extended deterrence and assurance commitments.”



**Homeland Defense & Security Information Analysis Center**

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