Currents

The Latest In Homeland Defense & Security News

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Highlight:

DOE Betting On Smarter Transportation Infrastructure Leading To Energy Efficiency

DOE's National Renewable Energy Laboratory (NREL) is developing a tool that will guide people through a city "in the most energy-efficient way possible." The tool would provide travel information through the traveler's smartphone.

(Image courtesy of the Advanced Research Projects Agency — Energy)

Alternative Energy

Going Solid-State Could Make Batteries Safer And Longer-Lasting

Researchers are investigating solid-state batteries. The advantages include operation in frigid temperatures, increased energy storage capacity, and increased safety.

U.S. Navy To Sign Its Largest Solar PPA at 150 MW-AC

"Sempra's Mesquite Solar 3 will provide 1/3 of the power for 14 military bases in California. This is the largest renewable energy purchase by a division of the U.S. federal government to date."

Using Fungi To Harvest Microalgae For Biofuels

"Microalgae are a promising feedstock for biofuels, but current methods of harvesting and dewatering them are unsustainable. Now researchers have shown that growing the algae with certain filamentous fungi to form lichens can reduce both cost and the energy input."

Biometrics

Clear Biometric Technology Being Introduced At Baltimore-Washington Airport

The Clear Fast Access program will be introduced to the Baltimore-Washington Thurgood Marshall Airport in September. The Clear program is a security clearance option for frequent travelers that allows a faster process through security in the airport.

FBI Clarifies Facial Recognition Technology Use In New York Times Letter

Amy Hess, executive assistant director of the FBI's science and technology division, clarifies several misconceptions about the agency's use of facial recognition technology, particularly in regard to using the software to analyze driver's license photos and images from surveillance cameras.

Indra Installs 124 Biometric Border Control Kiosks At Five Spanish Airports

"Indra has successfully deployed approximately 124 automatic border control (ABC) biometric systems at five airports across Spain, including in Madrid, Barcelona, Girona, Palma de Mallorca and Alicante." "The biometric technology is designed to accelerate the processing of the passengers of the European Economic Area (Schengen area) returning from non-member states."

CBRN

New Reference Material To Help Monitor Oceans' Radioactive Contamination

The National Institute of Standards and Technology (NIST) has created a new reference material that will help scientists more accurately determine the amount of radiation in an ocean environment. The new standard is a mixture of powdered oysters and mussels collected from three locations: the Irish Sea, the White Sea, and the Sea of Japan before 2011.

Biosurveillance Technology Gets Up Close And Personal

According to scientists at the Edgewood Chemical Biological Center (ECBC), wearable devices will be developed that will detect chemical/biological exposure before symptoms occur.

Nanocrystals Don't Add Up For Reactor Materials

Early simulations indicated that nanocrystals could absorb radiation damage better than the polycrystalline materials used in nuclear reactors. Recently, "researchers have found that nanocrystalline materials don't necessarily resist radiation effects in nuclear reactors better than currently used materials."

New Drug Protects Against Nuclear Radiation's Deadly Effects 24 Hours After Exposure

A research team has discovered "that a single injection of the investigative peptide drug TP508 given twenty-four hours after a potentially lethal exposure to radiation appears to significantly increase survival and delay mortality in mice by counteracting damage to the gastrointestinal system."

Critical infrastructure

In The Pacific Northwest, Fear Of The Big One Should Be Channeled Into Pragmatic Action

As a result of increased warnings, and studies of the Cascadia Subduction

Zone, Oregon is working on some of the first tsunami building codes. These may be implemented over the next few years.

Toxic Blue-Green Algae A Growing Threat To Nation's Drinking, Recreational Water

Toxic cyanobacteria, or blue-green algae, are a risk to recreational and drinking water quality. At this time, "no testing for cyanobacteria is mandated by state or federal drinking water regulators."

Drought Causing California's San Joaquin Valley Land To Sink, Damaging Infrastructure

A NASA report shows that the land in some locations of the San Joaquin Valley is sinking faster than ever before, at nearly two inches per month. The subsidence, or sinking land, has been occurring for decades due to the excessive groundwater pumping during drought conditions. "The increased subsidence rates can damage local, state, and federal infrastructure, including aqueducts, bridges, roads, and flood control structures."

Cultural

Remote Sensing, Satellite Imagery, Surveys Use To Estimate Population Of Mogadishu

A number of new tools were used to estimate the population of Mogadishu. The study illustrated the various cultures and infrastructure within the city and is a potential aid to humanitarian relief agencies and the military.

Letting Cities Develop Naturally

Recent research has acknowledged the importance of geographical relationships among cities and there is growing evidence that geography does affect the economies.

Homeland Defense and Security

Origami-Inspired Shelters Could Serve Military, Disaster Relief Efforts

The University of Notre Dame's Kinetic Structures Laboratory is the only university laboratory in the United States that is dedicated to investigating kinetic structures for civil engineering applications. The new structure that they have developed has many potential applications, such as military and humanitarian assistance. The rigid walls fold, the structures are more energy-efficient than canvas tents, and can easily be transported.

TSA Tightens Passenger Scrutiny After Screening Failures

After reports that TSA agents failed to detect fake bombs that were carried by undercover agents, TSA increased passenger security.

Social Media Is Transforming Emergency Communications

Social media (SM) is becoming an important communication tool in emergencies. SM is often the only telecommunications medium that survives, and is the first to recover.

Medical

Hidden Damage Revealed In Veterans' Brains From IED Blasts

Researchers have found a honeycomb pattern of broken and swollen nerve fibers in the brains of Iraq and Afghanistan combat veterans who survived improvised explosive device (IED) blasts, but later died of other causes. The next step is to work with engineers to do simulation studies in order to confirm the hypothesis that brain injury can come from within the chest.

Women Warriors At No Greater Risk For PTSD Than Men, Study Finds

Recent studies show that "U.S. female service members are no more vulnerable than male service members to the negative mental health consequences of warfare exposure."

Impact Of Sleep Disturbance On Recovery In Veterans With PTSD And TBI

"Sleep difficulty is a primary symptom of both PTSD and TBI and has been found to affect the severity of both conditions." "Poor sleep often persists in veterans after resolution of their PTSD and mild TBI symptoms, but few treatments and rehabilitation protocols target sleep specifically."

WMD

Boeing Joins Lockheed Martin And Raytheon To Develop Multi-Warhead Killer Missile Defense

"The Boeing Co. is joining rivals Lockheed Martin Corp. and Raytheon Co. in an effort to develop a ballistic missile defense multi-warhead killer weapon that would be able to detect, track, and kill several different incoming enemy missile warheads and decoys with only one counter-missile launch."

Homeland Defense & Security Information Analysis Center