UNH Research 2012

A digest of the year’s research news from the University of New Hampshire

This report is produced by the Research Development and Communications unit of the UNH Research Office.
Find it on the Web at http://www.unh.edu/research/UNH-Research-Digest.
Business & Technology

Angel Investor Market in Steady Recovery, UNH Center for Venture Research Finds
http://www.unh.edu/news/releases/2012/oct/lw10recovery.cfm
http://www.unh.edu/campusjournal/2012/10/angel-investor-market-steady-recovery-unh-center-venture-research-finds

According to the Center for Venture Research at UNH, the angel investor market in the first two quarters of 2012 showed signs of steady recovery since the correction in the second half of 2008 and the first half of 2009, with total investments at $9.2 billion, an increase of 3.1 percent over the same period in 2011.

ArgenTech Solutions Awarded Technology Innovation Grant from New Hampshire Innovation Research Center
http://www.unh.edu/news/releases/2012/sep/gs04powder.cfm
http://www.unh.edu/campusjournal/2012/09/argentech-solutions-awarded-technology-innovation-grant-new-hampshire-innovation-research-ce

The New Hampshire Innovation Research Center (NHIRC, based at UNH) has awarded a Granite State Technology Innovation Grant to ArgenTech Solutions, Inc. to help develop a high-performance, photoluminescent powder coating additive suitable for advanced safety and military applications. The resulting product will be available in a wide range of colors and is designed to be significantly brighter and longer lasting than any of the products currently available.

Energy Conservation, Transportation at Core of Student-designed Android App
https://www.iol.unh.edu/blog/2012/5/16/

UNH computer science students worked with the UNH Sustainability Academy to design the UNH Energy Dashboard, a way for students and faculty to access up-to-date utility usage information for all the buildings across campus.

Related Research Areas: Sustainability & the Environment

Gov. Lynch Announces Companies Chosen for Green Launching Pad Funding
http://www.unh.edu/news/cj_nr/2012/jan/lh18green.cfm

Governor John Lynch announced the three businesses selected to participate in the next round of Green Launching Pad (GLP) funding: LDI Corporation of Portsmouth, RAS-Tech LLC of Brentwood, and Earthtec of Portsmouth. The Green Launching Pad program provides support to businesses that will help the State achieve the objectives of the ARRA-State Energy Program and N.H. Climate Action Plan, with an emphasis on green manufacturing while creating new jobs and contributing positively to the state’s economy.

Related Research Areas: Sustainability & the Environment
Governor, President Huddleston Announce National Science Foundation Funding to Support Statewide Economic Development

http://www.unh.edu/unhtoday/2012/03/governor-unh-president-announce-nsf-grant-support-economic-development


Governor John Lynch and UNH President Mark Huddleston announced a five-year, $20 million grant from the National Science Foundation. UNH will lead a statewide research and education project bringing together researchers from around the state to better understand the environment and the complex interactions of the climate-ecological-human system, as well as provide critical information for state decision makers.

Related Research Areas: Health, Behavioral & Social Sciences; Sustainability & the Environment

Hamanasi Eco-Resort: Examining the Profit, Planet, and People Bottom Lines of Sustainability

http://www.unh.edu/unhtoday/2012/05/hamanasi-eco-resort-examining-profit-planet-and-people-bottom-lines-sustainability

Kate Early, a senior majoring in hospitality management, traveled to Hamanasi, a resort in a Belize rural fishing village in the summer of 2011. Follow Early on her journey as she learns about the three P’s: profit, planet, and people.

Related Research Areas: Sustainability & the Environment

Hutchinson Sealing Systems Awarded Technology Innovation Grant for Automotive Window Weatherstrips

http://www.unh.edu/news/releases/2012/oct/gs26nhirc.cfm

http://www.unh.edu/campusjournal/2012/09/argentech-solutions-awarded-technology-innovation-grant-new-hampshire-innovation-research-ce

The New Hampshire Innovation Research Center (NHIRC, based at UNH) and Hutchinson Sealing Systems, Inc. have co-funded a project to develop eco-friendly weather strips that seal retractable driver and passenger-side windows. Ronald Goulet, adjunct professor of mechanical engineering at UNH, is leading this research to offer new solutions that will lower production costs, reduce product weight, and eliminate volatile organic compound emissions.

Related Research Areas: Engineering & Physical Sciences

Keeping Drivers' Eyes On The Road

http://www.unh.edu/campusjournal/2012/10/keeping-drivers-eyes-road

http://www.unh.edu/unhtoday/2012/10/keeping-drivers-eyes-road

Psychologists mingled with electrical engineers, computer scientists, highway officials, and at least one insurance company executive at the Automotive User Interfaces and Interactive Vehicular Applications conference, hosted by UNH in Portsmouth in October, to explore recent advances in understanding how drivers can interact with devices so their driving is not impacted. More than 170 participants from around the world attended the three-day conference, which included a field trip to Professor of Electrical and Computer Engineering Andrew Kun’s lab to try out his driving simulator.

Related Research Areas: Health, Behavioral & Social Sciences
Local Angel Investors Fund UNH Startup Focused on Improving Hearing Aids
http://unh.edu/news/releases/2012/jul/em30angel.cfm
http://unh.edu/news/campusjournal/2012/Aug/08angel.cfm
http://www.unh.edu/unhtoday/2012/08/local-angel-investors-fund-unh-startup-focused-improving-hearing-aids

Local angel investors have funded UNH’s fifth spinoff company, Setem Technologies, which is using the results of research by mathematics professor Kevin Short to develop signal separation technology that addresses the “cocktail party problem” – the ability to focus on a specific speech source and mitigate/eliminate any extraneous background noise or interference.

Related Research Areas: Sustainability & the Environment

Maps for Environmentalists
http://www.unh.edu/unhtoday/2012/08/maps-environmentalists

Ph.D. student Meghan MacLean ’12 has developed PolyFrag, an open source tool for mapping habitat fragmentation. It will be useful to land managers, town planning boards, and environmental protection organizations for identifying remotely those areas that might be vulnerable to invasive species and possibly mitigating the advance of the invasives.

Related Research Areas: Sustainability & the Environment

Mikkel Hagen receives the CAINE 2012 Conference Best Paper Award
https://www.iol.unh.edu/pressroom/newsletter/q42012/index.html

Mikkel Hagen, senior engineer in UNH’s InterOperability Laboratory, received the CAINE 2012 Conference Best Paper Award for his presentation of the paper "Deficit Round Robin with Adaptive Weight Control.” This International Conference on Computer Applications in Industry and Engineering provides an international forum for presentation and discussion of research on computers and applications.

Network New Hampshire Now Begins Building Statewide Public Safety Broadband Network
http://www.unh.edu/news/cj_nr/2012/feb/em01network.cfm

Green Mountain Communications, Inc. has completed work on four New Hampshire mountaintops to construct NHSafeNet, a wireless public safety microwave network that will improve the communications, efficiency, and emergency readiness of state and local agencies. NHSafeNet is one of four primary broadband projects being implemented under Network New Hampshire Now.
NH Optical Systems Awarded Technology Innovation Grant to Research and Design the First Software-Defined Network Services in New Hampshire
http://www.unh.edu/news/releases/2012/nov/gs06optical.cfm

The Strategic Technology Office of Information Technology at UNH teamed up with New Hampshire Optical Systems, Inc. (NHOS), a Nashua-based telecommunications provider of fiber optic infrastructure solutions, to research software-defined networks that offer increased broadband speeds and capabilities to businesses of all sizes across the state, especially those in underserved and unserved areas. The project is funded by NHOS and matched with a Granite State Technology Innovation Grant awarded by the New Hampshire Innovation Research Center (NHIRC, based at UNH).

Professor's Groundbreaking Research Leads to International Economics Initiative, Research Center
http://www.unh.edu/news/cj_nr/2012/apr/lw23research.cfm
http://unh.edu/news/campusjournal/2012/Apr/25research.cfm
http://www.unh.edu/unhtoday/2012/04/unh-professors-groundbreaking-research-leads-international-economics-initiative-research-cen

Groundbreaking research conducted by Michael Goldberg, the Roland H. O’Neal Professor of Economics in UNH’s Paul College of Business and Economics, has led to the creation of the INET Center on Imperfect Knowledge Economics (IKE), an international research center that will be part of a comprehensive initiative by the Institute of New Economic Thinking (INET) at the University of Copenhagen.

Protecting Whales? Thanks to UNH, There’s an App for That
http://www.unh.edu/news/cj_nr/2012/apr/bp12whales.cfm

Researchers at UNH’s Center for Coastal and Ocean Mapping (CCOM) helped develop a new iPad and iPhone application (app) to help protect critically endangered North Atlantic right whales from collisions with ships. Kurt Schwehr, affiliate assistant professor, Lee Alexander, research associate professor, and Roland Arsenault, research scientist, led the development of key technical aspects of the WhaleALERT app, launched in April, 2012.

Report a Crime: There’s an App for That: UNH Is First University to Use New Crime Fighting App
http://www.unh.edu/news/cj_nr/2012/apr/jr16crime.cfm

A new mobile phone application (app) developed for UNH by a UNH School of Law student aims to fight crime with technology. Third-year law student Eman Pahlevani developed the smartphone app, CrimePush Security, with his brother, Shyan, and friend Samier Mansur after Shyan was the victim of a robbery in Washington, D.C.

Related Research Areas: Marine & Ocean Sciences

Related Research Areas: Health, Behavioral & Social Sciences
Science by Smartphone
http://unh.edu/news/campusjournal/2012/Jul/11smartphone.cfm

UNH research scientist Annette Schloss of the Institute for the Study of Earth, Oceans, and Space (EOS) Earth Systems Research Center (ESRC) is leading a demonstration project that is developing a cyber-enabled center of learning for Earth systems science. The project’s goals are to increase the use of personal, handheld devices as scientific tools; create a central clearinghouse via a web portal for this cyber-enabled data; and provide teachers and students with access to and skilled usage of these tools and data.

Related Research Areas: Sustainability & the Environment

Student Gains National Attention for Lifesaving Smartphone App
http://www.unh.edu/unhtoday/2012/03/student-gains-national-attention-lifesaving-smartphone-app

UNH Law student Eman Pahlevani’s smartphone application (app) that allows people to report a crime discretely with the push of a button has gained instant popularity with police departments and universities across the country, the media, and entities interested in partnering with his fledgling company. More than 500 universities and police departments have contacted CrimePush to find out how they can integrate with the app.

Related Research Areas: Health, Behavioral & Social Sciences

To Market to 'Green' Consumers, Hoteliers Must See Forest and Trees, UNH Research Shows
http://www.unh.edu/news/releases/2012/jul/lw31green.cfm
http://unh.edu/news/campusjournal/2012/Aug/08green.cfm

According to new research by Nelson Barber, associate professor of hospitality management, it isn’t enough for hotels looking to attract “green” consumers to use sustainable business practices and be committed to sustainability as an environmental goal. Hotels also should effectively communicate those practices to green consumers.

Related Research Areas: Sustainability & the Environment

Top Brands Showing Signs of Sustainable Growth
http://www.unh.edu/news/releases/2012/nov/em05brands.cfm

An annual rating of consumer brands performed by Climate Counts, an affiliated program of the Sustainability Institute at UNH, found that the message coming from top name brands is clear: climate change poses a threat to business in the form of increased costs and risks associated with extreme weather. As a result, companies are prioritizing the need to reduce greenhouse gas (GHG) emissions and lower their carbon footprint.

UNH Announces New Economic Index for Lodging Industry
http://www.unh.edu/news/releases/2012/oct/lw12ecoindex.cfm
http://www.unh.edu/campusjournal/2012/10/unh-announces-new-economic-index-lodging-industry

In October, UNH debuted a new quarterly economic index that will help the U.S. lodging industry conduct short- and long-range economic planning.
UNH Celebrates Commercialization Growth; Recognizes Success of Mathematician Kevin Short
http://www.unh.edu/news/releases/2012/oct/em18short.cfm

UNH’s Office for Research Partnerships and Commercialization (ORPC) celebrated the success of faculty and staff members in increasing the number of innovation disclosures more than 100 percent to set a UNH annual record of 32 disclosures in FY 2012. The University’s second annual Innovator of the Year award was presented to mathematician Kevin Short.

Related Research Areas: Engineering & Physical Sciences

UNH Center for Venture Research: U.S. Angel Investor Market on Solid Path of Recovery in 2011
http://www.unh.edu/news/cj_nr/2012/apr/lw03angel.cfm
http://unh.edu/news/campusjournal/2012/Apr/04angel.cfm

UNH’s Center for Venture Research has been conducting research on the angel market since 1980. Its recent findings show that the U.S. angel investor market continued to recover in investment dollars and investment numbers in 2011, a trend that began in 2010.

UNH Franchising Index Extends Strong Rebound in Q1 2012
http://www.unh.edu/news/cj_nr/2012/may/lw08franchising.cfm
http://unh.edu/news/campusjournal/2012/May/09franchising.cfm
http://www.unh.edu/unhtoday/2012/05/unh-franchising-index-extends-strong-rebound-q1-2012

The UNH Rosenberg Center Franchise 50 Index, which tracks publicly traded companies in the United States engaged in business format franchising, rose 8.1 percent in the first quarter of 2012, extending its strong rebound from the dip in the third quarter of 2011.

UNH Lodging Index, October 2012: Executives Positive About Business Conditions
http://www.unh.edu/news/releases/2012/oct/lw26index.cfm

According to the UNH Lodging Executives Sentiment Index (LESI), lodging executives, looking forward 12 months, expect to add more nonmanagerial employees, representing an increase in expectations for lodging executives reporting in August 2012. This is in line with the decrease of the national unemployment rate, which fell from 8.1 percent in August 2012 to 7.8 percent in September 2012, as reported by the Bureau of Labor Statistics.

UNH Lodging Index, November 2012: Executives Less Optimistic About Business Conditions
http://www.unh.edu/news/releases/2012/nov/lw16lesi.cfm

U.S. lodging executives are less optimistic about present general business conditions, although this was offset by more optimism about the next 12 months, according to the UNH Lodging Executives Sentiment Index (LESI) for September 2012.
UNH Lodging Index, December 2012: Decline Continues in November
http://www.unh.edu/news/releases/2012/dec/lw17lesi.cfm

U.S. lodging executives continue to be less optimistic about present general business conditions, according to the UNH Lodging Executives Sentiment Index (LESI) for October 2012.

UNH, Michigan Aerospace Corp to Bring Radiation Detector to Market
http://www.unh.edu/news/releases/2012/jul/ds09radiation.cfm

Scientists from UNH and the Michigan Aerospace Corporation have signed an exclusive option agreement to commercialize instrumentation originally developed at UNH’s Space Science Center for space-based missions and now being re-engineered for homeland security purposes. The partners plan to bring to market the Portable Neutron Spectroscope, or NSPECT, a highly sensitive instrument that will detect illicit radioactive and fissile (capable of sustaining a chain reaction) materials with pinpoint accuracy from a safe distance.

Related Research Areas: Engineering & Physical Sciences; Space Science

UNH Report: N.H. Energy Efficiency Program Will Save State $84.5M
http://www.unh.edu/unhtoday/2012/05/unh-report-nh-energy-efficiency-program-will-save-state-845m

A report issued by UNH’s Carbon Solutions New England (CSNE) shows that grants awarded by New Hampshire’s Greenhouse Gas Emissions Reduction Fund (NHGERF) generated an annual energy use reduction of 182,800 million BTUs and a savings of more than $5 million to state businesses, communities, and residents in the second year of the program.

Related Research Areas: Sustainability & the Environment

UNH Research: U.S. Hospitality Industry Often Reluctant to Hire People with Disabilities
http://www.unh.edu/news/cj_nr/2012/jan/lw26research.cfm
http://unh.edu/news/campusjournal/2012/Feb/01hire.cfm

Andrew Houtenville, associate professor of economics and research director of the UNH Institute on Disability, and Valenti Kalargyrou, assistant professor of hospitality management, analyzed data from 320 hospitality companies in the U.S. They found that people with disabilities trying to find employment in the U.S. hospitality industry face employers who often are reluctant to hire them because of faulty preconceived notions about their abilities.

Related Research Areas: Health, Behavioral & Social Sciences
UNH’s Latest Startup Company Commercializes Anti-Fatigue Hydrogel

http://www.unh.edu/news/releases/2012/dec/em12wakup.cfm

Research from UNH’s chemistry department has led to an exclusive license agreement for an anti-fatigue hydrogel between the university and Wakup, Inc., UNH’s sixth startup company. Wakup Energy Gel is an all-natural stimulant that provides an inexpensive, calorie free, and caffeine free alternative to coffee, energy drinks, and energy shots.

*Related Research Areas: Health, Behavioral & Social Sciences*

Where Project54 Is Now

http://www.unh.edu/unhtoday/2012/06/where-project54-now

The next step for Project54, a system that was developed in UNH’s Consolidated Advanced Technologies Laboratory (CATlab) to operate patrol cars’ equipment – radio, siren, lights, radar, etc. – with voice commands, is to determine how the computers should respond. Andrew Kun, associate professor of electrical and computer engineering and Project54’s principal investigator, says one of the next pieces of the work is figuring out what kinds of answers computers should give in response to voice commands.

*Related Research Areas: Health, Behavioral & Social Sciences*