February, 2015

Read stories this month in these UNH research areas:

Agriculture & Biosciences

Business & Technology

Engineering & Physical Sciences

Health, Behavioral & Social Sciences

Humanities & the Arts

Marine & Ocean Sciences

Space Science

Sustainability & the Environment

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Agriculture & Biosciences

An Update on the Brown Marmorated Stink Bug

UNH Cooperative Extension is monitoring the increased presence of the brown marmorated stink bug in several New Hampshire communities. This invasive species can be a significant household nuisance, and has the potential to become a serious agricultural pest throughout New England. The stink bugs emerge from overwintering between late March and mid-May. They can be identified by the pattern on their antennae: dark, light, dark, light, dark. Cooperative Extension encourages citizens to report any sightings to help further research and monitoring efforts.

http://extension.unh.edu/articles/Update-Brown-Marmorated-Stink-Bug

Pinpointing a Pint-Sized Pest From On High

UNH master’s student Justin Williams used satellite-based remote sensing technology to create a large-scale map of the distribution of the hemlock woolly adelgid, an invasive insect causing widespread defoliation of hemlock trees along the East Coast. Williams found that hemlocks release an increased amount of chlorophyll prior to succumbing to the disease. Under the guidance of Barry Rock, natural resources and the environment professor emeritus, Williams completed his project with support from the U.S. Forest Service’s Pathways Program. Williams’ work will help scientists know where this pest is before large-scale infestation and damage occurs so that efforts can be made to reduce future damage.

http://www.unh.edu/unhtoday/2015/02/pinpointing-pint-sized-pest-high

UNH Recognized for University Research Farms in National Ranking

Best College Reviews.org has included UNH in a list of the top 20 college farms in the United States. The review noted the diversity of UNH’s farms, the integration of agricultural programs into the academic and surrounding community, and the university’s historic designation as a land grant institution. UNH’s farms include the Woodman and Kingman agronomy and horticultural farms, the Macfarlane Greenhouses, the Fairchild Dairy Teaching and Research Center, and the Organic Dairy Research Farm.

http://colsa.unh.edu/aes/article/topfarms

Credit: UNH Cooperative Extension

Credit: NH Agricultural Experiment Station
CDFIs Stepping into the Breach: An Impact Evaluation - Summary Report
The Carsey School of Public Policy issued a report on the U.S. Treasury Department’s Community Development Financial Institutions Fund (CDFI), concluding that CDFIs do not have a greater risk than conventional lenders do. The report was authored by Michael Swack, Carsey School Faculty Director of the Center on Social Innovation and Finance and UNH Peter T. Paul College professor of economics and management; Jack Northrup, Carsey School Policy Fellow and president of New England Market Research; and Eric Hangen, President of I Squared Community Development Consulting, Inc. Commenting on the study’s findings, CDFI Director Annie Donovan stated: “The reports released today demonstrate that CDFIs that receive financial assistance from the CDFI Fund are meeting their mission to promote economic growth by providing access to credit, capital, and financial services to underserved populations and distressed communities.”

Innovation Research Center Seeks Grant Applications for Product Development and Research
The New Hampshire Innovation Research Center (NHIRC) provides grants to businesses interested in establishing collaborative relationships with New Hampshire universities and colleges. The grants promote promising university-industry collaborations that turn research and product development into clear economic impact. Companies that receive funds are required to provide matching dollars or services, and are offered additional training in grant writing to apply for federally-funded Small Business Innovation Research and Small Business Technology Transfer grants. Funds for the NHIRC grants are provided by the New Hampshire Legislature and administered by UNHInnovation, a unit of the UNH Research Office.

UNH Lodging Index Weakens on Poor Present and Future Expectations
The UNH Lodging Executives Sentiment Index (LESI) declined from September to the period ending in December of 2014. The LESI is a national poll that measures the business predictions of executives in the lodging industry. Nelson Barber, associate professor of hospitality management and index manager, commented: “Lodging executives’ expectations for present and future business conditions weakened significantly as leisure demand is anticipated to be lower than expected.”
Engineering & Physical Sciences

UNH Structural Engineering Professor Available to Comment on Roof Collapses
Ray Cook, associate professor of civil and environmental engineering, is available to discuss the science of roof collapses and strategies for preventing them. He can discuss ice dams, snow loading, why rain on snow is so detrimental, and collapse mechanisms. Cook has extensive knowledge of roof design and is a registered professional engineer in the State of New Hampshire. He teaches a course at UNH on structural design using wood framing.

http://www.unh.edu/news/releases/2015/02/bp20snowremoval.cfm

Credit: Lisa Nugent

Health, Behavioral & Social Sciences

After Great Recession, More Married Fathers Providing Child Care
A Carsey School of Public Policy brief by family demographer Kristin Smith reported that the number of married fathers serving as primary caregivers for their children has continued to rise following the Great Recession. The rise in father-provided child care was driven primarily by the rise in child care provided by black and Hispanic fathers. Smith explained: “Fathers are spending more time with their children and their involvement in the family has increased since at least the 1970s.” Smith notes that increased reliance on fathers as care providers has broad implications – children with involved fathers often have more positive educational outcomes and feel more secure emotionally.

http://campaign.r20.constantcontact.com/...-em03carsey.cfm

At UNH’s Manchester Campus, Psych Students Get Real-World Experience
UNH Manchester offers psychology students an opportunity to engage in a unique, community-based research class. Alison Paglia, associate professor of psychology, created the course after members of the local community began coming to her with specific research needs. This semester, Paglia’s students will work with Jean Tewksbury, director of programs at the YWCA in Manchester, to do a better job of reaching out to and designing programs for recent college graduates and young professional women.

http://www.unh.edu/unhtoday/2015/02/unhs-manchester-campus-psych-students-get-real-world-experience

Bidding David Hagner a Fond Farewell
Research professor David Hagner retired in December after almost 25 years at UNH’s Institute on Disability (IOD). Hagner’s career involved extensive work with students on the autism spectrum of disorders and research and demonstration projects focused on assisting individuals with disabilities with transition, employment, and community living. “David epitomized what it is to be a ‘scholar advocate’,” said IOD Research Director Dr. Andrew Houtenville.


Credit: UNH Institute on Disability
Facilitation Lab Seeks to Keep the “Civil” in Civil Meetings
UNH Cooperative Extension and the Carsey School of Public Policy’s New Hampshire Listens program has collaborated with UNH theater professor David Kaye to create the Facilitation Lab, a series of hands-on applied theater workshops aimed at promoting respectful and productive public meetings. Using actors to create scenarios of tense situations that can arise in meetings, the Facilitation Lab provides insights into human dynamics and engages audience members to bring about solutions. The labs generate candid discussion about how to handle complicated professional situations, giving participants a forum to discuss possible responses to issues such as prejudice and gender bias.

http://extension.unh.edu/articles/Meeting-Out-Control
http://www.unh.edu/unhtoday/2015/02/unh-facilitation-lab-seeks-keep-civility-municipal-meetings

Flame Retardants Found to Cause Metabolic, Liver Problems
For more than 10 years, Gale Carey, professor of nutrition, and more than a dozen UNH graduate and undergraduate students have collaborated with researchers from several universities and industries across the nation to examine the relationship between the synthetic flame retardant chemicals found in household items and the causes of obesity. In a recent study, Carey and her team of researchers found that laboratory rats exposed to polybrominated diphenyl ethers, or PBDEs, developed enlarged livers and insulin resistance, which can lead to weight gain. Carey explained that there is a growing body of experimental evidence suggesting certain environmental chemicals could work at the biochemical level to disrupt the body’s metabolism and contribute to obesity. Flame retardants are found in common household items such as couches, carpet padding, and electronics.

http://colsa.unh.edu/aes/article/carey
http://www.unh.edu/news/releases/2015/02/lw16obesity.cfm
http://www.unh.edu/unhtoday/2015/02/unh-research-flame-retardants-found-cause-metabolic-liver-problem

Historian Jeff Bolster Named 2015 Lindberg Award Winner
W. Jeffrey Bolster, professor of history in the College of Liberal Arts, was selected to receive the UNH Lindberg Award for 2015, recognizing his exceptional work as a teacher-scholar. Bolster’s research projects focus on topics including maritime, environmental, and Atlantic history, and the African American experience. Bolster’s highly regarded and widely read books include Black Jacks: African American Seamen in the Age of Sail and The Mortal Sea: Fishing in the Atlantic in the Age of Sail.

http://cola.unh.edu/article/2015/02/jeff-bolster-lindberg

Kessler Foundation Awards Grant to UNH for National Disability Employment Survey
The UNH Institute on Disability (UNH IOD) and the UNH Survey Center (UNH SC) received a grant from the Kessler Foundation to conduct a survey on the employment status of Americans with disabilities. UNH SC will conduct field tests, make calls, and collect the necessary data, and UNH-IOD will then analyze the results. The survey results will provide insights into what strategies work and do not work for improving employment outcomes for this population group.

Next-Door Neighbors
Justin Young, a Ph.D. candidate in sociology, is exploring social relationships in racially diverse neighborhoods in Manchester for his dissertation research. Young’s work examines how income inequality may be one of the main factors leading to a lack of communication and civic involvement between members of different ethnic groups. His advisor is Michele Dillon, professor of sociology.

http://cola.unh.edu/thecollegeletter/2015-02/next-door-neighbors

Professor Seichepine Presents Research on Traumatic Brain Injuries Among Gulf War Veterans
At the 43rd Annual Meeting of the International Neuropsychological Society held in early February, 2015, Daniel Seichepine, lecturer of psychology at UNH Manchester, presented the results of his research on traumatic brain injuries sustained by veterans during and after the 1990-1991 Gulf War Seichepine and his collaborators found that one-third of Gulf War Veterans report experiencing at least one traumatic brain injury during the war, and many report receiving multiple injuries in their lifetimes. Seichepine believes that these findings demonstrate a need for additional research on possible long-term cognitive difficulties for Gulf War Veterans.

http://manchester.unh.edu/blog/about-our-faculty/professor-seichepine-presents-research-traumatic-brain-injuries-among-gulf

Through the APCD Council, IHPP Partners with West Health Policy Center to Launch New Guide to Create All-Payer Claims Databases
The All-Payer Claims Database (APCD) Council, hosted by UNH’s Institute for Health Policy and Practice (IHPP), is partnering with the West Health Policy Center in Washington, D.C. to create a manual for states interested in establishing all-payer claims databases. These databases provide greater price transparency and more comparison options for consumers shopping for healthcare. The manual will be an easy-to-use resource that draws upon the experience of Council members and the lessons learned from years of working with states on APCD development. Josephine Porter, deputy director of the IHPP, co-chairs the APCD Council.


UNH Anthropologist Eleanor Harrison-Buck Examines the Roots of Chocolate in Mesoamerica
Eleanor Harrison-Buck, associate professor of anthropology, and Serita Frey, professor of soil microbial ecology in the department of natural resources and the environment, are working together to trace the history of cacao growing in Central America. While Harrison-Buck’s anthropological studies have found that cacao often was present in ritual feasts, the crop does not preserve well in soil, so archaeologists know little about the ancient methods of cacao bean production. Harrison-Buck and Frey are gathering soil samples from throughout Belize to determine if cacao orchards leave a distinct biological footprint. Eventually, they hope to pinpoint where cacao was produced in the Belize Valley in historic or prehistoric times. Their research is featured in an article on the history of chocolate in Smithsonian Magazine.

http://cola.unh.edu/article/2015/02/unh-anthropologist-eleanor-harrison-buck-examines-roots-chocolate-mesoamerica
UNH Research Finds Rural Students Have Less Access to Advanced Placement Courses

A study by researchers in the Carsey School of Public Policy at UNH revealed that nearly one-half of rural school districts have no students enrolled in advanced placement courses. The report concluded that “It is important that educators, administrators, and policy makers continue to look for ways to boost success in college-level coursework, perhaps through targeted teacher professional development, financial support for low income students, and a re-examination of student expectations.” Marybeth Mattingly, director of research on vulnerable families at the Carsey School and research assistant professor of sociology, and Douglas Gagnon, former research assistant at the Carsey School, conducted the research.

http://www.unh.edu/news/releases/2015/02/em11carsey.cfm

Humanities & the Arts

Professor Macieski to Share Expertise on Lewis Hine

Robert Macieski, associate professor of history at UNH Manchester, will present his research on the work of photographer Lewis W. Hine at the Ireland American Studies Association’s annual conference in April, 2015. Macieski has explored how Hine worked as a “social photographer,” investigating and exposing social ills, their cost, and their consequences. Hine’s iconic images of children at work helped promote reforms leading to the end of child labor in the United States.

http://manchester.unh.edu/blog/about-our-faculty/professor-macieski-share-expertise-lewis-hine

Scenes From the Frontlines

Nathan Webster ’95 ‘09G, lecturer of English, is a veteran of the Gulf War and a freelance photojournalist who has covered the stories of individual soldiers in Iraq. Webster’s work is featured in Conflict Zone, a traveling exhibit of war photography from Iraq and Afghanistan currently on display at UNH’s University Museum in Dimond Library. Webster was instrumental in bringing the exhibit to UNH and hopes that the images will allow visitors to consider war in a different way.

http://cola.unh.edu/article/2015/02/scenes-frontlines

Slave Capitalism

Sean Moore, associate professor of English, is spending six months doing research at the Redwood Library and Athenaeum at Rhode Island’s Newport Mansions. Moore’s work examines how money from the slave trade fueled early American funding for the arts and contributed to the rise of capitalism. Currently supported by a Newport Mansions fellowship, Moore will extend his research to a number of historical libraries and societies across the states that were the thirteen colonies – uncovering the past in the dusty books and letters of our ancestors – with the support of a prestigious National Endowment for the Humanities Fellowship and a grant from the New England Regional Fellowship Consortium.

http://cola.unh.edu/thecollegeletter/2015-02/slave-capitalism
Marine & Ocean Sciences

Kelp Is On the Way

New Hampshire Sea Grant and UNH Cooperative Extension are working to introduce nutritious kelp and other sea vegetables to local consumers and fishermen. UNH Cooperative Extension fisheries specialist Gabriela Bradt and chef Evan Hennessey teamed up to present two workshops in early 2015 at his restaurant, Stages at One Washington in Dover, NH. The workshops introduced attendees to the science, history, nutritional value, and tastes of seaweed. Sea Grant aquaculture specialist Michael Chambers sees kelp production as an economic opportunity for local fishermen, and as a possible solution to the problem of the excess nitrogen produced in steelhead trout aquaculture pens in the Piscataqua River.

http://www.unh.edu/unhtoday/2015/02/kelp-way

Space Science

A Radiation Belt Twofer – UNH-built "CubeSats" Probe Mysteries of Earth's Radiation Belts

Harlan Spence, professor of physics and director of UNH’s Institute for the Study of Earth, Oceans, and Space, is the leader of the research team for two NASA missions examining Earth’s radiation belts. The Van Allen Probes mission is a large-scale project, while the FIREBIRD-II “CubeSat” mission will allow for up-close monitoring of “microbursts” that interfere with satellite technology. Spence explained: “We care about this because the belts’ high-energy particles, particularly the electrons, pose a real risk to spacecraft, so if we understand these physical processes that create ‘space weather’ better, we’ll be able to predict how the radiation belts will behave and both protect the satellites we depend upon for telecommunications, weather monitoring and prediction and design them to withstand this high-energy radiation.”

http://www.unh.edu/unhtoday/2015/02/radiation-belt-twofer

Sustainability & the Environment

Have Funding, Will Travel: Ph.D. Student and Fulbright Fellow Trots the Globe in Pursuit of a Scientific Career

Sophia (Sophie) Burke ’13, Ph.D. candidate in the Natural Resources and Earth System Science program, has received a Fulbright Fellowship to study and do research at the University of Waikato in New Zealand. “I’ll be learning about peatlands that formed in a vastly different climate than what I’m used to – that is, subtropical versus subarctic. And I’ll also learn about different ways that carbon flux is monitored in peatland ecosystems by taking measurements from a flux tower for the first time as well as doing incubation work.” As an undergraduate, Burke spent time in New Zealand through the EcoQuest program, and traveled to Sweden three times with the Northern Ecosystems Research for Undergraduates (NERU) program which is sponsored by the National Science Foundation and the American-Swedish
Institute. Burke’s advisor and mentor is Ruth Varner, associate professor of biogeochemistry and Earth sciences and director of NERU.

http://www.unh.edu/unhtoday/2015/02/have-funding-will-travel-phd-student-and-fulbright-fellow-trots-globe-pursuit-scientific-car

NH EPSCoR Research Currents - 2014 Edition Now Available
The 2014 Edition of New Hampshire EPSCoR’s publication Research Currents is now available to view and read online. It showcases research, educational, and outreach efforts going on in New Hampshire that are strengthen the science and engineering infrastructure of the state. The goal of NH EPSCoR is to improve the state’s economy and increase our understanding, and management, of natural resources. Articles in this issue of Currents include “Do You Trust Scientists About the Environment?”, “Submersible Sensors Will Help Town Reduce Pollution,” and “Getting Smarter by Using Smartphones.”

http://campaign.r20.constantcontact.com/render?ca=3f09011f-bbcc-46b9-bf17-3fcf1b183e86&c=6d83cf0-7901-11e3-9ada-d4ae52900e00&ch=6e11df00-7901-11e3-9b4d-d4ae52900e00

Snow Research, Snow Albedo, and Picture Post
Earth Sciences graduate student James Lazarcik uses daily photographs to observe how the surface albedo (light reflection) of snowpack changes over time. Lazarcik also is researching how air pollutants impact albedo and affect the environment during melting periods. Lazarcik wrote about his research for Picture Post News, an online publication of the DEW Picture Post Network, a NASA-sponsored citizen science initiative that facilitates collaboration on environmental monitoring projects that employ digital photography.


Photos of the bulk snowpack in these fields at UNH’s Burley-Demeritt farm may provide indications of changes in the albedo and chemistry of the snowpack caused by air pollutants. Credit: James Lazarcik

UNH Researcher Kevin Gardner to Speak at Maine Sustainability and Water Conference
Kevin Gardner, professor of civil and environmental engineering, will participate in a session at the annual Maine Sustainability and Water Conference in Augusta on March 31, 2015. As co-presenter with Kathleen Bell from the University of Maine, Gardner will discuss the impact of coastal water quality on beaches and shellfish beds in Maine and New Hampshire. His talk will focus specifically on future concerns and possible community responses to challenges.

http://nhepscor.org/events/maine-sustainability-water-conference

UNH Researcher Will Discuss Climate and Land Use at Organic Farmers Conference
University Professor John Aber gave the keynote address at the Maine Organic Farmers and Gardeners Association Spring Growth Conference on March 7, 2015. He addressed the challenges of climate change as they relate to agricultural management and ways to reduce costs and energy use throughout the processes used for dairy farming and vegetable production. Aber’s exceptional career has spanned a range of research interests, but his current focus is on the innovative composting and energy recovery efforts at UNH’s Organic Dairy Research Farm.

Credit: NH Agricultural Experiment Station

http://colsa.unh.edu/aes/article/nhaes/abermofga
http://www.unh.edu/unhtoday/2015/02/unh-researcher-will-discuss-climate-and-land-use-organic-farmers-conference