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[PressPac Archives](http://paracom.paramountcommunication.com/ct/6698358%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)      | **ACS NEWS SERVICEWeekly Press Package - September 14, 2011 ALL CONTENT IS FOR IMMEDIATE RELEASE Please credit the individual journal or the American Chemical Society as the source for this information.** Here is the latest American Chemical Society (ACS) Weekly PressPac from the Office of Public Affairs. It has news from ACS’ 39 peer-reviewed journals and Chemical & Engineering News.Science Inquiries: Michael Woods, editorm\_woods@acs.org202-872-6293General Inquiries: Michael Bernsteinm\_bernstein@acs.org 202-872-6042  https://images.magnetmail.net/images/clients/ACS/IYC(1).jpgARTICLE #1 **FOR IMMEDIATE RELEASE****Woolly mammoth’s secrets for shrugging off cold points toward new artificial blood for humans**Biochemistry

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|  http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914Woolly%20Mammoth1PP.jpgWoolly mammoth’s secrets for shrugging off cold points toward new artificial blood for humans. Credit: iStock |

The blood from woolly mammoths—those extinct elephant-like creatures that roamed the Earth in pre-historic times—is helping scientists develop new  blood products for modern medical procedures that involve reducing patients’ body temperature. The report appears in ACS’ journal Biochemistry.Chien Ho and colleagues note that woolly mammoth ancestors initially evolved in warm climates, where African and Asian elephants live now, but migrated to the cold regions of Eurasia 1.2 million – 2.0 million years ago in the Pleistocene ice age. They adapted to their new environment by growing thick, “woolly” fur and smaller ears, which helped conserve heat, and possibly by changing their DNA. In previous research, Ho and colleagues discovered that a blood protein (hemoglobin) that carries oxygen from the lungs to the rest of the body in the woolly mammoth has mutations in its DNA that make it different from that of its cousin, the Asian elephant. The scientists turned to the mutations that helped woolly mammoths survive freezing temperatures, and carefully analyzed hemoglobin from the ancient animal.They didn’t have a woolly mammoth blood sample, so they made the hemoglobin protein in the laboratory by using fragmented DNA sequences from three mammoths that died in Siberia between 25,000 and 43,000 years ago. Compared to hemoglobin from Asian elephants and humans, the woolly mammoth protein was much less sensitive to temperature changes, which means it can still easily unload oxygen to tissues that need it in the cold, whereas the other hemoglobins can’t. This is likely due to at least two of the mutations in the woolly mammoth hemoglobin gene. These insights could lead to the design of new artificial blood products for use in hypothermia induced during heart and brain surgeries.

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|  http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914Biochemistry1PP.jpg |

ARTICLE #1 **FOR IMMEDIATE RELEASE**“A Biochemical-Biophysical Study of Hemoglobins from Woolly Mammoth, Asian Elephant, and Humans”[DOWNLOAD FULL TEXT ARTICLE](http://paracom.paramountcommunication.com/ct/6698359%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) CONTACT:Chien Ho, Ph.D.Carnegie Mellon UniversityPittsburgh, Pa.Phone: 412-268-3395Fax: 412-268-7083Email: chienho@andrew.cmu.edu  [To Top](#top)http://paracom.paramountcommunication.com/cimages/20c19ea793db663ac8d9cf19232d11c8/thingoldline.jpgARTICLE #2 **FOR IMMEDIATE RELEASE****"Super-spaghetti" with heart-healthy label now possible**Journal of Agricultural and Food Chemistry

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|  http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914Spaghetti2PP.jpgNew “super-spaghetti” could boast heart-healthy label. Credit: iStock |

Consumers could soon see packages of pasta labeled “good source of dietary fiber” and “may reduce the risk of heart disease” thanks to the development of a new genre of pasta made with barley—a grain famous for giving beer its characteristic strength and flavor. The report appears in ACS’ Journal of Agricultural and Food Chemistry.Vito Verardo, Ana Maria Gómez-Caravaca and colleagues explain that barley, a grain that is an excellent source of fiber and antioxidants, is gaining interest as an ingredient in so-called “functional foods” — a genre of foods that are supplemented with healthful additives. The functional foods craze began in Japan in the mid-1980s and caught on around the world with health-conscious consumers, creating a fast-growing industry that is expected to reach over $176 billion by 2013. Barley is already added to some bakery products. To determine whether barley could make a new functional spaghetti by providing fiber and antioxidants, the researchers developed a barley flour, that contains the most nutritious part of the grain and used it to make pasta. This flour corresponds to the barley by-products and has been obtained by an healthy separation method such as the air classification.They found that the barley spaghetti had more fiber and more antioxidant activity than traditional semolina-based spaghettis. Adding gluten to barley flour improved the cooking quality of the pasta, but lowered its antioxidant activity.The authors acknowledge funding from the [Italian Ministry of Instruction, University and Scientific Research](http://paracom.paramountcommunication.com/ct/6698360%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) and the [Spanish Ministerio de Educacion](http://paracom.paramountcommunication.com/ct/6698361%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar).

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ARTICLE #2 **FOR IMMEDIATE RELEASE**“Development of Functional Spaghetti Enriched in Bioactive Compounds Using Barley Coarse Fraction Obtained by Air Classification”[DOWNLOAD FULL TEXT ARTICLE](http://paracom.paramountcommunication.com/ct/6698362%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) CONTACT:Vito Verardo, Ph.D.Università di BolognaCesena (FC), ItalyPhone: 39-547-338117Email: vito.verardo@unibo.itOrAna Maria Gómez-Caravaca, Ph.D.Università di Bologna, Cesena (FC), ItalyUniversity of Granada, Granada, SpainPhone: 39-547-338117Email: anagomez@ugr.es [To Top](#top)http://paracom.paramountcommunication.com/cimages/20c19ea793db663ac8d9cf19232d11c8/thingoldline.jpg ARTICLE #3 **FOR IMMEDIATE RELEASENew technology for recovering valuable minerals from waste rock**Langmuir

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|  http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914Gold3PP.jpgNew technology for recovering valuable minerals from waste rock. Credit: iStock |

Researchers report discovery of a completely new technology for more efficiently separating gold, silver, copper, and other valuable materials from rock and ore. Their report on the process, which uses nanoparticles to latch onto those materials and attach them to air bubbles in a flotation machine, appears in the ACS journal Langmuir.Robert Pelton and colleagues explain that companies use a technique termed froth flotation to process about 450 million tons of minerals each year. The process involves crushing the minerals into small particles, and then floating the particles in water to separate the commercially valuable particles from the waste rock. The water contains “collector” substances that can attach to the valuable particles, causing them to repel water and rise to the bubbling top of the water where they can be easily skimmed off.The researchers demonstrated an entirely new type of collector technology, consisting of water-repelling nanoparticles. In laboratory experiments using glass beads to simulate actual mineral particles, they showed that the nanoparticles attached so firmly to the beads that flotation produced a recover rate of almost 100 per cent.The authors acknowledge funding from the [Centre for Materials and Manufacturing](http://paracom.paramountcommunication.com/ct/6698363%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) and [VALE Base Metals](http://paracom.paramountcommunication.com/ct/6698364%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar).

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ARTICLE #3 **FOR IMMEDIATE RELEASE**“Nanoparticle Flotation Collectors – Mechanisms Behind a New Technology”[DOWNLOAD FULL TEXT ARTICLE](http://paracom.paramountcommunication.com/ct/6698365%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)CONTACT:Robert Pelton, Ph.D.McMaster UniversityOntario, CanadaPhone: 905-525-9140, ext. 27045E-mail: peltonrh@mcmaster.ca [To Top](#top)http://paracom.paramountcommunication.com/cimages/20c19ea793db663ac8d9cf19232d11c8/thingoldline.jpg ARTICLE #4 **FOR IMMEDIATE RELEASE: A PressPac Instant Replay\*High levels of potentially toxic flame retardants in California pregnant women: A PressPac Instant Replay\***Environmental Science & Technology

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|  http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914PolyurethaneFoamPP4.jpgScientists have detected high levels of potentially toxic flame retardants — found in furniture foam, carpets, and other sources — among pregnant women in Northern California. Credit: iStock |

A new study finds that pregnant women in Northern California have the highest PBDE flame retardant exposures reported to date among pregnant women worldwide. It also describes some of the first evidence from humans that certain flame retardants may interfere with thyroid hormone signaling during pregnancy, which is critical to fetal brain development. The study, described as one of the most extensive to date on flame retardant exposures in pregnant women, appears in the ACS journal Environmental Science & Technology.Ami Zota and colleagues note that the flame retardant chemicals, known as polybrominated diphenyl ethers (PBDEs), have been widely used in furniture foam, plastics, carpets, consumer electronics, wire insulation, and other products since the 1970s. Although California banned manufacture and import of certain PBDEs in 2004, human exposure continues from old products, house dust, food, and other sources. Studies suggest that PBDE exposure during pregnancy may disrupt thyroid function, with adverse effects on normal development of the fetus’s brain that persist throughout life, and also have adverse effects on the mother.In their study of 25 second-trimester pregnant women in California, the researchers found the highest-ever levels of certain PBDEs among pregnant women worldwide. The high exposure most likely was the unintended consequence of California’s furniture flammability standards, which manufacturers have met since 1975 by adding PBDE’s to foam in upholstered furniture, Zota and colleagues said. While preliminary, the study also found a link between PBDE levels and levels of thyroid-stimulating hormone, a substance produced in the brain, that helps regulate activity of the thyroid gland.The authors acknowledge funding from the Passport Foundation Science Innovation Fund, Mrs. Audrey McMahon of the [Learning Disabilities Association of America](http://paracom.paramountcommunication.com/ct/6698366%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar), and the [National Institute of Environmental Health Sciences](http://paracom.paramountcommunication.com/ct/6698367%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar).Full texts of the study are available from the contacts, above, in the ACS Office of Public Affairs.

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|  http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914EST%20PP4.jpg[Click here for high-resolution image](http://paracom.paramountcommunication.com/ct/6698368%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) |

ARTICLE #4 **FOR IMMEDIATE RELEASE**“Polybrominated Diphenyl Ethers, Hydroxylated Polybrominated Diphenyl Ethers, and Measures of Thyroid Function in Second Trimester Pregnant Women in California”[DOWNLOAD FULL TEXT ARTICLE](http://paracom.paramountcommunication.com/ct/6698369%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)CONTACT:Ami Zota, Sc.D., M.S.Program on Reproductive Health and the EnvironmentUniversity of California, San FranciscoSan Francisco, Calif.Phone: (510) 986-8925Fax: (510) 986-8960E-mail: zotaar@obgyn.ucsf.edu**\* A previous PressPac item that you may have missed**  [To Top](#top)http://paracom.paramountcommunication.com/cimages/20c19ea793db663ac8d9cf19232d11c8/thingoldline.jpg ARTICLE #5 **FOR IMMEDIATE RELEASE****Good news plus lingering concerns for Deepwater Horizon cleanup workers**Chemical & Engineering NewsSeveral new studies of air and water near the site of the Deepwater Horizon oil spill conclude that cleanup workers may have escaped harm from one of

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| http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914CEN_PP5.jpg[Click here for high-resolution image](http://paracom.paramountcommunication.com/ct/6698370%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) |

the most worrisome groups of potentially toxic substances in the oil, according to an article in Chemical & Engineering News (CEN), ACS’s weekly news magazine. But it cites concerns that another group of potentially harmful chemicals did escape from the water and could create a health hazard for cleanup workers.The article, by C&EN Senior Editor Elizabeth Wilson, describes research showing that benzene, toluene, ethylbenzene, and xylene — collectively termed BTEX — remained dissolved in the Gulf of Mexico, and did not vaporize into the air where they could be inhaled by cleanup workers. The spill began on July 20, 2010 with an explosion on the Deepwater Horizon facility, 50 miles off the coast of Louisiana, killing 11 oil workers. By the time the well was capped 87 days later, 4.9 million barrels (206 million gallons) of oil had spilled.Tempering that apparent good news for the health of cleanup workers, however, are concerns that other  substance released by the crude oil, substances that do not dissolve as well in water, die become airborne during the 2010 disaster.  If so, they could pose a health threat to cleanup workers, the article notes. ARTICLE #5 **FOR IMMEDIATE RELEASE**"Hyrdocarbons at Gulf Spill Surface"This story is available at:[http://pubs.acs.org/cen/science/89/8937sci3.html](http://paracom.paramountcommunication.com/ct/6698371%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) [To Top](#top)http://paracom.paramountcommunication.com/cimages/20c19ea793db663ac8d9cf19232d11c8/thingoldline.jpg   **Journalists’ Resources****Press releases, briefings, and more from ACS’ 242nd National Meeting** [www.eurekalert.org/acsmeet.php](http://paracom.paramountcommunication.com/ct/6698372%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)  [http://www.ustream.tv/channel/acslive](http://paracom.paramountcommunication.com/ct/6698373%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) **Inside Science News Service**For thoroughly enjoyable multimedia coverage of the science behind the news — a valuable resource for journalists and news media organizations everywhere. 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For the full scoop, contact Michael Bernstein, m\_bernstein@acs.org.  **ACS Pressroom Blog** The ACS Office of Public Affairs' [pressroom blog](http://paracom.paramountcommunication.com/ct/6698375%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) highlights research from ACS’ 39 peer-reviewed journals and National Meetings. **Bytesize Science Blog** Educators and kids, put on your thinking caps: The American Chemical Society has [a blog for Bytesize Science](http://paracom.paramountcommunication.com/ct/6698376%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar), a science podcast for kids of all ages.  **ACS Satellite Pressroom: Daily news blasts on Twitter** The satellite press room has become one of the most popular science news sites on Twitter. 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Then visit [http://twitter.com/ACSpressroom](http://paracom.paramountcommunication.com/ct/6698378%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) and click the ‘join’ button beneath the press room logo. **C&EN on Twitter**Follow @cenmag <[http://twitter.com/cenmag](http://paracom.paramountcommunication.com/ct/6698379%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)> for the latest news in chemistry and dispatches from our blog, C&ENtral Science <[http://centralscience.org](http://paracom.paramountcommunication.com/ct/6698380%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)>.**ACS Press Releases** [Press releases](http://paracom.paramountcommunication.com/ct/6698381%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) on a variety of chemistry-related topics.**International Year of Chemistry** The 63rd General Assembly of the United Nations proclaimed 2011 the International Year of Chemistry (IYC-2011) to increase global recognition of how chemistry and related sciences contribute to everyday life and the future. [ACS’ IYC site](http://paracom.paramountcommunication.com/ct/6698382%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) is a gateway for information on the global celebration of chemistry and its role in other sciences, literally from astronomy to http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/IYC2011.jpgzoology.[To Top](#top)http://paracom.paramountcommunication.com/cimages/20c19ea793db663ac8d9cf19232d11c8/goldline.jpg**ACS Videos**The American Chemical Society encourages news organizations, museums, educational organizations, and other web sites to embed links to these videos.**Spellbound: How Kids Became Scientists** http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914spellboundPP.jpgThe road to a Nobel Prize began for one scientist in elementary school when his father placed a sign on his bedroom door proclaiming him to be a “doctor.” This is just one of the many experiences that helped launch the careers of scientists from diverse backgrounds who are featured in a new ACS video series called [Spellbound: How Kids Became Scientists](http://paracom.paramountcommunication.com/ct/6698383%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar). **First Living, Dancing Periodic Table of the Elements**http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914chemdancePP.jpgThat famous chart displaying the chemical elements that make up everything on Earth — a fixture on the walls of classrooms and labs — literally comes alive in this new video from the American Chemical Society (ACS). [Chemists Can Dance!](http://paracom.paramountcommunication.com/ct/6698384%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) features scores of chemists wearing symbols representing the elements, kicking up their heels to the tune of an original rap song. It's all part of ACS's celebration of the International Year of Chemistry. Check out the fun and share the link.**Prized Science: Taming the Red Tides**The latest episode in the American Chemical Society’s new video series, Prized Science: How the Science Behind ACS Awards Impacts Your Life, focuses on the quest http://paracom.paramountcommunication.com/cimages/c733d3416ba774aed44d4c31568b9f9f/0914prizsciPP.jpgto cure a terrible form of food poisoning caused by population explosions of algae that stain the water red and produce a potent toxin. Entitled “Taming the Red Tides,” the high-definition video focuses on Michael Crimmins, Ph.D., winner of the 2010 Ernest Guenther Award in the Chemistry of Natural Products. The series is available at the [Prized Science](http://paracom.paramountcommunication.com/ct/6698385%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) website, [YouTube](http://paracom.paramountcommunication.com/ct/6698386%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar), [iTunes](http://paracom.paramountcommunication.com/ct/6698387%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) and on DVD. **A Day Without Chemistry** Imagine a day without cars, electric lights, TV, telephones, safe food, and water, medicine, clothing, your house, and thousands of other familiar objects that make up modern society. Do it, and you are imagining a day in a world without chemistry. ACS explores that thought-provoking premise in a new high-definition video released as part of the celebration of the International Year of Chemistry. [A Day Without Chemistry](http://paracom.paramountcommunication.com/ct/6698388%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) follows a person who sees more and more everyday necessities and conveniences disappear before his widening eyes.[The Chemistry of Sourdough Bread](http://paracom.paramountcommunication.com/ct/6698389%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)[The Chemistry of Fireworks](http://paracom.paramountcommunication.com/ct/6698390%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar)[The Chemistry of Grilling and Barbecuing](http://paracom.paramountcommunication.com/ct/6698391%3A9814579666%3Am%3A1%3A195942604%3A6FE6BB5523093ACD7436AEC3B37F930A%3Ar) [To Top](#top)  http://paracom.paramountcommunication.com/cimages/20c19ea793db663ac8d9cf19232d11c8/goldline.jpg**ACS Podcasts**

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