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[PressPac Archives](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539139&m=1784911&u=ACS&j=9158553&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_PRESSPACS&node_id=223&use_sec=false&sec_url_var=region1&__uuid=a0c923e3-c385-4d96-bdc8-eadaa07eb02f)      | **ACS NEWS SERVICEWeekly Press Package - February 22, 2012 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’ 41 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  ARTICLE #1 **FOR IMMEDIATE RELEASE****New way to tap largest remaining treasure trove of potential new antibiotics** Journal of the American Chemical Society

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| http://images.magnetmail.net/images/clients/ACS/022212MRSA_thumb.jpgNew way to tap largest remaining treasure trove of potential new antibioticsCredit: iStock |

Scientists are reporting use of a new technology for sifting through the world’s largest remaining pool of potential antibiotics to discover two new antibiotics that work against deadly resistant microbes, including the “super bugs” known as MRSA. Their report appears in the Journal of the American Chemical Society.Sean Brady and colleagues explain that an urgent need exists for new medications to cope with microbes that shrug off the most powerful traditional antibiotics. Methicillin-resistant Staphylococcus aureus (MRSA) infections, for instance, are resistant to most known antibiotics. MRSA strikes at least 280,000 people in the U.S. alone every year, and almost 20,000 of those patients die. The typical way of discovering new antibiotics involves identifying and growing new bacteria from soil and other environmental samples in culture dishes in the laboratory. That environmental treasure-trove is the largest remaining potential source of new antibiotics. Researchers then analyze the bacteria to see if they make substances that could be used as antibiotics to kill other microbes. But most bacteria found in nature can’t grow in the laboratory. That’s why Brady and colleagues took a new approach to this problem.The researchers removed DNA from soil bacteria that wouldn’t grow in the lab. Then, they put this DNA into different bacteria that do grow well in culture dishes, and these bacteria acted like incubators for the new DNA. The approach enabled Brady’s team to study the substances made by the soil bacteria’s DNA in the lab. With this “metagenomics” method, they identified two new possible antibiotics called fasamycin A and fasamycin B that killed MRSA and vancomycin-resistant Enterococcus faecalis, which also is becoming more resistant to known antibiotics. They also determined how the new antibiotics work. “Metagenomics has the potential to access large numbers of previously inaccessible natural antibiotics,” say the researchers.The researchers acknowledge funding from the [National Institutes of Health](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539140&m=1784911&u=ACS&j=9158553&s=http://www.nih.gov/) and the [Howard Hughes Medical Institute](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539141&m=1784911&u=ACS&j=9158553&s=http://www.hhmi.org/).

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ARTICLE #1 **FOR IMMEDIATE RELEASE**“Environmental DNA-Encoded Antibiotics Fasamycins A and B Inhibit FabF in Type II Fatty Acid Biosynthesis”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539143&m=1784911&u=ACS&j=9158553&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/ja207662w) CONTACT:Sean F. Brady, Ph.D.Rockefeller UniversityHoward Hughes Medical InstituteNew York, N.Y. 10065Email: sbrady@rockefeller.edu[To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #2 **FOR IMMEDIATE RELEASE****MOFs special review issue**Chemical Reviews

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| http://images.magnetmail.net/images/clients/ACS/022212MOFACS_thumb.jpgMOFs special review issueCredit: American Chemical Society |

New analyses of more than 4,000 scientific studies have concluded that a family of “miracle materials” called MOFs have a bright future in products and technologies — ranging from the fuel tanks in hydrogen-powered cars to muting the effects of the greenhouse gas carbon dioxide — that are critical for solving some of the greatest global challenges of the 21st century. The 18 articles examining 4,283 pieces of research on MOFs published in the past appear in a special edition of the ACS’ journal Chemical Reviews.Discovered 15 years ago, more than 3,000 metal-organic frameworks, or MOFs, have been made so far, and they represent one of today’s hottest fields of research. These ultra-highly-porous solids consist of metals like zinc or copper linked together by “struts” of organic chemicals to form networks of empty pores almost like the pores in a kitchen sponge. Up to 90 percent of a MOF consists of empty space that could be filled with hydrogen, carbon dioxide, medications for slow-release in the human body or a range of other materials. MOFs have such an enormous internal surface area that a single ounce, unraveled and spread out, could cover the surface of 280 football fields.The special issue of Chemical Reviews consists of 18 articles that analyze research on MOF structures, applications, synthesis and optical and ferroelectric properties. They identify the current state of knowledge on the topic, prospects for commercial and industrial applications and major problems yet to be resolved. The articles tie together advances from several groups from around the world, marking the progress made thus far in MOF research.“Since the 1990s, this area of chemistry has experienced almost unparalleled growth, as evidenced by not only the sheer number of research papers published but also the ever-expanding scope of the research,” say Hong-Cai Zhou, Jeffrey R. Long and Omar M. Yaghi, in an editorial introducing the issue. The special issue comprises the most up-to-date contributions from leading MOF experts and serves as a valuable resource for anyone curious about MOFs.

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| http://images.magnetmail.net/images/clients/ACS/022212ChemRev_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539144&m=1784911&u=ACS&j=9158553&s=http://web.1.c2.audiovideoweb.com/1c2web3536/022212chemrev.jpg) for high-resolution image |

ARTICLE #2 **FOR IMMEDIATE RELEASE**“Introduction to Metal–Organic Frameworks” (editorial)[GO TO ALL MOF SPECIAL ISSUE ARTICLES](http://www.mmsend88.com/link.cfm?r=800557068&sid=17656270&m=1784911&u=ACS&j=9158553&s=http://web.1.c2.audiovideoweb.com/1c2web3536/ChemRevMOF.htm) CONTACT:Hong-Cai Zhou, Ph.D.Department of ChemistryTexas A&M UniversityCollege Station, Texas 77843Phone: 979-845-4034Fax: 979-845-1595Email: zhou@chem.tamu.eduorJeffrey R. Long, Ph.D.Department of ChemistryUniversity of California, BerkeleyLawrence Berkeley National LaboratoryBerkeley, Calif. 94720Phone: 510-642-0860Email: jrlong@berkeley.eduorOmar M. Yaghi, Ph.D.Department of ChemistryUniversity of California, BerkeleyLawrence Berkeley National LaboratoryBerkeley, Calif. 94720Phone: 510-495-2168 or 510-643-3507Email: yaghi@berkeley.edu or oyaghi@lbl.gov[To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #3 **FOR IMMEDIATE RELEASE“Miracle material” graphene is thinnest known anti-corrosion coating**ACS Nano

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| http://images.magnetmail.net/images/clients/ACS/022212Graphene_thumb.jpg“Miracle material” graphene is thinnest known anti-corrosion coatingCredit: iStock |

New research has established the “miracle material” called graphene as the world’s thinnest known coating for protecting metals against corrosion. Their study on this potential new use of graphene appears in ACS Nano.In the study, Dhiraj Prasai and colleagues point out that rusting and other corrosion of metals is a serious global problem, and intense efforts are underway to find new ways to slow or prevent it. Corrosion results from contact of the metal’s surface with air, water or other substances. One major approach involves coating metals with materials that shield the metal surface, but currently used materials have limitations. The scientists decided to evaluate graphene as a new coating. Graphene is a single layer of carbon atoms, many layers of which are in lead pencils and charcoal, and is the thinnest, strongest known material. That’s why it is called the miracle material. In graphene, the carbon atoms are arranged like a chicken-wire fence in a layer so thin that is transparent, and an ounce would cover 28 football fields.They found that graphene, whether made directly on copper or nickel or transferred onto another metal, provides protection against corrosion. Copper coated by growing a single layer of graphene through chemical vapor deposition (CVD) corroded seven times slower than bare copper, and nickel coated by growing multiple layers of graphene corroded 20 times slower than bare nickel. Remarkably, a single layer of graphene provides the same corrosion protection as conventional organic coatings that are more than five times thicker. Graphene coatings could be ideal corrosion-inhibiting coatings in applications where a thin coating is favorable, such as microelectronic components (e.g., interconnects, aircraft components and implantable devices), say the scientists.The researchers acknowledge funding from the [National Science Foundation](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539145&m=1784911&u=ACS&j=9158553&s=http://www.nsf.gov/).

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| http://images.magnetmail.net/images/clients/ACS/022212ACSNano_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539146&m=1784911&u=ACS&j=9158553&s=http://web.1.c2.audiovideoweb.com/1c2web3536/022212acsnano.jpg) for high-resolution image |

ARTICLE #3 **FOR IMMEDIATE RELEASE**“Graphene: Corrosion-Inhibiting Coating”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=17656271&m=1784911&u=ACS&j=9158553&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/nn203507y)CONTACT:Kirill I. Bolotin, Ph.D.Department of Physics and AstronomyVanderbilt UniversityNashville, Tenn. 37235Phone: 909-547-4552Email: kirill.bolotin@vanderbilt.edu [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif ARTICLE #4 **FOR IMMEDIATE RELEASE: A PressPac Instant Replay\*Dried licorice root fights the bacteria that cause tooth decay and gum disease**Journal of Natural Products

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| http://images.magnetmail.net/images/clients/ACS/010412LicoriceIstock_thumb.jpgDried licorice root fights the bacteria that cause tooth decay and gum diseaseCredit: iStock |

Scientists are reporting identification of two substances in licorice — used extensively in Chinese traditional medicine — that kill the major bacteria responsible for tooth decay and gum disease, the leading causes of tooth loss in children and adults. In a study in ACS’ Journal of Natural Products, they say that these substances could have a role in treating and preventing tooth decay and gum disease. Stefan Gafner and colleagues explain that the dried root of the licorice plant is a common treatment in Chinese traditional medicine, especially as a way to enhance the activity of other herbal ingredients or as a flavoring. Despite the popularity of licorice candy in the U.S., licorice root has been replaced in domestic candy with anise oil, which has a similar flavor. Traditional medical practitioners use dried licorice root to treat various ailments, such as respiratory and digestive problems, but few modern scientific studies address whether licorice really works. (Consumers should check with their health care provider before taking licorice root because it can have undesirable effects and interactions with prescription drugs.) To test whether the sweet root could combat the bacteria that cause gum disease and cavities, the researchers took a closer look at various substances in licorice. They found that two of the licorice compounds, licoricidin and licorisoflavan A, were the most effective antibacterial substances. These substances killed two of the major bacteria responsible for dental cavities and two of the bacteria that promote gum disease. One of the compounds — licoricidin — also killed a third gum disease bacterium. The researchers say that these substances could treat or even prevent oral infections.

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| http://images.magnetmail.net/images/clients/ACS/022212JNP_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539148&m=1784911&u=ACS&j=9158553&s=http://web.1.c2.audiovideoweb.com/1c2web3536/022212jnp.jpg) for high-resolution image |

ARTICLE #4 **FOR IMMEDIATE RELEASE**“Isoflavonoids and Coumarins from Glycyrrhiza uralensis: Antibacterial Activity against Oral Pathogens and Conversion of Isoflavans into Isoflavan-Quinones during Purification”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539149&m=1784911&u=ACS&j=9158553&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/np2004775)CONTACT:Stefan Gafner, Ph.D. Tom’s of Maine Kennebunk, Maine 04043Phone: 207-467-2227 Fax: 207-985-2196 Email: stefang@tomsofmaine.com **\* A previous PressPac item that you may have missed**   [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #5 **FOR IMMEDIATE RELEASE****Lessons from an $800-million drug flop may lead to a new genre of anti-cholesterol medicines**Chemical & Engineering News

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| http://images.magnetmail.net/images/clients/ACS/022212CEN_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=17656272&m=1784911&u=ACS&j=9158553&s=http://web.1.c2.audiovideoweb.com/1c2web3536/022212cen.jpg) for high-resolution image. |

Mindful of lessons from a failed heart drug that cost $800 million to develop, drug companies are taking another shot at new medications that boost levels of so-called “good cholesterol,” which removes cholesterol from the body. A report on how three new versions of medications in the same family as the failed torcetrapib appears in the current edition of Chemical & Engineering News, the newsmagazine of the American Chemical Society, the world’s largest scientific society.In the cover story, C&EN Associate Editor Carmen Drahl explains that the drug maker Pfizer abruptly stopped development of its newest heart medicine in 2006, when clinical trials showed it was increasing patients’ risk of death. Torcetrapib then was a high-profile potential new medication that blocked a substance called cholesteryl ester transfer protein (CETP) in a way expected to increase blood levels of HDL-cholesterol, high-density lipoprotein cholesterol. Experts hoped torcetrapib would open a new chapter in treating heart disease. Data, however, indicated that torcetrapib had increased the risk of death in a 15,000-patient clinical trial, and Pfizer promptly halted further development.C&EN describes how Eli Lilly, Roche and Merck slowed down development of their own CETP blockers to watch closely for hints unwanted of effects, such as torcetrapib’s tendency to increase blood pressure, which Pfizer had missed. So far, the new CETP blockers continue to show promise as viable new heart drugs. Drahl points out, however, that the final judgment may be years away as results of clinical trials on 30,000 become available.ARTICLE #5 **FOR IMMEDIATE RELEASE**"The Cholesterol Bet"This story is available at: [http://cenm.ag/drugs](http://www.mmsend88.com/link.cfm?r=800557068&sid=17656273&m=1784911&u=ACS&j=9158553&s=http://cenm.ag/drugs)  [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif **Journalists’ Resources** **News media registration for ACS’ 243rd National Meeting & Exposition in San Diego**News media [registration](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539151&m=1784911&u=ACS&j=9158553&s=https://www.xpressreg.net/register/acsa032/media/start.asp) is now open for the American Chemical Society’s (ACS) 243rd National Meeting & Exposition in San Diego, March 25-29, 2012. The event will include more than 11,500 reports on new discoveries in medicine and health, food and nutrition, energy, the environment and other fields where chemistry plays a central role. One of the largest scientific conferences of 2012, the meeting will take place at the San Diego Convention Center and area hotels. To view full news release about meeting registration, click [here](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539152&m=1784911&u=ACS&j=9158553&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=222&content_id=CNBP_028895&use_sec=true&sec_url_var=region1&__uuid=077ccb29-4a64-4924-98b7-ed219e050a6d). **Press releases, briefings, and more from ACS’ 242nd National Meeting**[www.eurekalert.org/acsmeet.php](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539153&m=1784911&u=ACS&j=9158553&s=http://www.eurekalert.org/acsmeet.php) [http://www.ustream.tv/channel/acslive](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539154&m=1784911&u=ACS&j=9158553&s=http://www.ustream.tv/channel/acslive%20) **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. [Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539155&m=1784911&u=ACS&j=9158553&s=http://www.insidescience.org/) to visit the Inside Science News website.**Must-reads from C&EN: Mother Nature’s Medicines**More than half of all modern drugs came from substances produced in bacteria, plants and other natural sources. Establishment of the Natural Products Discovery Institute stands to energize this ongoing quest for drugs from this bountiful source. For the full story, contact Michael Bernstein at m\_bernstein@acs.org.**ACS Pressroom Blog** The ACS Office of Public Affairs' [pressroom blog](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539156&m=1784911&u=ACS&j=9158553&s=http://www.acspressblog.com) highlights research from ACS’ 41 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://www.mmsend88.com/link.cfm?r=800557068&sid=17539157&m=1784911&u=ACS&j=9158553&s=http://www.bytesizescience.com), 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. To get our news blasts and updates, create a free account at [https://twitter.com/signup](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539158&m=1784911&u=ACS&j=9158553&s=https://twitter.com/signup). Then visit [http://twitter.com/ACSpressroom](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539159&m=1784911&u=ACS&j=9158553&s=http://twitter.com/ACSpressroom) and click the ‘join’ button beneath the press room logo. **C&EN on Twitter**Follow @cenmag <[http://twitter.com/cenmag](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539160&m=1784911&u=ACS&j=9158553&s=http://twitter.com/cenmag)> for the latest news in chemistry and dispatches from our blog, C&ENtral Science <[http://centralscience.org](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539161&m=1784911&u=ACS&j=9158553&s=http://centralscience.org)>.**ACS Press Releases** [Press releases](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539162&m=1784911&u=ACS&j=9158553&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_NEWSRELEASES&node_id=222&use_sec=false&sec_url_var=region1&__uuid=50b5ab93-801d-4d0d-868f-b9507ff9d709) on a variety of chemistry-related topics.[To Top](#top)http://images.magnetmail.net/images/clients/acs/goldline.gif**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**

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The 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://www.mmsend88.com/link.cfm?r=800557068&sid=17539163&m=1784911&u=ACS&j=9158553&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=1355&content_id=CNBP_028033&use_sec=true&sec_url_var=region1&__uuid=e8e6ee76-0abe-4e78-84c4-3717c995c65e). **Prized Science video series**

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Prized Science: How the Science Behind ACS Awards Impacts Your Life video series is new for 2011! In the first episode, see how Ahmed Zewail, Ph.D., developed a technology that's paving the way for new medicines, new fuels and new materials that will give people longer, healthier, happier lives. Zewail is the winner of the 2011 Priestley Medal. The second episode features the work of David Craik, Ph.D., who made advances toward new drugs for treating health problems that affect millions of people around the world, including antibiotic-resistant bacteria and AIDS. Craik is the winner of the ACS 2011 Ralph F. Hirschmann Award in Peptide Chemistry, sponsored by Merck Research Laboratories. More episodes will appear later in the year. The series is available at the [Prized Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539164&m=1784911&u=ACS&j=9158553&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=446&content_id=CTD1_018821&use_sec=true&sec_url_var=region1&__uuid=594bce97-0b05-4df7-b759-1a0f9156c5d8) website and on DVD. **First Living, Dancing Periodic Table of the Elements**

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That 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://www.mmsend88.com/link.cfm?r=800557068&sid=17539165&m=1784911&u=ACS&j=9158553&s=http://bytesizescience.com/index.cfm/2011/3/29/The-Chemistry-Dance) 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.**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://www.mmsend88.com/link.cfm?r=800557068&sid=17539166&m=1784911&u=ACS&j=9158553&s=http://www.youtube.com/watch?v=AbfW_CMMe48) follows a person who sees more and more everyday necessities and conveniences disappear before his widening eyes.[The Chemistry of Sourdough Bread](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539167&m=1784911&u=ACS&j=9158553&s=http://www.bytesizescience.com/index.cfm/2010/9/27/Chemistry-of-Sourdough)[The Chemistry of Fireworks](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539168&m=1784911&u=ACS&j=9158553&s=http://www.bytesizescience.com/index.cfm/2010/6/25/Bytesize-Science-Presents-The-Chemistry-of-Fireworks)[The Chemistry of Grilling and Barbecuing](http://www.mmsend88.com/link.cfm?r=800557068&sid=17539169&m=1784911&u=ACS&j=9158553&s=http://www.bytesizescience.com/index.cfm/2010/6/15/Chemistry-of-Barbeque) [To Top](#top)  http://images.magnetmail.net/images/clients/ACS/goldline.gif**ACS Podcasts**

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