



BioTechCircle News®

February 2009

Featured February articles

Green technology article titles are highlighted in **green**. Here are our **featured** non-green articles.

Does Even More than a Spider Can

http://www.economist.com/science/displaystory.cfm?story_id=13013043

Clinicians Using Electronic Prescribing Override Most Medication Safety Alerts

<http://www.dana-farber.org/abo/news/press/2009/clinicians-using-electronic-prescribing-override-most-medication-safety-alerts.html>

Cell-Building Discovery Could Reduce Need for Some Animal Research

<http://news.brown.edu/pressreleases/2009/02/microtissue>

Using Stem Cells To Make Blood Substitutes

<http://pubs.acs.org/cen/science/87/8708sci1a.html>

Implant Makes Cells Kill Cancer

<http://www.technologyreview.com/biomedicine/22027/page1/>

NOTE: It has always been our philosophy to highlight well-written biotech articles that you, our global readers, may access on the Web at no cost. Starting with the January 2009 report, we regret having to discontinue citing excellent articles that move to paid-subscription status after a brief time, often before we are able to post these monthly reports.

In this articles section: links to 61 free Web articles in 13 major categories.

The major categories are in alphabetical order and further subdivided to make it easy for you to locate news and developments in technology, the business and the markets in the life science areas of interest to you.

Note: if the links don't connect you directly, please copy and paste the entire URL into your web browser.

Here are the major categories and the page where each category starts:

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AGRI-BIOTECH

Subcategory: Energy/ Fuel

Rot's Unique Wood Degrading Machinery

Doe Joint Genome Institute

05-Feb-09

The brown-rot *Postia placenta*'s genome offers a detailed inventory of the biomass-degrading enzymes that this and other fungi possess, which can be harnessed for better biofuels production.

http://www.jgi.doe.gov/News/news_09_02_05.html

Subcategory: Government/ Approvals

Who Really Oversees Food Safety?

Mary Clare Jalonick

Manufacturing.net

24-Feb-09

At least 15 government agencies have a hand in making sure food is safe under at least 30 different laws, some of which date back to the early 1900s, Jalonick reports.

<http://www.manufacturing.net/article.aspx?id=187074>

Subcategory: Microorganisms

What's Killing the Coral Reefs?

DIAGNOSTIC TOOLS

Subcategory: Miscellaneous

Scripps Research Scientists Develop General-Purpose Method for Detecting Trace Chemicals

Scripps Research Institute

25-Feb-09

A method of sensitively detecting specific chemicals in the laboratory may lead to a host of new ways to monitor a variety of chemicals in nature, including many that are relevant to diagnostic medicine and environmental work.

<http://www.scripps.edu/news/press/022509.html>

DRUG DELIVERY

Subcategory: Materials

Does Even More than a Spider Can

Economist

29-Jan-09

Normal spider silk thickens into tiny fibers and spheres in propanol, researchers find. If injected into the bloodstream, the spheres could deliver a dose over a longer period than the sudden hit that comes with a traditional injection.

http://www.economist.com/science/displaystory.cfm?story_id=13013043

INDUSTRY

Subcategory: Bio Pharma

2008 Top 10 Biopharmaceutical Companies Report

Gil Roth

Contract Pharma

23-Feb-09

Lists and links to biopharmaceutical companies meeting criteria of making more than 40% of its drug revenues by selling biologic products, including biotherapeutics, vaccines and other proteins.

<http://www.contractpharma.com/articles/2008/07/2008-top-10-biopharmaceutical-companies-report>

Subcategory: Education

Mo. Patent Fight Shows Perils of 'Tech Transfer'

Alan Scher Zagier

R & D Magazine

29-Jan-09

Discusses deteriorating relationships between researchers and university technology transfer policies, in which university labs help incubate discoveries that can speed lifesaving drugs and modern

conveniences to market.

[ELTYPE=IDN&PRODCODE=00000000&PRODLETT=DH&CommonCount=0](#)

Subcategory: Energy/ Fuel

Santa Clara Has Novel Use for Dumped Wi-Fi

Lisa Sibley Silicon Valley/San Jose Business Journal 30-Jan-09

Reports on nonprofit electric utility's Advanced Metering Infrastructure that measures, collects and analyzes energy usage from electricity meters; its "smart grid" program delivers electricity using digital technology to save energy and cost.

<http://sanjose.bizjournals.com/sanjose/stories/2009/02/02/story1.html?b=1233550800^1769982>

Subcategory: Government/ Approvals

FDA Approves Drug From Transgenic Goat Milk

Britt Erickson Chemical & Engineering News 16-Feb-09

Decision on ATryn, a human antithrombin protein extracted from the milk of genetically engineered goats, marks the first U.S. approval of a human therapy derived from a genetically engineered animal. The drug has been available in Europe since 2006.

<http://pubs.acs.org/cen/news/87/i07/8707notw5.html>

Subcategory: Misc. Drugs

Biotech Drug Prices Under Scrutiny

Jill Wechsler BioPharm International 01-Feb-09

Efforts to cut spending on healthcare will focus on outlays for prescription drugs by Medicare and other health programs, Wechsler reports.

<http://biopharminternational.findpharma.com/biopharm/Regulatory+Compliance+Articles/ArticleStandard/Article/detail/580773>

ORGANIZATIONS

Subcategory: Education

HHMI Fellowship Program Expands to Help More Students Become Researchers

Howard Hughes Medical Institute 12-Feb-09

Nine Gilliam fellowships fund exceptional students from groups traditionally underrepresented in the sciences or from disadvantaged backgrounds. Program aims to enrich science research and increase the diversity of college and university faculty members.

<http://www.hhmi.org/news/gilliam20090212.html>

PEOPLE PROFILES

Subcategory: Immunology/ Infectious Diseases

Vital Signs...When Modern Medicine Battles Genetics... and Loses

Claire Panosian Dunavan

Discover

14-Jan-09

Although excellent care can tip the balance between life and death, in some cases patients have genetic vulnerabilities that all the high-tech care in the world simply cannot conquer, writes physician Panosian Dunavan.

<http://discovermagazine.com/2009/feb/14-when-modern-medicine-battles-genetics-loses>

PERSONALIZED MEDICINE

Subcategory: Cardiology/ Vascular Diseases

Genetic Information Can Improve Administration of Anticoagulant

Gwen Ericson

University of Washington

18-Feb-09

Using a patient's genetic information can make it easier to get the warfarin dose right. The correct warfarin dose is calculated by taking into account the effect of two genes involved in warfarin sensitivity and metabolism.

<http://mednews.wustl.edu/news/page/normal/13519.html>

PHARMACEUTICALS

Subcategory: Databases

Clinicians Using Electronic Prescribing Override Most Medication Safety Alerts

Dana-Farber Cancer Institute

10-Feb-09

Clinicians overrode more than 90% of the drug interaction alerts and 77% of the drug allergy alerts, study finds, suggesting the need for development and integration of high-quality decision support systems.

<http://www.dana-farber.org/abo/news/press/2009/clinicians-using-electronic-prescribing-override-most-medication-safety-alerts.html>

PLATFORM TECHNOLOGIES

Subcategory: Cell Therapy

Researcher Seeks to Turn Stem Cells into Blood Vessels

Phil Sneiderman

EurekAlert!

19-Feb-09

Scientist explores: What happens at the molecular level when stem cells differentiate: Which environmental cues cause them to form blood

vessels instead of other types of body tissue? Lack of oxygen?
Nutrients? Texture and composition of materials?

http://www.eurekaalert.org/pub_releases/2009-02/jhu-rst021809.php

Subcategory: Combinatorial chemistry

Synthetic Biology Yields Clues to Evolution and the Origin of Life

Tim Stephens

EurekaAlert!

15-Feb-09

Origin of life is seen as the result of combinatorial chemistry on a global scale: combinatorial chemistry allows vast numbers of structurally distinct molecules to be synthesized and tested at the same time.

http://www.eurekaalert.org/pub_releases/2009-02/uoc--sby020909.php

Subcategory: Drug Discovery

Monitoring Cell-Wide Protein Production with Ribosome Profiling

Howard Hughes Medical Institute

12-Feb-09

Describes a powerful tool that can quickly tell the identity, quantity of every protein produced by a living cell at any given time. May help pinpoint which proteins drive specific diseases, which of those proteins might be the best target for new drugs.

<http://www.hhmi.org/news/weissman20090212.html>

Subcategory: Evolution Research

Self-Assembled Nucleotide Helix

Stuart A. Borman

Chemical & Engineering News

16-Feb-09

Structure suggests how nucleotide monomers might line up to form covalently bonded nucleic acid oligomers and thus has potential implications for prebiotic chemistry (chemical reactions resulting in the appearance of life).

<http://pubs.acs.org/cen/news/87/i07/8707notw7.html>

A Comeback for Lamarckian Evolution?

Emily Singer

Technology Review

04-Feb-09

The effects of an animal's environment during adolescence can be passed down to future offspring, providing support for a largely-dismissed, 200-year-old theory of evolution stating that acquired characteristics can be passed on to offspring.

<http://www.technologyreview.com/biomedicine/22061/>

Subcategory: Materials

Simplicity Is Crucial to Design Optimization at Nanoscale

Denise Brehm

Massachusetts Institute of

03-Feb-09

Scientists have discovered that the particular arrangement of proteins that produces the sturdiest product is not the arrangement with the most built-in redundancy or the most complicated pattern, but rather a

rope-like substitute.

http://cee.mit.edu/news/newsreleases/2009/stacks_and_bundles

Spun-sugar Fibers Spawn Sweet Technique for Nerve Repair

Purdue News

26-Feb-09

Sugar filaments are coated with a corn-based degradable polymer, and then the sugar is dissolved in water, leaving behind bundles of hollow polymer tubes that mimic those found in nerves. The scaffold could be used to promote nerve regeneration.

<http://news.uns.purdue.edu/x/2009a/090226ShiNerves.html>

Subcategory: Misc. Drugs

Tailor-made Recombinant Proteins in Mammals

Paul Preuss

Berkeley News

09-Feb-09

Aldehyde tags direct chemical modifications to specific sites on recombinant proteins, including the monoclonal antibodies that are important in the pharmaceutical industry. Technique is versatile and easy to apply, with a wide range of applications.

<http://newscenter.lbl.gov/press-releases/2009/02/09/tailor-made-recombinant-proteins-in->

Peptide Applications for Cardiovascular Therapies

Gary Hu

Bioscience Technology

01-Feb-09

The specificity of peptides makes them attractive and lucrative therapeutics. The current focus in the peptide market has broadened to include a wide range of treatments for such conditions as allergies, Parkinson's, multiple sclerosis, and heart failure.

<http://www.biosciencetechnology.com/ShowPR~PUBCODE~090~ACCT~9000010725~ISSUE~0901~RELTYPE~PAA~PRODCODE~00006092~PRODLETT~A.html>

Subcategory: Miscellaneous

From the Labs: Biomedicine

Emily Singer

Technology Review

01-Mar-09

Singer reviews two experiments and breakthroughs in biomedicine, cellular fusion and a genetic clock, and explains why they are important.

<http://www.technologyreview.com/biomedicine/22139/>

Subcategory: Nanotechnology

Speed-Reading DNA Inches Closer

Katherine Bourzac

Technology Review

24-Feb-09

Researchers hope to bring down both the cost and the time required for sequencing using a technique called nanopore sequencing. Allows for the direct identification of bases without the conventional fluorescent labels and imaging equipment.

<http://www.technologyreview.com/biomedicine/22217/page1/>

Subcategory: Oncology

MicroRNAs Make for Safer Cancer Treatments

Mayo Clinic

26-Feb-09

Scientists are engineering oncolytic viruses' genetic sequence, using microRNAs to restrict them to specific tissues, thus making it impossible for the viruses to damage healthy tissue.

<http://www.mayoclinic.org/news2008-rst/5042.html>

Subcategory: Tissue Engineering

Cell-Building Discovery Could Reduce Need for Some Animal Research

Mark Hollmer

Brown University

02-Feb-09

Biomedical engineers, using a 3-D Petri dish they invented, have successfully built complex-shaped microtissues by assembling small building blocks of living cell clusters.

<http://news.brown.edu/pressreleases/2009/02/microtissue>

Evolution by Intelligent Design

Jane Bosveld

Discover

02-Feb-09

Reports on bioengineering breakthroughs and implications for the future, including embryos from the palm of your hand, gene targeting and artificial chromosomes.

<http://discovermagazine.com/2009/mar/02-evolution-by-intelligent-design>

RESEARCH ADVANCEMENTS

Subcategory: Cell Therapy

Using Stem Cells To Make Blood Substitutes

Sarah Everts

Chemical & Engineering News

23-Feb-09

Fully mature human red blood cells have been made from hematopoietic (obtained from umbilical cords of both newborn babies and adult bone marrow) stem cells. Artificial blood eliminates reliance on blood donors and risk of rejection and disease transfer.

<http://pubs.acs.org/cen/science/87/8708sci1a.html>

Subcategory: Dermatology

Removing Wrinkles with RHAMM

Lynn Yarris

Berkeley News

30-Jan-09

Controlling concentrations in the skin of the RHAMM protein, also linked to the spread of several major human cancers, holds promise for the elimination of wrinkles and skin rejuvenation without surgery or neurotoxin injections, researchers suggest.

<http://newscenter.lbl.gov/feature-stories/2009/01/30/removing-wrinkles-with-rhamm/>

Subcategory: Gastroenterology

Scientists at Scripps Research Identify a Mutation that Causes Inflammatory Bowel Disease

Scripps Research Institute

09-Feb-09

A mouse mutation to an increased susceptibility for developing inflammatory bowel disease (IBD), which in humans is represented by Crohn's disease and ulcerative colitis. Findings may lead to new and better treatments for the disease.

<http://www.scripps.edu/news/press/020909.html>

Subcategory: Imaging

Imaging the Glycomes of Living Organisms

Paul Preuss

Berkeley News

12-Feb-09

Reviews manipulation of glycans, sugars that occur throughout living things; they are particularly abundant on the surfaces of cells, involved in binding bacteria and viruses to host cells and with the adhesion of white blood cells during infection.

<http://newscenter.lbl.gov/feature-stories/2009/02/12/imaging-the-glycomes-of-living->

Subcategory: Immunology/ Infectious Diseases

Protein "Eye" Finds Viruses and Starts Immune Response

Diana Yates

R & D Magazine

24-Feb-09

Study reveals how a cellular protein, RIG-I, recognizes an invading virus and alerts the body to the infection. Unlike most other proteins known to detect viral infections only in specialized immune cells, RIG-I is active in every cell type in the body.

<http://www.rdmag.com/ShowPR~PUBCODE~014~ACCT~1400000100~ISSUE~0902~RELTYPE~LST~PRODCODE~00000000~PRODLETT~AW.html>

Subcategory: Metabolism: Obesity, Diabetes

Hope For A Rare Disease

Stuart A. Borman

Chemical & Engineering News

09-Feb-09

NiemannPick C (NPC) disease is a rare disorder in children, with approximately 500 cases currently diagnosed worldwide. A form of the common organic solubilizing agent β -cyclodextrin has been found to reverse NPC disease in mice.

<http://pubs.acs.org/cen/news/87/i06/8706notw6.html>

Subcategory: Nephrology/ Urology

Multiple Genes Implicated in Autism

Deborah Halber

MIT News

09-Feb-09

Researchers have shown for the first time that multiple, interacting

genetic risk factors may influence the severity of autistic symptoms.
Discovery could lead to drugs targeting gene interactions.

<http://web.mit.edu/newsoffice/2009/autism-gene-0209.html>

Bacteria in Urinary Tract Infections Caught Making Burglar's Tools

Michael Purdy

Washington University in St. Louis

19-Feb-09

Bacteria that cause urinary tract infections (UTIs) make more tools called siderophores that allow the bad bacteria to steal iron from their hosts, making it easier for the bacteria to survive and reproduce.

<http://mednews.wustl.edu/news/page/normal/13544.html>

Subcategory: Neurology

Sunny Side Up

Economist

26-Feb-09

Carriers of one version of a gene are at higher risk of depression and attempted suicide when facing traumatic events. The gene lies in a region of the genome that promotes the activity of a second gene, which encodes serotonin transporter protein.

http://www.economist.com/science/displaystory.cfm?story_id=13176767

A Hole in the Genome

Emily Singer

Technology Review

01-Mar-09

A small chunk of DNA linked to schizophrenia, mental retardation, and autism may change the way we think about disease. Missing or extra pieces of DNA in the 1q21.1 region put the bearer at risk for a surprisingly broad range of such disorders.

<http://www.technologyreview.com/biomedicine/22135/?a=f>

Subcategory: Oncology

Cancer Research: Genomics Enters the Fray

Alan Dove

Bioscience Technology

27-Feb-09

Lower costs and increased funding converge to draw more researchers into studying cancer genomics, Dove reports. A non-technical barrier is having properly consented patient samples to access.

<http://www.biosciencetechnology.com/ShowPR~PUBCODE~090~ACCT~9000000100~ISSUE~0902~RELTYPE~PR~PRODCODE~00000000~PRODLETT~P.html>

Biomarker For Cancer Aggression

Rachel Petkewich

Chemical & Engineering News

11-Feb-09

Men with prostate cancer had high levels of sarcosine in their urine. Sarcosine may be involved in the development of prostate cancer: when added to cultures of benign prostate cells, the cells became invasive.

<http://pubs.acs.org/cen/news/87/i07/8707news5.html>

Rosetta Genomics Reports First Ever In-Vivo Efficacy Data for a

Systemic MicroRNA Therapeutic for Liver Cancer

Rosetta Genomics

12-Feb-09

Liver cancer is the third cause of cancer death globally. Animal-model study demonstrates a marked suppression of a microRNA that was found to be over expressed in human hepato-cellular carcinoma (HCC), and a significant two-fold reduction of tumor mass.

<http://phx.corporate-ir.net/phoenix.zhtml?c=203066&p=irol->

Implant Makes Cells Kill Cancer

Katherine Bourzac

Technology Review

28-Jan-09

Polymer implant attracts and trains immune-system cells to go after cancer; in animal studies, the implant increased the survival rate of mice with a deadly melanoma from 0 to 90%.

<http://www.technologyreview.com/biomedicine/22027/page1/>

Subcategory: Pulmonary/ Respiratory Diseases

'Evolved' Virus May Improve Gene Therapy for Cystic Fibrosis

Robert Sanders

UC Berkeley News

17-Feb-09

A relatively benign virus, adeno-associated virus (AAV), into a highly infectious form that is ideal as a carrier for gene therapy. In its first gene therapy test, it completely cured human cystic fibrosis lung tissue in culture.

http://www.berkeley.edu/news/media/releases/2009/02/17_schaffer.shtml

RESEARCH TOOLS

Subcategory: Cell Therapy

Freeing Up Stem-Cell Research

Emily Singer

Technology Review

10-Feb-09

Scientists get ready for the end of federal restrictions on embryonic-stem-cell research, allowing them to use most of the estimated 600 stem-cell lines that have been created around the globe.

<http://www.technologyreview.com/biomedicine/22084/>

Subcategory: Computing Systems

From the Works of Shakespeare to the Genomes of Viruses:

Lynn Yarris

Berkeley News

10-Feb-09

The Feature Frequency Profile technique can be used to create “family trees” that put into easy-to-see perspective the relationships between groups within a large data set such as identifying our genetic ancestors or classifying new life forms.

<http://newscenter.lbl.gov/feature-stories/2009/02/10/from-the-works-of-shakespeare-to-the->

[genomes-of-viruses/](#)

Bridging the Gap

Howard Hughes Medical Institute

22-Feb-09

Scientists have mapped previously unknown pathways in yeast cells that link the overactivity of a mysterious gene to the death of nerve cells in Parkinson's disease. Describes algorithm providing new ways of thinking about confusing data results.

<http://www.hhmi.org/news/lindquist20090222.html>

Subcategory: Databases

Assigning Bacterial Strains to Species via the Internet – Electronic Taxonomy

eMLSA.net

23-Feb-09

Portal provides a portal for the electronic taxonomy of bacteria, providing a common format and software for assigning strains to species via the Internet.

<http://www.emlsa.net/>

Thomson Reuters Adds Life Science to Web of Knowledge

R & D Magazine

26-Feb-09

Derived from over 3500 journals, plus reports, books and conferences, Global Health contains over 1.2 million scientific records from 1973 to the present; more than 90,000 records are added yearly. Links to Thompson Reuters, ISI Web of Knowledge, others.

<http://www.rdmag.com/ShowPR~PUBCODE~014~ACCT~1400000101~ISSUE~0902~RELTYP~IDN~PRODCODE~00000000~PRODLETT~MQ.html>

Subcategory: Disease Prevention

NASA Study Predicted Outbreak of Deadly Virus

NASA

13-Feb-09

An early warning system, 10+ years in development, successfully predicted the 2006-2007 outbreak of the deadly Rift Valley fever in northeast Africa, giving public health officials there up to 6 weeks of warning, enough time to lessen human impact.

http://www.nasa.gov/topics/earth/features/riftvalley_fever.html

Subcategory: Evolution Research

Basic Information

Economist

19-Feb-09

Scientists announce the first draft of the genome of humanity's closest relative, the Neanderthals. Information on The Neandertal Genome Project at: <http://www.eva.mpg.de/neandertal/index.html>.

http://www.economist.com/science/displaystory.cfm?story_id=13139627

Did Increased Gene Duplication Set Stage for Human Evolution?

Howard Hughes Medical Institute 12-Feb-09
Gene duplication, a major change occurring 10 million years ago in a common ancestor of gorillas, chimpanzees, and humans, may be responsible for a genetic flexibility resulting in some uniquely human characteristics.

<http://www.hhmi.org/news/eichler20090212.html>

Scientists Unlock Mystery of Molecular Machine

University of Montreal 19-Feb-09
Scientists have proposed a new theory for how a universal molecular machine, the ribosome, managed to self-assemble as a critical step in the genesis of all life on Earth.

<http://www.nouvelles.umontreal.ca/udem-news/press-releases/scientists-unlock-mystery-of-molecular-machine.html>

Subcategory: Genome Sequence

Next Gen Sequencing Technology Pinpoint "On-Off Switches" in Genomes

Doe Joint Genome Institute 12-Feb-09
A set of molecular tools promises to clarify the longstanding mystery of the role played by vast stretches of DNA sequence that do not code for the functional units, i.e. genes, but may have a powerful regulatory influence.

http://www.jgi.doe.gov/News/news_09_02_12.html

Subcategory: Genomics

Improved Method for Comparing Genomes as Well as Written Text

Robert Sanders Berkeley News 28-Jan-09
New method can be used to compare distantly related organisms or organisms with genomes of vastly different sizes and diversity, and can compare the entire genome, not just a small fraction of the gene-containing portion known to code for proteins.

http://www.berkeley.edu/news/media/releases/2009/01/28_genomecomp.shtml

Subcategory: Government/ Approvals

Good Products Introduces Secure Document Storage g-SOPs for Regulated Industries

Applied Clinical Trials 19-Feb-09
Software tool facilitates creation, management and storage of controlled documents related to Standard Operating Procedures (SOPs) for use in the life science industry. SOPs ensure that all procedures are carried out in a consistent, compliant manner.

<http://appliedclinicaltrialsonline.findpharma.com/appliedclinicaltrials/News/Good-Products-Introduces-Secure-Document-Storage->

Subcategory: Imaging

Technique Dives Into Cells

Celia Arnaud

Chemical & Engineering News

05-Feb-09

A new microscope, interferometric photoactivated localization microscopy (iPALM), improves the 3D resolution of fluorescence imaging to better than 20 nm, at least twice as good as resolutions previously reported for 3-D fluorescence imaging.

<http://pubs.acs.org/cen/news/87/i06/8706notw5.html>

STRATEGIC RELATIONSHIPS

Subcategory: Collaboration

Nextrials Pledges Support for ANSI's Latest Initiative

Applied Clinical Trials

13-Feb-09

Nextrials Joins GlaxoSmithKline, Johnson & Johnson and other industry titans to support interoperability framework for healthcare, such as electronic health records, and pharmaceutical research.

<http://appliedclinicaltrialsonline.findpharma.com/appliedclinicaltrials/News/Nextrials-Pledges-Support-for-ANSIs-Latest->

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