



BioTechCircle News®

October 2009

In this articles section: links to 64 free Web articles in 14 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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For a brief explanation of how we categorize the articles, please see "Express Guide to Monthly Web Articles at: http://www.techmanage.net/expressguide_articles

AGRI-BIOTECH

Subcategory: Animal

How Does Cage Enrichment Affect Rodents?

Alla Katsnelson

The Scientist

01-Oct-09

Reviews international laws and the current and emerging practices of providing caged rodents, used for research, with enrichment such as nesting material, places to hide, group housing and modified room temperature.

http://www.the-scientist.com/templates/trackable/display/article1.jsp?a_day=1&index=1&year=2009&page=30&month=10

Subcategory: Energy/ Fuel

Popping the Cork on Biofuel Agriculture

Bryan Lowder

Brookhaven National Laboratory

19-Oct-09

Suberin, the woody, waxy, cell-wall substance found in cork, controls a plant's water and nutrient transportation and keeps pathogens out. Enzyme responsible for the formation of suberin could lead to easier production of crops used for biofuels.

http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=997

Myriad Rules and Regulations Challenge Emergent Biofuels Industry

University of Illinois

21-Oct-09

Within genetically modified crops and biofuels, case law is still being built. Legal experts are addressing legal and regulatory issues arising from new plant technologies. The field is ripe for those interested in policy and regulation.

<http://www.igb.uiuc.edu/news/endres.html>

Subcategory: Environmental

Key To How Bacteria Clear Mercury Pollution

University of Tennessee

01-Oct-09

An enzyme, known as MerB, gives certain bacteria the ability to convert methylmercury into a less-toxic form of mercury that poses substantially less environmental risk, a trait that lets them survive in mercury-rich environments.

<http://www.utk.edu/tntoday/2009/10/01/utk-orml-researchers-mercury/>

Subcategory: Food

Food, Glorious Food

Economist

29-Oct-09

Not all omega-3s are created equal. The good ones (long-chain fatty acids) come from sources such as fish. The far less beneficial ones (short-chain fatty acids) come from cheap plant oils like flax seed and soya, and from leafy green vegetables.

http://www.economist.com/sciencetechnology/displayStory.cfm?story_id=14743783

Study: No Shortage of U.S. Engineers

Moira Herbst Business Week 28-Oct-09

U.S. colleges and universities are graduating as many scientists and engineers as ever, according to a study, but many of the highest-performing students are choosing careers in other fields, especially finance and consulting.

http://www.businessweek.com/bwdaily/dnflash/content/oct2009/db20091027_723059.htm?link_position=link17

Subcategory: Energy/ Fuel

Fossil-Fuel Costs

Jeff Johnson Chemical & Engineering News 26-Oct-09

Fossil-fuel-based energy production, mostly from coal and oil, causes \$120 billion worth of health and other non-climate-related damages in the U.S. each year that are not figured into the price of energy, says a National Research Council report.

<http://pubs.acs.org/cen/news/87/i43/8743notw2.html>

Subcategory: Personalized Medicine

Improving the Odds

James Netterwald Drug Discovery & Development 01-Oct-09

Personalized medicine is partially premised on the ability of a specific drug to effect change in a specific biomarker. Netterwald reviews several companies involved in developing personalized medicine drugs and diagnostic tools.

<http://www.ddmag.com/article-Improving-the-Odds-100609.aspx>

INVESTMENTS/ GOV. SUPPORT

Subcategory: Bio Pharma

A Biotech's Battle Lost

The Scientist 16-Sep-09

Altus Pharmaceuticals, a 17-year-old Boston-area biotech focusing on a human growth hormone therapy, is selling its assets and is not likely to stay in business.

<http://www.the-scientist.com/blog/display/55982/>

Subcategory: Collaboration

Friend This: Scientists Will Find Research Partners More Easily, Thanks to New \$12.2 Million Nih Grant Establishing National

Cornell University 21-Oct-09

A national, Facebook-like, professional social network called VIVOweb

will enable scientists to find new biomedical research and partnerships. By fostering alliances, it is hoped that biomedical research and discovery will move faster.

<http://www.pressoffice.cornell.edu/pressoffice/releases/release.cfm?r=33322>

Subcategory: Federal

Obama Visits NIH

Britt E. Erickson

Chemical & Engineering News

01-Oct-09

The National Institutes of Health has awarded \$5 billion in research grants under the American Recovery & Reinvestment Act, the largest ever in the history of biomedical research.

<http://pubs.acs.org/cen/news/87/i40/8740notw9.html>

NOVEL APPLICATIONS

Subcategory: Misc. Medical Devices

Mobile Microbots to Face Big Challenge

R & D Magazine

23-Oct-09

Describes events designed to "road test" agility, maneuverability, response to computer control and the ability to move objects—all skills that future industrial microbots will need for tasks such as microsurgery within the human body.

<http://www.rdmag.com/Manufacturing-Mobile-microbots-to-face-big-challenge/?wnnvz=clpb87iV1KLySixc>

Subcategory: Miscellaneous

Spiraling Flight of Maple Tree Seeds Inspires New Aerial Surveillance

University of Maryland

20-Oct-09

Maple tree seeds (or samara fruit) and the spiraling pattern in which they glide to the ground inspire scientists to apply the seeds' unique design to devices that can hover and perform surveillance in defense and emergency situations.

http://www.eng.umd.edu/media/pressreleases/pr101909_mapleseed.html

ORGANIZATIONS

Subcategory: Patent/Intellectual Property Issues

Newcomer Enters Patent Measuring

Michael McCoy

Chemical & Engineering News

19-Oct-09

A new company, PatentSight, is entering the growing business of assessing patents to measure the effectiveness of corporate R&D. Its Patent Asset Index is being backed by BASF and Dow Chemical, the

world's two largest chemical companies.
<http://pubs.acs.org/cen/news/87/i42/8742notw8.html>

PEOPLE PROFILES

Subcategory: Bioethics

Gone, but Not Forgotten

Economist

30-Oct-09

On October 26 2009, all charges against Dr. Hwang Woo-suk were found proven. Dr Hwang was convicted of fabricating data, misusing research funds and trading illegally in human eggs. He was given a suspended sentence.

http://www.economist.com/sciencetechnology/displayStory.cfm?story_id=14781624

Subcategory: Imaging

Oct. 30, 1958: Medical Oops Leads to First Coronary Angiogram

Hadley Leggett

Wired

30-Oct-09

Cardiac imaging is said to save countless lives; most of those saved owe their lives to a serendipitous medical error in 1958, when a large amount of dye was accidentally injected into the small vessels of a patient's heart during a routine imaging test.

<http://www.wired.com/thistdayintech/2009/10/1030first-coronary-angiogram>

Subcategory: Oncology

Nobel Prize In Physiology Or Medicine

Carmen Drahl

Chemical & Engineering News

12-Oct-09

Nobel Prize in Physiology or Medicine goes to 3 researchers who illuminated the fundamental biochemistry that takes place at the ends of chromosomes. The work has stimulated the development of new therapeutic strategies for cancer.

<http://pubs.acs.org/cen/news/87/i41/8741notw2.html>

Subcategory: Proteomics

Nobel Prize In Chemistry

Stu Borman

Chemical & Engineering News

12-Oct-09

Nobel prize in chemistry awarded to 3 scientists "for studies of the structure and function of the ribosome," the protein-making factory of cells. All used X-ray crystallography to map the ribosome's structure and study its complex mechanism of action.

<http://pubs.acs.org/cen/news/87/i41/8741notw1.html>

PERSONALIZED MEDICINE

Subcategory: Lab-on-a-chip/ DNA Chips/

Mini-lab for Cancer Diagnosis

The Technische Universität München 15-Oct-09

Microchip can establish in the laboratory whether a patient's tumor cells will react to a given drug. Could help in future with the rapid identification of the most effective medication for the individual patient.

http://portal.mytum.de/pressestelle/pressemitteilungen/news_article.2009-10-15.1382498315

DNA Transistor' Could Revolutionize Genetic Testing

Priya Ganapati Wired 06-Oct-09

The "DNA transistor" could make it faster and cheaper to sequence individuals' complete genomes. In so doing, it could help facilitate advances in bio-medical research and personalized medicine.

<http://www.wired.com/gadgetlab/2009/10/dna-analyzer-on-a-chip/>

PLATFORM TECHNOLOGIES

Subcategory: Cell Therapy

Harvard Team Reports Major Step Forward in Cell Reprogramming

Harvard University Gazette 08-Oct-09

Researchers have made a major advance toward producing induced pluripotent stem cells (iPS cells). These cells can then be created from the cells of individual patients for transplantation into those patients.

<http://harvardscience.harvard.edu/foundations/articles/harvard-team-reports-major-step-forward-cell-reprogramming>

Subcategory: Energy/ Fuel

Lowering Fuel Cell Cost: New Sulfur- and Coking-Tolerant Material Could Expand Applications for Solid Oxide Fuel Cells

Georgia Institute of Techology 01-Oct-09

Reviews development of solid oxide fuel cells that offer high energy efficiency, the potential for direct utilization of all types of fuels including renewable biofuels, and the possibility of lower costs since they do not use any precious metals.

<http://gtresearchnews.gatech.edu/newsrelease/fuel-cell-material.htm>

Subcategory: Environmental

New Aluminum-water Rocket Propellant Promising for Future Space Missions

Purdue News 07-Oct-09

Discusses new type of rocket propellant made of a frozen mixture of

water and "nanoscale aluminum" powder that is more environmentally friendly than conventional propellants.

<http://www.purdue.edu/UNS/x/2009b/091007SonRocket.html>

Subcategory: Nanotechnology

Scientists Decipher the 3-d Structure of the Human Genome

MIT News

08-Oct-09

Scientists have deciphered the three-dimensional structure of the human genome, paving the way for new insights into genomic function and expanding our understanding of how cellular DNA folds at scales that dwarf the double helix.

<http://web.mit.edu/press/2009/3d-genome.html>

Scientists Are First to Observe the Global Motions of an Enzyme

Ohio State University

28-Oct-09

Scientists have identified how the motions of an enzyme are related to correctly copying genetic instructions, setting the stage for studies that can uncover what happens when DNA copying mistakes are made.

<http://researchnews.osu.edu/archive/dnaenzyme.htm>

Models Begin to Unravel How Single DNA Strands Combine

University of Wisconsin

05-Oct-09

Researchers have identified some of the pathways through which single complementary strands of DNA interact and combine to form the double helix. Understanding this hybridization is central to DNA microchips, DNA-based nanoscale assembly.

<http://www.news.wisc.edu/17171>

Subcategory: Proteomics

Antibody Strategies for Membrane Protein Targets

Soma S.R. Banik, Benjamin J. Doranz
Drug Discovery & Development

01-Oct-09

Membrane-embedded proteins, including G protein-coupled receptors (GPCRs) and ion channels, are currently the most important class of therapeutic targets. Reviews challenges, methods to generate high-quality antibodies against membrane proteins.

<http://www.ddmag.com/article-Antibody-Strategies-for-Membrane-Protein-Targets->

Studies Begin to Shape New Image of DNA

Howard Hughes Medical Institute

29-Oct-09

Researchers are showing DNA's ability to morph into a large number of complex shapes. This shape-shifting ability permits proteins to attach and read the right region of DNA so genes can be turned on or off at the proper time.

<http://www.hhmi.org/news/honig20091029.html>

Single-stranded DNA-binding Protein Proven Dynamic, Critical to DNA

Diana Yates

University of Illinois

21-Oct-09

A single-stranded DNA-binding protein (SSB), once thought to be static among the many molecules that interact with DNA, actually moves back and forth along single-stranded DNA, allowing other proteins to repair, recombine or replicate the strands.

<http://news.illinois.edu/news/09/1021dna.html>

Subcategory: Reproduction

Restarting Regeneration One Step at a Time

Howard Hughes Medical Institute

22-Oct-09

Flatworms called planarians can regrow virtually everything lost to amputation. The WNT pathway is found to be a key player in planarian regeneration. May help to understand fetal development.

<http://www.hhmi.org/news/sanchezalvarado20091023.html>

RESEARCH ADVANCEMENTS

Subcategory: Cloning Techniques

Small Mechanical Forces Have Big Impact on Embryonic Stem Cells

James E. Kloeppel

University of Illinois

19-Oct-09

Small forces may play critical roles in inducing strong biological responses in embryonic stem cells, and in shaping embryos during their early development. Applications include include therapeutic cloning and regenerative medicine.

<http://news.illinois.edu/news/09/1019stemcells.html>

Subcategory: Evolution Research

First Genome Sequence of Kalahari Bushmen, Africa's "Forgotten People"

Kevin Davies

Bio-IT World

23-Oct-09

Possibly the oldest human population, Kalahari Bushmen are nomadic, non-tribal, and do not practice agriculture or herbiculture. Genome sequence may shed light on the population's genetic structure that could inform future pharmacogenetic therapies.

<http://www.bio-itworld.com/news/10/23/09/genome-sequence-Kalahari-Bushmen.html>

Subcategory: Immunology/ Infectious Diseases

Histone Molecules Drive Organ Failure During Sepsis

Howard Hughes Medical Institute

25-Oct-09

Research shows that histones, the protein spools that help keep DNA tightly coiled, that escape from cells at the onset of sepsis contribute directly to organ failure. Sepsis occurs when the immune system over-

responds and blocks flow to vital organs.

<http://www.hhmi.org/news/esmon20091025.html>

Subcategory: Misc. Drugs

Feature: Meds Behaving Badly - Exploring Serious Drug Side-effects

Chrissie Giles

Wellcome Fund

13-Oct-09

Unwanted side-effects can be distressing, harmful and costly consequences of many common drugs. The Serious Adverse Events Consortium, an international collaboration, is leading the way in understanding the genetic background to these reactions.

<http://www.wellcome.ac.uk/News/2009/Features/WTX056770.htm>

Subcategory: Miscellaneous

You Smell

Ivan Amato

Chemical & Engineering News

12-Oct-09

Does body odor bear discernible biomarkers that reflect your state of health, such as whether you have cancer or diabetes? Amato reports that each of the 6.7 billion people on Earth has a signature body odor.

<http://pubs.acs.org/cen/science/87/8741sci2.html>

Subcategory: Neurology

Master Regulator Found for Regenerating Nerve Fibers in Live Animals

Childrens' Hospital Boston

25-Oct-09

Neurons in the central nervous system (the brain and spinal cord) cannot regenerate injured nerve fibers, limiting people's ability to recover from brain or spinal cord injuries. New findings suggest Mst3b, or agents that stimulate it, may help.

<http://www.childrenshospital.org/newsroom/Site1339/mainpageS1339P1sublevel574.html>

The Protein for Quick Decision-makers

Max Planck Society

26-Oct-09

Individuals with the COMT-Val genotype learn faster from unexpected outcomes and are more flexible decision makers, say researchers. An enzyme variant is discovered that promotes fast and flexible decision-making behavior.

<http://www.mpg.de/english/illustrationsDocumentation/documentation/pressReleases/2009/pressRelease20091026/index.html>

Prion Study Reveals First Direct Information about the Protein's Molecular Structure

Jennifer O'Brien

University of California San Francisco

06-Oct-09

Study reveals surprisingly large structural differences between natural prions (responsible for human Creutzfeldt-Jakob disease and "mad cow" disease) and the closest synthetic analogs that scientists have created in

the lab to study them more easily.

<http://news.ucsf.edu/releases/prion-study-reveals-first-direct-information-about-the-proteins->

Colombian Guerrillas Help Scientists Locate Literacy in the Brain

Wellcome Trust

15-Oct-09

A unique study of former guerrillas in Colombia, who didn't learn to read until adulthood, has helped scientists to redefine their understanding of the key regions of the brain involved in literacy, including an area known as the angular gyrus.

<http://www.wellcome.ac.uk/News/Media-office/Press-releases/2009/WTX056926.htm>

Subcategory: Obstetrics/ Gynecology

Targeted Therapies Exploit Tiny Chinks in Cancer's Armor

Linda Geddes

New Scientist

07-Oct-09

Discusses "synthetic lethality," which exploits tumor weakness by inducing two types of changes in the cancer cells, rather than treatments that cause the devastating side effects of many chemotherapy agents, which attack healthy cells as well.

<http://www.newscientist.com/article/mg20427293.000-targeted-therapies-exploit-tiny-chinks-in-cancers-armor.html>

Subcategory: Oncology

Study Shows How Normal Cells Influence Tumor Growth

The Ohio State University Medical Center 21-Oct-09

Gene changes in normal tumor cells have been shown to foster tumor growth and progression and may explain why some human breast cancer patients respond to a standard therapy while others with apparently identical disease do not.

<http://medicalcenter.osu.edu/viewer/Pages/index.aspx?NewsId=5189>

Subcategory: Proteomics

New Imaging Tools Show Protein Slip-Sliding Along DNA

Howard Hughes Medical Institute

11-Oct-09

The single-strand DNA binding protein has been shown to do a lot of slipping and sliding as it stabilizes DNA by wrestling it into place. May lead to greater understanding of the machines that repair and replicate DNA, linked to cancer and aging.

<http://www.hhmi.org/news/ha20091011.html>

Subcategory: Reproduction

NIH-Funded Researchers Transform Embryonic Stem Cells Into Human Germ Cells

National Institutes of Health

28-Oct-09

Laboratory observation of human germ cells has the potential to yield

important clues to the origins of unexplained infertility and to the genesis of many birth defects and chromosomal disorders.

<http://www.nih.gov/news/health/oct2009/nichd-28.htm>

OU Part of International Study on Genetic Impact of Radiation

University of Oklahoma

05-Oct-09

Discusses a massive international study on the possible genetic effects of radiation and cancer drug exposures on future generations. Looking at potential genetic consequences of reproductive organs exposed to curative therapy by drugs or radiation.

<http://www.ouhsc.edu/article-display.asp?idnum=1454>

RESEARCH TOOLS

Subcategory: Cardiology/ Vascular Diseases

First Large-scale Genome-wide Study of Blood Measurements

Wellcome Fund

14-Oct-09

First large-scale genome-wide study of blood measurements has uncovered 15 new regions of the genome involved in the development of blood cells and a genetic variant that increases the risk of developing heart disease.

<http://www.wellcome.ac.uk/News/2009/News/WTX056792.htm>

Subcategory: Databases

iPhone Apps Every Biologist Needs

The Scientist

09-Oct-09

Lists a PhD student's top 10 smart phone applications that boost his efficiency and speed his research. Includes free and modestly-priced software such as Molecules for viewing 3D protein structures.

<http://www.the-scientist.com/news/display/56049/>

Subcategory: Diagnostic Test Systems

A Cancerous Melody

The Scientist

25-Sep-09

Combining modern statistics with the sounds of a sweet melody may make interpreting gene transcription and translation, and diagnosing the diseases that result from abnormalities in gene expression, much more manageable tasks.

<http://www.the-scientist.com/blog/display/55998/>

Subcategory: Environment

Logbooks May Yield Climate Bounty

Judith Burns

BBC News

05-Oct-09

Scientists hope weather data from 18th Century ships' logbooks will throw new light on how the climate has changed in the past 200 years.
<http://news.bbc.co.uk/2/hi/science/nature/8291267.stm>

Subcategory: Environmental

Designer Molecule Detects Tiny Amounts of Cyanide, Then Glows

University of Indiana

21-Oct-09

Cyanide contamination of drinking water is a major problem in developing countries and in some developed countries as well. Describes system that works in water at normal pH levels and can be modified at will to enhance its reactivity.

<http://newsinfo.iu.edu/news/page/normal/12286.html>

Subcategory: Gene Sequences

New Gene Map Reveals Details of Copy Number Variations

Wellcome Fund

09-Oct-09

42 million locations on the genomes of 40 people, half of European ancestry and half of West African ancestry, have been scanned. Aim is to discover if copy number variations (CNVs) are likely to explain what researchers call 'missing heritability'.

<http://www.wellcome.ac.uk/News/2009/News/WTX056754.htm>

Subcategory: Genome Sequence

Next-Generation Phred Software Squeezes More Data From Illumina

Kevin Davies

Bio-IT World

05-Oct-09

By squeezing out more usable data per instrument run, scientist Philip Green aims to lower the costs of genome sequencing and simultaneously increase the amount of unique sequence extracted in each experiment.

<http://www.bio-itworld.com/news/10/05/09/Phred-software-data-Illumina.html>

Genomes of Two Popular Research Strains of E. coli Sequenced

Brookhaven National Laboratory

20-Oct-09

Researchers have sequenced and analyzed the genomes of two important laboratory strains of E. coli bacteria, one used to study evolution and the other to produce proteins for basic research or practical applications.

http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=1019

Subcategory: Imaging

Silence of the Genes

Berkeley News

12-Oct-09

The molecular architecture of a protein complex, known as a human RISC-loading complex that helps determine the fate of human cells has been imaged. This structure controls whether genetic messages are

silenced or expressed.

<http://newscenter.lbl.gov/press-releases/2009/10/12/silence-of-the-genes/>

Seeing Molecules With A New Light

Stu Borman

Chemical & Engineering News

26-Oct-09

Stimulated emission can be used as a contrast mechanism for molecular microscopy, could make it possible to image biomolecules that have undetectable fluorescence (such as hemoglobin, cytochrome, and melanin) in living cells and organisms.

<http://pubs.acs.org/cen/news/87/i43/8743notw1.html>

THERAPEUTIC CATEGORY

Subcategory: Disease Prevention

Run for Your Life:new Studies Show Benefits of Exercise on the Brain

Society of Neuroscience

18-Oct-09

Mounting evidence shows the benefits of exercise on both the brain and body. Rresearch underscores the positive influence of regular physical activity on Parkinson's disease, depression, premenstrual syndrome, and memory.

http://www.sfn.org/index.cfm?pagename=news_101809a

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