http://www.techmanage.net

BioTechCircle News®

May 2009

We're emphasizing green technology because fossil fuels, primeval forests, species diversity and other finite, non-renewable legacies of our planet -- legaicies that have taken millions of years to build up -- are becoming permanently extinguished, mostly due to imprudent human activity.

Our picks for non-eco articles we thought were particularly interesting are highlighted in yellow.

In this articles section: links to 67 free Web articles in 11 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. There are now links to 4,342 Web articles in our archives.

Visit our Express Guide to Monthly Web Articles to learn more about our focus and review a table explaining our classification scheme.

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:

AGRI-BIOTECH

Subcategory: Crops

MSU Discoveries Upend Traditional Thinking about How Plants Make Certain Compounds

Michigan State University 26-May-09

Tomato plants are found to use neryl diphosphateas the substrate for making monoterpenes. Could help researchers find new ways to protect plants from pests.

http://news.msu.edu/story/6374/&topic_id=13

Too Much of a Good Thing: Understanding Plants' Overactive Immune System Will Help MU Researchers Build Better Crops

University of Missouri 27-May-09

Researchers have identified important suppressors that negatively regulate the responses of the immune system in the plant species Arabidopsis thaliana. Understanding the immune system of plants would allow breeders to create better yielding crop plants.

http://munews.missouri.edu/news-releases/2009/0527-Gassman-plant-defense.php

Subcategory: Energy/ Fuel

Pliable Proteins Keep Photosynthesis on the Light Path

Arizona State University 11-May-09

Results may have long-term practical applications for the development of next-generation solar cells, which could, through biomimicry of photosynthesis, greatly boost the energy efficiency compared with current technology.

http://www.biodesign.asu.edu/news/pliable-proteins-keep-photosynthesis-on-the-light-path

The Ethanol Lobby: Profits vs. Food

Ed Wallace Business Week 26-May-09

If the ethanol lobby really believes in the biofuel, why are there so few E85 pumps in corn-growing states, Wallace asks.

http://www.businessweek.com/lifestyle/content/may2009/bw20090526_169812.htm?link_posi

Bioelectricity May Outperform Ethanol

ECNmag 08-May-09

How can we maximize our "miles per acre" from biomass? Researchers say the best bet is to convert the biomass to electricity, rather than ethanol.

http://www.ecnmag.com/article-Bioelectricity-May-Outperform-Ethanol-050809.aspx?menuid=0

Study Suggests Bioelectricity Could Be More Efficient than Ethanol to Power Vehicles

University of California Mercedes 07-May-09

Scientists found that biomass converted into electricity produced 81% more transportation miles and 108% more emissions offsets compared to ethanol.

http://www.ucmerced.edu/news_articles/05072009_study_suggests_bioelectricity_could.asp

Subcategory: Environment

All The Carbon Counts

Lee Tune Pacific Northwest National Laboratory 28-May-09

Computer model called MiniCAM incorporates economics, energy, agriculture, land-use changes, emissions and concentrations of greenhouse gases in order to understand the way that human decisions interact with natural processes that control climate.

http://www.pnl.gov/news/release.asp?id=374

Subcategory: Genomics

More-Precise Genetic Engineering for Plants

Courtney Humphries Technology Review 30-Apr-09

Discusses a gene-targeting technology called zinc finger nucleases, i.e. synthetic proteins that can precisely target locations in the genome and make specific genetic changes.

http://www.technologyreview.com/biomedicine/22562/

Subcategory: Miscellaneous

10 Strange Species Discovered Last Year

Wired 26-May-09

Highlights the top 10 species found and described in 2008, according to The International Institute for Species Exploration. Includes caffeine-less coffee plants, tiny seahorses and a 23-inch long bug that looks like a branch.

http://www.wired.com/wiredscience/2009/05/strangespecies/

BIOBUSINESS MANAGEMENT

Subcategory: Computing Systems

The New Computing Pioneers

Rick Mullin Chemical & Engineering News 25-May-09

Big drug firms are now starting to push data storage and processing onto the Internet to be managed for them by external companies.

http://pubs.acs.org/cen/coverstory/87/8721cover.html

Subcategory: Patent/Intellectual Property Issues

Special Report: Patentability of Genetic Sequences Limited

Genetic Engineering News 13-May-09

The Federal Circuit's decision in Kubin generally means that to the extent a protein has been previously identified, its nucleotide sequence is no longer patentable.

http://www.genengnews.com/news/bnitem.aspx?name=54504126

Cancer Patients Challenge the Patenting of a Gene

John Schwartz The New York Times 12-May-09

Lawsuit on gene patent blends patent law, medical science, breast cancer activism and an unusual civil liberties argument in ways that could make it a landmark case.

http://www.nytimes.com/2009/05/13/health/13patent.html?_r=1&hp

Subcategory: Venture

Financial Crisis To Reshape Biotech

Manufacturing.net 05-May-09

The U.S. biotech industry became profitable for the first time in 2008, but many companies will have to start rethinking how they raise capital in a market where attracting investment is already highly competitive.

http://www.manufacturing.net/article.aspx?id=197184

DIAGNOSTIC TOOLS

Subcategory: Oncology

Implantable Device Offers Continuous Cancer Monitoring

MIT News 12-May-09

The implantable devices, which could be implanted at the time of biopsy, could also be tailored to monitor chemotherapy agents, allowing doctors to determine whether cancer drugs are reaching the tumors.

http://web.mit.edu/newsoffice/2009/cancer-detect-0512.html

INDUSTRY

Subcategory: General

Sobering BIO

Lisa Jarvis Chemical & Engineering News 25-May-09

Attendance was down by 30%-40% at the Biotechnology Industry Organization's annual meeting in 2009, compared with 2008. The biotech industry finds itself caught in "the perfect storm of economic meltdown, political volatility, and scientific challenge."

http://pubs.acs.org/cen/news/87/i21/8721notw4.html

Subcategory: Miscellaneous

The Dawning of the Biometric Age

Ellen Gibson Business Week 20-May-09

The world is moving further into digital identification and biometrics such as digital fingerprints and iris scans, raising privacy concerns.

http://www.businessweek.com/innovate/content/may2009/id20090520_625039.htm

INVESTMENTS/GOV. SUPPORT

Subcategory: Education

Off to the Lab: Medical, Dental, and Veterinary Students Given a Chance to Make Their Own Discoveries

Howard Hughes Medical Institute 07-May-09

Supported by HHMI, 112 medical, dental, and veterinary students will work a year in a laboratory that will hone their scientific skills and prepare them for possible careers in research.

http://www.hhmi.org/news/20090507scholarsfellows.html

Subcategory: Environment

Stimulating Green Energy

Joseph Romm Technology Review 01-May-09

Can we stimulate the economy and create a sound green-energy policy at the same time? Romm discusses why it's not possible to have a sustained economic recovery that isn't green.

http://www.technologyreview.com/energy/22474/

MEDICAL DEVICES

Subcategory: Nanotechnology

New Tool for Next-Generation Cancer Treatments using Nanodiamonds

Northwestern University 18-May-09

A new tool can precisely deliver tiny doses of drug-carrying nanomaterials to individual cells and can also act like a fountain pen, wherein drug-coated nanodiamonds serve as the ink, allowing researchers to create devices by "writing" with it.

http://www.mccormick.northwestern.edu/news/articles/517

NOVEL APPLICATIONS

Subcategory: Materials

Coca-Cola's Biobased Bottles

Alex Tullo Chemical & Engineering News 25-May-09

Beverage bottles are typically created from polyethylene terephthalate (PET). The ethylene glycol in the new Dasani bottles will be derived from sugar and molasses, rather than its usual origin in petroleum and natural gas.

http://pubs.acs.org/cen/news/87/i21/8721notw9.html

Subcategory: Neurology

2009 Finalists of the Contest

Neural Correlate Society 01-May-09

Take a break from your routine and check out these optical illusions.

http://illusioncontest.neuralcorrelate.com/cat/2009/

Subcategory: Oncology

Ginger Tames Chemo Nausea

Drug Discovery & Development 15-May-09

People who started taking ginger capsules several days before a chemo infusion had fewer and less severe bouts of nausea afterward than others who were given dummy capsules, study finds.

http://www.dddmag.com/news-Ginger-Tames-Chemo-Nausea-051509.aspx

ORGANIZATIONS

Subcategory: Bioethics

Elsevier Published 6 Fake Journals

Bob Grant The Scientist 07-May-09

Scientific publishing giant Elsevier put out 6 publications between 2000 and 2005 that were sponsored by unnamed pharmaceutical companies, looked like peer reviewed medical journals. Company has admitted it did not disclose sponsorship. 30 comments.

http://www.the-scientist.com/blog/display/55679

Subcategory: Computing Systems

Merck Seeds An Open Database With Computers And Data

Rick Mullin Chemical & Engineering News 25-May-09

Mullin reports on the launch of Sage Bionetwork, an open-platform database for sharing and disseminating complex disease biology data.

http://pubs.acs.org/cen/coverstory/87/8721cover1.html

Subcategory: Immunology/ Infectious Diseases

GENEART Synthesizes Genes for Swine Flu Vaccine in Record Speed

GeneArt 05-Apr-09

Specialist in Synthetic Biology produced genes for the development of a vaccine against the so called 'swine flu' in record time: within 3-5 calendar days.

http://www.geneart.com/english/events-press/press/latest-press-releases/pressdetail/article/geneart-synthesizes-genes-for-swine-flu-vaccine-in-record-speed-

Subcategory: Miscellaneous

Perfect Ten: Bio-IT World Announces Winners of 2009 Best Practices Awards

Bio-IT World 29-Apr-09

The Best Practices Awards Program recognizes academic, industry organizations for outstanding innovation and collaboration in the deployment of technologies, and novel business strategies advancing drug discovery, biomedical research and clinical trials.

http://www.bio-itworld.com/news/04/29/09/Bio-ITWorld-Best-Practices-award-winners-

PLATFORM TECHNOLOGIES

Subcategory: Cell Therapy

Embryo's Heartbeat Drives Generation of New Blood Cells

Howard Hughes Medical Institute 13-May-09

Researchers found that the blood's movement through the aorta triggers the production of new blood stem cells, which will give rise to all the red and white blood cells the organism needs to survive.

http://www.hhmi.org/news/daleyzon20090513.html

Subcategory: Computing Systems

Wolfram Alpha Braces for Heavy Traffic

David Talbot Technology Review 18-May-09

Talbot describes Wolfram Alpha, a "computational knowledge engine" that answers queries by tapping databases and running calculations instead of searching the Web.

http://www.technologyreview.com/web/22666/

Subcategory: Drug Discovery

The Sky's the Limit

James Netterwald, PhD, MT Drug Discovery & Development 01-May-09

Describes RNA ascent to new heights as a drug target (potentially 20,000 to 30,000) as improvements in siRNA delivery continue.

http://www.dddmag.com/Article-RNA-Drug-Target-050509.aspx

Smarter Screening

Mark A. Collins | Drug Discovery & Development | 01-May-09

A decade of results demonstrates that high content screening can help researchers better understand disease, improve lead selection, and provide early warning for toxicology issues.

http://www.dddmag.com/Article-High-Content-Screening-050509.aspx

Subcategory: Energy/ Fuel

Ink-Jet Printing for Cheaper Solar Cells

Kevin Bullis | Technology Review | 07-May-09

An improved process uses ink-jet printing to make electrical connections within a solar cell, replacing the existing screen-printing process.

http://www.technologyreview.com/energy/22599/

New Catalyst Could Boost Cleaner Fuel Use

Tony Fitzpatrick | Washington University in St. Louis | 14-May-09

Describes a technique for a bimetallic fuel cell catalyst that is efficient, robust and 2-5 times more effective than commercial catalysts.

http://news-info.wustl.edu/news/page/normal/14161.html

Subcategory: Genomics

Understanding the Genetic Architecture of Complex Traits

Daniel MacArthur | Genetic Future | 06-May-09

Discusses new approaches to the genetic variants underlying human disease, such as targeted sequencing of candidate genes to find rare variants and copy-number variants in patients suffering from 7 different diseases.

http://scienceblogs.com/geneticfuture/2009/05/understanding_the_genetic_arch.php

Researchers Gain Fine-scale, Genome-wide Insights into Patterns of Human Population Structures Around the World

Leila Gray | University of Washington | 14-May-09

Revealing genomic patterns provides insights into the history of human evolution, the predominant evolutionary forces that shaped local populations, and the relationships among populations.

http://uwnews.org/article.asp?articleID=49745

Subcategory: Materials

Progress Toward Artificial Tissue?

Angewandte Chemie | 18-May-09

Reports on a novel, highly porous, sponge-like material whose mechanical properties closely resemble those of biological soft tissues.

http://www3.interscience.wiley.com/journal/26737/home/press/200919press.html

Subcategory: Nanotechnology

DNA In Another Dimension

Bethany Halford | Chemical & Engineering News | 25-May-09

Describes a method for creating complex 3-D nanostructures, using DNA as a chemical building block, with precisely controlled dimensions that range from 10 to 100 nm.

http://pubs.acs.org/cen/news/87/i21/8721notw6.html

A Lockbox Built from DNA

Jocelyn Rice | Technology Review | 07-May-09

Using nothing but DNA, researchers have constructed a tiny box with a lid that can either lock shut or, with the help of a set of DNA keys, hinge open. The box has solid sides and moving parts.

http://www.technologyreview.com/biomedicine/22600/

Subcategory: Proteomics

New Structure Revisits History

Stu Borman | Chemical & Engineering News | 25-May-09

Steric, electronic, and other interactions among enzyme active-site residues profoundly influence the way those enzymes do their jobs. Reports discovery of a "hydrophobic funnel" structure named the "Westheimer Fold."

http://pubs.acs.org/cen/news/87/i21/8721notw8.html

Purely Protein Pluripotency

Elie Dolgin | The Scientist | 23-Apr-09

Using only a cocktail of purified proteins and a chemical additive, investigators have generated induced pluripotent stem (iPS) cells that don't carry the potential burden of unexpected genetic modifications.

http://www.the-scientist.com/blog/display/55657/

DNA Repeats Hold RNA Starts

Edyta Zielinska | The Scientist | 20-Apr-09

DNA sequences that don't code for proteins and are repeated thousands or millions of times in the genome contain promoter sequences that can instigate not only their own transcription, but the transcription of protein-coding genes as well.

http://www.the-scientist.com/blog/display/55625/

New Tool Isolates RNA Within Specific Cells

University of Oregon | 15-May-09

Instead of scientists needing to physically separate cell types, they now can inject a chemically modified gene from the one-celled organism Toxoplasma gondii and activate it in only one cell type within a tissue.

http://comm.uoregon.edu/archive/news-release/2009/5/new-tool-isolates-rna-within-specific-

How an Enzyme Tells Stem Cells Which Way to Divide

University of Oregon 14-May-09

Driving Miranda, a protein in fruit flies crucial to switch a stem cell's fate, is not as complex as biologists thought: one enzyme (aPKC) stands alone and acts as a traffic cop that directs which roads daughter cells will take.

http://comm.uoregon.edu/archive/news-release/2009/5/how-enzyme-tells-stem-cells-which-way-

RESEARCH ADVANCEMENTS

Subcategory: Bioterrorism

Scientists Discover How Smallpox May Derail Human Immune System

University of Florida 11-May-09

Protein-on-protein interactions between the smallpox proteome and proteins from human DNA results in a particularly devastating pairing between a viral protein called G1R and a human protein called human nuclear factor kappa-B1.

http://news.ufl.edu/2009/05/11/smallpox/

Subcategory: Immunology/ Infectious Diseases

Hunting for Clues in the Swine Flu Genetic Code

Emily Singer Technology Review 29-Apr-09

As the World Health Organization raises its pandemic alert to level 5, scientists study the genetic sequence of the swine flu virus.

http://www.technologyreview.com/biomedicine/22569/

How Superbugs Control Their Lethal Weapons

The Western University of Ontario 25-May-09

Researchers have discovered processes that reduce lethal effects of toxins from superbugs, allowing humans and microbes to co-evolve. Discovery may lead to novel alternatives to antibiotics that specifically target the toxic effects of these superbugs.

http://communications.uwo.ca/com/western_news/stories/how_superbugs_control_their_lethal_weapons_20090525444348/

Subcategory: Metabolism: Obesity, Diabetes

Alzheimer's Scary Link To Diabetes

Sophie L. Rovner Chemical & Engineering News 18-May-09

Diabetics tend to get Alzheimer's more frequently, and possibly at an earlier age, than the general population; this in addition to blindness, heart disease and other serious complications.

http://pubs.acs.org/cen/science/87/8720sci1.html

Pig-to-Monkey Transplant Treats Diabetes

Michael Day Technology Review 12-May-09

Using embryonic tissue for interspecies organ transplants offers a way to evade the host's immune system. The embryonic tissue has ability to grow into a new pancreas that uses blood vessels from the host animal.

http://www.technologyreview.com/biomedicine/22636/

Subcategory: Microorganisms

Scientists Find RNA Surprises in Listeria Bacteria

Howard Hughes Medical Institute 17-May-09

Scientists are beginning to understand the molecular mechanisms that transform the listeria bacterium from a harmless soil-dweller to a dangerous human pathogen.

http://www.hhmi.org/news/cossart20090517.html

Subcategory: Neurology

Relax and Learn: New Drugs that Help DNA Unwind May Improve Memory

Howard Hughes Medical Institute 07-May-09

Scientists have identified a protein that hampers learning and memory by keeping DNA inside neurons tightly coiled and unable to "relax." Compounds that block the activity of this newly identified protein appear to enhance memory in mice.

http://www.hhmi.org/news/tsai20090507.html

Genetic Study Confirms the Immune System's Role in Narcolepsy

National Institute of Health 03-May-09

Unique variants of a gene called HLA-DQB1*0602 associated with narcolepsy, a disorder that causes disabling daytime sleepiness, sleep attacks, irresistible bouts of sleep that can strike at any time, and disturbed sleep at night.

http://www.nih.gov/news/health/may2009/ninds-03.htm

Risk of Autism Tied to Genes that Influence Brain Cell Connections

National Institute of Neurological Disorders and Stroke 28-Apr-09

Findings of 3 separate studies establish that genetic factors play a strong role in autism spectrum disorder. Analysis is likely to yield better strategies for diagnosing and treating children with autism.

http://www.ninds.nih.gov/news_and_events/press_releases/pressrelease_autism_cell_adhesion

Subcategory: Oncology

Why Do People with Down Syndrome Have Less Cancer?

Children's Hospital Boston 20-May-09

Those with Down syndrome have overall cancer mortality below 10% of that in the general population. Some propose that people with Down syndrome may be getting an extra dose of one or more cancer-protective genes from their extra copy of chromosome 21.

http://www.childrenshospital.org/newsroom/Site1339/mainpageS1339P1sublevel533.html

Scientists Discover How UV Radiation Causes Cells to Die to Avoid Cancer Damage

Howard Hughes Medical Institute 14-May-09

UV radiation causes human cells to create proteins that trigger cell death. It's a built-in safety pathway whose precise mechanism had never been seen before.

http://www.hhmi.org/news/kornblihtt20090514.html

Subcategory: Ophthalmology

Protein-protein Interaction Explains Vision Loss in Genetic Diseases

Glenna Picton Baylor College of Medicine 10-May-09

Explains variations of vision loss in people with a host of disorders associated with defective cilia within the cells; offers a blueprint for unraveling similar variations in signs among people with other genetic diseases.

http://www.bcm.edu/news/item.cfm?newsID=1420

Subcategory: Pain Management

Tiny Implants for Treating Chronic Pain

Emily Singer Technology Review 15-May-09

A tiny injectable implant, smaller than a grain of rice, might one day take the place of large neural stimulators used to treat chronic pain and other neurological disorders.

http://www.technologyreview.com/biomedicine/22657/

Subcategory: Pulmonary/ Respiratory Diseases

Breathe Easy

Economist 21-May-09

Asthma is a life-threatening, allergy-driven lung disease common in wealthy countries, absent from poor ones and on the rise in those making the transition. Eczema appears to be a link.

http://www.economist.com/science/displaystory.cfm?story_id=13688144

RESEARCH TOOLS

Subcategory: Computing Systems

Next-Generation DNA Sequencing Raises The Bar In Laboratory Data Management

Rick Mullin | Chemical & Engineering News | 25-May-09

Next-generation sequencing has increased by orders of magnitude an already daunting volume of data generated in laboratories, creating an immense information technology (IT) challenge.

http://pubs.acs.org/cen/coverstory/87/8721cover2.html

New Tool Helps Researchers Identify DNA Patterns of Cancer, Genetic Disorders

North Carolina State University | 19-May-09

Since the human visual system is more adept at identifying patterns, and differentiating between patterns,"symbolic scatter plot" tool has been developed to provide a visual representation of a DNA sequence.

http://news.ncsu.edu/news/2009/05/wmscoxdna1.php

A Smarter Search for What Ails You

Erica Naone | Technology Review | 29-Apr-09

The most useful information can remain hidden within the body of a complex document. New software searches through health-related information, presents the user with answers to common questions by analyzing sentence structure in a novel way.

http://www.technologyreview.com/web/22556/

Brewing with Synthetic Biology

Courtney Humphries | Technology Review | 22-Apr-09

A new approach, that relies on constructing libraries of component parts combined with mathematical modeling, offers a more efficient way to design biological "circuits."

http://www.technologyreview.com/biomedicine/22528/page1/

Subcategory: Evolution Research

The Evolution of Gene Regulation

Ludwig-Maximilians | 26-May-09

Genes that are frequently active will be directly induced, while genes that encode more rarely used proteins tend to be kept inactive by repressors. Discusses another principle: “wear-and-tear”.

http://www.en.uni-muenchen.de/news/research/gerland.html

Life’s First Spark Re-Created in the Laboratory

Brandon Keim | Wired | 13-May-09

Researchers produce a ribonucleotide by simulating the ongoing cycle of evaporation, heating and condensation resembling life-originating conditions hypothesized by Charles Darwin.

http://www.wired.com/wiredscience/2009/05/ribonucleotides/

Subcategory: Food

Better Safeguards For The Food Supply

Sophie L. Rovner | Chemical & Engineering News | 25-May-09

Scientists are looking beyond melamine-detection methods to other techniques that can more broadly protect the food supply. Notes that every method has its advantages and disadvantages.

http://pubs.acs.org/cen/science/87/8721sci1a.html

Subcategory: Gene Sequences

Research Team Finds Important Role for Junk DNA

Kitta MacPherson | Princeton University | 20-May-09

DNA sequences from regions of what had been viewed as the "dispensable genome" or "junk DNA" are actually performing functions, such as growth, that are central for the organism.

http://www.princeton.edu/main/news/archive/S24/28/32C04/index.xml?section=topstories

Subcategory: Genome Sequence

The Vagaries of Genome Variation: Do You Copy?

Kevin Davies | Bio-IT World | 21-May-09

Davies reports on Comprehending Copy Number Variation conference covering number and breadth of copy number variants (CNVs) in the human genome, emerging evidence for their role in the etiology of many complex diseases such as autism and epilepsy.

http://www.bio-itworld.com/news/2009/05/21/cnv-mtg.html

Subcategory: Imaging

Fluorescent Proteins Go Invisible

Robert F. Service | ScienceNow Daily News | 07-May-09

Researchers make a fluorescent protein that emits infrared light. Infrared passes through tissue more easily than visible light can, so it should allow researchers to trace individual molecules throughout the bodies of mice and other small, live animals.

http://sciencenow.sciencemag.org/cgi/content/full/2009/507/5?rss=1

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

The next Generation of Genome-wide Association Studies

Daniel MacArthur | Genetic Future | 20-May-09

New chips are designed to simultaneously assay 4 million sites of variation in the human genome, increasing coverage of 2 types of variants that tended to be poorly captured by previous generations of chips: rare variants, and structural variation.

http://scienceblogs.com/geneticfuture/2009/05/the_next_generation_of_genome-.php

Copyright 2009, Technology Management Associates, Inc.. All rights reserved. Please do not reprint or host on your Web site without explicit permission.