Communicating Science Broadly

Jeff Nesbit, Director
Office of Legislative and Public Affairs

The Changing Media Landscape

PEW / INTERNET
PEW INTERNET & AMERICAN LIFE PROJECT

Nearly 40 million Americans rely on the internet as their ***primary source*** of news about science.

- *Television is first (41%) as a science news source.*
- *The internet is now second (20%)*
- *Newspapers and magazines are third (14%)*
- *In homes with broadband, 44% of young adults get their science news from the internet.*

Pew Internet and American Life Project survey, November 2006
Funded by the National Science Foundation

Science in the national media

- *Pure coverage of science has all but disappeared in the national media.*
- *U.S. News & World Report, the Wall Street Journal, CNN and USA Today no longer have science sections.*
- *The major broadcast networks now cover science under a space, health or technology umbrella.*

Science as *Technology*

BC News: Technology Index - Microsoft Internet Explorer provided by National Science Foundation

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http://abcnews.go.com/Technology/

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Friday, September 07, 2007

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tartup hopes to compete with Google Earth by ding a more natural world.

1 Comment

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iew: Jawbone Bluetooth Headset
pite its size, Jawbone goes far in eliminating kground noise.

A Social Network for Each Day of the Week
Insight into the Top 7 social networks for students and companies to engage in.

Gaming With 'High School Musical' Crowd
Disney now offers a video game based on its popular direct-to-TV movie.

ore Sci-Tech News 1 of 10

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Teenagers find a new online way

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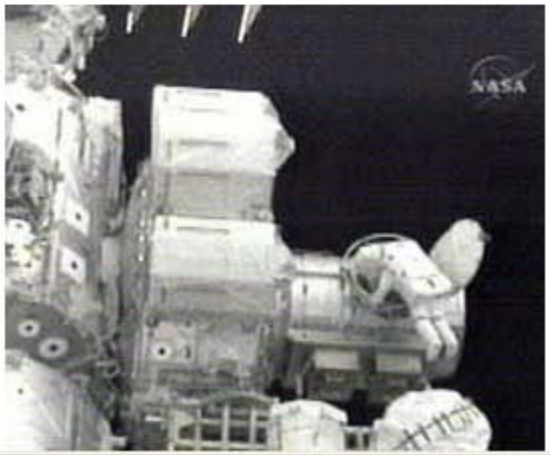

Astronauts perform critical construction job

Astronauts plowed ahead Monday with the mammoth job of moving a 17½-ton solar array truss on the international space station, a task made even more crucial following the discovery of contamination in an important part of the orbiting lab's

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Hyper Kids? Cut Out Preservatives

BLOGS »

EYE ON SCIENCE

Why Honeybees Are Vanishing

By MIKE LEMONICK

Science magazine is weighing in on why huge numbers of hives have been abandoned with a suite of papers, based on genomic analysis, that points to a microbe called Israeli Acute Paralysis Virus.

More Blogs »

QUOTES OF THE DAY »

"To conclude, I invite you to embrace Islam."

– OSAMA BIN LADEN
in a new 30-minute videotape, the first to surface in three years

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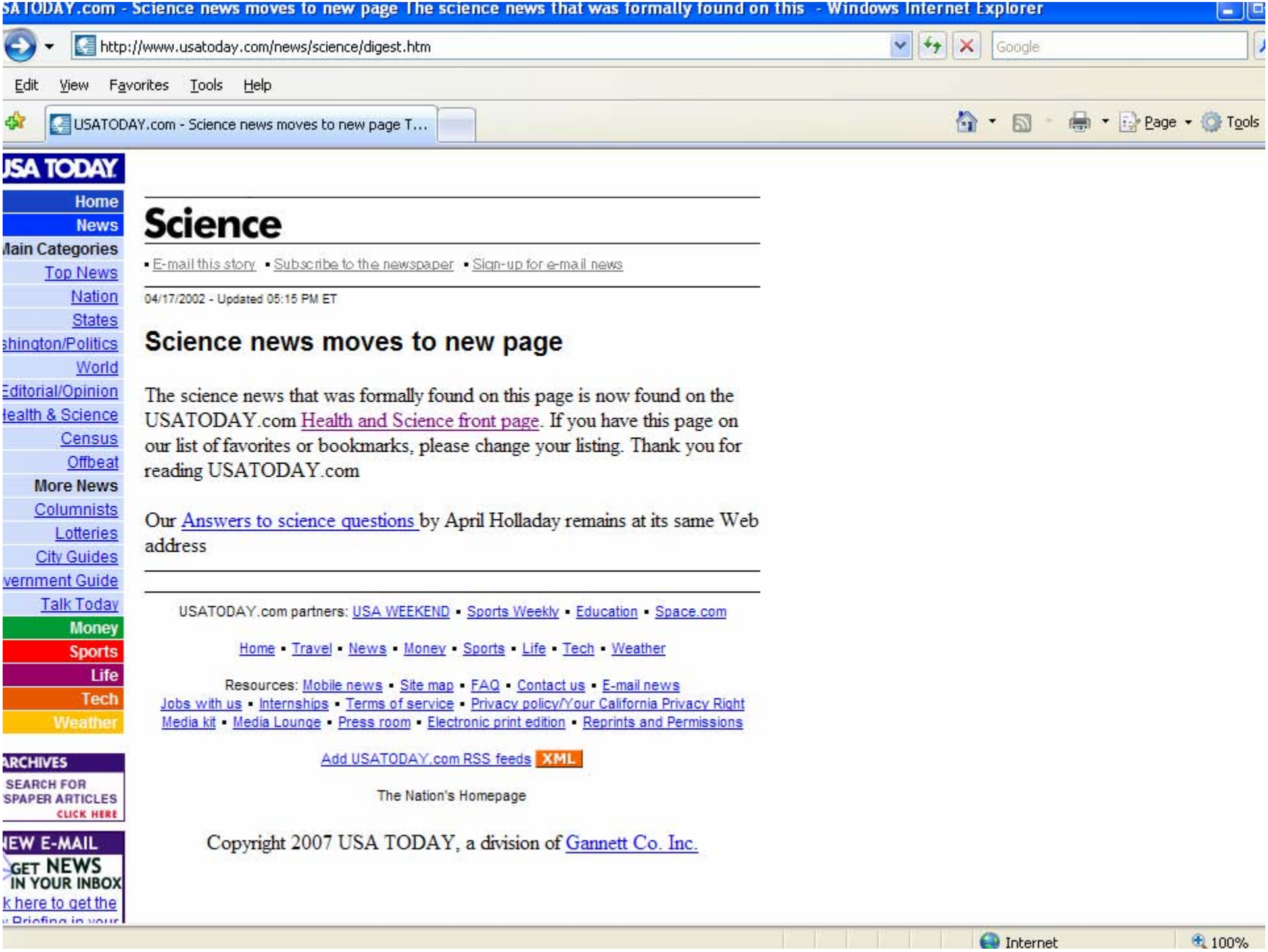
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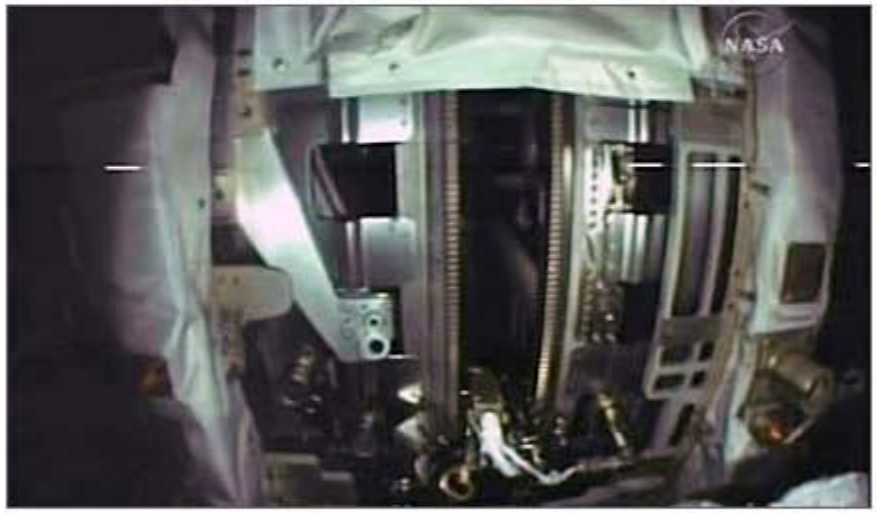

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space | Comment | Recommend 1

NASA extends shuttle mission to take closer look at gears

By Marcia Dunn, Associated Press

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IN THE NEWS

Competition Puts Solar Homes on Display

October 23, 2007

Report

The Department of Energy's Solar Decathlon brought teams from 20 universities to the National Mall to showcase their designs for solar-powered homes.

RealAudio | Download Streaming Video

Solar Homes on the National Mall

October 23, 2007

Slide Show

View all of the solar homes entered in the Department of Energy's 2007 Solar Decathlon.

IN-DEPTH COVERAGE

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Broader Impacts

Criterion 2

1) How well does the activity advance discovery and understanding while promoting teaching, training and learning?

2) How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, etc.)?

3) To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?

4) Will the results be disseminated broadly to enhance scientific and technological understanding?

5) What may be the benefits of the proposed activity to society?

Past "Broader Impact" Activities

1) Partner with museums and science centers

2) Collaborate on education activities

3) Make data available to digital libraries

4) Present research findings to policy audiences

5) Participate in conferences and workshops

2002 NSF Report on Broader Impacts:

"Experience shows that while most proposers have little difficulty responding to the criterion relating to intellectual merit…

…many proposers have difficulty understanding how to frame the broader impacts of the activities they propose to undertake."

NSF's Response in 2002

- The agency said that it would not review any proposal that failed to address Criterion 2.

- Despite this mandate from NSF, there was still considerable confusion about what types of activities fulfill Criterion 2.

And Now, 5 years later?

- A recent American Physical Society News article says that some in the scientific community view Criterion 2 as "confusing, burdensome, inappropriate, or counterproductive."

- An MIT scientist describes it as "punitive."

NSF funded a Broader Impacts workshop this summer, and 26 institutions were represented. Some suggestions:

- 1) Identify established education and outreach programs that scientists and NSF-funded programs could join.
- 2) Build a Criterion 2 percentage into large awards that could support extensive outreach projects.
- 3) Recognize ongoing, broad-based media and public affairs initiatives that fulfill Criterion 2.

Congress has now weighed in

America COMPETES (NSF's 2007 reauthorization) requires a report to Congress on "broader impacts" in areas such as:

* *outreach to the public*
* *training scientists*
* *disseminating research findings.*

Scientific Communications Act of 2007 (H.R. 1453)
March 21, 2007

- "…with the increasing presence of science and technology in public policy issues, a greater national effort needs to be made to train scientists to engage in the public dialogue…."
- "…provides resources at the National Science Foundation (NSF) to improve the ability of scientists to convey the relevance and importance of scientific research and technical topics…"

A new, emerging mandate for communicating science to the public

- Renewed emphasis on making the scientific process, research and discoveries available to the public.
- The public must understand the science it is being asked to support financially.
- Criterion 2 – and the "broader impacts" part of it – are important to this effort.

New NSF Public Affairs Initiatives

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Press Release 07-130

National Science Foundation and ResearchChannel Form Programming Partnership

RESEARCH CHANNEL

NSF and ResearchChannel will develop science programs for national and international broadcast.
Credit and Larger Version

October 4, 2007

Feverish Effort Under Way to Understand Mt. Vesuvius

LIVE SCIENCE

Lucia Gurioli
University of Hawaii at Manoa
LiveScience.com

Sat Oct 13, 1:10 PM ET

This Behind the Scenes article was provided to LiveScience in partnership with the National Science Foundation.

While majoring in geology at the University of Pisa in 1991, I traveled on a class fieldtrip to Vulcano —a small island volcano near Sicily's north shore. (The word "volcano" originated from Vulcano, which was named after the Roman God of Fire.)

During the fieldtrip, I climbed to the top of Vulcano and then descended into its summit crater. When I reached the crater floor, I marveled at the tranquility and silence that filled the air. But then, as I glanced up at the steep, steaming,

The NewsMarket: South Pole Telescope May Reveal What the Universe is Made Of - Microsoft Internet Explorer provided by National

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South Pole Telescope May Reveal What the Universe is Made Of [Source: National Science Foundation]

(2)

[21-Mar-2007] Scientists say they are hoping a massive telescope will help them uncover the materials that comprise the universe and how these particles got here. The South Pole Telescope (SPT), which measures 75 feet tall, 33 feet wide and weighs 280 tons, is also expected to help scientists determine if dark energy is the force that dominates the universe. Scientists have varying ideas as to what dark energy may be and how it directly affects the universe. The $19.2 million...

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National Science Foundation

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With Financial Backing at Last, There's a Revolution in Power

Thanks to Silicon Valley's money and ideas, solar and other new technologies may finally pay off.

- Offshore, bigger blades reap wind power
- Governors push for smart energy
- Video: Green ideas for your home

300-foot "Power Tower" built by Abengoa outside Seville, Spain. (Abengoa)

SCIENCE BLOG: THINKING HARDER

Medical Trials Ignore the Placebo Effect

The randomized, placebo-controlled trial is considered the gold standard of medical experimentation. But could much of what glitters be fool's gold?

MORE FROM U.S. NEWS

For Frogs, a Digital Detour

Software makes it possible for students to swap a scalpel for a computer mouse in the Biology lab.

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Discovering the Sweet in Basil

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Press Release 07-086 - Video

Call-in Program With Experts to Discuss Their New Approach to Cancer Detection

Play Video

Three of the pioneers behind novel light-scattering techniques to detect certain early stage cancers joined an outside expert on biophotonics in a call-in program to discuss new research results that were presented in the Aug. 1, 2007, edition of *Clinical Cancer Research*. Richard McCourt (right), of NSF's Directorate for Biological Sciences, was the moderator.

Credit: *National Science Foundation*

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AAAS

What is Communicating Science?

Scientists and engineers who foster information-sharing and respect between science and the public are essential for the public communication of and engagement with science. Although traditional scientific training typically does not prepare scientists and engineers to be effective communicators outside of academia, funding agencies are increasingly encouraging researchers to extend beyond peer-reviewed publishing and communicate their results directly to the greater public.

In response to this need in science communications, the AAAS Center for Public Engagement with Science and Technology is partnering with the National Science Foundation to provide resources for scientists and engineers, both online and via in-person workshops, to help researchers communicate more broadly with the public.

Communicating Science Broadly resources include interactive video seminars, how-to tips and strategies for identifying public outreach opportunities, as well as sample questions and answers on key science topics.

The resources address how to communicate science broadly through the following outlets:

- Media outreach
- Public outreach
- Multimedia development

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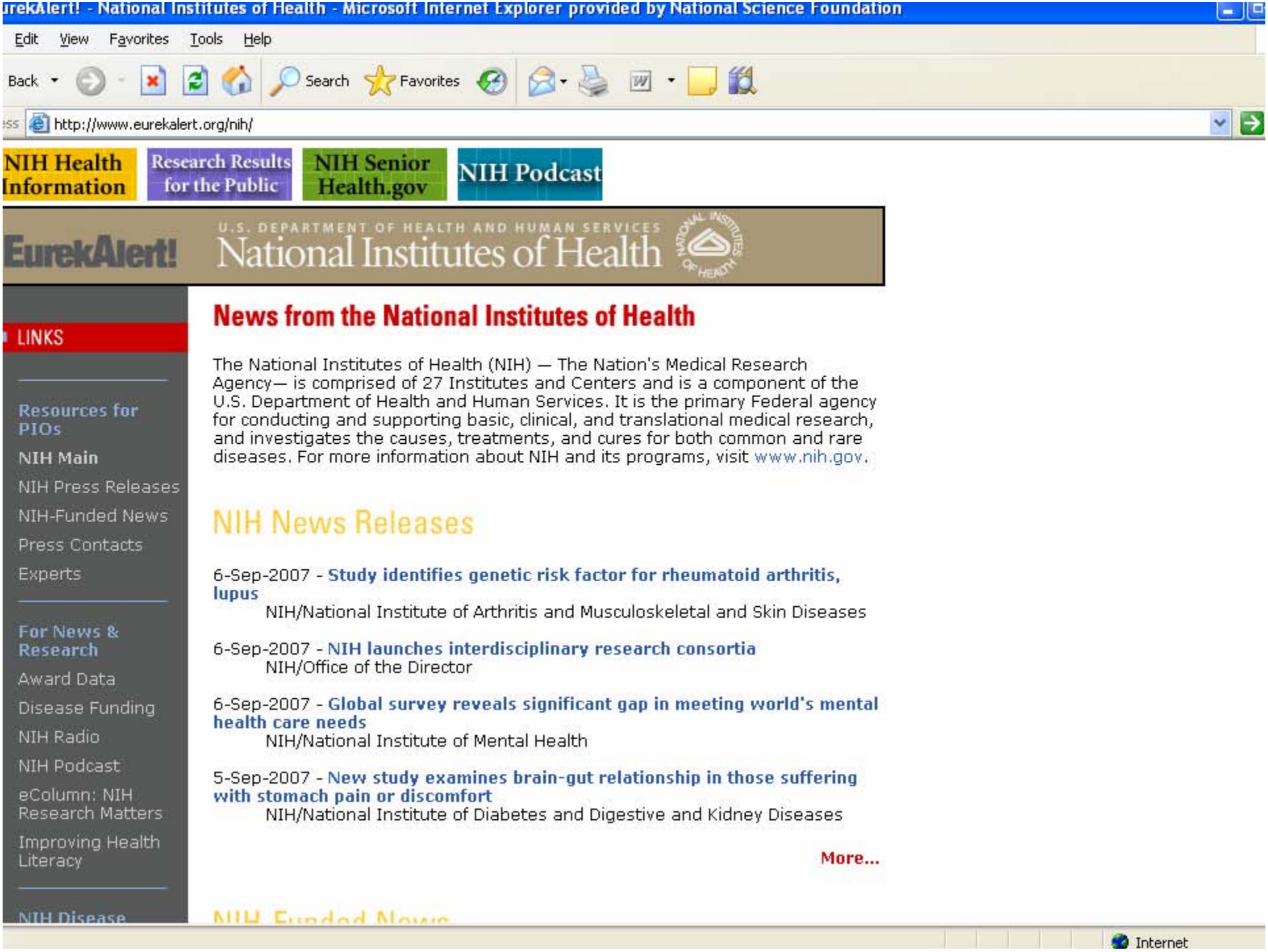
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NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases
6-Sep-2007 - NIH launches interdisciplinary research consortia
NIH/Office of the Director
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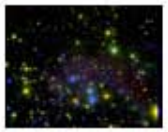

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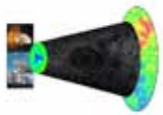

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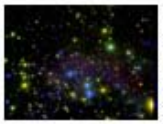

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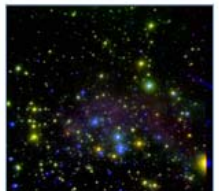

Credit: UCB/NASA/Keck Observatory

The central starburst region

ARTICLE

'ONE OF THE MOST CURIOUS OBJECTS IN THE SKY' DELIGHTS ASTRONOMERS AGAIN

Mauna Kea (August 29th, 2007) Edwin Hubble once called IC 10 "one of the most curious objects in the sky," and new observations of the extremely faint, lightweight dwarf galaxy are giving scientists new clues about how populations of stars are born.

Though the properties of stars is one of the most well-studied topics in astronomy, scientists still don't fully understand all the mechanisms involved in star formation and evolution, particularly in galaxies with low levels of oxygen, nitrogen and other heavy elements. But scientists studying the IC 10 galaxy may soon understand how stars might have looked like in the distant past, when the universe was in a younger, more pristine form.

"A few years ago these types of studies would have been impossible from the ground," said Dr. Taft Armandroff, director of the W. M. Keck Observatory, who's own research includes the study of dwarf galaxies. "We can now study individual stars of galaxies several million light years from Earth to understand how star formation events may have affected the evolution of the Milky Way galaxy. This galaxy can teach us what the most common types of galaxies in the universe might be like."

New images of IC 10 reveal a small region of space teeming with nearly a thousand stars. The image, obtained with NASA's Hubble Space Telescope and the W. M. Keck Observatory in

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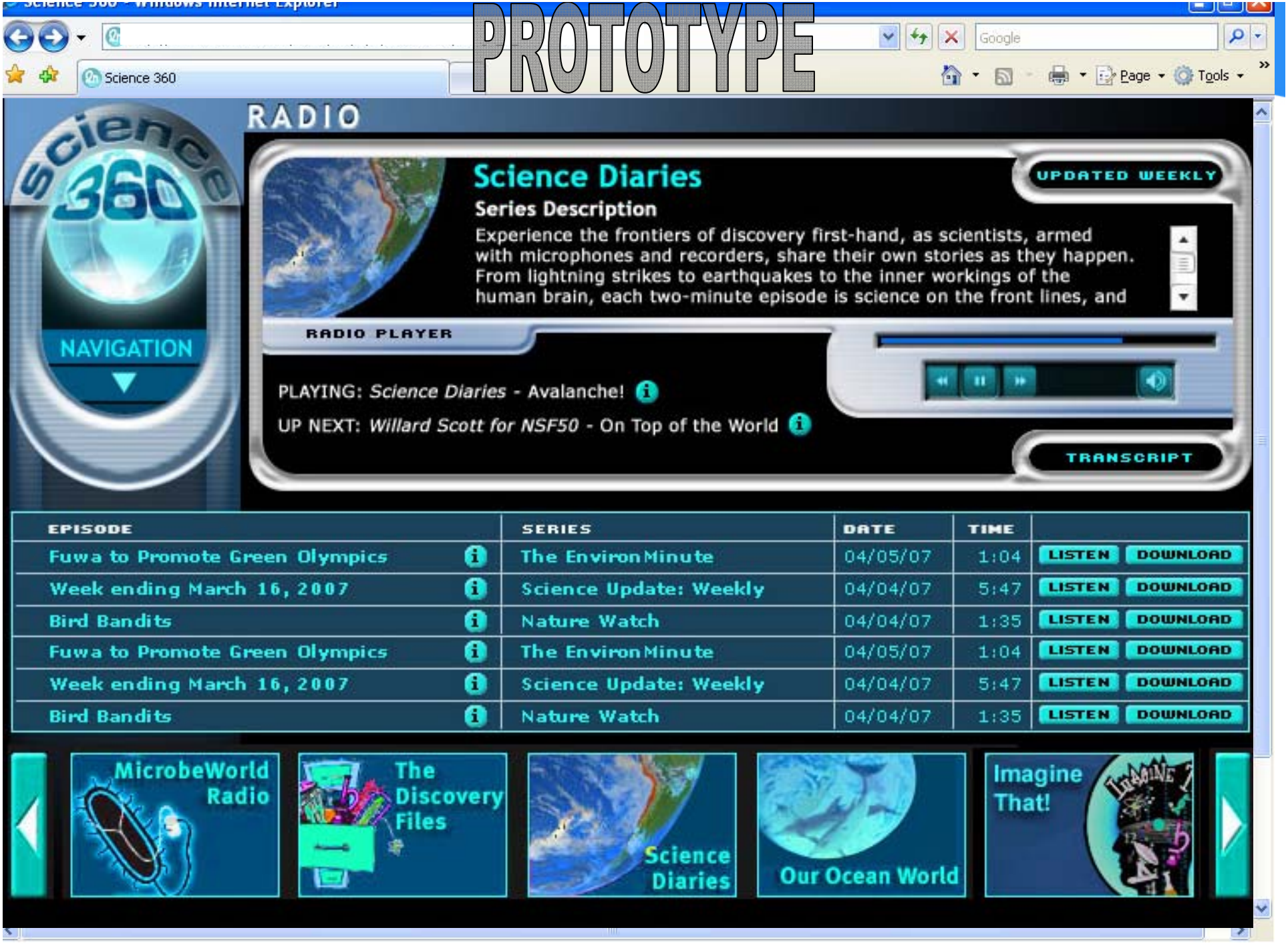
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- Are some athletes engineers?
- Do teams employ people with Ph.D.s in math, science and engineering?
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CSI: The Experience **was developed by the Fort Worth Museum of Science and History, CBS Consumer Products, CSI: Crime Scene Investigation, and the National Science Foundation.**

FORT WORTH MUSEUM

The Fort Worth Museum of Science and History serves as a vital component of the educational infrastructure of Texas and an important family leisure destination for North Texas due to its creative, vibrant programs and exhibits. Established in 1941, the Museum today hosts roughly 800,000 visitors a year, including more than 150,000 school children. Because the Museum is constructing a new building beginning in the fall of 2007, it will host *CSI: The Experience* in the summer of 2008 off-site. Accredited by the American Association of Museums, the Fort Worth Museum is a founding member of the Science Museum Exhibit Collaborative (see below), for which it is developing *CSI: The Experience*.

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