

## Calendar/Meetings

### November

10-11, [Induction to Grid Computing and the National Grid Service](#), University of St. Andrews, UK

12-18, [SC|05](#), Seattle, WA

13-14, [Grid 2005 - 6th IEEE/ACM International Workshop on Grid Computing](#), Seattle, Washington

16-18, [World Summit on the Information Society](#), Tunis

[Full Calendar](#)

## Feature Story

### Grids and Gluons

Grid tools are helping scientists solve a nuclear physics mystery—how the proton gets its spin. The origin of the proton's spin has been the subject of experiment and speculation for over 15 years, and preliminary results from the PHENIX experiment show that the proton is not as strange as some may have thought.

"We are striving to understand the fundamental structure of matter," said Abhay

Deshpande, a physicist from the State University of New York at Stony Brook. "Protons and neutrons form 99% of the matter around us, and mass and spin are their two fundamental properties."



The PHENIX detector at Brookhaven National Laboratory.

Spin is the direction a particle spins around an axis as it travels, just as the Earth spins on its axis as it travels around the sun. Until 1989, physicists assumed that the spin of the three quarks that make up a proton combine to create the total proton spin. That year, a European nuclear physics experiment using a method called Deep Inelastic Scattering reported that the three quarks only carry 20–30% of the proton's spin. This result, later confirmed by DIS experiments around the world and labeled the "spin crisis," caused physicists to suspect that the gluons that bind quarks together may be the carriers of the missing spin.

[Read the full article](#)

## Image of the Week



**MonALISA monitoring of OSG and US CMS jobs.** (Click on image for larger version.)

*Image courtesy of Iosif Legrand*

The [US CMS Software and Computing program](#) has supported [MonALISA](#) during its five-year development, helping to build it into a set of services used by many network and grid projects worldwide. This example MonALISA monitoring plot shows that US CMS jobs (in red) dominated Open Science Grid use during the month of October.

## Link of the Week

### Super Computing Power

How will medicine leap to the next stage? Many are anticipating an era of "personalized" medicine in which our specific medical conditions can be treated individually. The answers are going to depend not only on advances made in the laboratory, but also on new ways of modeling and simulating medical conditions on large-scale,



The human arterial "tree."

### Grids in the News

#### Special Sessions Unite Access Grid, Education

GRIDtoday, November 7, 2005

The National Center for Supercomputing Applications and inSORS have arranged a series of presentations using Access Grid technology to showcase the technology that educators and researchers are using to bring the world to their classrooms.

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#### Campus Grid Computing Used to

## **Networking in the New York Times**

This special New York Times Technology section contains 11 articles covering advanced networking technology, home networking, network-enabled collaboration and worldwide network innovations. (Free subscription required to read articles.)

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The logo for the Office of Science, U.S. Department of Energy (DOE), featuring a stylized orange and red swirl design.

interconnected computers.

If doctors could watch how blood circulates through our arteries in a kind of 3-D real-time movie, they could see exactly where high blood pressure affects individual arterial systems. They could tailor medication to reduce the pressure exactly. They could also see potential blockages in important arteries and design ways to remove or reduce them without major surgery.

Calculations of blood flow in the human arterial "tree" are among the scientific projects that require the enormous resources of the NSF TeraGrid.

Exact blood flow determination is the challenge taken up by Dr. George Em Karniadakis, who is not an M.D. but a professor of computational fluid mechanics at Brown University. Computational is the important word here. Karniadakis and his team are well on their way to building an accurate three-dimensional computer model of arterial blood flow that will ultimately aid doctors who want to save us from arteriosclerosis, coronary artery disease and other circulatory diseases.

[Read the full article](#)

*This article, by Faith Singer-Villalobos and Merry Maisel, originally appeared on the University of Texas at Austin's Web site.*

## **Achieve Practical Vehicle Collision Analysis**

Mazda News, November 7, 2005

HIROSHIMA, Japan--Hiroshima University has teamed up with Mazda Motor Corporation and Fujitsu Limited in a joint research project that analyzes vehicle collision data using Hiroshima University's campus grid of networked personal computers.

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## **SEEK Annual Meeting Held at SDSC**

SDSC Press Release, November 4, 2005

More than 40 participants from as far away as Scotland, New Zealand, and Alaska gathered for the annual All Hands project meeting of the Science Environment for Ecological Knowledge, known as SEEK, held at the San Diego Supercomputer Center (SDSC) at UC San Diego from October 24 to 28, 2005.

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## **IU Makes Storage Available for TeraGrid Users**

HPCWire, November 4, 2005  
By Scott McCaulay, Thomas Hacker, Andrew Arenson, Radha Surya

As part of its resource contributions to the NSF-funded TeraGrid, Indiana University is now making tape-based storage available to users of the TeraGrid via Indiana University's Massive Data Storage System (MDSS), which uses the High Performance Storage System (HPSS) software.

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