

Calendar/Meetings

August 2005

15-17, [First Nordic Grid Neighborhood Conference](#), Oslo, Norway

22-26, [ACM SIGCOMM 2005](#), Philadelphia, Pennsylvania

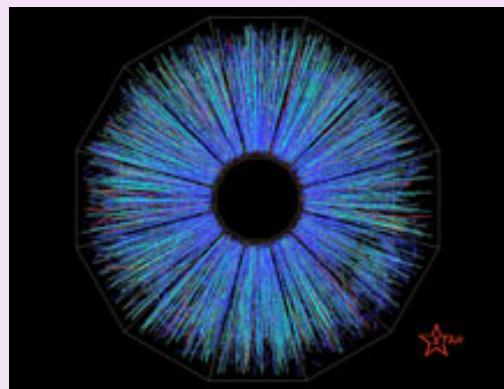
23-27, [20th APAN Meeting: Advanced Network Conference in Taipei](#), Taipei, Taiwan

29-30, [Open Science Grid Blueprint Meeting](#), Buffalo, New York

30-31, [Bridging the Gap: End-to-End Networking for Landmark Applications](#), Ann Arbor, Michigan

[Full Calendar](#)

Image of the Week



Collision of two gold beams in the STAR detector. (Click on image for larger version.)

Courtesy of Brookhaven National Laboratory

Beams of gold nuclei travel in opposite directions at nearly the speed of light in the Relativistic Heavy Ion Collider at Brookhaven National Laboratory. The beams collide in detectors such as the [Solenoid Tracker at RHIC](#), producing the sprays of particles

Feature Story

Grids Help Search for Gravitational Waves



Installing a mode-matching mirror and suspension into a vacuum chamber during LIGO construction.

Image Courtesy LIGO Laboratory

Albert Einstein predicted the existence of gravitational waves in 1916, and for the past three decades a succession of experiments has attempted to directly detect the waves with no success. Now using the Laser Interferometer Gravitational Wave Observatory and grid computing, the 400 scientists and engineers of the LIGO Scientific Collaboration hope to finally detect them.

"Gravity waves are fluctuations in the space-time continuum created whenever large masses move," said Kent Blackburn, senior scientist at the California Institute of Technology. "Even such catastrophic events as colliding black holes produce barely detectable waves, and these events are what the LSC searches for with the world's two most sensitive gravitational wave detectors."

Many sensors monitor the detectors and their environment so that a gravity wave can be distinguished from an earthquake or a dropped hammer. All this information adds up to a lot of data—the detectors have produced 400 terabytes of data since they started operating in 2002.

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Cyberinfrastructure Takes Central Role at NSF



On July 22, National Science Foundation Director Arden Bement, Jr. announced a new Office of Cyberinfrastructure—formerly called the Division of Shared Cyberinfrastructure—that will report directly to the Office of the Director. The change in name and status of the OCI, as well as the creation of an NSF Cyberinfrastructure Council, reflects the growing role of cyberinfrastructure in research and education, explained Acting OCI Director Deborah Crawford.

"Cyberinfrastructure is now so important in science and engineering research and education that the director decided it should be more visible within the agency," said Crawford. "All of the disciplines that the NSF supports now have shared ownership of the cyberinfrastructure endeavor."

The role of the OCI is to coordinate and support the acquisition, development and deployment of cyberinfrastructure resources, tools and services. High-performance computers, storage, data repositories and management, networking, software and middleware are some of the areas that the new office covers. Crawford expects that the OCI will grow in size as its range of responsibilities increases over the next few years.

"New programmatic approaches for cyberinfrastructure have been discussed in the past week at the National Science Board Meeting," said Crawford. "Planning and implementation activities focused on enhancing high-performance computing capabilities will start within the month."

shown in this image. The STAR GRID allows collaborators to analyze data using their own computer resources, by using a data grid to automatically copy data sets from BNL to remote sites soon after they are collected in the detector.

[Link of the Week](#)

GridCafé Flash Animations

These animations provide a good, quick introduction to what the grid is, how it works, why scientists need it and how it's different from the Web and the Internet.

[PDF Version for Printing](#)

[XML](#) [RSS Headlines](#)



Office of Science/
U.S. DOE

DIALOGUE Workshop Addresses Data Access and Integration



DIALOGUE workshop participants.
Image Courtesy Alexandre Vaniachine

More than 30 data grid researchers from 13 institutions in the United States, Europe and Asia attended the First International DIALOGUE Workshop, where they shared research findings and worked to enable global data access and integration across scientific grids.

"As more and more applications move towards distributed storage and processing solutions, new and interesting issues arise," said workshop organizer Joel Saltz from The Ohio State University.

"Applications must handle varying, sometimes extremely large data sizes and increasingly complex data models. Areas from engineering to biomedical research face common challenges and domain specific issues regarding the storage, management and processing of requirements in a data grid environment. Future data grid middleware solutions will need to be able to deal with these issues in generalizable, globally applicable ways."

The workshop was held August 1–2 at the OSU campus in Columbus, Ohio. DIALOGUE represents a major international effort to push data access and integration (DAI) tools and standards into new territory, envisioning more ambitious data integration architectures that are well-adapted for semantic grids, simulation, analysis, data mining and visualization. The DIALOGUE goal is to bring together researchers and developers to create a framework that is readily available to scientists and scientific organizations worldwide.

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Grids in the News

E-Science Methods Reveal New Insights Into Antibiotic Resistance
EurekAlert, August 15, 2005

Large-scale computer simulations have pinpointed a tiny change in molecular structure that could account for drug resistance in *Streptococcus pneumoniae*, the organism that causes childhood pneumonia and claims 3.5 million lives a year, mainly in developing countries.

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Live Demonstration of 21st Century National-Scale Team Science

OptIPuter Press Release, August 12, 2005

8.12.05 -- There are four wings to the Earth Science building of the Goddard Space Flight Center (GSFC) in Greenbelt, MD.

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DTI Launches £1m 'Grid Computing' Drive

Times Online, August 10, 2005
By Rhys Blakely

The Department of Trade and Industry today embarked on a £1 million drive to promote the use of grid computing by British blue-chip companies.

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The Big Picture: GEON Map Services

SDSC Press Release, August 5, 2005

In many scientific disciplines, a picture is worth a thousand words. In the Earth sciences, for example, researchers have long relied on thematic maps to present, overlay, and analyze diverse kinds of information that come from multiple data sources.

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