

Calendar/Meetings

April

24-26, [Spring 2006 Internet2 Member Meeting](#), Arlington, Virginia

24-27, [Condor Week 2006](#), Madison, Wisconsin

25, [HiCOMB 2006: Fifth IEEE International Workshop on High Performance Computational Biology](#), Rhodes Island, Greece

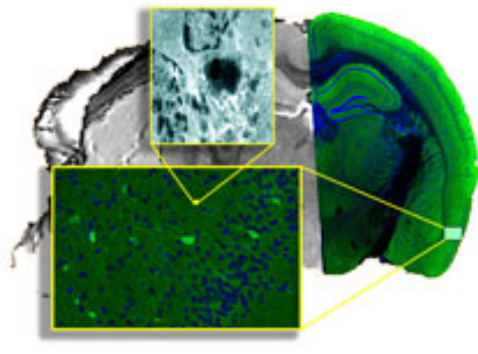
25-29, [20th IEEE International Parallel and Distributed Processing Symposium](#), Rhodes Island, Greece

26-28, [First BalticGrid All-Hands Meeting](#), Vilnius, Lithuania

27, [EGEE Industry Day](#), Paris, France

[Full Calendar](#)

Image of the Week



Mosaic of 3D MRI and electron microscope images of a mouse brain. (Click on image for larger version.)

Image Credit BIRN/Diana Price

Researchers examining the nervous system have long struggled to understand how higher order structures, such as cellular networks,

Feature Story

MammoGrid Helps Doctors Detect Breast Cancer

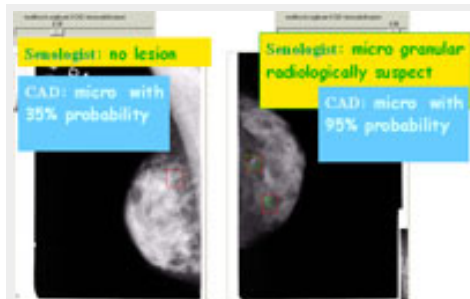
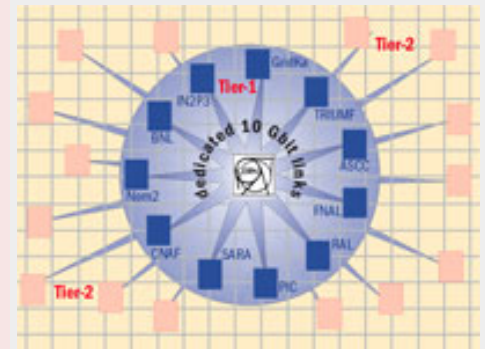


Illustration of computer-aided detection (CAD) of breast cancer.
Image Courtesy Jose Galvez

Breast cancer is the most common cancer in women, and mammograms are one of the main tools doctors use to diagnose this potentially fatal disease. The rate of misdiagnosis from mammography is high, however—estimates range up to 30%—due in part to physical differences across patient populations, differences in mammography equipment and procedures and difficulty in using computers to help detect changes in breast tissue. The MammoGrid project applies grid technology to aid in the accurate detection of breast cancer using mammograms.

With MammoGrid, doctors can harness the computing power of the grid to run advanced algorithms on digital versions of mammograms. This type of computer-aided detection of breast cancer, when used in tandem with the traditional method of visually screening mammograms, may help increase the accuracy of diagnoses. Computer-aided detection is even more effective when used with large mammogram databases, something the project is helping to create. MammoGrid also enables hospitals and doctors to share image data, making it easier for women to get second opinions and to involve their personal physician in decision-making.

Networking Tackles the LHC Challenge



Conceptual view of the interconnectivity between computing centers for the LHC.

It is well known that the Grid will provide storage and computing for the experiments at the Large Hadron Collider (LHC), which will generate vast amounts of data. However, this would not work without a networking infrastructure to move data from the experiments to the collaborating institutes and then to the physicists. The LHC Computing Grid (LCG) infrastructure is built on the concept of tiers, with different institutes providing certain services. Briefly, CERN is Tier-0, while Tier-1 institutes are responsible for long-term data storage services, and Tier-2 centres mainly provide CPU and temporary storage services. All institutes connected to the LCG infrastructure have to communicate with each other, so the networking has to deal with traffic crossing a number of networks and network-management domains.

The end-to-end path between a scientist somewhere in the world and the data coming from the detectors comprises the on-site campus network infrastructures as well as the connectivity between the experiments, the CERN Computer Centre and the Tier-1 and Tier-2 centres. This connectivity is provided on infrastructures of various types, and different international collaborative initiatives contribute to a dynamically evolving situation.

are assembled out of finer building blocks. The Mouse Biomedical Informatics Research Network (BIRN) collaboration develops correlated imaging approaches to map neural structures, characterizing neurodegenerative disorders such as Parkinson's Disease in mice. Researchers are developing a bridge between whole brain imaging techniques (such as MRI) and electron microscope analysis, allowing detailed examination of cellular and subcellular structure in the larger context of the whole brain.

[Read more...](#)

Statistic of the Week

80,000

Number of volunteers participating in the [Rothberg Institute for Childhood Diseases'](#) distributed computing projects. The projects search for drug candidates for avian flu, malaria and Tuberosus Sclerosis.

Source: [Computerworld](#)

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Office of Science/
U.S. DOE

"In some countries where mammography may take place in a hospital far from the small village where the patient and her doctor live, this kind of connectivity could greatly enhance the quality of medical care," says Jean-Marie Le Goff, group leader of CERN's Technology Transfer Group.

[Full article](#)

Grids in the News

Puerto Rican University Deploys Grid Testbed

GRIDtoday, April 17, 2006
By Derrick Harris

GRIDtoday spoke with Wilson Rivera, director of The Parallel and Distributed Computing Laboratory at the University of Puerto Rico, Mayaguez, about his lab's Grid testbed, which is being used to research and improve various areas of Grid computing.

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Distributed computing project targets avian influenza

Computerworld, April 13, 2006
By Jeremy Kirk

A research institute is harnessing the power of thousands of computers over the Internet to investigate potential drug treatments for deadly avian influenza.

[Read More...](#)

A Cyber Infrastructure Network for Europe

European Science Foundation News Release, April 13, 2006

Computational science in Europe is set to receive a boost from a new Forward Look to be launched this year by the European Science Foundation.

[Read More...](#)

[Read the full article by David Foster in this month's CERN Courier](#)

Announcement

Apply Now for the 2006 NVO Summer School



The 2005 NVO Summer School.

The US National Virtual Observatory invites applicants for the 2006 NVO Summer School, to be held September 6—12 at the Aspen Meadows Resort in Colorado. Applications are due by June 5 for this hands-on experience for astronomers and software developers.

Participants will work with experienced NVO users and software specialists to become familiar with the data discovery, data access and high performance computing capabilities of the Virtual Observatory. In the latter part of the summer school, small teams will pursue their own VO-enabled research projects by applying VO tools and/or developing their own applications.

Participation is open to anyone interested in learning how to use the VO for astronomical research, developing VO-aware tools or making astronomical data collections available to VO users. We especially encourage advanced undergraduates, graduate students and post-doctoral fellows to apply. Programming experience will be helpful but is not required, and participants will be required to bring an internet-capable laptop. Attendance is limited to 40 people. A waiver of the registration fee, and a travel and per diem stipend, may be available to successful applicants for whom the expenses would present a financial hardship. The NVO Summer School is made possible through the support of the National Science Foundation and the National Aeronautics and Space Administration.

