

Calendar/Meetings

April

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

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

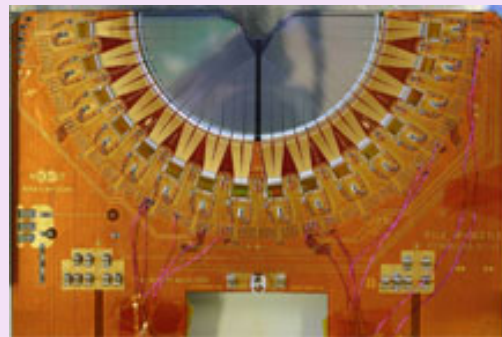
25-29, [20th IEEE International Parallel and Distributed Processing Symposium](#), Rhodes Island, Greece

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

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

[Full Calendar](#)

Image of the Week



Prototype detector module of the LHCb Pile-Up system. (Click on image for larger version.)

Image Credit NIKHEF

The [LHCb experiment](#) will study CP violation—if the laws of nature are the same for matter and antimatter—at the Large Hadron Collider. The LHCb collaboration will use grid computing technology and infrastructure provided by the LHC Computing Grid (LCG) and Enabling Grids for E-science (EGEE) projects to make data available to collaborators worldwide for analysis and discovery.

Feature Story

Distributing a Data Deluge



Members of the L-Store team.

The flood of data generated by scientific simulation and experimentation poses many challenges for researchers, including deciding how and where to store the data, and how to securely transfer it among worldwide collaborations. A team of computer scientists from Vanderbilt University is helping scientists meet these challenges with L-Store, a new system for distributed storage.

"When you visit a Web site, you don't think about the fact that the images come from one place and the ads from another," says Alan Tackett, technical director at Vanderbilt's Advanced Computing Center for Research and Education. "That's the way we feel data storage should work."

When complete, L-Store will provide a scalable, secure way for data to be stored on distributed systems. Users will install L-Store on their resources—anything from a single laptop to a multi-site computing grid—and save their data to the same "cloud" structure no matter how large the amount of data or storage becomes. The problem of accessing such distributed data files is solved using a new technology for sending data over networks called the Internet Backplane Protocol. IBP, developed at the University of Tennessee, Knoxville, enables the efficient movement of large data sets over the Internet by breaking up each file into chunks and transferring the fragments simultaneously rather than sequentially.

Managing Workflow with NAMD-G

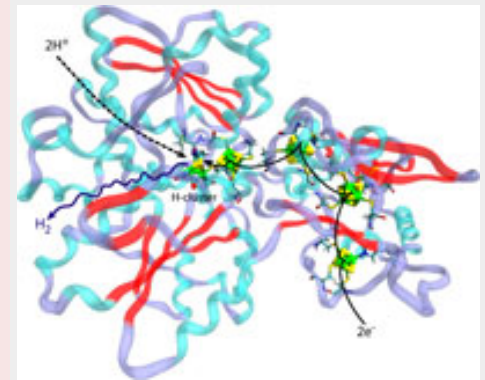


Image Credit Jordi Cohen, UIUC

"It started with the challenge in technology."

That's how Klaus Schulten, Swanlund Professor of Physics and Director of the Theoretical and Computational Biophysics Group at UIUC, describes the impetus for what became the collaborative scientific efforts conducted by his research group and NCSA. From that collaboration came two things: successful science and NAMD-G.

According to Schulten, one of the main challenges that the world faces today is the need to change our economy by using other fuel sources, in this case, hydrogen gas. Algae absorb light and use it to produce hydrogen gas. But there is a problem; it bubbles hydrogen gas out and permits oxygen to enter the protein thereby switching off hydrogen production.

Researchers from the National Renewable Energy Laboratory in Colorado believed that if the protein could not be changed, it could be redesigned so that it would still permit hydrogen to bubble out, but not let oxygen in.

[Read the full article by Herbert Morgan and Kathleen Ricker in the April issue of *data link*](#)

Announcement

Link of the Week

Human Proteome Folding Project

Through the World Community Grid, you can donate your computer's spare processing power to help predict the shape of human proteins. While proteins carry out all the functions that keep humans alive, scientists still don't know the purpose of many of them. With an understanding of how each protein affects human health, scientists can develop new cures for diseases.

Grids in the News

Tapping into the power of the grid

Telegraph-Journal, April 11, 2006

By Kevin Barrett

A researcher at the University of New Brunswick believes great potential exists for business to take advantage of underutilized capacity of today's computers.

[Read More...](#)

Gridbus Releases GridSim

Toolkit 4.0

GRIDtoday, April 10, 2006

The Gridbus Project and the GRIDS (Grid Computing and Distributed Systems) Lab at the University of Melbourne, Australia, has released the next-version of Grid simulation software, the GridSim Toolkit 4.0.

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Announcement

Proposals for NSF's CI-TEAM Solicitation Due June 5



*Image Credit Nicolle Rager Fuller,
National Science Foundation*

The National Science Foundation seeks proposals for its FY06 Cyberinfrastructure Training, Education, Advancement, and Mentoring for Our 21st Century Workforce (CI-TEAM) solicitation. CI-TEAM projects engage in research and education activities that promote or leverage cyberinfrastructure. The awards prepare current and future generations of scientists, engineers and educators to use, support, deploy, develop and design cyberinfrastructure, as well as fostering diversity in the workforce.

The FY06 expanded CI-TEAM solicitation seeks two types of project proposals. The first type, Demonstration Projects, are exploratory in nature and may be limited in scope, with the potential to serve as pathfinders to larger implementation activities in the future. Implementation Projects are larger in scope and draw on prior experience to deliver sustainable learning and workforce development activities that complement ongoing NSF investment in cyberinfrastructure.

Both types of projects should include collaborations with expertise in multiple disciplines and partnerships between academic institutions, government, industry, other not-for-profit organizations and international partners. Projects should also leverage existing development efforts in cyberinfrastructure technologies, adhere to open software standards and provide sound execution and evaluation plans. NSF expects to select 8–16 Demonstration Projects

Register Now for TeraGrid'06: Advancing Scientific Discovery

Race over to Indy in June to explore the applications of cyberinfrastructure for advancing scientific discovery at TeraGrid '06.

This forum, for individuals and institutions that use cyberinfrastructure to address the challenging computational problems facing our world, will be held June 12–15 in Indianapolis, Indiana.



Attendees will have many opportunities for networking, partnering and sharing their perspectives of how cyberinfrastructure can contribute to research and education across multiple fields. Three separate conference tracks and a number of tutorials will be available. National Science Foundation Director Arden Bement, Kelvin Droegemeier from the School of Meteorology and Center for Analysis and Prediction of Storms at the University of Oklahoma, and Daniel Atkins, head of the newly created NSF Office of Cyberinfrastructure, are invited keynote speakers.

Entries are due by April 28 for the [TeraGrid Student Contest](#), where high school students showcase their skills and knowledge by describing their perspective on the impact cyberinfrastructure will have on their world. Prizes include a trip to the TeraGrid '06 conference in Indianapolis, Indiana; an Apple iPod™; and the grand prize will be a trip to SC|06 in Tampa, Florida, in November.

Jointly hosted by Indiana University and the Rosen Center for Advanced Computing of Purdue University, TeraGrid '06 will introduce TeraGrid resources and services, illustrate how to use advanced TeraGrid applications for the development of new grid computing capabilities and for research and education, and showcase real-world technology demonstrations. Contact [Kay Hunt](#) for

at up to \$250,000 total each and 6–8 Implementation Projects at up to \$1,000,000 total each.

[More information](#)

more information.

[More information and registration](#)