

Science Grid Communication

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Fermilab

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National Science Foundation
WHERE DISCOVERIES BEGIN



Office of Science/
U.S. DOE



Why?

- If grids will develop to make science happen, they will need support!
 - Technical
 - Intellectual
 - Investment
- Must communicate grids' value to decision makers
- Communication is necessary for grids to succeed



What?

- Grids may change culture, society and science
- This is positive and exciting!
- Slightly different focuses
 - Within community
 - To other communities
 - To public, media, funding agencies
- Message a work in progress



Within HEP grid community

- Who's doing what?
- What's happening when?
- How can we help each other?
- How we share resources and expertise?
- Where are we going as a field?



Other sciences

- What do we have in common?
- Where should we specialize?
- How can we pool resources?
- Where are we going as a country? As a global scientific community?
- Where do we intersect with business, education, individuals at home?



Some of the U.S. Grids

- GEON
- OSG
- BIRN
- CCG
- NEES
- TeraGrid
- Earth System Grid
- GriPhyN
- iVDGL
- PPDG
- Access Grid
- SEEK
- SCEC
- nanoHUB
- World Community Grid
- PRAGMA



Public/media/funding agencies

- Grids are exciting
- They're popping up everywhere
- They'll help us do great things in the future
 - In science, in education, in business
- They're doing great things right now!
 - Money well spent



Grid Support in U.S.

- National Science Foundation
 - CISE: Computer & Information Science & Engineering
 - SCI: Shared CyberInfrastructure
 - Math & Physical Sciences (MPS), Biology, Geosciences
- Department of Energy
 - Advanced Scientific Computing Research
 - SciDAC-Scientific Discovery through Advanced Computing
 - High Energy Physics, etc.
- Universities
- Businesses (IBM, Sun, etc.)

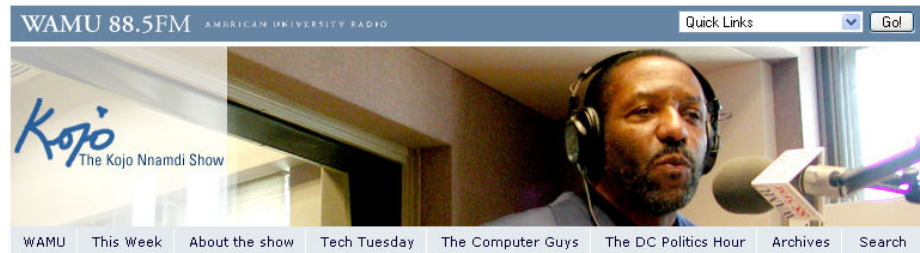
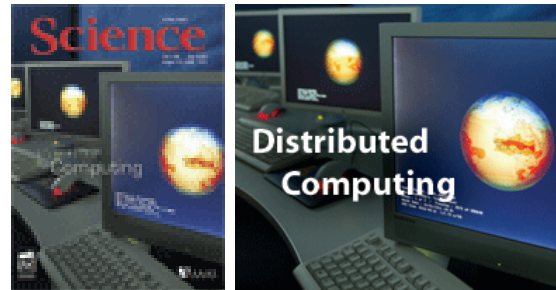
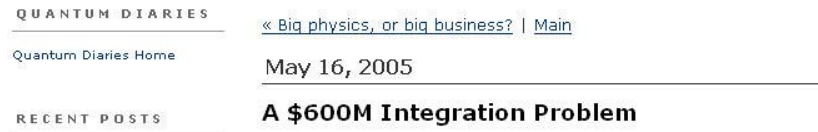


How can we communicate?

- Person to person
- Articles in magazines, newspapers, online
- Newsletters
- Web sites
- Press releases
- Talks
- Education
 - NC state-wide collaborative grid computing course
 - Grid summer workshops
- Methods still in progress

Getting grids out there

- Grid Physicist in “Quantum Diaries”
- Science Magazine
- Radio show in Washington, D.C.





Communication takes time

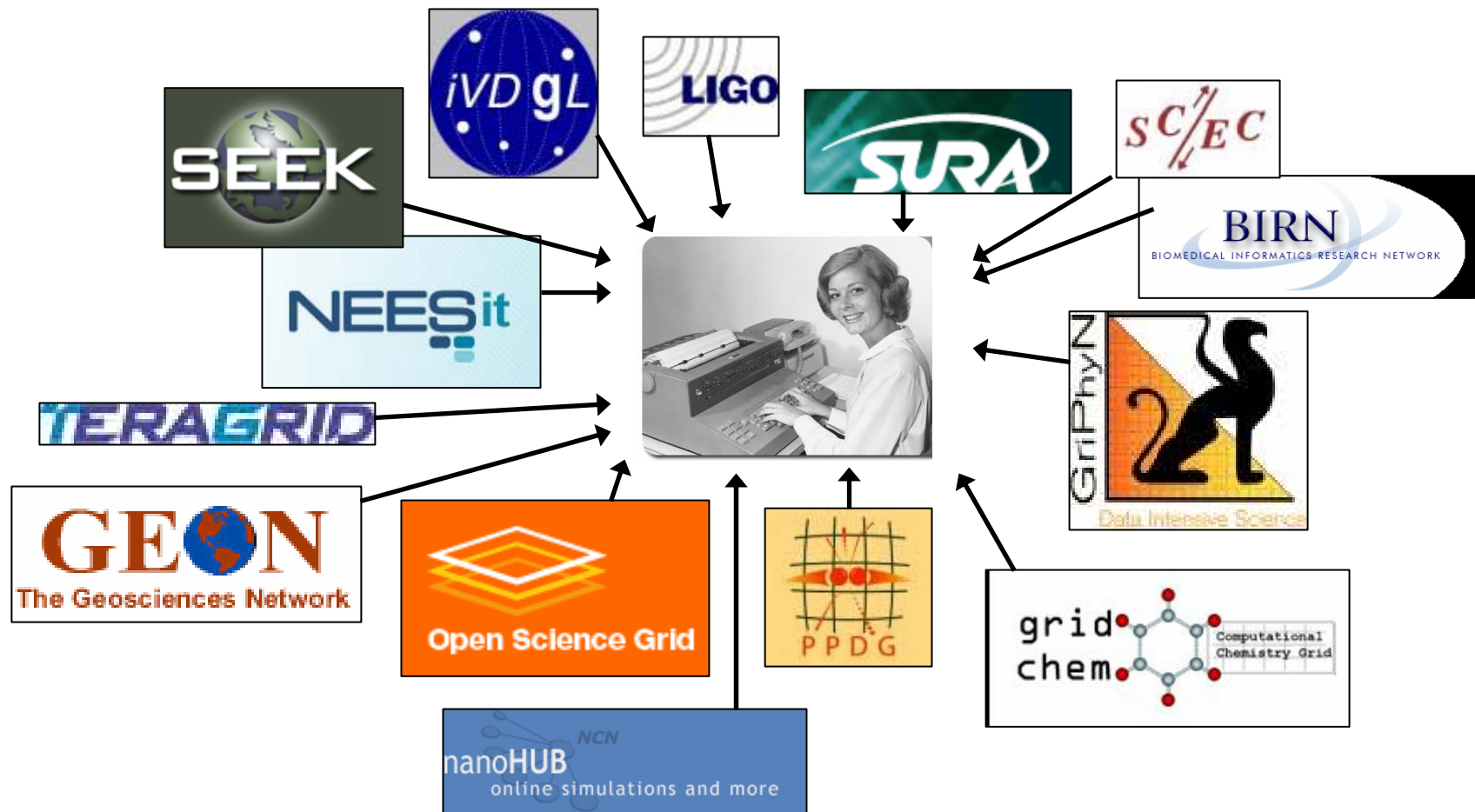
- Everyone knows this is important
- Many are stressing importance of communication
 - No duplication of effort
 - Limited funding everywhere, want to take advantage of what's out there
- Cross-communication between grids, projects, sciences is needed
- Who's got time?
- Need people dedicated to communication



Grid Communication Group

- Similar philosophy to InterAction Collaboration
- Coordinate communication effort
- Combining resources

Grid Communicator





So far...

- Press releases
 - Coordinated with CERN, other involved institutions
 - Distributed to IT and science media
- Weekly e-newsletter
- Contacting diverse grid activities
 - Computer science, physics, biology, earth science, chemistry, education
 - Attending meetings
 - Contacts for e-newsletter



Science Grid This Week

- Debuted April 28, 2005
- So far, covered
 - Regions: Taiwan, Canada, U.S.
 - Groups: Internet2, QuarkNet, GriPhyN, DZero, GridChem, BIRN, SCEC
 - Security, Software, Biology, Physics, Geology, Chemistry
- Over 3000 visits to SGTW Web site since May 1
- 825 subscribers (up from ~570)
- Audience:
 - U.S, and worldwide grid community
 - University administrators
 - Media, Interested public
 - Washington, D.C. (NSF, DOE, Congress)

SCIENCE GRID THIS WEEK

MAY 18, 2005 [ABOUT SGTW](#) | [SUBSCRIBE](#) | [ARCHIVE](#) | [CONTACT SGTW](#)

Calendar/Meetings

MAY

18-19, [Rocks-A-Palooza I \(Rocks All Hands Meeting\)](#), SDSC, La Jolla, CA

22-25, [International Conference on Computational Science 2005](#), Atlanta, GA

23-27, [International ICFA Workshop on HEP Networking, Grid and Digital Divide Issues for Global e-Science](#), Daegu, Korea

24-26, [Second EGEE/LCG Grid Operations Workshop](#), Bologna, Italy

JUNE

1-2, [Open Science Grid Applications Workshop](#), SLAC, Menlo Park, CA

[Full Calendar](#)



Feature Story

ISGC 2005 Focuses on Collaboration in Asia-Pacific

ISGC 2005 Group Photo. Courtesy of the Academia Sinica Computing Centre, Taipei, Taiwan.

Two hundred scientists from Asia, Europe and North America gathered to discuss grid computing collaboration, development and advancement in the Asia-Pacific region at the third annual International Symposium on Grid Computing. The ISGC, which took place April 26-29 at the Academia Sinica in Taipei, Taiwan, introduces advanced grid technologies to diverse communities and works to establish a region-wide infrastructure for grid computing.

"This is the only conference in the region focused on cooperation and

Profile

Gabriele Carcassi: ATLAS Security Guard

Gabriele Carcassi

Gabriele Carcassi has been writing software since he was 10 years old. Now a software engineer at Brookhaven National Laboratory, Carcassi works on the security aspects of grid computing for the ATLAS experiment and the experiments at BNL's Relativistic Heavy Ion Collider.

"One aspect of grid security is accountability," said Carcassi. "Previously, all jobs and file transfer work submitted to the grid ran on one local account, and there was only one account per virtual organization. We are working on ways to increase accountability; to tell who did what on which grid computing site."



More to come

- Web site
 - Image bank
 - Talks repository
 - Grid information for beginners
- Multimedia. Use all resources available to us!
- More press releases, articles
- Identify potential collaborators
- Foster connections between grid communities



Communicator Community

- I'm part of a community as well
- I come from HEP/LHC community
- Other computing centers, big projects (Internet2, BIRN), businesses have their own communicators
- We need to connect



Collaboration

- Between science, computer science, IT, education
- Within and among scientific fields
- Between global projects and groups
- Successful collaboration required to achieve successful grids



Open Science Grid

- Ties together the US and Science and Grids
- Support existing partner experiments
 - LHC--US CMS, US ATLAS, LIGO, SDSS, STAR, CDF, D0
- Reach out and support other experiments, communities
- Try to foster and facilitate new standards and capabilities by implementing and using them
- My role?
 - Web site
 - Write about OSG collaborators, technology, etc. for SGTW, symmetry, etc.
 - Travel to OSG sites, connect diverse collaborators
 - Connect OSG with potential collaborators from other fields



Connections

- Interoperability
 - Driven by global nature of science and scientific collaborations (especially HEP!)
- Networking
 - Without great networks, no great grids
 - One part of the story
- Inter-grids and Intra-grids both important
 - FermiGrid
 - Campus grids: Wisconsin (GLOW), Florida
- Empower and Enable
 - Geographically distributed individuals and small groups
 - Both sides of the digital divide
 - Networks plus higher level services needed



Future

- Global computing for science is here
- Grids are strategic for the global future of the field (LHC, ILC)
- With so much going on, communication is vital
- This is a wonderful time!

“An active field of science is like an immense anthill; the individual almost vanishes into the mass of minds tumbling over each other, carrying information from place to place, passing it around at the speed of light.”

May 23, 2005

-- Lewis Thomas, *“The Lives of a Cell”*

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Contact me

- Ideas, suggestions, submissions
 - Science Grid This Week
 - Web site content
 - What else do you need?
- katie@fnal.gov
- sgtw@interactions.org
- <http://www.interactions.org/sgtw>



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Extra Slides

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NSF SCI Programs

- **International Research Network Connections**
- **NSF Middleware Initiative**
- **x-CISE Emphases**
 - Broadening Participation in Computing
 - Cyber Trust
 - Cyberinfrastructure TEAM (CI-TEAM): Demonstration Projects
 - DDDAS: Dynamic Data Driven Applications Systems
 - Science and Engineering Information Integration and Informatics
 - Science of Design
 - Software and Tools for High-End Computing



Advanced Scientific Computing: National Collaboratories & Networking

- DOE Science Grid
- A National Collaboratory to Advance the Science of High-Temperature Plasma Physics for Magnetic Fusion
- Particle Physics Data Grid
- Earth System Grid II: Turning Climate Datasets into Community Resources
- A High-Performance Data Grid Toolkit
- Optimizing Performance and Enhancing Functionality of Distributed Applications Using Logistical Networking
- Security and Policy for Group Collaboration
- Bandwidth Estimation: Measurement Methodologies and Application
- Middleware Technology to Support Science Portals
- INCITE: Edge-Based Traffic Processing and Service Inference for High Performance Networks