Science.gov:

A Collaborative Success

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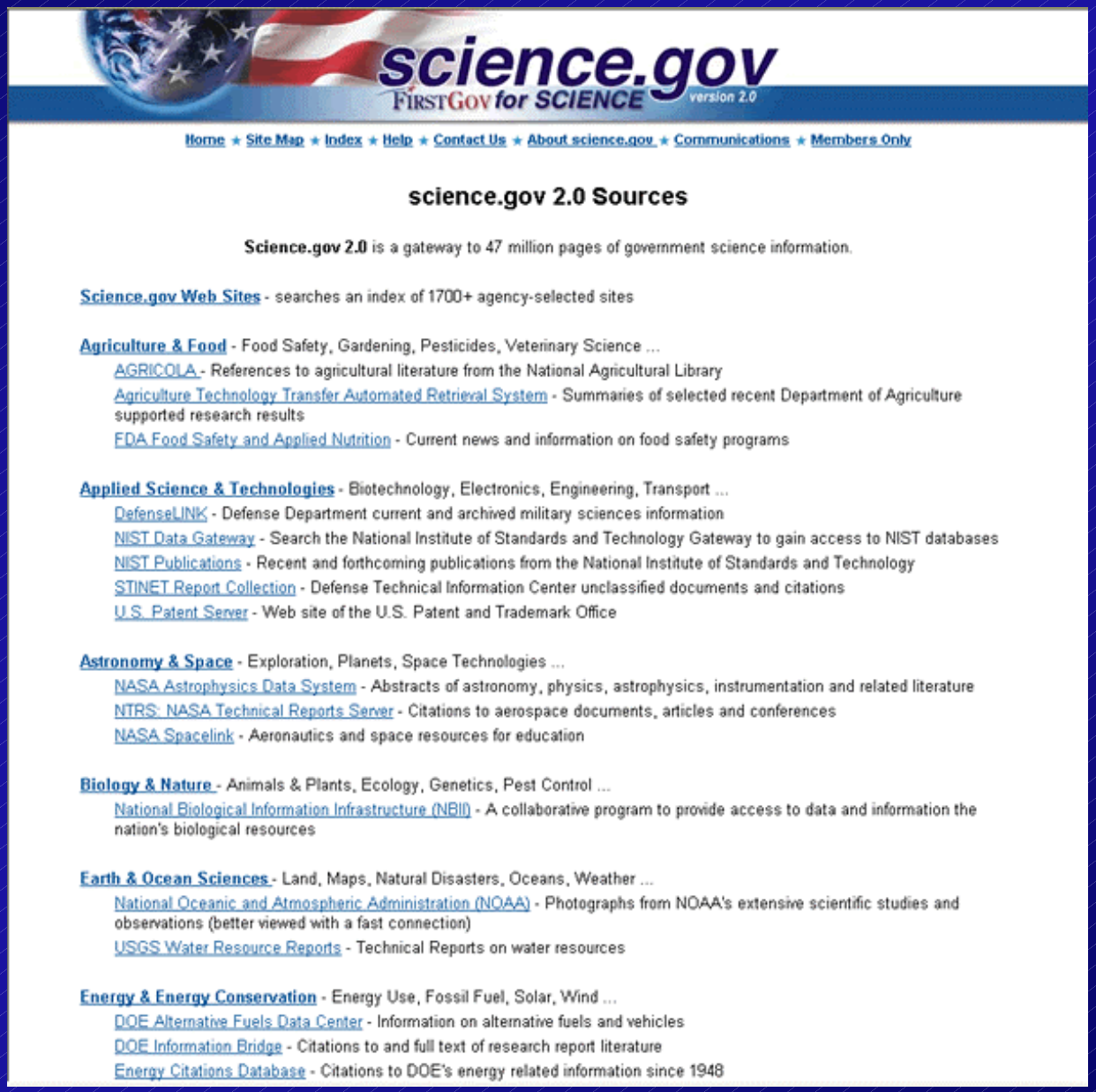
What is Science.gov?

- A cross-agency gateway to one of the nation's most valuable resources – its government R&D
- A collaborative Alliance of 17 information offices from 12 major science agencies
- A unique search tool, deployed by OSTI, currently for 30 deep Web databases with 47 million pages
- A Web portal indexing over 1,700 resources
- A creative way to maximize the U.S. return on its R&D investment

It's a lot of resources



science.gov
FirstGov for SCIENCE version 2.0

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science.gov 2.0 Sources

Science.gov 2.0 is a gateway to 47 million pages of government science information.

Science.gov Web Sites - searches an index of 1700+ agency-selected sites

Agriculture & Food - Food Safety, Gardening, Pesticides, Veterinary Science ...
- AGRICOLA - References to agricultural literature from the National Agricultural Library
- Agriculture Technology Transfer Automated Retrieval System - Summaries of selected recent Department of Agriculture supported research results
- FDA Food Safety and Applied Nutrition - Current news and information on food safety programs

Applied Science & Technologies - Biotechnology, Electronics, Engineering, Transport ...
- DefenseLINK - Defense Department current and archived military sciences information
- NIST Data Gateway - Search the National Institute of Standards and Technology Gateway to gain access to NIST databases
- NIST Publications - Recent and forthcoming publications from the National Institute of Standards and Technology
- STINET Report Collection - Defense Technical Information Center unclassified documents and citations
- U.S. Patent Server - Web site of the U.S. Patent and Trademark Office

Astronomy & Space - Exploration, Planets, Space Technologies ...
- NASA Astrophysics Data System - Abstracts of astronomy, physics, astrophysics, instrumentation and related literature
- NTRS: NASA Technical Reports Server - Citations to aerospace documents, articles and conferences
- NASA Spacelink - Aeronautics and space resources for education

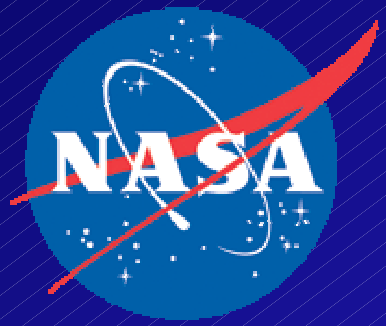
Biology & Nature - Animals & Plants, Ecology, Genetics, Pest Control ...
- National Biological Information Infrastructure (NBII) - A collaborative program to provide access to data and information the nation's biological resources

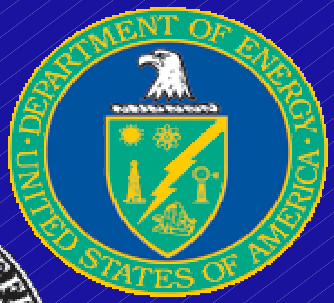
Earth & Ocean Sciences - Land, Maps, Natural Disasters, Oceans, Weather ...
- National Oceanic and Atmospheric Administration (NOAA) - Photographs from NOAA's extensive scientific studies and observations (better viewed with a fast connection)
- USGS Water Resource Reports - Technical Reports on water resources

Energy & Energy Conservation - Energy Use, Fossil Fuel, Solar, Wind ...
- DOE Alternative Fuels Data Center - Information on alternative fuels and vehicles
- DOE Information Bridge - Citations to and full text of research report literature
- Energy Citations Database - Citations to DOE's energy related information since 1948

Science.gov is also …

an extraordinary partnership of information operations





With **National Archives and Records Administration** Support

Built on the precept that …

agencies have opportunity to make R&D more accessible

- Deep Web will continue to grow – surface Web lacked government R&D results
- Huge data collections are useful only if patron knows where to find them
- Technology paired with innovation offers solutions

Laying the foundation

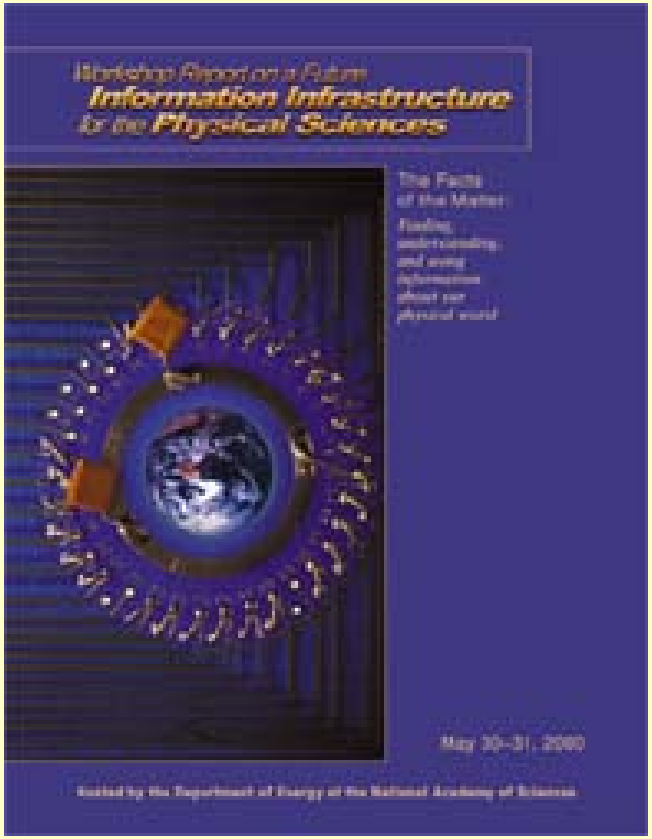
DOE convenes first workshop May 2000 at National Academy of Sciences

Panelists from academia, government, and industry

Workshop I – The Vision

- Adjust to changing modes of science communication
- Respond to call of National studies
- Enthusiastic endorsement to establish infrastructure

Trivelpiece Report -- The future science information infrastructure



www.osti.gov/physicalsciences

National studies over time

- Shared knowledge is the enabler of scientific progress
- Access to right info at the right time is goal
- Technology offers new promise to long-known problem

Workshop II – The Alliance

April 2001 Workshop at NIST

"Strengthening the Public Information Infrastructure for Science"

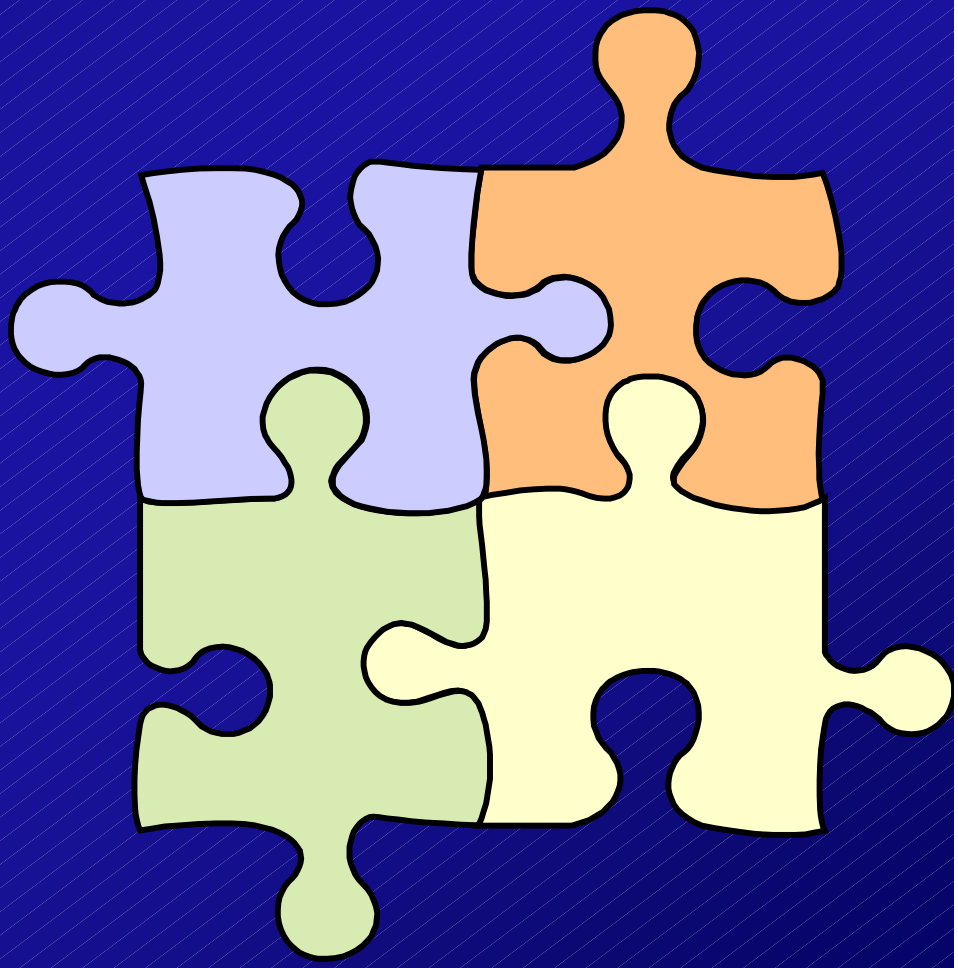
Workshop Organized by:

CENDI Information Managers Group
Center for Information Policy, University of Maryland
Department of Energy
National Institute of Standards and Technology
National Science Foundation

science.gov

Shared premises of agencies at workshop

- Web is the tool of choice
- Each science agency has information & services to fulfill its mission – to bring to Internet table
- Science is not bounded by organization or geography
- Interagency collaboration is necessary



Science.gov Alliance created April 2001

- Endorsed concept for interagency science portal
- Resulted in extraordinary voluntary collaboration – without special funding or legislative mandate!
- Supported E-gov initiative
- Brought together major and often hard-to-find information collections

Alliance governance

- Vision and strategic direction provided by Alliance principals
- Administration provided by chair or co-chairs selected from among the Alliance members, current co-chairs – NAL, USGS
- Technical Team provides technical direction and recommendations
- Additional task groups as needed (science.gov taxonomy, content development, Web site management, promotional/outreach activities)
- Major support by CENDI

Agency "Pot Luck"

- Agencies brought to the Internet table their unique information specialties
- Flagship service was metasearch: a single patron query pulses multiple agency databases
- A credit to many contributors

Many special contributors

- **Science.gov Alliance and CENDI –** seized opportunity without mandate;
- **FirstGov.gov –** supported the early stages through two grants and continual advice;
- **Over 200 staff members** within member agencies **–** have served in many capacities on working teams;
- **Commerce's NTIS –** manages browsetree of Web sites;
- **U.S. Geological Survey –** manages the Web site search engine;
- **Information International Associates (Bonnie Carroll and staff) –** provides the central secretariat support;
- **DOE/OSTI –** conceived idea; developed technological backbone and deep Web search; and hosts Web site.

Science.gov Launched

December 2002

- Greater access to selected, authoritative U.S. R&D results
- Connected isolated islands of information via a single Web portal
- Supported President's Management Agenda
- Utilized metasearch

They said it, year one …

"… makes it easier to round up scientific information that is strewn across the U.S. government's Web sites."

Science magazine

"… a great example of e-government in action."

Dr. John Marburger, Director, Office of Science and Technology Policy

"I guarantee you will be blown away by the resources at your disposal."

Stuart Brown, Editor, Internet Science Week

First ".gov" street in America?

Nov. 7, 2003

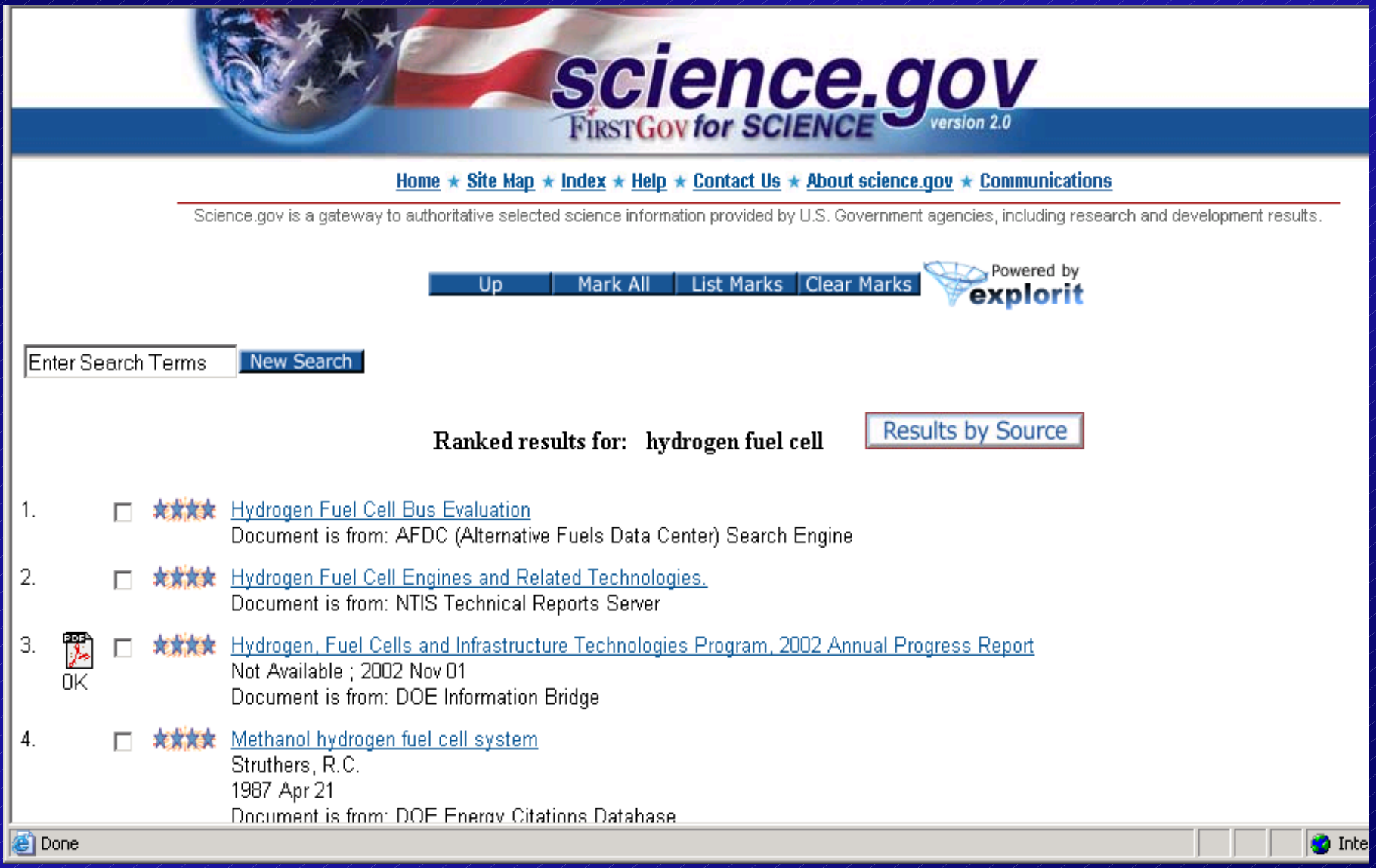
Oak Ridge, Tennessee, renames roadway

Launched May 11, 2004

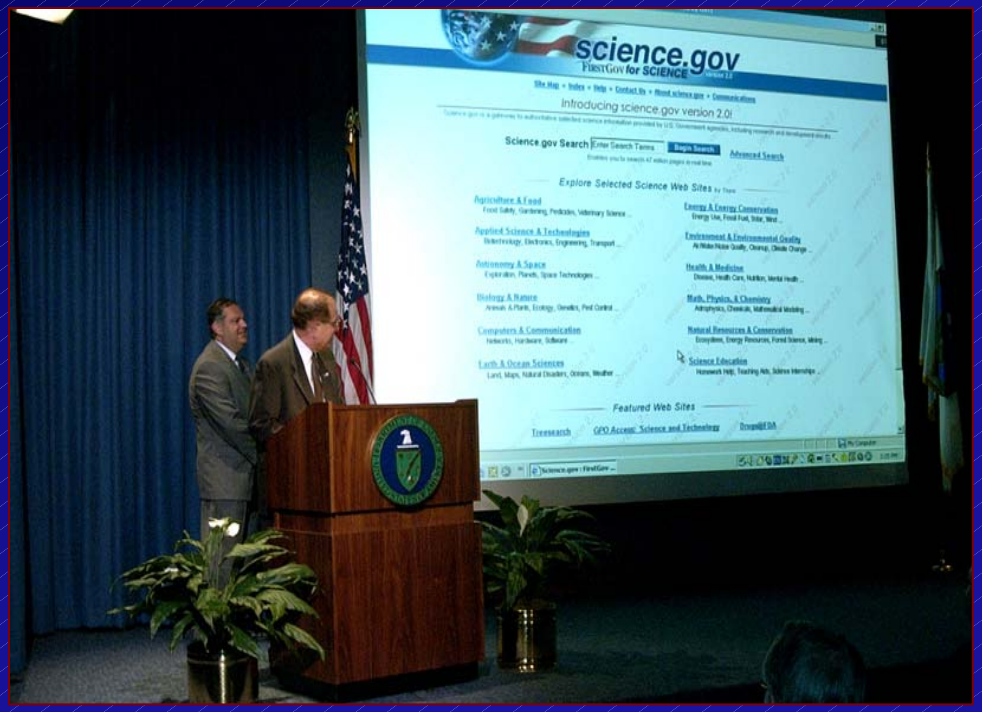
(Once again, pushing the envelope)

- Introduced *relevancy ranking* of metasearch results
- Enhanced options
  - One-step search across ALL databases
  - Advanced search
  - Progress status bar

Ranked results delivered to patron



DOE held launch ceremony



Secretary Spencer Abraham and Dr. Ray Orbach helped launch Version 2.0

"These agencies together have combined innovative technology, forward thinking, and hard work to build an invaluable science tool."

Secretary Abraham

They said it, round two

"The new site offers additional content, technological enhancements, and a newly developed relevancy ranking technology that helps patrons get to the best documents quickly."

Paula Hane, Information Today NewsBreaks

"Science.gov 2.0 plumbs depths of federal data … presents the hits in one set, ordered by their usefulness to the searcher."

Joab Jackson, Government Computer News

Continued collaboration and enhancement

- Version 3.0 – just months away
- Features:
  - Enhanced precision searching
    - ✓MetaRank
    - ✓Boolean and fielded searching
  - Alert service individualized for patrons
- Version 4.0 on horizon
- Other types of science content being explored

Science.gov 4.0 – the latest architecture

- Enhance Relevancy Ranking (DeepRank)
- Full-text Relevancy Ranking, Science.gov 4.0 Grid
- Launch Planned in 2006

Science.gov server located at OSTI

Internet user performs a search of OSTI's Science.gov Web server.

Science.gov server
located at OSTI

NIH Grid Node

DOE Grid Node

DOD Grid Node

OSTI server sends out query to node at each agency, where nodes and and databases are *co-located.*

Science.gov server
located at OSTI

NIH Grid Node

DOE Grid Node

DOD Grid Node

Node at each agency pulses it's databases and performs QuickRank.

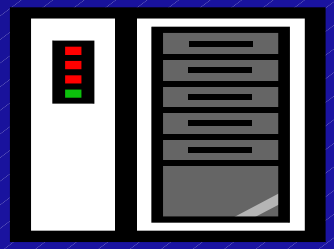
Science.gov server
located at OSTI

NIH Grid Node

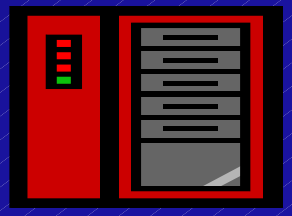
DOE Grid Node

DOD Grid Node

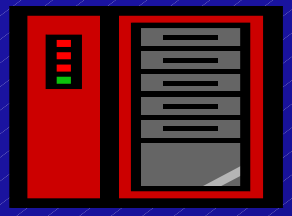
Agency nodes then retrieve the now QuickRanked, full-text results from their respective databases.



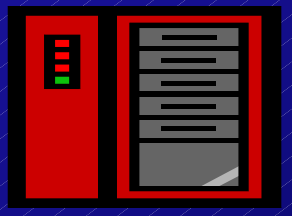
Science.gov server
located at OSTI



NIH Grid Node

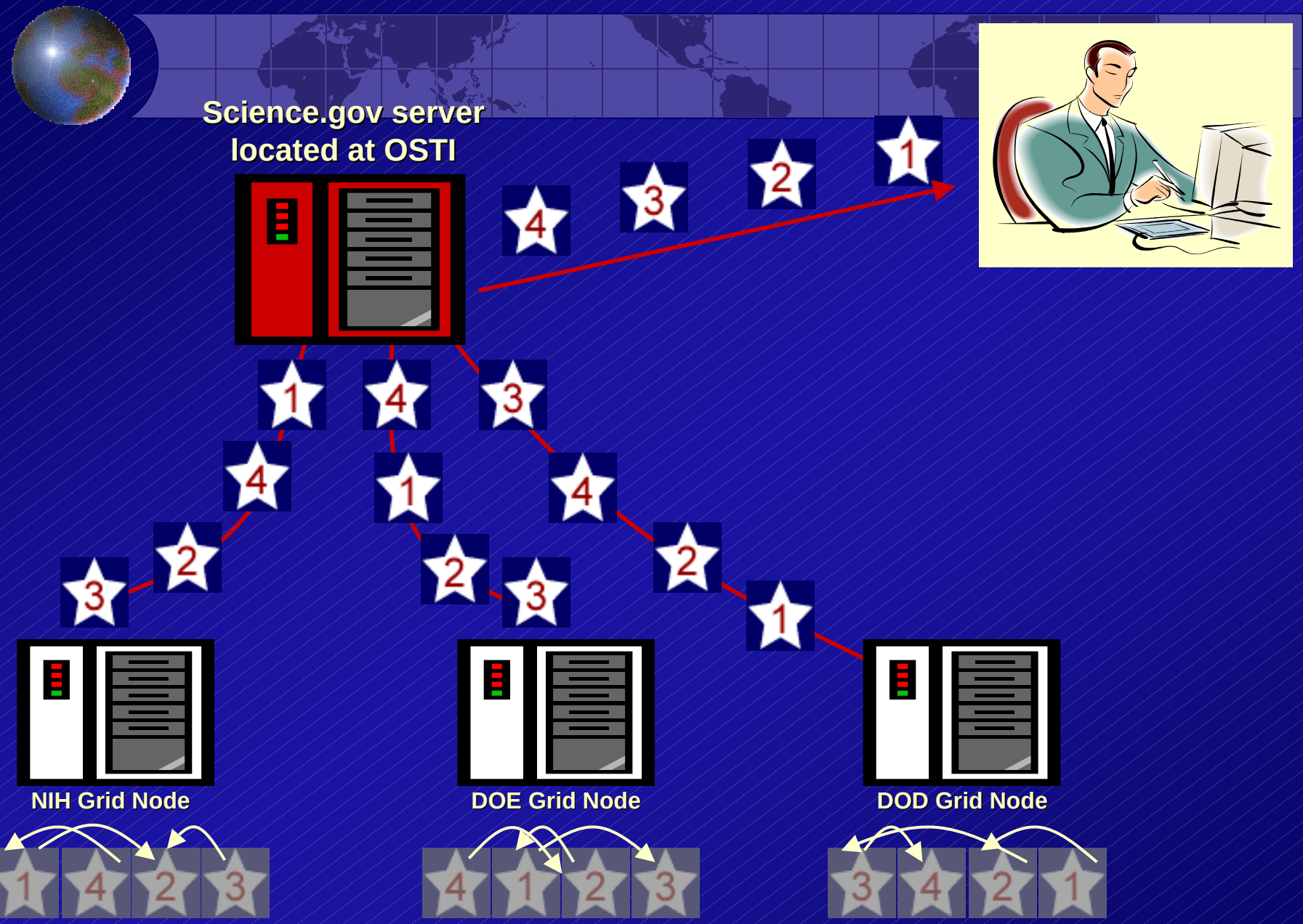


DOE Grid Node



DOD Grid Node

The QuickRanked results are then ranked based on the DeepRank algorithm.



The DeepRanked results are then merged at the OSTI server and rapidly returned to the user.

A Collaborative Success!

Science.gov tutorial

Science.gov tutorial you are about to view can be found at www.science.gov/communications