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Supporting E-science and Data Curation: Progress at Research Institutions and Their Libraries

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Supporting E-science and Data Curation: Progress at Research Institutions and Their Libraries

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April 17, 2010



ARL E-Science Activities

- **2006 Task Force created**

- NSF Workshop: *To Stand the Test of Time: Long-term Stewardship of Digital Data Sets in Science and Engineering* (2006)

<http://www.arl.org/bm~doc/digdatarpt.pdf>

- **2007 Task Force Report recommendations**

http://www.arl.org/bm~doc/ARL_EScience_final.pdf

- Education, awareness
- Workforce development
- Relationships with relevant organizations
- Infrastructure development (CNI)
- Policy development, new publishing genre



E-research engagement: The new paradigm

- Multi-institutional, international, collaborative context
- Data roles: planning, management, preservation, curation
- Well-integrated, sustainable models of support for research process



ARL E-Science Activities

- **2008 ARL/CNI Forum, *Reinventing Science Librarianship***
 - <http://www.arl.org/resources/pubs/fallforumproceedings/forum08proceedings.shtml>
- **Resources**
 - Talking Points <http://www.arl.org/bm~doc/e-science-talking-points.pdf>
 - <http://www.arl.org/rtl/eresearch/escience/>
- **2009-10 Working Group study of membership**



The ARL E-Science Survey

- Q: What is the status of institutional planning?
 - Campus structures
 - Infrastructure development
- Q: What is the status of library planning & engagement?
 - Library role in campus planning
 - Library services, infrastructure, capacity (staff)
 - Pressure points, areas of interest

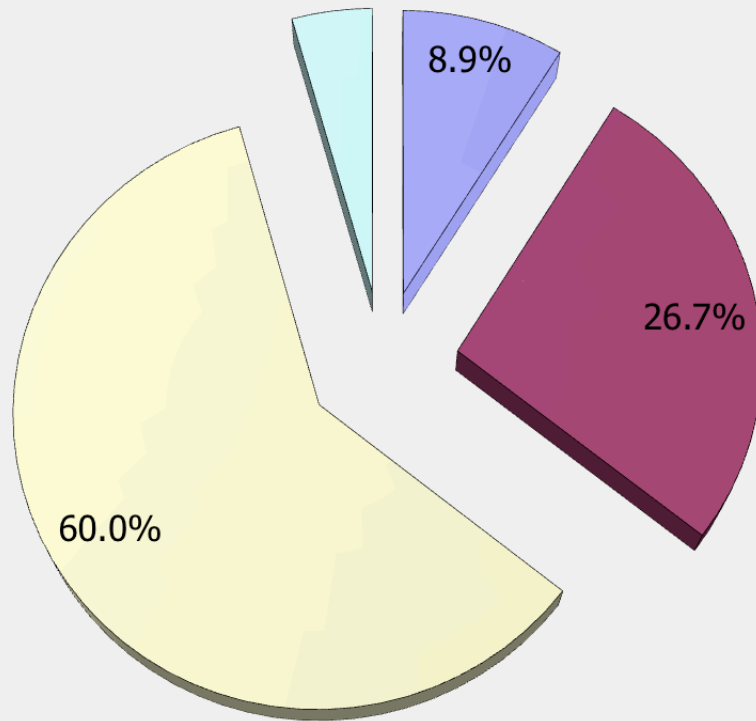


Institutional organizing behavior

- A: Widespread engagement (61 respondents)
 - Institutional infrastructure in place or planned at 77%
 - Most institutions have hybrid of institution-wide and unit planning & infrastructure (60%)
 - Only 9% are pursuing a purely institution-wide approach
 - Institution-wide approaches include: IT, Library, faculty/researchers, Office of Research



To centralize or decentralize?



- Institution-wide structure (such as a group or task force)
- Individual units (i.e., departments, colleges, schools, etc.) develop infrastructure and policies
- A hybrid structure: institution-wide and unit-specific efforts.
- Another organizational structure

The answer is, Yes!



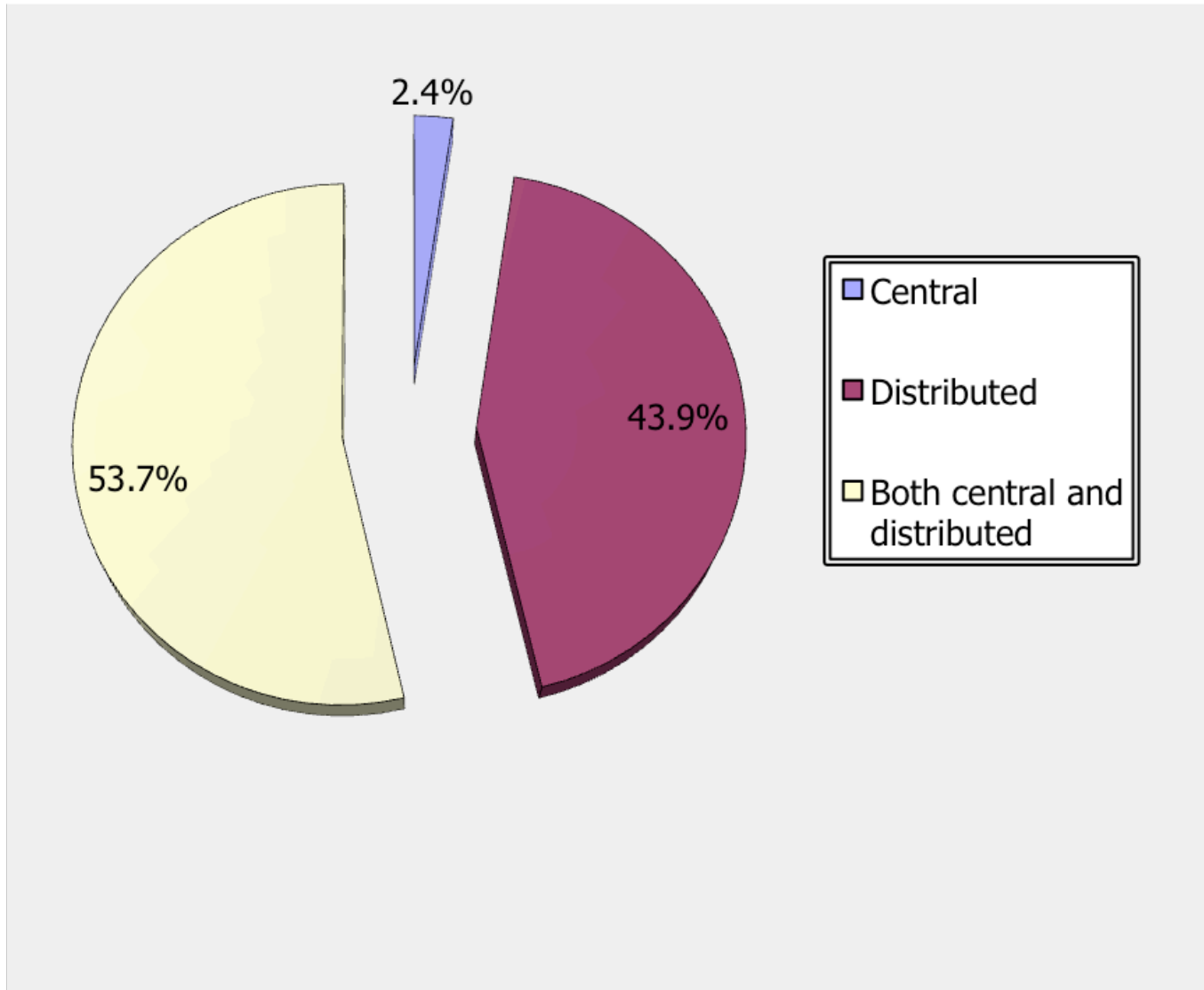
Put someone in charge?

Of those institutions with focused infrastructure

- 45% report designated unit to provide data curation support



Create a “Data Center”?



Centralized strategies

“A cyberinfrastructure task force is in the planning stages, and it will report to the President of the University.” – U Oregon

“Two groups exist: Cyberinfrastructure Council and Knowledge Management Committee. The Council is most involved in the high performance computing, data centers, other computing and network issues. The Knowledge Management Committee is more oriented to the content of escience and data curation...” – U Utah

“The locus for planning and services around e-science issues at the U. of Washington is the UW eScience Institute, an interdisciplinary and institution-wide coordinating body”



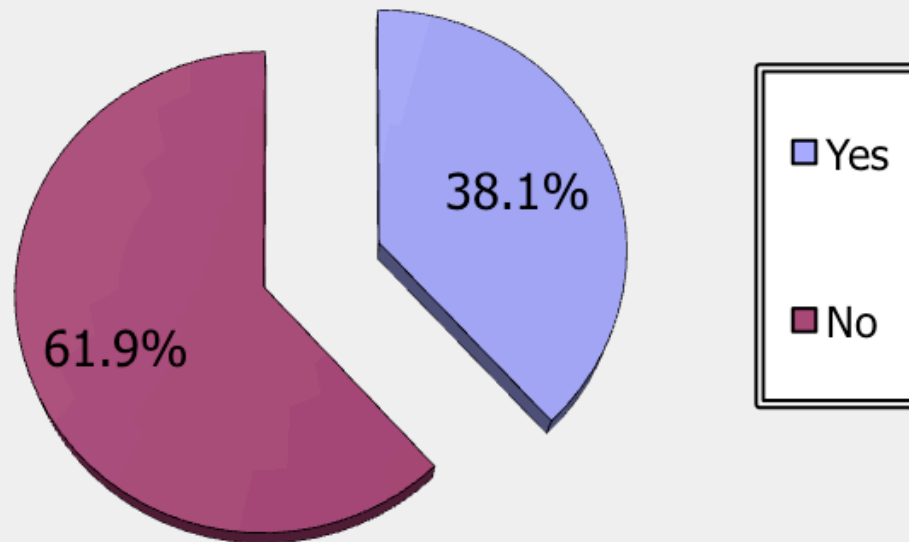
Decentralized themes

“Most science and engineering departments, labs and centers...have some infrastructure to support high performance computing, or provide software tools to process/visualize research data. But none...are clearly documented on a single webpage or other place where researchers can easily locate.” - MIT

“Currently there is no one central group or effort that focuses on overall planning, but a collection of overlapping initiatives and activities – This is largely because the university is highly decentralized and others in the institution do not think in terms of e-science but in terms of research supported by cyberinfrastructure.” - Purdue



What's happening with needs assessment?



Examples gathered at:
<http://www.arl.org/rtl/eresearch/escien/esciensurvey/surveyresearch.shtml#instdatres>



Are institutions getting grant funding?

- 19 institutions engaged in DataNet proposal development, most involved the library
- 14 libraries involved in other e-science grants (NIH, NSF, Mellon and Gates Foundations)



Organization-level strategies for success

- Do your homework
- Find partners, coordinate, collaborate
- Balance centralized strategies with engaging with those who are ready now
- Work on grant funding as part of the picture



Libraries are supporting e-Science

- Of libraries with institutional activity, 73% reported library involvement.
- Organization: group or group/department/individual lead

E-Research Working Group, Data Curation Working Group, e-Data Archiving Group, Science Data Services Team, Data Executive Group, E-Research Team

- 87% libraries offering service collaborate with other units (e.g., IT, colleges/departments, centers, Ofc. Research)



What is the emerging library service portfolio?

- Finding, using available infrastructure
 - 8 libraries maintain web site on services
- Finding relevant data, developing data management plans, rights management
 - 8 libraries offer training in data management
- Metadata and archiving consultation/support



How is the staff issue being addressed?

- Most (90%) rely on discipline librarians, many (66%) also have data librarians
- 64% reassigning existing staff
- 39% have hired e-science expertise
- 39% are planning to hire e-science expertise



Who are these people?

- 65 positions detailed:
 - Two named chairs
 - 71% had library/info science degree
 - 34% had disciplinary degree
 - 17% had both library and other disciplinary degree



Building teams on the service side to work with teams of researchers



Pressure Points for ARL Libraries

- Organizational:
 - Low recognition of importance of e-science support
 - Turf issues
 - Complexity of structures



Pressure Points for ARL Libraries

- Resources:
 - Staff with relevant expertise
 - Technology infrastructure
 - Budget constraints



Learn more

- ARL page for the survey:
<http://www.arl.org/rtl/eresearch/escien/esciensurvey/>
- Forthcoming report: May 2010

