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LTER DataBits

Information Management Newsletter of
The Long Term Ecological Research Network

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◆ **Good Reads**

Revolutionizing Science and Engineering through Cyberinfrastructure

- Karen Baker (PAL/CCE) and Jerry Wanetick (PAL/CCE)

D.E. Atkins, K.K. Droegemeier, S.I. Feldman, H. García-Molina, M.L. Klein, D.G. Messerschmitt, Pmessina, J.P. Ostriker, and M.H. Wright. 2003. Revolutionizing Science and Engineering through Cyberinfrastructure. NSF Blue-Ribbon Advisory Panel on Cyberinfrastructure.

http://www.communitytechnology.org/nsf_ci_report

The Atkins Report represents one in a series of milestones marking NSF supported computer science and technology digital development initiatives. It builds from earlier National Research Council reports focusing on e-Government (2002) and the environmental science grand challenges (2003) as well as the NSF report on supercomputer centers (1995); it emerges alongside reports on digital libraries (2003) and environmental cyberinfrastructure (2003). Bringing forward a recognition of the need for broad interdisciplinary coordination, it highlights the term 'cyberinfrastructure'. Revolution refers to doing things differently, in this case, with new types of scientific and engineering knowledge environments and organizations. We find new names emerging for such work arrangements, from collaboratory and grid to eScience communities. The report discusses not only new environments but also new roles: "The research community needs more broadly trained personnel with blended expertise in disciplinary science or engineering, mathematical and computational modeling, numerical methods, visualization, and sociotechnical understanding of grid or collaboratory organizations." Timely reading, as we consider the next decade of LTER science, the Atkins report opens the door on critical contemporary issues by articulating the need to define as well as to build cyberinfrastructure. It is initially disconcerting to find the notion of cyberinfrastructure remains fuzzy, but perhaps we are fortunate to be afforded some conceptual space. Rather than adopting a strictly technical approach, we may consider the opportunity, in addition to building cyberinfrastructure, of defining and designing cyberinfrastructure, as a part of a multi-dimensional research process rather than apart from it.

Building the Virtual State: IT and Institutional Change

- Florence Millerand (PAL/CCE)

Jane Fountain. 2001. Building the Virtual State: IT and Institutional Change. Brookings Institution Press.

The book addresses the implications of information technology for institutional change in government. Anchored and illustrated through three case studies, the author points out that the challenges that face the government to build a virtual state are not technological but are largely organizational and institutional. A virtual state -a government organized in terms of virtual agencies, cross-agency and public-private networks - requires more than a technical infrastructure for linking the computers of the government, it demands an institutional infrastructure to support new coordinated practices and procedures between a range of organizational systems. Useful both for information management scholars and for data management practitioners, this book helps to understand the frequent gap between the potential of 'objective' technology (the existing technology product or plan) and the reality of 'enacted' technology (the actual implementation of the planned technology) that results from the introduction of the 'objective' technology in pre-existing social relationships, organizational cultures, and institutional structures.