

Ethnographic Fieldwork and Infrastructure Studies

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Project: Interoperability Strategies for Scientific Cyberinfrastructure: A Comparative Study

Project Web Page: <http://interoperability.ucsd.edu>

NSF Program(s): Scientific Testbeds; Human Social Dynamics: Agents of Change

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We ask: How are data going to be made available...and widely usable? How will infrastructure and information systems be built to support data sharing?

Our goal: Comparative analysis with the goal of identifying features and facets of collaborative communities working on issues of interoperability.

This project explores the centrality of collaborative, interdisciplinary work in building information infrastructure. As new scientific infrastructure is emerging, a central question being posed is how to share data across time and across distributed organizational and social contexts. This issue is particularly important since some of the great political questions of our day, such as understanding climate and developing a sustainable relationship with our environment, depend upon the ability to federate data across organizational and disciplinary contexts. There have been a wealth of suggestions for technical fixes for this pressing concern, but there has been little study - and no comparative study - of the organizational and social dimensions of differing data handling and integration strategies.

As contemporary scientific questions increase in scope, conceptual and methodological frameworks must also broaden. Our project brings together a collaborative interdisciplinary team to address jointly selected contemporary cyberinfrastructure issues focusing on local practices and technology use that supports long-term scientific endeavors. We are looking simultaneously at the interdependent technical, organizational, and social processes involved in informatics and information system design including classification strategies, organizational structures, and ways of working as well as participant roles and responsibilities.

Through comparative study of three scientific communities - GEON, LTER, and Ocean Informatics - we seek to develop a grounded understanding of the complexities involved in producing and sustaining a shared scientific information infrastructure. Our methods draw from qualitative research - and include grounded theory, action research, design and sociotechnical analysis as well as systems and information science approaches. We conduct ethnographic analysis on documents and interviews; we use collaborative design in order to consider and facilitate interfaces with and between data, technology, and participants. Through design and articulation work such as community dialogue and mutual learning, we focus on building awareness of configurations and ramifications of technology use in today's scientific data handling arena.

Our work blends research and application, stretching from theory to enactment. While conducting infrastructure research, **we are sensitizing informatics, environmental science, and science studies communities to the need to consider in partnership the social and organizational dimensions of local work practices together with the technological.**

Project References:

KSBaker, DRibes, FMillerand, GCBowker, 2005. Interoperability Strategies for Scientific Cyberinfrastructure: Research and Practice. Proceedings of the American Society for Information Systems and Technology
http://interoperability.ucsd.edu/docs/05ASIST_CIP_wbox.pdf