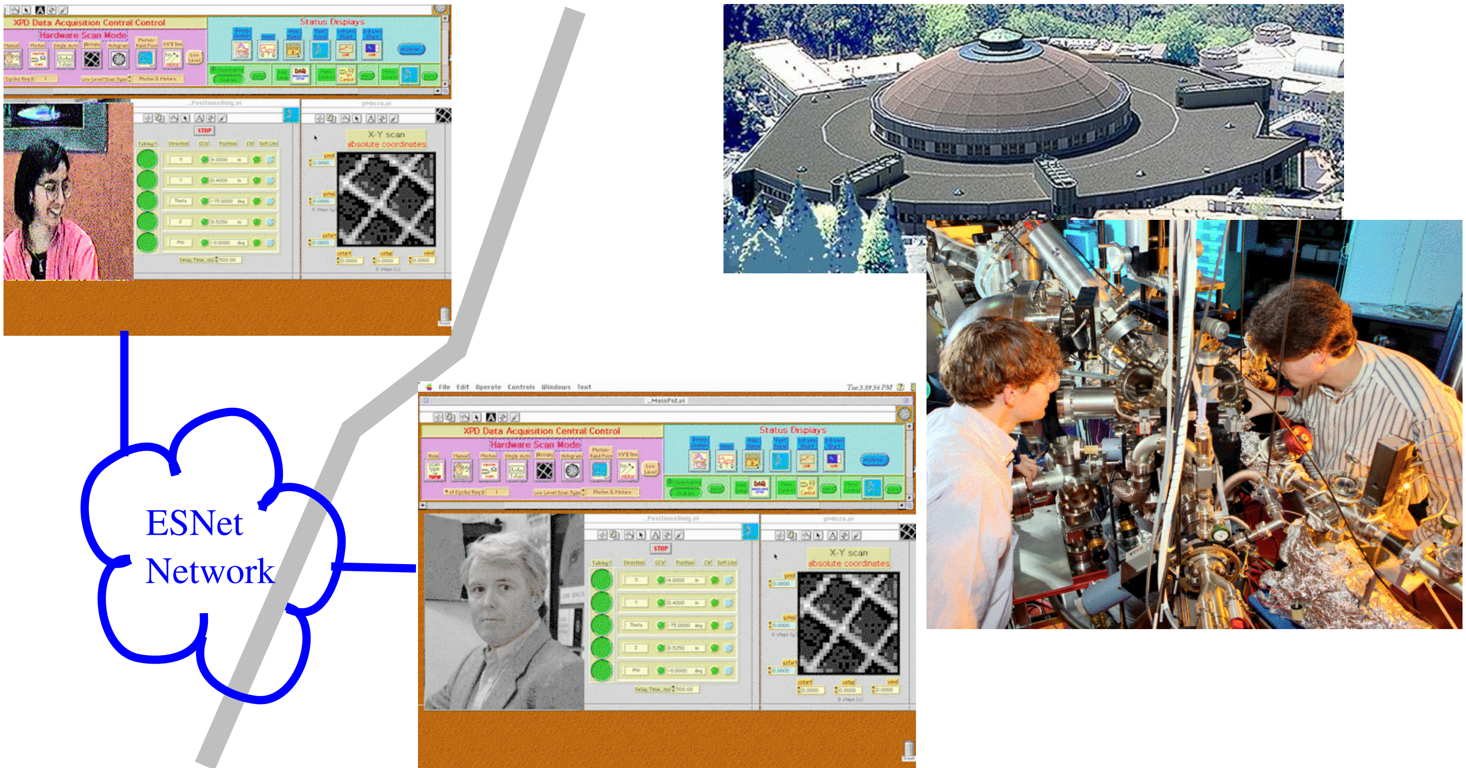
On-Line Facilities Provide Remote Collaboration Capabilities

A collection of emerging technologies, together with work in distributed computing completed in the DOE Energy Research community over the past several years, is making it possible to place large-scale unique DOE facilities on-line. The Distributed, Collaboratory Experiment Environments (DCEE) Program consists of four projects building prototype remote experiment and collaborative environments. The term "collaboratories" was coined in a National Research Council report[1]. The goal of collaboratories is to provide complete location-independent access to instruments, data acquisition and analysis resources, as well as to collaborating researchers.

The work underway in the DCEE projects represents some of the research and development required in computer science to make collaboratories a reality. The first phase of the projects provided facilities such as remote experiment monitoring capabilities and some researcher interaction capabilities. This functionality, however, is only the beginning of what is required to provide a complete collaboratory other components are still needed. Capabilities including data dissemination to multiple users, resource management for the sharing of experiment control, safety and security, electronic laboratory notebooks, elements of tele-presence, and integrated user interfaces all need further research and development. A complete collaboratory environment will allow researchers to collaborate with each other and run experiments as if they were in the same room regardless of actual location.

The DCEE program is funded by the DOE Office of Energy Research, Mathematical, Information and Computational Sciences Division. It began in early calendar 1995 and, although there is much work still to be completed, it has already produced promising results. The vision is to "accelerate DOE mission accomplishments through advanced collaboration and simulation capabilities." Information about the DCEE projects is available via the WWW page: *http://www-itg.lbl.gov/DCEEpage/DCEE_Overview.html*.

1. --"National Collaboratories - Applying Information-Technology for Scientific Research," Committee on a National Collaboratory, National Research Council. National Academy Press, Washington, D. C., 1993.



The Spectro-Microscopy Collaboratory DCEE project