Sustainability Plan

Sustainability is the continuance of community, activities, and beneficial outcomes past the period of NSF funding of the Center. Though financial support is necessary for the Center to operate, there are other factors that contribute to sustainable outcomes. The Center is focusing on all forms of capacity building, including:

1. Increasing human capacity through hiring and development of future leaders
2. Providing effective engagement of faculty and staff
3. Improving the effectiveness of collaborative interactions
4. Improving the nimbleness and adaptability of the Center to emerging opportunities
5. Developing new and diverse funding sources

The first three forms target improving the quality of human engagement. The Center aims to build high quality human capacity by extending the involvement of faculty.

The fourth requires awareness of the academic landscape and the ability to recognize and the capacity to provide meaningful services to the university and broader community. Lastly, the Center is building its research base. Our activities in these capacity building areas are described below.

Faculty Engagement

A key factor in Center sustainability is the development of the next generation of leadership. Interdisciplinary teamwork and collaboration is complex, and leading the Center's efforts requires substantial skill. As the Center grows and expands its reach, it will become increasingly important that faculty develop the knowledge and skills necessary to lead this complex effort. PI Dr. Ann Gates is investing time and energy mentoring the involved faculty and ensuring that Center sustainability will not be hampered by a lack of leadership.

A second approach to building the human capacity of the Center is to **increase the number of faculty who contribute** to the vision and mission of the Center. This is being addressed through the addition of staff and involvement of new faculty. For example, Dr. Pennington was hired to provide leadership in the adoption of cyberinfrastructure technologies across campus, elicit requirements that lead to innovative ways to analyze and visualize complex systems that advance the understanding and knowledge of scientific and engineering phenomena, and facilitate productive and effective collaborative teams.

The CyberShARE Center Steering Committee recommended **reduced teaching workload** for CyberShARE faculty as a strategy to increase the research capacity of the Center and as an incentive to attract

additional faculty. The Center will seek guidance from the administration to realize this recommendation.

Services

On January 17, 2011, the National Science Foundation (NSF) began requiring Data Management Plans for all proposals, regardless of project size (NSF Grant Proposal Guide, Chapter II.C.2.j). Other funding agencies have their own data management initiatives. CyberShARE is developing a Data Management System, called MetaShare, that will serve as a bridge between independent researchers and small teams that do not have access to community data management infrastructure and large institutional or national data archives. The goal of the MetaShARE project is to engage researchers at the earliest point possible in the data lifecycle, mentor them through the process of developing appropriate metadata, provide short term data management services, and assist them through the transition to a long-term data archive. The MetaShare System is being created to support researchers in three phases of the data management lifecycle: Phase 1: creation of a data management plan; Phase 2: documentation of collected data through metadata; and Phase 3: discovery of data through metadata. CyberShARE is developing a fee structure to provide these data management services to UTEP faculty.

Other areas in which the Center is developing services are in visualization and collaboration tools. In addition, the CyberShARE Center has expertise in building collaborative interdisciplinary teams, and it is developing a model to support such efforts through a mentoring process that addresses the human barriers to interdisciplinary collaboration and CI adoption. The effort will focus on the creation of fluid, flexible, and temporary organizational arrangements that provide the necessary time and focus; mentoring that efficiently enables the process; and tools that facilitate interactions. The CyberShARE team envisions that the Center will serve as a conduit for researchers across campus to meet, share ideas, and develop new innovative directions in research.

Research Base

CyberShARE will seek 5-year funding from the NSF CREST program in 2012. In addition, CyberShARE will seek funding under the following NSF programs:

- Eager
- CI-TEAM
- PIRE
- IGERT
- CDI
- other programs under the Office of Cyberinfrastructure

Drs. Craig Tweedie and Deana Pennington are working on a large collaborative proposal with USDA. Deana Pennington is also working on a large collaborative NIH proposal. CyberShARE will diversify its funding by seeking funding in agencies such as Department of Defense, Department of Energy, and others.