LEARN, UTSA and Collaboration with CUDI

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Collaborate
Innovate
Learn
Research
LEARN
Lonestar
Education
And
Research
Network


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EARN Mission

- is a non-profit collaboration of Texas education institutions
- supports the research, education, health care, and public service missions through the innovative development, operation, and utilization of advanced statewide networking
- access to global resources, and related cyber infrastructure services

EARN

he universities of Texas utilize LEARN for the following:

- LEARN is the transport for the TACC connection to the Extensible Terascale Facility Grid.
- Data Center Consolidation
- LEARN increases the bandwidth providing new capabilities for P-20 Texas institutions.
- LEARN produces a new protection for connections serving Austin, Houston, Dallas and San Antonio.
- LEARN provides an aggregate connection to I2

4 LEARN Members

Baylor University
Baylor College of Medicine
Lamar University
Northeast Texas Consortium (NETnet)
Prairie View A&M University
Rice University
Sam Houston State University
Southern Methodist University
Stephen F. Austin State University
Texas A&M University
Texas A&M University System
Texas A&M University System Health Science Center
Texas A&M University-Corpus Christi
Texas Association of Community Colleges
Texas Christian University
Texas State University - San Marcos
Texas Education Telecommunications Network (TETN)
Texas Tech University
Texas Tech University System

- University of Houston System
- University of North Texas System
- University of Texas at Arlington
- University of Texas at Austin
- University of Texas at Dallas
- University of Texas at El Paso
- University of Texas Health Science Center at Houston
- University of Texas Health Science Center at San Antonio
- University of Texas Health Center at Tyler
- University of Texas M.D. Anderson Cancer Center
- University of Texas Medical Branch at Galveston
- University of Texas - Pan American
- University of Texas at San Antonio
- University of Texas Southwestern Medical Center at Dallas
- University of Texas System

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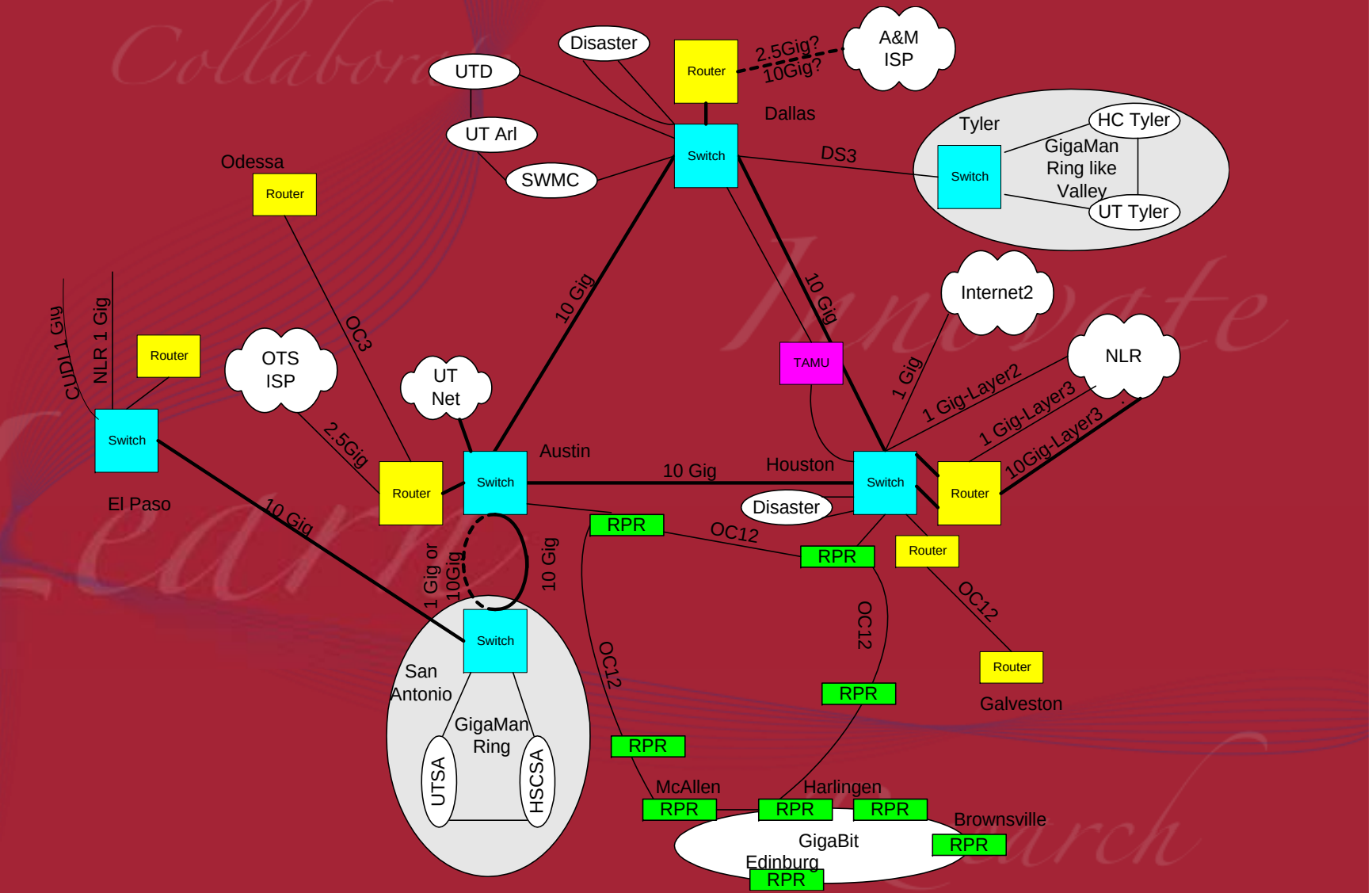


ome LEARN enabled applications

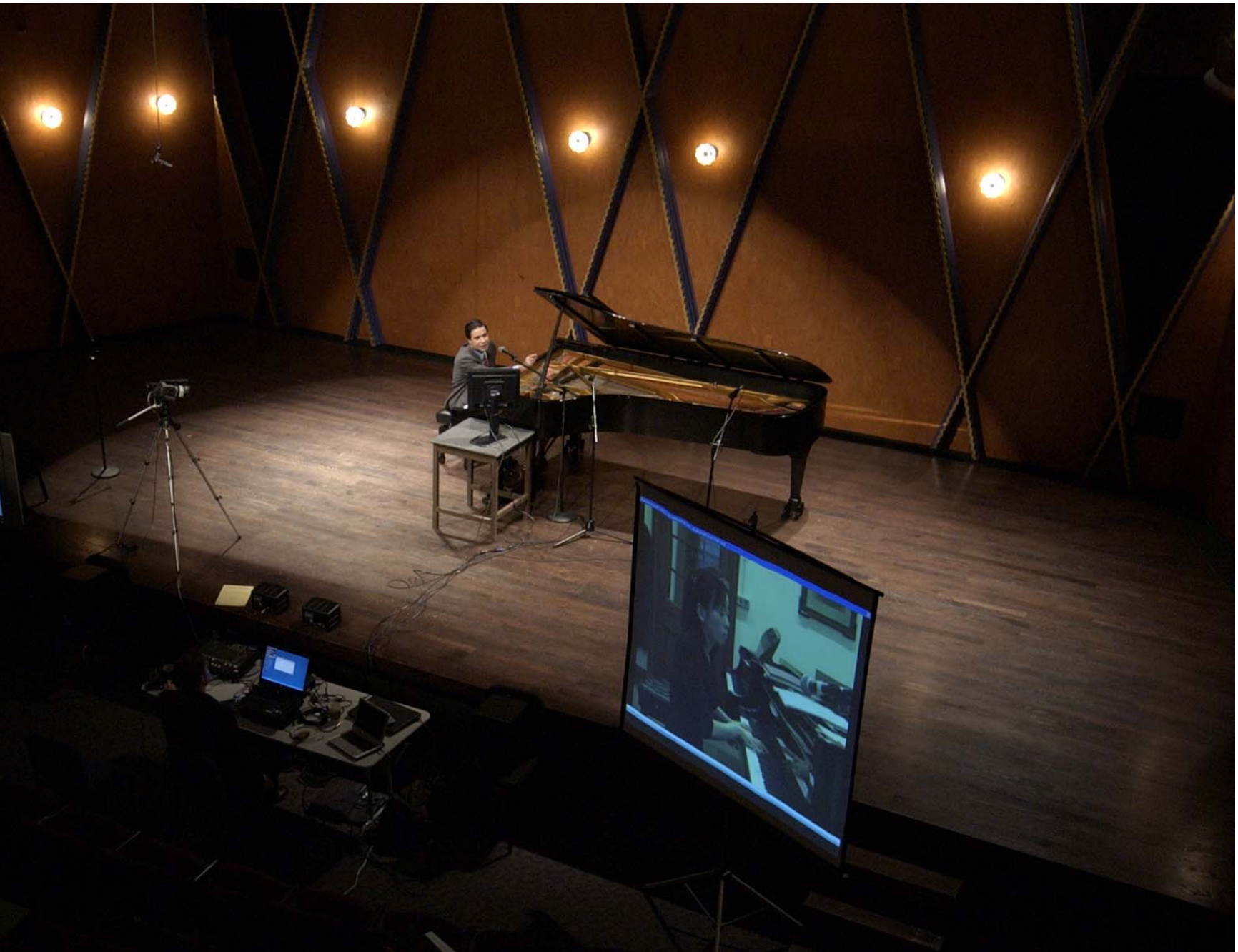
TCU Masters Class

Collaborate

Innovate

Learn

Research



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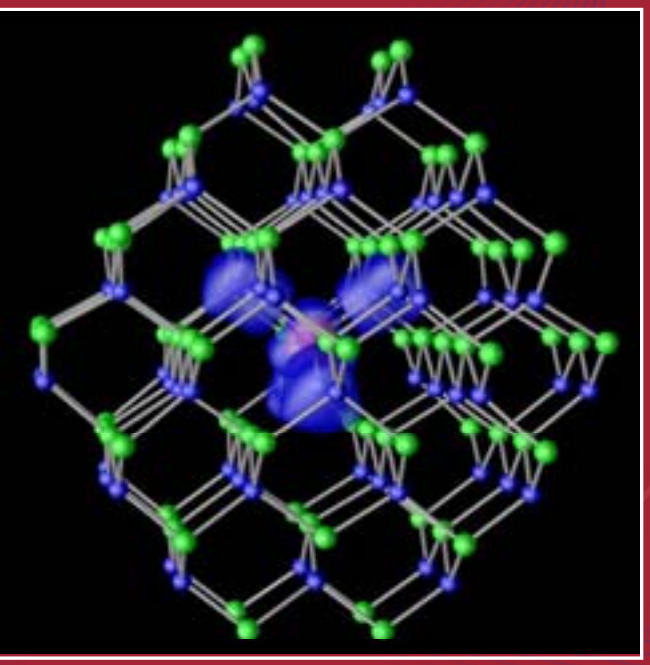
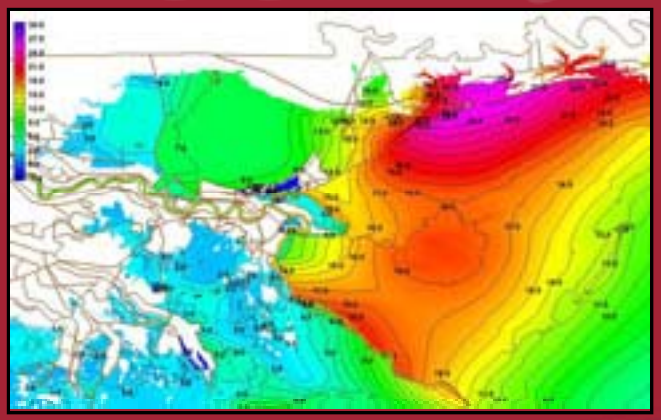
TCU Masters Class

Texas is the big player in grid computing

exas Advanced Computer Center



- The Science of Small
- Takes a Big Computer (what does this mean? Which image does the text apply?

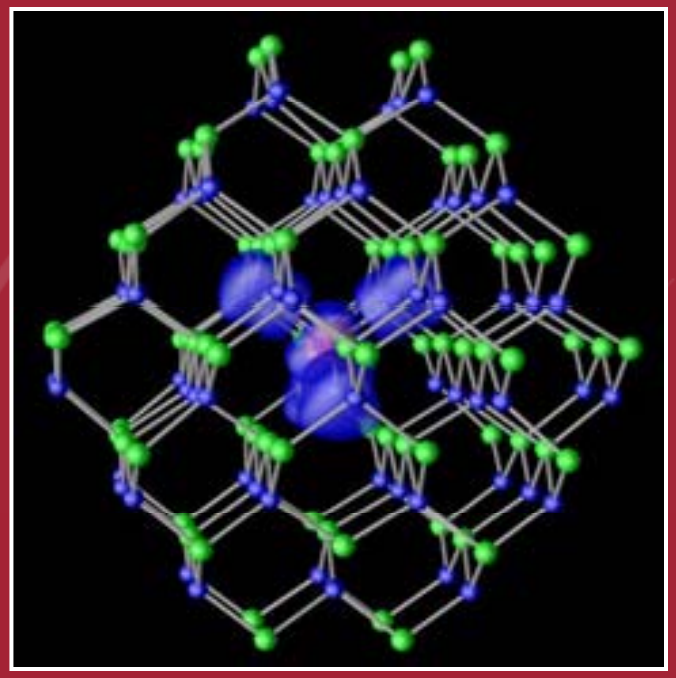


Collaborate
Innovate
Research

exas Advanced Computer Center

Mission

- To enhance the research and education programs of the University of Texas at Austin and its partners through research, development, operation and support of advanced computing technologies



TeraGrid™

ACC

TACC provides comprehensive advanced computing resources, ncluding:

- high performance computing (HPC) systems of a variety of architectures
- advanced scientific visualization (SciVis) resources
- massive data storage/archival systems to store the vast quantities of data that result from performing simulations on HPC systems and developing visualizations of large data sets.

UT GRID

Condor
High Throughput Computing

ACC Research & Development

TACC's current research and development activity and main area of interest:

- Evaluating and modeling the performance characteristics of HPC systems
- Developing algorithms and codes on these systems

ACC Research & Development

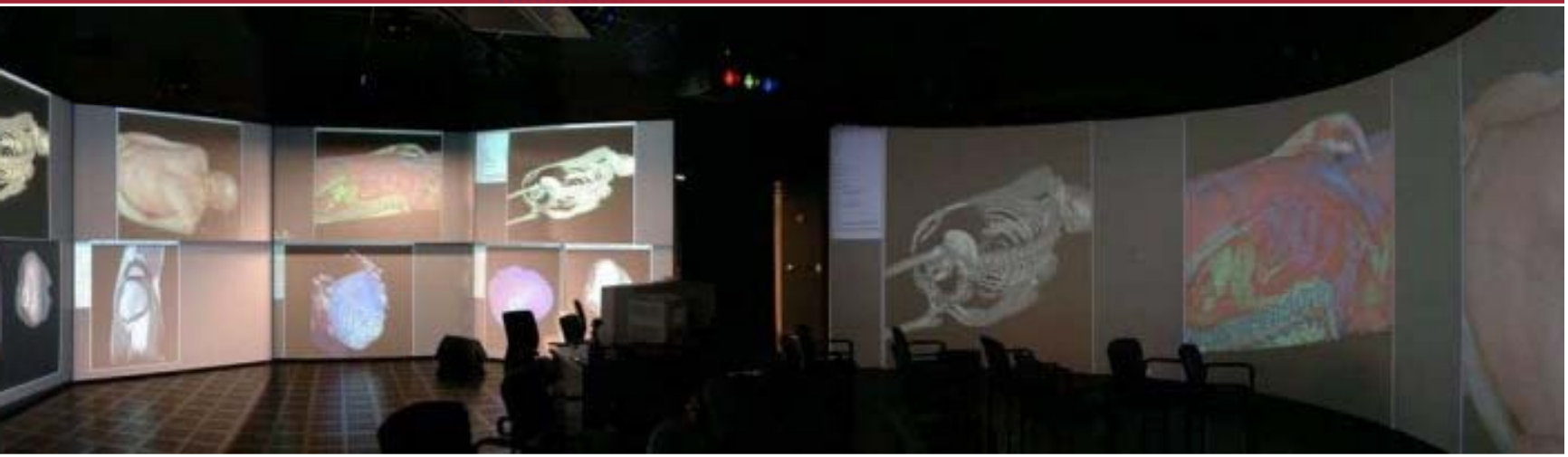
TACC's other research and development activities and areas of interest include:

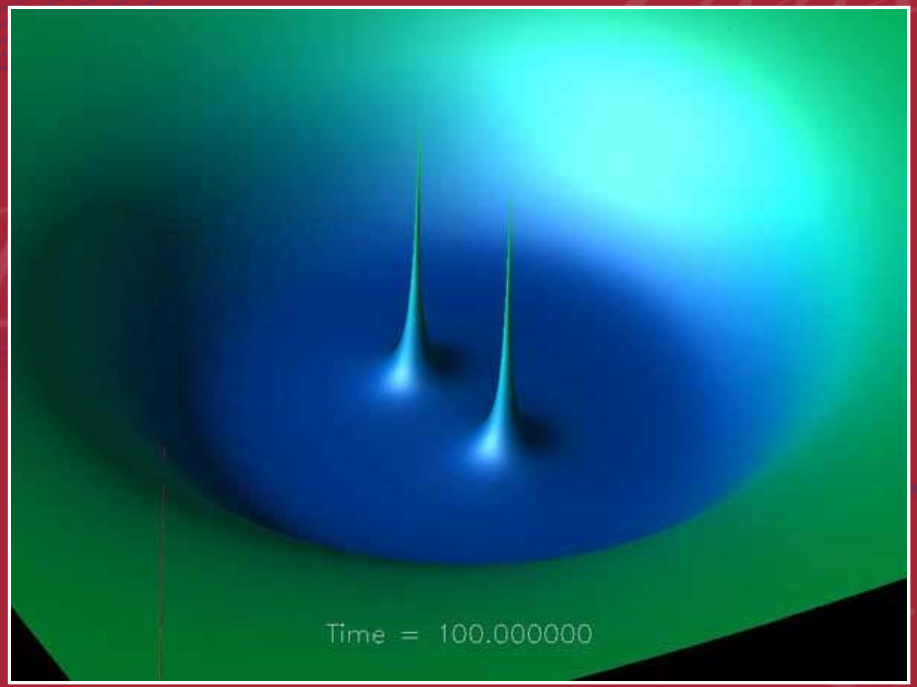
- exploring the impact of large displays and immersive techniques on data analysis and knowledge discovery
- developing new visualization tools for collaborative and remote visualization
- building reliable, high-performance commodity clusters for HPC simulations and scientific visualization
- developing Computational Grid software to seamlessly integrate TACC HPC, scientific visualization

ACC Visualization

TACC operates an immersive visualization laboratory with the following esources:

- Terascale remote visualization system, consisting of a Sun E25K with 128 processors, 512 Gigabytes of shared memory, and access to over a Terabyte of storage
- 8-processor SGI Prism with 4 ATI FireGL X3 256MB graphics cards
- Cylindrically-symmetric, 3x1 edge-blended front-projection power wall
- Large-panel, 5x2 tiled power wall
- Video and audio editing systems editing

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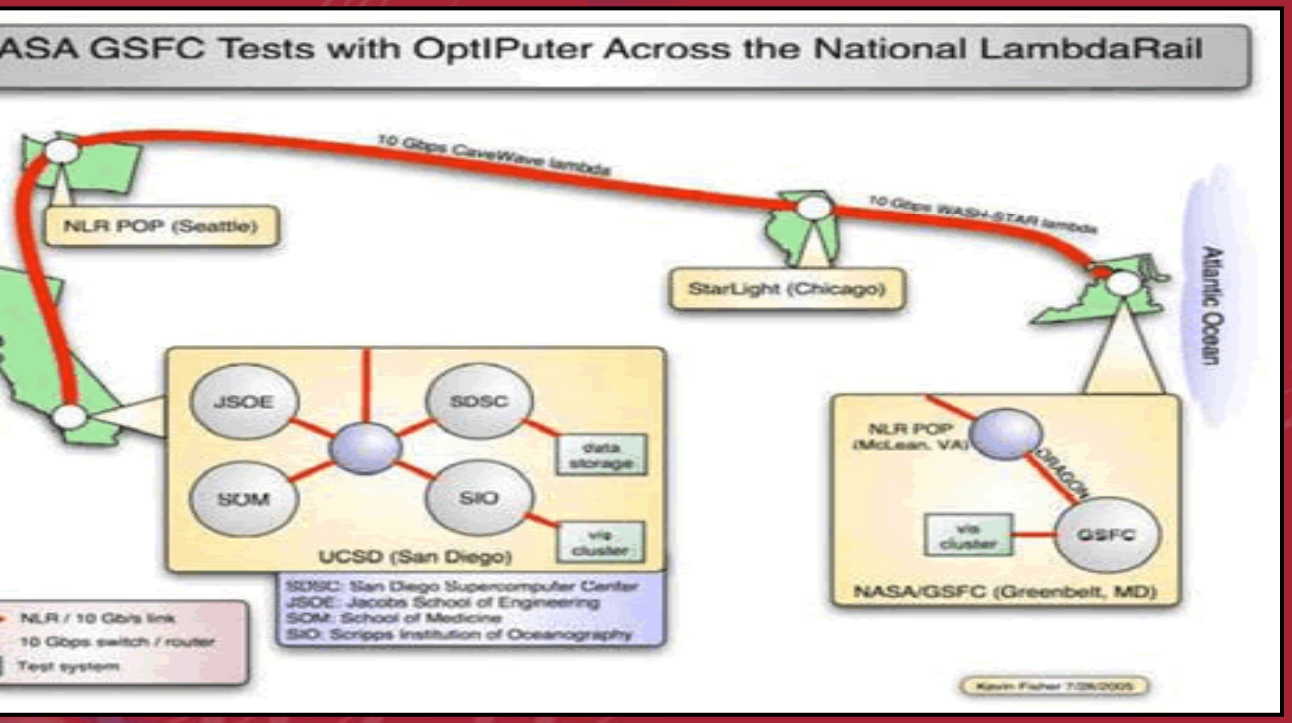
ome LEARN enabled applications

- TCU Masters Class
- Texas is the big player in grid computing
- Participation in the Optiputer Project

ptIPuter



e OptIPuter exploits a new world in which the central
nitectural element is optical networking - not computers -
ating 'supernetworks.'"

Valerie E. Taylor,
Texas A&M University
Co-Principal investigator

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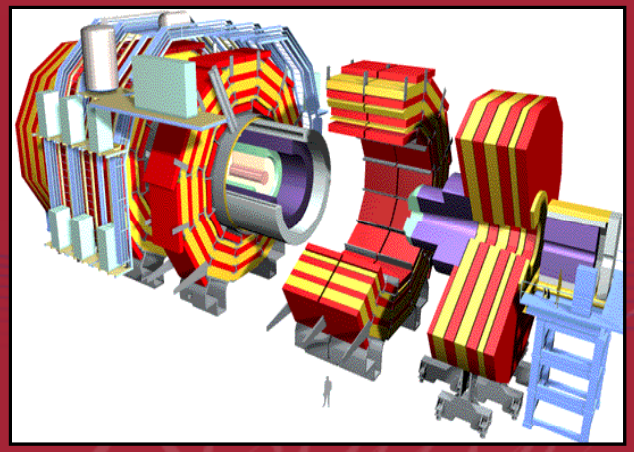
- The Large Hadron Collider

Where physics and cosmology meet

LHC - the aim of the experiment:

o smash protons moving at 99.999999% of the speed of ght into each other and so recreate conditions a fraction a second after the Big Bang. The LHC experiments try nd work out what happened.



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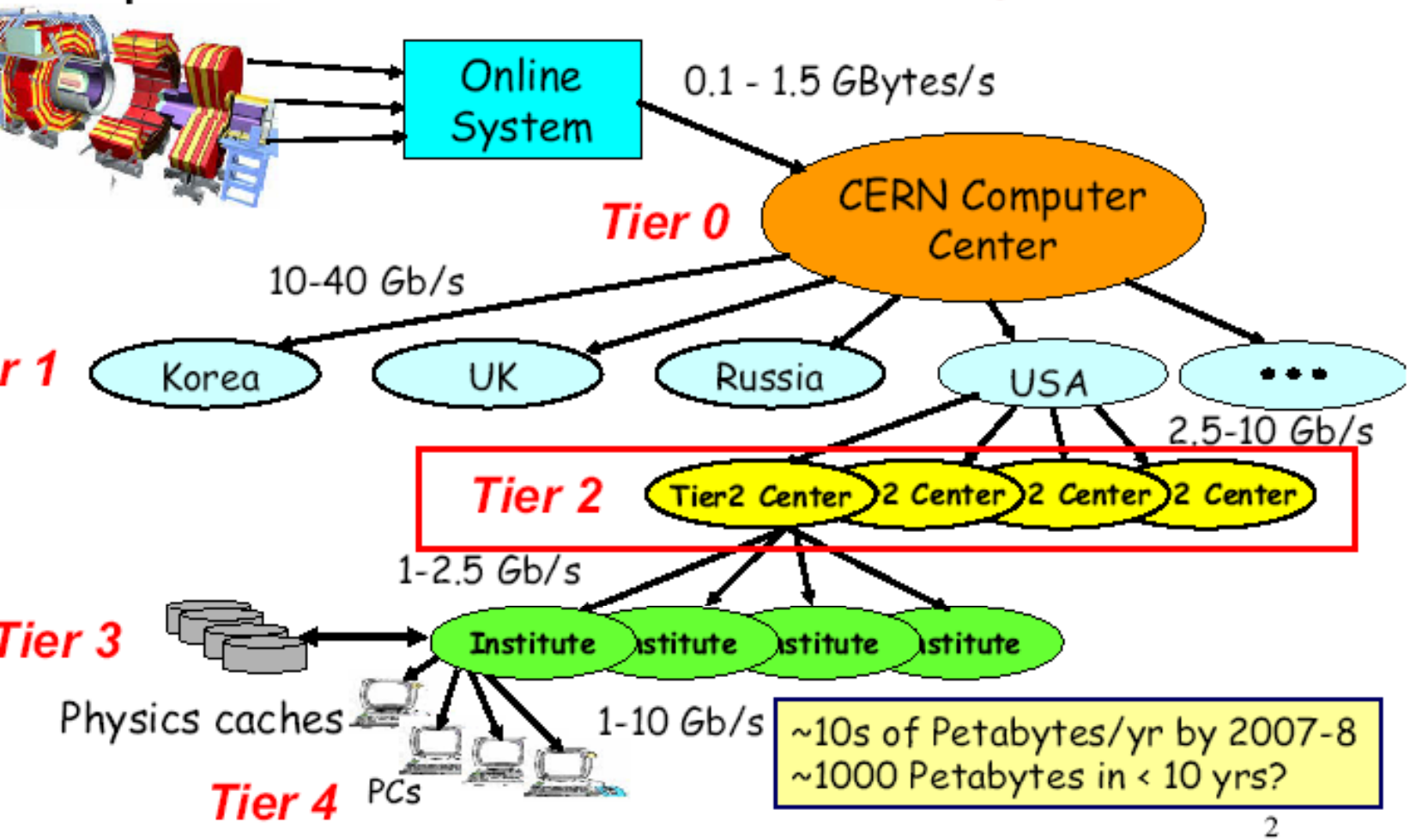
C2C

How can the LHC Collaborators at Universities Participate?

THE GRID BASED LHC DISCOVERY MACHINE

Work within ITR/CISE Community ; LHC a Driver



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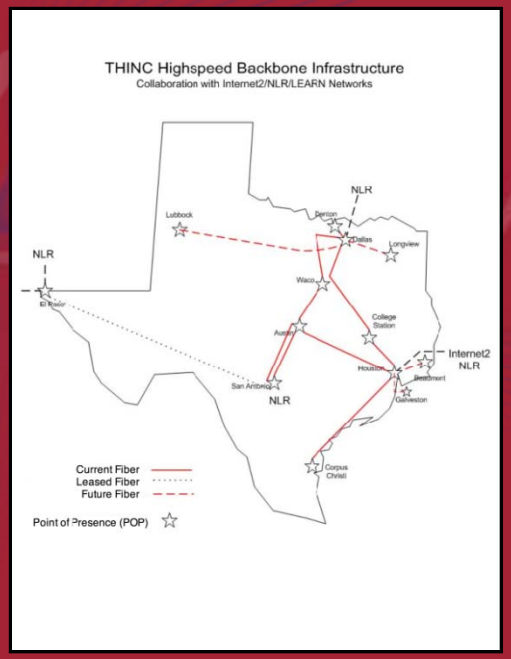
- Data Center Consolidation / Disaster Avoidance

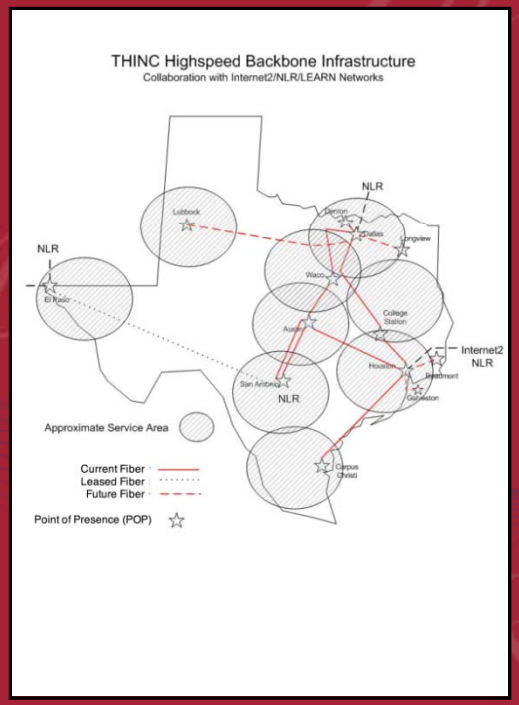
n the LEARN horizon

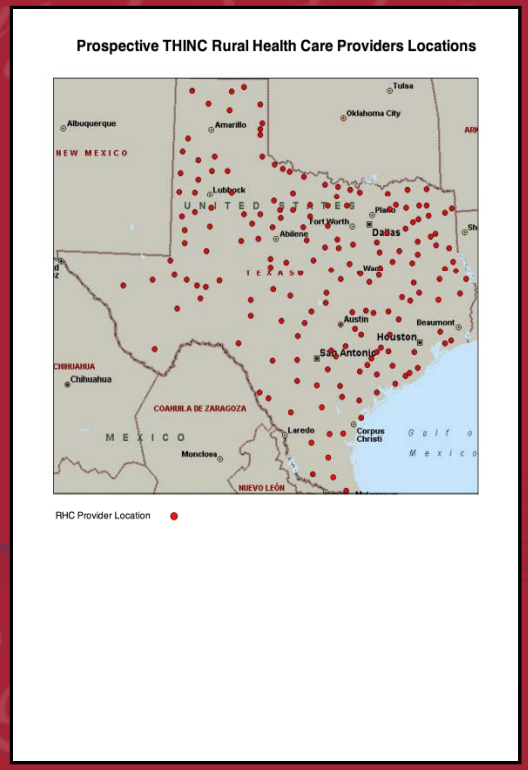
- Merger with the North Texas Gigapop
- West Texas – a new partnership
- A LEARN Federated Identity
- FCC Rural Health Care Pilot Program
- GENI

CC Rural Healthcare Pilot Program

- Texas Health Information Network Collaboration (THINC) $11M
- LEARN Identified as provider for initial 1GigE backbone







GENI

There is interest in participation in the GENI project via the LEARN network

What is GENI?

GENI is an experimental facility called the Global Environment for Network Innovation. GENI is designed to allow experiments on a wide variety of problems in communications, networking, distributed systems, cyber-security, and networked services and applications.

GENI

So is GENI the "next" Internet?

GENI is a research facility. It is not a replacement for the Internet (or any other communications technology). Rather the purpose of GENI to test and mature a wide range of research ideas in data communications and distributed systems. As those ideas mature, we may find that we adapt the Internet to incorporate those ideas. Or we may find a new communications infrastructure that gets built alongside the Internet. Either result is a success.

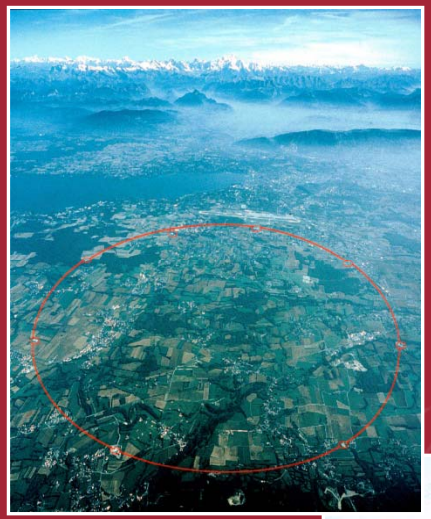
Is GENI only for academic researchers?

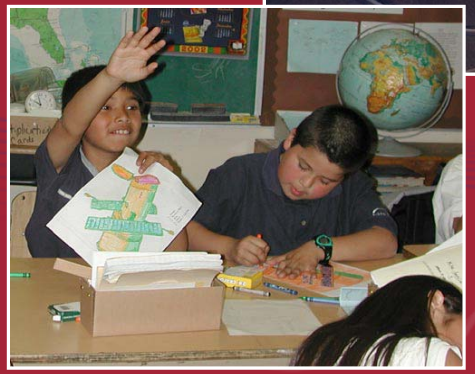
Absolutely not! GENI seeks the widest possible participation from researchers in industry and academia. We're also interested in reciprocal teaming arrangements with researchers outside the US.

bout UTSA

UTSA is in the process of establishing a center that is uniquely designed to leverage technology resources and research activities to benefit UTSA and partner institutions:

- Augmenting the rate of discovery for all investigators
- Invigorating scholarship for graduate students, undergrads, and students of the community
- Providing leadership in international networking
- Developing culturally diverse distributed learning and knowledge creation communities
- Enabling interdisciplinary research activities mediated through advanced information and communications technologies





or More Information

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C'08

THE International conference for High – Performance Computing and Networking

November 15-21, 2008

Hosted by ACM, IEEE, UT and LEARN

Over 9,000 participants expected