

UT System Research Cyberinfrastructure Project (UTRC)

What is UTRC?

UT System has developed and initiated a strategic plan to build and leverage comprehensive, integrated infrastructure to create an environment that promotes innovation and discovery. The UT System and its 15 institutions are working together to develop, deploy, operate, support, and upgrade the UT System Research Cyberinfrastructure (UTRC) Project with competitive advantages and leadership capabilities that surpass those of our peer institutions. UTRC presents superior, comprehensive scientific capabilities that provide research advantages that:

- enable breakthrough results and impact science,
- attract superior faculty and students, and
- attract funding to UT System institutions.

What are the component projects of UTRC?

Some features of the UTRC discovery environment will include:

- **Advanced computing** is being provided by the new **Lonestar** supercomputing system (with archival storage on the Ranch archival facility) at the Texas Advanced Computing Center (TACC). Lonestar enables parallel computing applications, large shared memory applications, high throughput computing, and remote visualization of large scale data. **Lonestar** is a national TeraGrid resource and is one of the most powerful, productive, and comprehensive academic systems in the US, and its availability within UTRC now presents a scientific advantage to researchers at UT System institutions.
- **Data sharing and services** will be provided by the **UT Data Repository (UTDR)**. **UTDR** will enable long-term data storage, hosting of large scientific data collections for collaborations and communities, and analysis capabilities that span multiple collections. **UTDR** will facilitate data management plans that are now required in all NSF and NIH proposals. **UTDR** will be designed by a multi-institution team to ensure it meets diverse research requirements and can scale up for future needs.
- **High bandwidth network connectivity** between all UT System institutions will be provided to enable sharing of data and movement of data to/from computing and data systems. **UT SysNet** will deploy this high-bandwidth network capability (10 Gbps connection) between the institutions, and will work with institutions to utilize it by resolving 'last-mile' issues into research facilities and centers on their campuses.

UTRC offers increased integration, consistent interfaces, and professional support to ensure that it is utilized effectively and to facilitate collaboration. UTRC resources will receive **regular upgrades in capabilities and usability** to maintain a scientifically competitive advantage over peer research institutions. UTRC incorporates an integrated, effective operations and user support team across UT System. This team ensures that the systems comprising UTRC (central and distributed, connected at high bandwidth) are easy to use, and works with researchers to help use systems, develop applications, manage and analyze data, and integrate with the decentralized resources.

Please visit www.utsystem.edu/research-cyberinfrastructure for more information.

When will UTRC be ready to support my research?

The Lonestar system is available **now** for computational research. UT SysNet access at 10Gbps connectivity is being deployed at campuses now, with many connected in 2011 and the rest in 2012. UTDR is being designed now with inputs from all of the institutions, with the first phase of deployment expected by October 2011.

More information will be added to this page as UTDR comes online and as UT System institutions are connected at 10 Gbps.

What is Lonestar? How do I gain access?

The first initiative of UTRC is in production now and available to researchers at all UT System institution immediately. Lonestar is a fully integrated advanced computing system on which UT System researchers can compute, store, analyze, generate, process, and visualize large amounts of data simply all in one place with a single user account. As part of UTRC, UT System researchers have **unique access** to allocations on Lonestar which integrates:

- Over 300 teraflops peak performance for parallel computing applications
- Large shared memory nodes with over 1 TB memory
- GPU nodes for remote visualization and accelerated computing
- Software tools and policies to enable high throughput computing

Getting an account (defining a project, and requesting an allocation) is easy for UT System institution researchers. The lead researcher for a project should connect to the [TACC User Portal](http://www.tacc.utexas.edu/user-services/new-user-info/) to request a project allocation; colleagues (collaborators, students, etc.) can also request accounts and use these project allocations. Detailed instructions for Requesting a Project/Allocation can also be found here: <http://www.tacc.utexas.edu/user-services/new-user-info/>

For more information about Lonestar, click here: <http://www.tacc.utexas.edu/partnerships/utrc>

What about Biomedical/Healthcare Research in UTRC?

UTRC will accommodate the many and varied biomedical research programs of the six UT health institutions, in addition to the diverse science and engineering—including biology—research programs at the nine UT academic universities. Each of the UTRC initiatives will be configured to support diverse research programs of all 15 institutions. Software, usage policies, system configurations, training, and user support will enable the computational biomedical programs to take maximum advantage of Lonestar, the UT Data Repository, and UT SysNet.