

# TEXAS ADVANCED COMPUTING CENTER



**WE CHANGE PEOPLE.  
THEY CHANGE THE WORLD.**



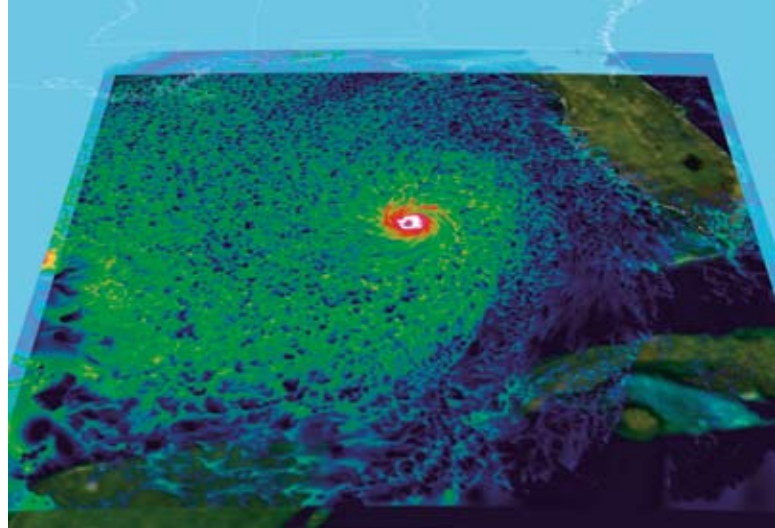
**THE UNIVERSITY OF TEXAS  
AT AUSTIN**

## INVESTING IN THE FUTURE OF DISCOVERY

What libraries were to world-class universities in prior centuries, advanced computational resources are to the success of research universities in the 21st century. The Texas Advanced Computing Center (TACC) plays a pivotal role in the new culture of computational science at The University of Texas at Austin and is central to UT's success as a major public research university. TACC boasts world-class resources and expertise that enable scientists and researchers to find solutions to the biggest problems facing science and society.

In the past five years, faculty at UT who depend on TACC resources to conduct their research have brought in more than \$400 million in external research funding. In early 2008, the center deployed Ranger – the most powerful supercomputer at any university in the world. Already, researchers at UT, across the country, and around the world are using Ranger to carry out groundbreaking science on an unprecedented scale.

Discovering solutions to the most pressing issues of our time requires the most advanced technological resources. From climate change to medical research to energy resources, traditional and renewable, advanced computing provides the tools that are critical to discovery in science and across disciplines.



---

## CAMPAIGN PRIORITIES

TACC has enjoyed tremendous success in supercomputing, enabling UT to become a leader in computational science. However, there are substantial challenges to maintaining leadership given the rapid changes in technology. In undertaking a major fundraising campaign, the center is focusing on four primary goals:

- Creating a first-of-its-kind endowment in advanced computing to provide sustainable support to the center, compensating for the gap in state funding between TACC and its peer centers.
- Building a next-generation data center to strengthen TACC's status as a top center for advanced computing.
- Establishing an endowment for the TACC Visualization Laboratory to support essential technology upgrades.
- Recruiting top faculty, graduate students, undergraduates, and other researchers to work on the most important computational problems facing science and society.



Campaign support will also help bring distinguished speakers and researchers to the center, and will fund education and outreach programs that inspire the next generation of scientists and problem solvers.

### ***Endowment for Leadership in Advanced Computing***

Advances in computational science are taking place at lightning speed. The life cycle of a world-class system is a matter of a few years, at best. Even Ranger, a system of unprecedented scale for scientific researchers, has an intended life span of only four years. At the same time, TACC has achieved its remarkable level of success despite an annual budget roughly one quarter the size of its peers. We seek to create an **endowment for leadership in advanced computing** to remove that gap.

The endowment will provide for critical technology upgrades in supercomputing, data storage, and networking; will fund the education and outreach programs that help address the country's overwhelming need for students entering the fields of science, engineering, and technology; and will provide TACC's director with the resources to undertake

new initiatives as opportunities arise and to address unanticipated needs.

No other advanced computing center has an endowment of this kind. It will hone TACC's competitive edge as a world-class center for advanced computing and strengthen the University's standing among the great research universities.

### ***Next-Generation Data Center***

Rapid advances in technology have generated exponential growth in breakthrough research, creating a growing demand for ever larger and more powerful advanced computing systems and for the large-scale data centers that host these systems. Unfortunately, the primary funding sources for high-performance computing systems do not provide associated funding for space and infrastructure.

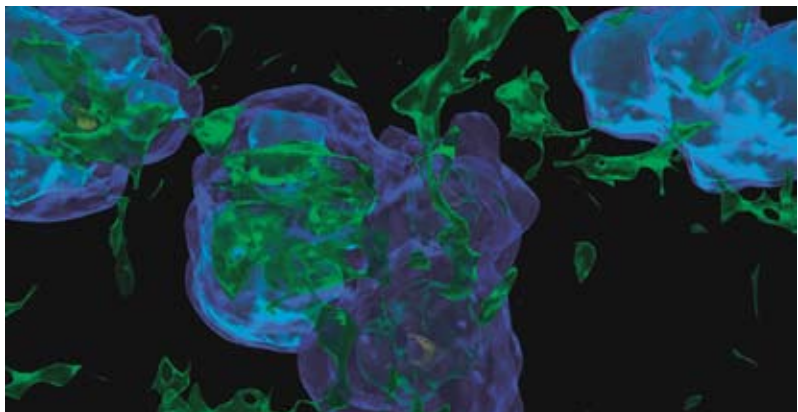
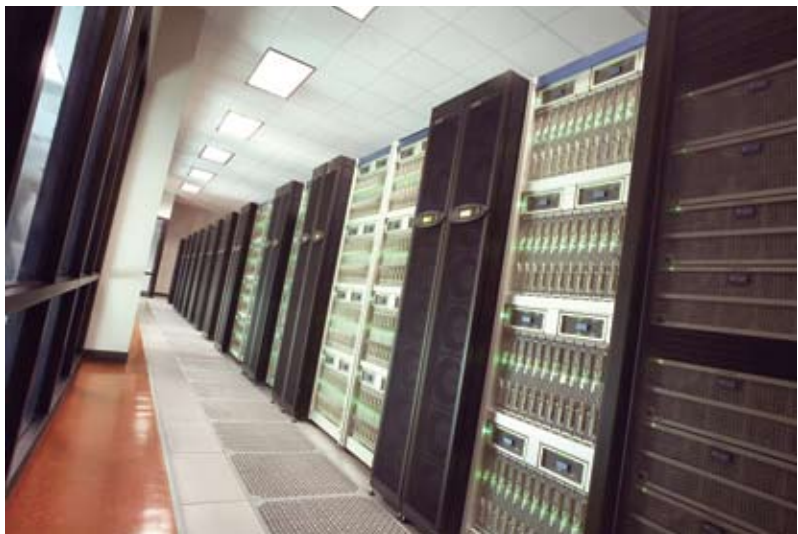
A world-class data center will provide TACC with the infrastructure necessary to deploy the most current technologies and compete for future generations of advanced computing systems. In addition, an **endowment to support data center operations and growth** will provide sustainable funding to maintain facilities, upgrade hardware and software, install energy-efficient power and cooling systems, and incorporate clean-energy technologies.

### ***Visualization Laboratory***

The TACC Visualization Laboratory in the Applied Computational Engineering and Sciences building on UT's main campus has recently undergone a complete transformation, emerging as a state-of-the-art facility for scientific visualization and collaborative research.

The new lab is cutting-edge in both size and capability, and the technology will support research across all disciplines, from the sciences and engineering to economics, architecture, and the liberal arts. In addition, the TACC Visualization Laboratory will enable groups of researchers to collaborate both in the lab and remotely.

To remain state-of-the-art and provide crucial support and expertise, the center must be able to upgrade the technologies in the TACC Visualization Laboratory as often as every 12 to 18 months and provide opportunities for students who assist faculty and other researchers. An **endowment for scientific visualization** will provide reliable funding for technology upgrades and student internships, ensuring that the TACC Visualization Laboratory remains one of the top facilities of its kind in the country.



### ***Investing in People***

The world-class capabilities at TACC have helped recruit nationally recognized faculty across colleges and departments at UT. The center has also recruited and developed top professional research staff with leading expertise in advanced computing, contributing to the University’s reputation as a premier institution for computational science. Additional research and internship opportunities will help ensure that UT Austin maintains its competitive edge:

- **Fellowships in computational science** will allow faculty and graduate students from UT and other universities to work at TACC, conducting research using center resources and collaborating on multidisciplinary projects.
- **A visiting speakers fund** will support up to six visiting speakers each year to come to UT and educate the campus community on topics that employ advanced computing technologies.
- **A researchers-in-residence fund** will attract top researchers from other universities and industry to work at TACC in short-term appointments on individual and joint research projects requiring advanced computing.
- **Summer internships** for graduate and undergraduate students will allow talented students to gain experience working with advanced computing technologies. Students will assist with research and development of applications and software that support computational science.

---

## **A DISCIPLINED CULTURE OF EXCELLENCE**

The campaign for the Texas Advanced Computing Center is part of the University-wide campaign to increase resources across the campus and to create the “disciplined culture of excellence” called for by the Commission of 125, which established goals for the University for the coming 25 years. Gifts to TACC will support the following areas:

<b>Research and Academic Programs</b> .....	\$50 million
Endowment for Leadership in Advanced Computing	
<b>Facilities and infrastructure</b> .....	\$45 million
Next generation data center	
TACC Visualization Laboratory	
<b>Investing in People</b> .....	\$5 million
Fellowships in computational science	
Visiting speakers fund	
Researchers-in-residence	
Internships	
<b>Total</b> .....	\$100 million



**WE CHANGE PEOPLE.  
THEY CHANGE THE WORLD.**



THE UNIVERSITY OF TEXAS  
AT AUSTIN