On Saturday, The University of Texas at Austin welcomes visitors of all ages to Explore UT. Many will come to the northeast area of campus, where the Cockrell School of Engineering lives, and discover the exciting technologies that improve our quality of life.

While Explore UT shows the fun side of higher education, our motive is serious. Our state needs to increase the number of students pursuing degrees in science, math and engineering. Children visiting UT can become the future leaders who will drive innovation and economic growth by creating the technologies, products and services that will solve grand challenges in such areas as energy, health care, manufacturing and infrastructure.

Recently, the National Academies, the leading authority on science, engineering and medicine, published Rising Above the Gathering Storm, Revisited: Rapidly Approaching Category 5.

“For the first time in history,” the authors concluded, “America’s younger generation is less well-educated than its parents ... and only a minority of American adults believes the standard of living of their children will be higher than what they themselves have enjoyed.”

One fact is striking: A generation ago, the U.S. had the highest percentage among developed nations for the number of college graduates. Today, we rank 10th.

The good news is there are strategies that will make a difference, and education is the key. Not only do we need more students to go to college and study math, science and engineering, we must encourage them to pursue advanced degrees.

At the Cockrell School, we have an important role in engineering education for Texas, the U.S. and globally. UT graduates more than 1,000 engineering students with bachelor degrees each year who go on to work and contribute to the economy. As important as an undergraduate degree is, work in advanced technology often requires a graduate degree.

Each year, about 8,000 U.S. students receive Ph.Ds in engineering, of which about 200 per year from the Cockrell School. This is a small number compared to the 150,000 U.S. students receiving MBAs or 44,000 completing law degrees each year.

As the economy pulls out of the recession, the employment demand for engineers with advanced degrees has increased. I hope we can fill this need.

A fundamental measure of competitiveness is the number and quality of jobs, which determines everyone’s quality of life. Economic growth depends upon two important “products” of the University of Texas: human capital and knowledge capital. Both enable future private investment and provide the resources for security, infrastructure and education. It is the ultimate virtuous circle.

What we need is long-term commitment to university-based research, closely tied to undergraduate education in engineering and science; scholarships to attract students to study these fields; modern laboratories for students and faculty to create and discover; and strong connections between universities with companies, management talent and investment capital. Finally, we need comprehensive programs for K-12 students to encourage them to graduate from high school and study science and engineering at Texas universities.

The Cockrell School is a central player in the Texas ecosystem through use-inspired research, high-quality undergraduate education, technology commercialization and outreach programs for students of all ages and backgrounds.

As we welcome thousands of kids to our campus with the goal of exciting them about engineering, I will look for our leaders of tomorrow. And on Monday, The University of Texas at Austin faculty and staff will be back at work inspiring our current students to learn, create and solve problems.

Dean Fenves’ editorial appeared in the Austin American-Statesman on March 5 and The Dallas Morning News on March 4.