

# TI University Programs



## About TI and TI Foundation support of universities:

Building tomorrow's work force through higher education has been a commitment of TI for more than 60 years. TI works to develop partnerships and programs, contribute financial resources, offer expertise and donate equipment all with the specific goal to make higher education – particularly focused on science, technology, engineering and math – better and more accessible. TI's efforts reach the top university engineering programs around the world.

## *Building the engineering work force*

TI has been dedicated to building tomorrow's work force through higher education for more than 60 years. We develop university partnerships and programs, contribute financial resources, offer expertise and donate equipment, all with to the goal of making higher education – with particular focus on science, technology, engineering and math – better and more accessible. TI's efforts reach the top engineering university programs around the world.

International students account for nearly half of masters' degrees and 70 percent of Ph.D. graduates in electrical engineering from U.S. universities. TI supports improved visa policies to allow us to attract and retain the world's best talent, particularly graduates from U.S. universities.

In addition, TI is doing its part to grow the domestic pipeline of engineering students. TI works with U.S. universities to prepare their students to become the future engineers that our company, suppliers and customers need. In 2008, TI and the TI Foundation made grants and investments totaling more than \$20 million to colleges and universities.

Through the TI University Program, more than 100,000 students across the world use our technology in labs each year to help bring their innovations to life. These global programs are currently a part of the strategy for TI's analog, embedded processing and medical businesses.

### **Student development**

TI has offered scholarships and helped develop curriculum and degree programs with universities.

### **Texas Engineering and Technical Consortium (TETC)**

As founding members, TI and the TI Foundation invested \$2.5 million over five years in the TETC. This unique collaboration among industry, federal and state government and universities seek to increase the number of graduates in engineering and computer science from Texas universities to meet the state's increasing market demands.

Our investment and in-kind contributions have been leveraged to provide more than \$27 million in 84 grants at 25 higher education institutions across the state. To date, TETC-funded programs have increased the overall number of electrical engineering and computer science graduates at a faster rate than schools nationwide.

## *Advancing semiconductor research*

TI engages with universities worldwide to develop programs that train engineers to design with our products and to research critical technology breakthroughs for our industry.

### **Leadership universities**

TI began our Leadership University program in 1999. We have committed more than \$12 million to participating universities since the program began. Leadership universities work with TI on long-term research projects and collaborate with TI's top analog and embedded processing technologists. Universities in the regions provide strong regional leadership links in research and education. Universities that are a part of this program include:

- *Georgia Institute of Technology, U.S. (1999)*
- *Massachusetts Institute of Technology (MIT), U.S. (1999)*
- *Rice University, U.S. (1999)*

## Corporate citizenship:

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- *Tsinghua University, China (2007)*
- *Shanghai Jiaotong University, China (2007)*
- *University of Electronic Science and Technology, China (2007)*
- *Indian Institute of Science (IIS), India (2007)*

Late in 2007 TI announced investment of \$15 million to fund medical technology research at selected universities worldwide. The multi-year funding effort began in 2008, and monies are being used primarily to support research and development of key emerging medical technologies in such areas as personal medical devices.

### **Labs and facilities**

TI funds labs and facilities to help students and faculty at universities stay at the forefront of semiconductor silicon technology. Investments have ranged from TI products for design work, to lab equipment, to funding to build or upgrade engineering facilities.

As part of TI's decision to build a state-of-the-art manufacturing facility in Richardson, Texas, UT Dallas received \$300 million from the state of Texas, the UT System and other entities. Some of these funds were used to build the Natural Science and Engineering Research Laboratory at the university that opened in 2007.

In 2008, in conjunction with the 50<sup>th</sup> anniversary of the integrated circuit, TI opened Kilby Labs at our research facility in Dallas, Texas. A center of innovation designed to foster creative ideas for breakthrough semiconductor technology, the new labs will build on IC inventor Jack Kilby's legacy of revolutionizing our lives through chip innovation. The new facility, though, will bring together university researchers and leading TI engineers to discover life-changing opportunities for semiconductor technology.

### **Semiconductor Research Corporation (SRC)**

The SRC is a consortium of semiconductor companies that collaboratively funds pre-competitive university research in semiconductor technology and design. TI is a core member of this group, which helps ensure a steady stream of university research contributions and graduates with advanced degrees in science and engineering fields related to semiconductor technology. These students work on critical technology barriers that will benefit our industry.

TI participates on technical advisory boards, routinely attends university research reviews and adds technical relevance to research efforts. Our annual contributions in the past five years averaged \$10.3 million, allowing SRC to fund more than \$40 million of semiconductor research and support more than 1,000 science and engineering graduate students at universities in a given year. In 2008, TI gave \$11.8 million to the program and plans to award another \$11.2 million in 2009.

### **Southwest Academy of Nanoelectronics (SWAN)**

TI contributed \$5 million to help launch the \$30 million Southwest Academy of Nanoelectronics (SWAN), a collaboration that includes the University of Texas (UT) system, the state of Texas and other industry partners. SWAN's goal is to advance nanoelectronics education, research, commercialization and manufacturing. TI funds are targeted toward faculty endowments at UT institutions – the University of Texas at Dallas and the University of Texas at Arlington.

In 2008, Dr. Robert Magnusson, founder and chief technology officer for Resonant Sensors Inc., was named the TI Distinguished University Chair in Nanoelectronics, at the University of Texas at Arlington as part of this program. Magnusson has developed a new class of nanostructured photonic devices that have applications in laser, sensor, solar cell and display technologies, which could make diagnostic tests happen in real time instead of waiting hours, days or weeks for results.

Questions? Feedback?

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### **Faculty Endowments**

The TI Distinguished Chair in Engineering Education at Southern Methodist University and the TI Distinguished Chair in Nanoelectronics at the University of Texas at Arlington were endowed by the TI Foundation and TI, respectively.

### **Texas Analog Center of Excellence (TxACE)**

TI was part of a \$16 million collaboration among academia, industry and government that focuses on research in analog and radio frequency technologies to help address some of the world's biggest challenges in such areas as energy efficiency, health care and public safety.

### **TI Science & Technology Innovation Fund**

The TI Foundation issued a three-year \$332,400 grant to the University of Texas at Dallas to support innovation and entrepreneurial development camps for high school juniors and seniors to increase their interest in careers in science and technology. The grant also will fund scholarships to UT Dallas engineering and science students who take entrepreneurship courses.

### **Worldwide University Programs**

TI's university program investments span the globe. With participation in every region, the TI Worldwide University Program brings TI technology to more than 130,000 students in 2,000 labs worldwide each year. Using TI analog and embedded processing evaluation modules, chips and software equips the next generation of engineers with the skills to tackle tomorrow's problems.

Programs continue to grow in the Americas, Middle East and Europe and are expanding rapidly in Eastern Europe, China and India. Areas of interest extend beyond traditional electrical and computer engineering to include biomedical, computer science and green energy departments.

Having a long history of consistent support is important to partnering with universities. TI's university program has consistently supported member universities with access to teaching materials, textbooks, the latest equipment, training and support through discounts or in-kind donations of TI technology for their lab equipment for 27 years.

For example, our program in China began in 1996 and the Chinese Ministry of Education agreed in 1998 to provide the latest DSP technologies, development and teaching tools to set up DSP labs. Through 2008, TI has invested in 228 labs in 154 universities, touching more than 40,000 graduate and undergraduate students per year.

Another example of explosive growth has been in India, where six major states have made DSP a compulsory part of their higher education engineering curriculum. TI embedded processors and analog technologies now impact about 45,000 engineering graduates each year from TI-equipped labs that operate across 711 engineering colleges. India produces approximately 360,000 engineering/science graduates each year.

TI also supports undergraduates directly by providing chips and evaluation modules to help them build their capstone or senior design projects through analog design contests. The students' creative design inventions range from small medical monitoring devices to facial recognition software.

Regional design contests are held, from a large tournament in China to the Engibus Contest in the United States. These attract thousands of students and teams compete for cash prizes. Through these contests, students receive access to the latest technologies, which encourages their pursuit of technological careers.