Ten Years of UTeach

Through the collaborative partnership of the College of Natural Sciences, the College of Education, and the Austin Independent School District, UTeach provides high-quality teacher education, with a goal of increasing the number and diversity of math, science, and computer science students entering secondary education.

UTeach students come from the large pool of talented majors in Natural Sciences. They have high SAT scores and have consistently earned higher-than-average grades in comparison to their College of Natural Sciences undergraduate peer group.

As part of a substantially revised approach to teacher education, UTeach employs several of the best high school science and math teachers in the state to lead introductory UTeach courses and coordinate a range of ongoing field-based experiences. To reinforce the value of such a career choice for students, the College of Natural Sciences pays the tuition for these introductory courses.

Faculty in the Colleges of Natural Sciences and Education have worked together closely to create a new set of courses for the UTeach program. UTeach courses integrate mastery of the subject matter with inquiry-based teaching. Technology benchmarks are integrated throughout the program. Particular attention is devoted to preparing teachers to work with students in many types of settings, from diverse backgrounds and cultures, emphasizing high-needs schools.

In the 10 years since the program was started, more than 400 UTeach students have graduated, and over 85% of them have entered teaching. UTeach is proud of all its graduates and grateful for the continuing support it receives from The University of Texas at Austin and the College of Natural Sciences, as well as foundations, corporations, and individuals who participate in the program’s goal of improving science and mathematics education for future generations.
UTeach now certifies over 70 students per year to be math, science, or computer science secondary teachers.

About two-thirds of UTeach graduates teach in major Texas cities, and about 45% teach in schools with more than 40% low-income students.

Over 85% of UTeach graduates earn math or science majors and, all have at least 24 hours of math or science content.

Over 85% of those certified go on to teach.

80% still teach after 4 years.

UTeach graduates stay in teaching longer than other teachers:

70% are still in teaching five or more years after entering the field, compared with fewer than 50% nationally.
Along with the rest of the nation, Texas is facing a critical shortage of math and science teachers in middle and high schools. Nearly a fourth of the state’s high school math teachers are not fully qualified to teach the subject. In science the statistics are even more alarming; almost a third of high school biology teachers in Texas are not certified to teach biology. UTeach was established as a close partnership of the Colleges of Natural Sciences and Education with the goal of attracting strong students in math, science and computer science to secondary teaching.

The UTeach program explodes the myth that math and science majors at major universities are not interested in becoming teachers. Since our first two teachers graduated in the spring of 2002, we have certified over 400 graduates in mathematics and science. Currently, over 470 students are in the UTeach program and these are not only majors in the College of Natural Sciences. As detailed in this report, our students come from virtually every college and school on The University of Texas at Austin campus. All take courses in the professional development sequence, many of which include a significant field experience, along with a rigorous course of study in math or science.

As we celebrate the tenth anniversary of the birth of this remarkable program, we acknowledge the incredible efforts of the many people who have brought us to our current level of excellence. The success of UTeach is due to the enthusiasm and hard work of students, faculty, master teachers and program staff, bolstered by the support of our donors, alumni and friends. Thanks to all for being unwavering champions of this critically important program.

Dr. Mary Ann Rankin  
DEAN OF NATURAL SCIENCES  
THE UNIVERSITY OF TEXAS AT AUSTIN

Dr. Manuel Justiz  
DEAN OF EDUCATION  
THE UNIVERSITY OF TEXAS AT AUSTIN
It is with great pleasure, and a measure of happy surprise, that we approach the tenth anniversary of the founding of UTeach. UTeach began in the summer of 1997, when the Dean of the College of Natural Sciences, Dr. Mary Ann Rankin, gathered together a group of award-winning secondary master teachers and asked them to draw on their years of teaching experience to design the best teacher preparation program they could. At the same time, Dean Manuel Justiz of the College of Education was exploring with his faculty ideas to revitalize the mathematics and science education programs. Faculty and master teachers in the Colleges of Natural Sciences and Education worked together to create a program that emphasizes early and continuous field experiences and is focused on teaching science and mathematics. They created a brand-new set of courses based on research into how people learn and practical experience in science and math classrooms.

Extensive collaboration between the Colleges of Natural Sciences and Education is a hallmark of UTeach and lies at the heart of its success. The program has emerged from the conviction that deep content mastery is essential for excellent teaching, but it is not enough. Great teachers also understand the challenges students face in arriving at understanding, and they are prepared to help students with many different learning needs and backgrounds meet that challenge.

We invite all our supporters to look over the past 10 years with pride and a genuine sense of accomplishment. We look forward to a long and happy partnership as UTeach expands beyond the boundaries of The University of Texas at Austin.

We would like to take this opportunity to thank everyone who has been involved with UTeach in the decade since its inception. Your dedication to math and science education is making a difference every day.

Dr. Larry Abraham  
College of Education

Dr. Michael Marder  
College of Natural Sciences
“The UTeach program is very progressive. For instance, the university has access to many tools, instruments, and experienced teachers (& master teachers) to guide us. It is progressive because there exist many new technological tools and the UTeach professors & master teachers demonstrate how to use these new tools that will eventually end up in tomorrow’s classrooms. Another way that this program is progressive is that

we have master teachers

alongside us to help us when we are in the classrooms during the period when we student teach.

In addition, the master teachers give us positive feedback on the things we do great in the classroom as well as things we need to improve upon.”

“As a member of the UTeach program, I was able to meet many future teachers & discuss issues among them. It was nice to talk to someone who was in the same boat as me. I did not feel alone because I could share my concerns with my peers.”

“The courses that we took in the program are relevant. These include Research Methods, Perspectives, Knowing and Learning, and the student teaching classes.

To this day, I use the material I have learned from the classes above when I teach.”

“After we graduate from the program, we are able to attend the ‘Super Saturday Sessions.’ This is our opportunity to get additional training in a variety of areas: labs, grant writing, classroom management, and innovative class activities.”

“The program has been great. I wish all of the instructors the best, and thank each from the bottom of my heart.”

“The field work was the best thing. It gives you a real taste of what teaching really is—‘theory vs. practice.’”

“The program is not just a list of classes to complete or requirements to meet. This program is life altering.

I know that this may sound a little over the top, but I believe that every book I had to read, every minute I spent on research, every single one of my ten million reflections I had to write, every SE lesson plan I wrote, every minute I spent in the classroom, absolutely everything I did to fulfill my requirements made me a completely different person. I work with two other first-year teachers and a 16th-year teacher, and they have all asked me about my classroom management, interaction with my students, and lesson plan ideas.”
Many UTeach graduates have become teacher leaders. Here’s what just a few of them have accomplished:

**Bradley Beth**  
**SPRING 2003**  
Mentioned in the latest AP Report to the Nation as having the highest AP Computer Science pass rate in the country among African-American and Hispanic students.

**Katey Arrington**  
**FALL 2001**  
**Math Coordinator**  
Pflugerville High School, since Fall 2006

**Marvelia De La Rosa**  
**FALL 2001**  
**Science Department Chair**  
Johnston High School, Spring 2003–Spring 2005

**Nadia Shanaa**  
**SPRING 2003**  
**Science Department Co-Chair**  
Burnet Middle School, since Spring 2005

**Martin Alvarez**  
**FALL 2001**  
**Mathematics Department Chair**  
Edison High School in San Antonio, since Fall 2005.

**Elizabeth Abernathy**  
**SPRING 2003**  
**Science Department Chair**  
Kealing Junior High School, since Fall 2006. Currently teaching at Bedicheck Middle School.

**Stephanie Bailey**  
**SPRING 2002**  
**Science Department Chair**  
A.J. Moore Academy (Waco), since Fall 2006.
Students in UTeach take courses in their major discipline together with a menu of innovative classes specially designed for future teachers. Several of these classes give students a chance to teach in schools well before student teaching.

The design of the UTeach program allows for a great deal of flexibility in when students take UTeach courses. This flexibility allows students to make the decision to teach either early or late in their undergraduate education and still stay on track for a timely graduation.

UTeach developed Teaching Options for the Bachelor of Science degrees in biology, chemistry, mathematics and physics. These degree plans feature all the necessary courses in the content area, and meet all college and university requirements as well as requirements for certification. Like other degrees at the university, these plans can be com-
pleted in four years.

While many students opt for a Teaching Option in conjunction with a major in biology, chemistry, mathematics and physics, a student may pursue a degree in any major, in any college, and take the courses required for certification—both in the professional development sequence and in the content area. This flexibility helps UTeach attract excellent students from across the entire University of Texas at Austin campus, while ensuring rigorous preparation in the content areas.

The UTeach program is not just for traditional undergraduates; it is also open to people who already hold degrees in their content areas. UTeach faculty review the transcripts of each degree-holder to ensure a solid background in mathematics or science and generate a list of required content courses the student must take concurrently with other UTeach courses.
UTeach began with the first students enrolling in the first UTeach course, Step 1, in the fall of 1997. Since that time, enrollment in UTeach grew until reaching a plateau of around 450 in 2004.

When the program began, all UTeach students were traditional undergraduates, seeking four-year degrees. Word quickly spread, and the UTeach program expanded to include degree-holders who wanted to become certified to teach. The first degree-holder entered UTeach in the fall of 1999. UTeach enrollment is close to 500 students; this is considerably higher than the original goal of 400 set in the early days of the program.

Before UTeach began, students who wanted to be certified as math or science teachers had to meet uncoordinated requirements in the Colleges of Natural Sciences and Education. Many waited until after completing their degrees to begin certification. Under UTeach, the two colleges work closely together, and the number of students obtaining secondary certification in math and science has doubled (math) or quadrupled (science).
The UTeach program attracts high quality majors from the College of Natural Sciences and also from the Colleges of Engineering, Education, and Communications, as well as Liberal Arts and the School of Business. No matter their major, all UTeach students take the same essential content courses as Natural Sciences majors before they can obtain certification.

UTeach seeks to attract and retain students who are strong in mathematics and science. The program requires a 2.5 grade point average to proceed in the professional development sequence, advance into the Apprentice Teaching semester, graduate with a UTeach degree, and be certified. This is higher than the 2.0 grade point average required by the university.

<table>
<thead>
<tr>
<th>UTeach Majors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>8</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>376</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>23</td>
</tr>
<tr>
<td>Communication</td>
<td>5</td>
</tr>
<tr>
<td>Education</td>
<td>11</td>
</tr>
<tr>
<td>Engineering</td>
<td>41</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>1</td>
</tr>
<tr>
<td>Geological Sciences</td>
<td>5</td>
</tr>
<tr>
<td>Graduate</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>480</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UTeach Grade Point Averages</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average GPA of UTeach Graduates</td>
<td>3.25</td>
</tr>
<tr>
<td>Average GPA of Graduates in College of Natural Sciences</td>
<td>3.14</td>
</tr>
<tr>
<td>Required GPA to certify with a UTeach Degree</td>
<td>2.5</td>
</tr>
<tr>
<td>Required GPA to graduate at UT-Austin</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Graduating well-prepared teachers who have a deep grounding in the content area is a vital contribution to quality instruction in mathematics and science. Equally important, however, is that these well-trained teachers be retained in the profession. UTeach students experience teaching in several classrooms before they graduate, so that they have a realistic understanding of what to expect in the classroom. These early field experiences, even before the student teaching semester, take place in high-needs schools. After UTeach students graduate, the program continues to provide support, including in-class mentoring for the first years and access to advanced degrees. The result is that UTeach graduates stay in teaching at higher rates than other U.S. teachers, even though they are in the difficult-to-staff areas of mathematics and science.
Great teachers understand the challenges students face in arriving at understanding, and they are prepared to help students with many different learning styles and backgrounds meet that challenge.
In the fall of 1997, the UTeach program began with one section of its first course, appropriately called Step 1, and an enrollment of 28 students. Ten years later, in the fall of 2007, the program has five sections of Step 1, and 95 students will take this class to explore whether they want to devote themselves to teaching.

Currently, the UTeach program comprises 470 students, over 75% of whom major in the College of Natural Sciences. The rest are declared majors in nine other University of Texas at Austin schools and colleges, including 10 students concurrently enrolled in the Graduate School. Regardless of their declared majors, from finance to engineering, from biology to computer sciences, UTeach students take a rigorous complement of courses in the professional development sequence and in mathematics and science.

Along with the traditional undergraduates, UTeach also has a small, highly skilled population of postbaccalaureate students seeking certification, ranging in age from 24 to 65. These career-changers promise to bring to the classroom a wealth of experience from industry, the military or medicine.

In the College of Education, all tenure track faculty for UTeach classes have both research and classroom experience. In the College of Natural Sciences, UTeach draws on the expertise of outstanding tenured or tenure track faculty as well as nine master teachers with a combined total of almost eight decades of teaching experience. Each master teacher holds a master’s degree, and several have earned doctoral degrees.

UTeach is a product of strong and innovative collaboration between the Colleges of Natural Sciences and Education at The University of Texas at Austin, which is a Research I institution. UTeach students begin their teaching careers equipped with the latest research-based ideas on how to teach a broad range of students effectively, while being mentored by teachers who have a wealth of practical experience. They also graduate having had research experience themselves in a research methods course taught by Natural Sciences faculty.
The UTeach Institute: UTeach Expands Nationally

The success of the UTeach program has attracted attention from institutions nationwide. This attention grew with the publication of *Rising Above the Gathering Storm*, a 2006 National Academies blue ribbon panel report addressing the growing concern that the United States is losing ground in maintaining its current leadership in innovation. While calling for an improvement in K–12 science and mathematics education, the Gathering Storm report endorses the UTeach program at The University of Texas at Austin as a model secondary teacher preparation program.

Due to UTeach’s success and the national attention it has received, colleges and universities from across the country have expressed interest in replicating the program. In response, the UTeach Institute was created to provide direction and assistance to expand and replicate UTeach at institutions in Texas and elsewhere across the country.

The UTeach program will be replicated in Texas and nationally through partnerships with several initiatives, including the Texas High School Project and the National Math and Science Initiative (NMSI). ExxonMobil, a key supporter in this expansion effort, provided major initial gift funding to NMSI in support of UTeach replication. NMSI, which was launched in response to the Gathering Storm report, aims to scale up two proven programs: UTeach and the AP incentive program. NMSI plans to award the first set of grants for up to 10 colleges and universities to replicate UTeach in the fall of 2007. These new UTeach programs will have a planning semester in the spring of 2008 and offer Step 1 classes the fall of 2008.

“The National Academies set forth a clear path for the nation to improve math and science education for our country’s youth, and it is now time for us to act,” said Tom Luce, CEO of NMSI and former U.S. assistant secretary of education for planning, evaluation, and policy development. “NMSI will broadly implement two proven programs in states across the nation in an effort to support the next generation of innovators.”

The UTeach Institute is excited to be a part of this important and timely effort to respond to the challenges of improving math and science education in Texas and elsewhere across the country.
Over the past 10 years, UTeach has enjoyed the support of foundations, corporations, and individuals who share the program’s vision of preparing the very best teachers of mathematics and science. Their ongoing generosity enables many of the aspects of UTeach that make it unique. For example, UTeach is able to offer internships as a form of financial support. Students are paid a competitive wage to work in educational settings, as tutors, or as classroom aids. The schools benefit from the extra support, and UTeach students benefit from the additional exposure to the classroom setting. UTeach is grateful for these very important partnerships and looks forward to continuing and productive relationships in the future.

Private Funding Sources (Current and Past)

American International Group
Anonymous
AT&T Inc. Foundation
Austin Community Foundation
Austin Partners in Education
Thomas O. Baldwin
The Boeing Company
George and Anne Butler Foundation
Calculus Consortium of Higher Education, Inc.
Karen and George Casey
Communities Foundation of Texas
Robert K. Cowan, Jr., M.D.
The Michael and Susan Dell Foundation
E.I. DuPont de Nemours and Company, Inc.
Jean K. Durkee
The Educational Advancement Foundation
El Paso Corporate Foundation
ExxonMobil Foundation
N. Rudy Garza
Andy and Peggy Greenawalt
The George and Mary Josephine Hamman Foundation
Harcourt Inc.
The Hartman Foundation
The William and Flora Hewlett Foundation
Hewlett-Packard Company
Rodney W. Hobbs
Marcille Hollingsworth
Cathy Holstead
Houston Endowment
Intel Foundation
John A. Jackson
Lee and Joe Jamail
Norah K. Johnson
Melissa A. Jones
Elizabeth J. Keig
John B. and Lynette H. Kinnaird
Sally D. Klink
Gail and Jeff Kodosky
The Kodosky Foundation
Georgia and Carey Legett
Mary N. Long
Harry Lucas, Jr.
H. David Medley
Microsoft Corporation
Marjorie Morales
The National Instruments Foundation
Tracy LaQuey Parker and Patrick Parker
Georgie E. Phillips
Kitty King Corbett Powell and The Powell Foundation
Michael and Pamela Reese
RGK Foundation
Sid W. Richardson Foundation
The Sallie Mae Fund
Marc S. Serif
Carolyn and Dick Shell
Karen L. Shewbart
Dorothy and Tom Shockley
Siemens Foundation
Sue Sinkin Memorial Fund
The Sooch Foundation
Sara Martinez Tucker
June and Virgil Waggoner
Westcave Preserve Corporation
Woodrow Wilson National Fellowship Foundation