

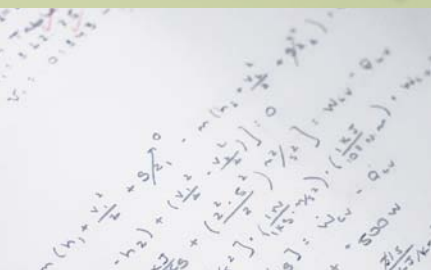
# TUTEACH

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## BULLETIN



### MESSAGE FROM THE Co-directors



With the United States facing serious educational deficiencies in science and math, skilled teachers with deep knowledge of biology, chemistry, physics and math are needed more than ever. In urban school districts, however, most experienced science teachers leave within five years.

In his most recent State of the Union address, President Obama announced plans to train 100,000 new teachers in mathematics, science, technology and engineering, or STEM subjects. Today, TUTEACH—modeled on the UTeach program at the University of Texas at Austin—is one of the most effective ways to prepare skilled science teachers for long-term success in the classroom. Ninety percent of UTeach graduates go into teaching, and 80 percent are still in the classroom after five years.

Here at Temple University, TUTEACH—a collaboration of the College of

*Message from the Co-directors  
continued on page 2*

### TUTEACH graduate plans to pursue her dream:

## Manali Saraiya

Manali Saraiya, a member of Temple's first class of TUTEACH graduates, always wanted to teach. "All through high school I worked as a math and English tutor," says Saraiya, who grew up near Princeton, N.J. "In my senior year, I worked with kids at a summer camp."



While working with children was a passion, standing up in front of a classroom of 30 kids was intimidating. "I'm somewhat shy, so I liked the way TUTEACH lets you jump right into student-teaching in your first year," remembers Saraiya, "If I would have waited until my junior or senior year to start teaching, I would have been even more nervous."

Saraiya admits her first day of teaching was scary. "My teaching partner was a bit more talkative so that took the edge off," she says, noting her classroom style tends more toward group work than lecture. "Knowing what kind of teacher I am really helped me feel confident going into my apprentice teaching at Carver High School of Engineering and Science."

Student-teaching completely changed Saraiya's outlook on the profession. "I realized I had a lot of freedom to structure the lessons, so I could teach students about cells through video, interactive lessons or take them outside," she says. "In teaching, you can be as creative as you want."

Saraiya did consider going to medical school after graduation, but is now planning on working at a science-enrichment camp and, eventually, becoming certified to teach in New Jersey. "I think there are a lot of similarities between working with patients and their families, and working with students and their parents," she says, "Both professions are stressful, but teaching is stressful in a good way!"

For Saraiya, TUTEACH is an experience she never thought she would have in college. "There were times when I wanted to stop because student-teaching and tough science courses can be an overwhelming combination," she says. "Now I can put both feet—biology and teaching—into the water, so to speak. Without TUTEACH, becoming a teacher might have remained only a dream."

**The other May 2011 graduates of the TUTEACH program are Dianne Choi, Jisu Jeong and James Richards.**

Help TUTEACH meet its \$1 million challenge. Go to [www.temple.edu/cst/tuteach](http://www.temple.edu/cst/tuteach) to find out how you can support the next generation of exceptional math and science teachers.

## ABOUT TUteach

Temple University's TUteach program is a fundamentally new approach to education that will educate more and better content-prepared science and mathematics teachers to serve diverse learners in high-need schools. In TUteach, science and mathematics majors get early and intensive preservice teaching experience, the latest pedagogical tools, and extensive mentoring and support as they become effective, state-certified teachers whose passion for their subject is passed on to their students. Temple's colleges of Science and Technology and Education are partners with the School District of Philadelphia in helping to address the nation's shortage of science and mathematics teachers through the TUteach program, which is funded in part by the National Math and Science Initiative.

## THE TUteach ADVANTAGE

- Science and math majors are knowledgeable and passionate about their disciplines
- Freshman-year practice teaching allows students to decide early if they are committed to teaching long-term
- Extensive and experienced support from Master and Mentor teachers

**Douglas H. Baird****Thomas J. Walker**

## MESSAGE FROM THE Co-directors *continued*

Science and Technology and the College of Education—continues its impressive growth by training the next generation of great math and science teachers. Program enrollment has increased from 21 students in fall 2006 to 150 in spring 2011. We now have more than 70 mentor teachers from 24 public schools, and these numbers continue to increase. We also are very proud to announce that this past May four students were part of TUteach's inaugural class of graduates. And, over the next five years, we anticipate more than 20 TUteach graduates per year who will impact more than 40,000 students, assuming each teacher serves 150 students per year.

TUteach's success is made possible by the generous contributions of Temple alumni, individuals and organizations that want to impact the future of science education. The National Math and Science Initiative's (NMSI) initial TUteach funding included a \$1 million matching challenge. Right now, TUteach needs to raise an additional \$300,000 by July 31, 2012, to receive NMSI's matching funds. Your gift will provide student scholarships, support TUteach's extraordinary growth and significantly improve science education for future generations.

Sincerely,

**Douglas H. Baird**

Assistant Dean, Science Education and Special Projects  
College of Science and Technology

**Thomas J. Walker**

Director, Center for Professional Development in Career and Technical Education  
Professor, College of Education

## TUteach News



*The UTeach site visit brought together (left to right) Mary Walker, Thomas Walker, Douglas Baird and Ashley Welch.*

### UTEACH SITE VISIT A SUCCESS

Staff from the UTeach Institute, including Mary Walker, program replication manager, and Ashley Welch, site coordinator, visited Temple in April to learn more about TUteach's progress. The site visit team conducted student focus groups, observed several TUteach courses, and led a discussion on data from TUteach and other UTeach replication sites nationwide. Temple's TUteach program earned the UTeach Institute's highest rating in approximately 80 percent of 50+ metrics, including creating an organization devoted to preparing teachers, attracting and retaining students, and continuous program improvement.

### TWO TUTEACH STUDENTS EARN HONORS

Anup Somalwar, a mathematics with teaching major entering his senior year, has been selected as a Temple University Ronald McNair Scholar. Named for the African-American astronaut who died in the Challenger explosion, the program supports undergraduates from historically underrepresented groups who have the talent and drive to pursue graduate study and advanced research. Somalwar's research project focuses on improving mathematics performance in the classroom by teaching mathematics in a culturally sensitive manner. Miguel Vaca, a biology with teaching major, has earned a spot in the Minority Access to Research Careers (MARC) program. He has been working with Temple professor of biology, Amy Freestone, on research projects and will travel to the University of Hawaii for a summer internship in marine biology partially funded by the MARC program.

## TUteach Studio



*The TUteach Studio in Barton Hall offers students space to work and relax as well as to meet with Master Teacher Herb Green.*

## Master Teacher:

# Marlene Hilkwitz, CST '72, EDU '74

Marlene Hilkwitz, a TUteach master teacher since 2010, is a former high school biology teacher of over 20 years, school administrator, educational consultant and longtime advocate for improving science and math education. She graduated from Temple University with an undergraduate degree in biology and then earned her master's degree in science education at the university's College of Education.

### What is the role of a master teacher?

I have multiple roles, but probably the most important is helping TUteach students understand—as early in their teaching careers as possible—the importance of using the inquiry method in the classroom. I am a bridge between TUteach students and the classroom teacher, helping to make sure that relationship is highly productive. I also help students assess themselves, helping them to ask, “What am I good at and what do I need to work on?”

### What do you look for when you observe TUteach students in the classroom?

I focus on those factors students can control, such as how to deliver instruction effectively, how to assess students during instruction and afterwards, and how to get all the students in the classroom involved.

### What do TUteach students find most challenging in the classroom?

The hardest thing for student-teachers, and even for more experienced teachers, is getting everyone in the classroom actively engaged in learning.

### What are the unique challenges to teaching science?

Kids have a lot of misconceptions about science and math. For example, they might think that boys have more of their father's genes and girls have more of their mother's genes. A teacher should ask a lot of questions before instruction to see from where students are coming. If you dive right into

Punnett square diagrams without addressing initial misconceptions, students will never really understand the foundations of genetics.

### What is the biggest misconception about teaching among TUteach students?

TUteach students are extremely smart and knowledgeable in their subject areas, and there is a tendency to believe that all kids will be able to pick up the concepts just as easily as they did. The biggest misperception is a feeling that “if I am teaching the lesson, kids will automatically learn it.” It's an eye-opening experience for student-teachers when they give the first test and most students fail.

### What are the most important skills for TUteach students to develop?

Teachers need to be good listeners. They must learn from their students. New teachers have to be able to handle criticism from students and others. They have to be able to communicate effectively with parents.



They must be patient and they must continue their professional development throughout their careers.

### Why is TUteach an effective model for training science and math teachers?

TUteach students really understand their subject areas. We can then concentrate on how to teach science and math so kids understand it. TUteach also gives students options, so they can go into teaching right after they graduate or come back to it later in their careers. Whatever their career—teaching, research, medicine or something else—they have the skills to be better listeners and better communicators.

### What makes Temple an ideal home for TUteach?

Philadelphia is a hub of scientific research and medical education, and Temple is a leader in both. What better place to attract talented and motivated students who are looking into the possibility of teaching science in an urban environment?

### What do you like best about your job?

I like watching the students teach in the classroom. It gives me a thrill when I think a student is going to be a great teacher. Because of TUteach, a lot of kids will get excited about learning science and maybe go into a science field. That's the whole point.

## TUteach BY THE NUMBERS

### TUteach ENROLLMENT

Fall 2008 | **21**

Spring 2009 | **63**

Fall 2009 | **89**

Spring 2010 | **107**

Fall 2010 | **133**

Spring 2011 | **150**



“TUteach lets me combine advanced chemistry studies and real-world experience in the classroom starting in my freshman year. It’s an unbeatable combination for becoming an exceptional science teacher. I’ve always wanted to be a teacher, but with TUteach I have so many options for my career. Your financial support of TUteach means more students like me will have the chance to pursue their goals in science, math and teaching!”

— Student: Amy Gutekunst,  
Year: Junior  
Majors: Chemistry with teaching; Spanish for education  
Hometown: Perkasio, Pa.

## TUteach Honor Roll

TUteach extends its deep appreciation to all the alumni, friends, parents, corporations and foundations that have supported the program since its inception. Below are those donors who made a generous gift between Jan. 1, 2010, and Dec. 31, 2010.

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# TUteach

Give the Gift of Knowledge



TUteach is an innovative program that will train a new generation of content-prepared science and math teachers. Students can get a BS degree, a teaching certificate and extensive real classroom experience in just four years. College of Science and Technology students will become tomorrow's leading teachers.

## Partner with Us

The National Math and Science Initiative is offering a \$1 million gift match challenge. Help our students fix the nation's math and science education deficit with your gift today.

For more information, visit [www.temple.edu/cst/tuteach](http://www.temple.edu/cst/tuteach) or contact:

- Victoria L. Blevins, College of Science and Technology, [victoria.blevins@temple.edu](mailto:victoria.blevins@temple.edu)
- Valerie Gay, College of Education, 215-204-4649 or [valgay@temple.edu](mailto:valgay@temple.edu) or
- Make your gift today at [myowlspace.com/giving](http://myowlspace.com/giving)



TUteach is a partnership between the College of Science and Technology and the College of Education.