2014 TUteach Graduates Set High Standards. The TUteach class of 2014 maintained a tradition of academic excellence, and includes honors graduate Nicole Guynn, B.S., Biology with Teaching, and inorganic chemistry award winner Nicole Dunn, B.S. Chemistry with Teaching. The 18 future math and science teachers of the Class of 2014 also distinguish themselves through their dedication to careers in education. Tran Vo, a Mathematics with Teaching graduate, exemplified this excellence and dedication during her apprentice teaching at Philadelphia High School for Girls. The students in Tran’s classes earned top scores in school-wide tests. This year also saw TUteach’s first Physics with Teaching graduates, Colette Weaver, in February, and Calvin Wang, Noyce Scholar, in May. Colette and Calvin are seeking Physics teaching positions, an area of critical need regionally and nationally.

TUteach Continues Steady Enrollment Growth. In 2013-14, TUteach set a record for enrollment in its introductory course, “Step-1.” Combining fall and spring semesters, 89 students registered for Step-1, exceeding the old record of 71 by 25%. In Fall, 2014, direct admission of TUteach majors will accelerate the enrollment growth experienced since the program started; for the first time ever, incoming freshman and transfer students are now able to declare a TUteach major when they apply.

Reflecting the growth in introductory course enrollment, numbers of TUteach graduates continue to increase each year. In 2014, 18 students graduated with TUteach degrees, also a new high. Based on enrollment growth in introductory courses, the number of graduates each year is expected to increase proportionally.
What do TUteach alumni do with their exceptional preparation? Through February 2014, 33 students completed TUteach degrees. Of these 23 (70%) are teaching in a middle or high school, are in a related education position, or are seeking a teaching position; 7 graduates (21%) are in graduate or professional school (2 Ph.D., 2 Medical, 2 Dental, 1 Optometry); and 3 graduates have secured positions in STEM-related industries (IT, Aerospace, Finance). Of the 23 graduates who are teaching or are in education-related careers, or seeking education positions, 14 (60%) are teaching in Philadelphia or another high need district. All 18 of the 2014 graduates are seeking have secured or teaching positions.

Anup Somalwar, Math with Teaching Alumnus Designs Popular Online Algebra Course.
The online algebra course developed by a team at String Theory High School is now the fourth most downloaded course on iTunes U, leading the rankings with courses from Stanford and Yale. Anup Somalwar, 2012 TUteach Mathematics with Teaching graduate and McNair Scholar, played a significant role on the development team for this online course. This is the latest example of TUteach graduates embracing leadership roles at the schools where they teach, even shortly after graduation.

TUteach Students, Faculty & Alums Distinguish Themselves at UTeach Conference.
TUteach students, faculty and alumni distinguished themselves at the 8th Annual UTeach Conference, held May 20-22 at the University of Texas, Austin. A poster presentation at the meeting from TUteach alums Donna Griffis and Nicole Guynn, class of 2014, and Jennifer Berman (Math with Teaching 2013) won an award for best program exposition, one of only two awards to conference presentations. In their presentation, Donna, Nicole and Jen focused on their volunteer service through “Education United,” a non-profit started by Jennifer Berman that provides STEM education to underserved youth in Philadelphia and vicinity. Nicole Guynn also presented a second poster at the conference based on her research on project-based instruction, part of her honors thesis in which she developed, delivered and evaluated engaging lessons during her apprentice teaching at the Carver High School of Engineering and Science. Nicole
was advised by TUteach Co-Director Dr. Janelle Bailey, faculty in Temple’s Department of Teaching and Learning.

![Award winners for presentations at the UTeach Conference: (center) TUteach alumnae Nicole Guynn, Donna Griffis and Jennifer Berman. Other winners shown: Anissa Gomez (left) and Jesus Aguilar-Landaverde (right) of the University of Texas, Austin.](image)

TUteach Co-Director Dr. Doug Baird, Jennifer Berman, and Tykee James, a Mathematics and Computer Science with Teaching major, also delivered a presentation on Education United and its synergy with CST’s Community Engagement course CST 1385, new in 2013-14. In CST 1385, students receive credit for volunteer service projects at schools, community centers, libraries, the Science Festival and other non-profits in support of STEM education for young Philadelphians. Tykee was one of the first students to complete a service project for CST 1385. He oversees a program where local high school students are trained to serve as docents at the Cobbs Creek Environmental Education Center.

Juan Huertas Fernandez, a Computer and Information Sciences major and CARAS travel grant recipient, delivered a platform presentation with Co-Director Baird on a new, online materials management system, “TRAK,” to help keep track of TUteach’s huge inventory of educational materials. TRAK was designed by Juan and his mentor, Dr. Justin Shi, faculty in Temple’s Department of Computer and Information Sciences. After the presentation, other universities expressed interest in adopting TRAK to manage their educational materials. Dr. Baird, Juan and Tykee James also attended a pre-meeting workshop on preparing computer science teachers. Juan and Tykee provided their perspectives as the only student attendees of the workshop.

CARAS travel grants, supported jointly by the Senior Vice Provost for Undergraduate Studies and Temple’s colleges and schools, fund undergraduates to travel to conferences to present research and creative works.
Also at the UTeach conference, Temple University was announced as one of four recipients of a mini-grant called “Development, Implementation and Dissemination of an Instructional Module to Infuse Mobile Technology into the UTeach Program.” The mini-grant award includes 37 Android tablet computers with Wi-Fi service, and over $18,000 to support the development, implementation and dissemination of STEM lessons for middle grades students. In this program, the UTeach Institute has teamed up with Verizon to launch a program that is helping tomorrow’s educators effectively use mobile technology to improve student learning and interest in STEM subjects. The grant proposal was submitted by TUteach faculty Kathleen McKinley, Janelle Bailey and Doug Baird.

The initiative, begun in September 2013 and called the “Verizon Innovative Learning Schools Higher Education program,” currently is available to students in UTeach secondary STEM teacher preparation programs at the University of Colorado at Boulder, the University of Kansas at Lawrence, the University of Massachusetts at Lowell, and the University of Texas at Austin. With the new grants, these four universities will be joined by Temple, University of California, Berkeley, Cleveland State University, and the University of Tennessee, Knoxville. Under the program, math and science majors pursuing secondary teaching certification through UTeach programs work with K-12 students, integrating mobile technologies into inquiry-based lessons. This integration greatly expands the resources and instructional tools available to teachers to engage students in relevant and exciting applications of math and science. The program will also develop lessons and support materials based on best practices on integrating mobile technology into STEM teaching and learning, and they will eventually be added to the UTeach
curriculum and available at UTeach’s 35 partner universities nationwide, reaching more than 6,200 students.

Justina Nixon Saintil, director of education and technology programs for the Verizon Foundation, said: “There’s a need for math and science teachers to not only be experts in their fields but also be proficient in using technology to engage students and inspire them to go into STEM fields. This partnership with UTeach and NMSI will provide an innovative curriculum and technology to the educators who will be integral in teaching the scientists, engineers and innovators of tomorrow.” The Verizon Foundation is focused on improving teaching and learning of STEM subjects, particularly through the use of mobile technologies. Preliminary results from a similar program providing ongoing professional development on mobile integration in the classroom to existing middle and high school teachers—called the Verizon Innovative Learning Schools program—showed increased improvements in learning STEM subjects and engagement in STEM.

**Verizon Foundation Partners with TUteach to Prepare STEM Teachers.** In addition to the mobile technologies project described above, Verizon also provided TUteach with a $40,000 grant to prepare new teachers, engage underserved Philadelphia youth in STEM activities, and develop new and utilize existing mobile and web-based applications in support of STEM education. Funds from Verizon will cover the entire cost of stipends for mentor teachers stipends and “Step” course students in 2014. This program will permit a new cohort of Temple students to try science and math teaching, and introduce young Philadelphians in grades 3-8 to inquiry based STEM activities. Funds from Verizon will also support new Verizon STEM Teacher Service Internships for TUteach students and alumni.

**Giving Science Lessons a Tune Up.** TUteach Master Teacher Marlene Hilkowitz and Michele Lee, supervisor of middle grades apprentice teachers for TUteach, presented at the National Science Teachers Association Conference in Boston, MA on April 4, 2014. The title of their presentation was “Using a Tuning Protocol to Analyze Lesson Plans in the Apprentice Teaching Seminar.” In Professor Hilkowitz’s Apprentice Teaching Seminar, TUteach apprentices have benefited from this effective approach to working with peers to improve their teaching.

**New Education Co-Director, Janelle Bailey** joined TUteach for the fall 2013 semester, and in March 2014 was appointed Co-Director. Janelle comes to Temple from the University of Nevada, Las Vegas where she held the rank of Associate Professor. Dr. Bailey earned her bachelor’s degree in astrophysics from Agnes Scott College, Decatur, GA, with a minor in mathematics; her Master’s degree in science education from the University of Georgia; and her Ph.D. from the University of Arizona in teaching and teacher education with a minor in astronomy. Dr. Bailey has published over 20 peer-reviewed papers, and is Vice President of the American Association of Physics Teachers. In 2013-14, Dr. Bailey taught Step-1, Step-2, Classroom Interactions and Project Based Instruction, and supervised three apprentice teachers. She holds a faculty appointment in the Department of Teaching and Learning in the College of Education.
New Mathematics Master Teacher, Kathleen McKinley joined TUteach in 2013-2014, teaching Intermediate algebra, Step-1, Step-2, and Functions and Modeling and supervising apprentice teachers. Professor McKinley earned her bachelor’s degree in secondary mathematics education, and her Master’s degree in educational leadership, both from St. Joseph’s University. Professor McKinley taught mathematics in Philadelphia for 12 years including serving as Chair of Mathematics at Stetson Middle School. She also worked in the School District of Philadelphia’s Office of Assessment, and served as NSF Implementation Facilitator for Secondary Mathematics Programs and as a High School Growth Specialist. Just before joining TUteach, Professor McKinley, served in the School District of Lancaster as Coordinator of Secondary Mathematics and Science. In Fall 2014, Professor McKinley will offer the new Step-1/Step-2 combination course that will allow juniors to start a TUteach major and finish all the TUteach courses in as few as four semesters. Since 2000, Professor McKinley has served as a “Teachers Teaching With Technology National Instructor.”

Dr. Herb Green mentors students presenting at local and regional conferences. Dr. Herb Green may have retired as a full-time TUteach Master Teacher, but sometimes it’s hard to tell! This year, Dr. Green advised students who developed presentations at meetings of both the Association of Teachers of Mathematic of Philadelphia and Vicinity (“ATMOPAV”) and the Pennsylvania Council of Teachers of Mathematics. A group of students received a CARAS Travel Grant funded by the Senior Vice Provost of Undergraduate Studies and CST to present at the Annual Conference of the PCTM in Seven Springs, PA; student presenters were Amanda Schantz, Tykee James, and Charles Dao. Master Teacher Kathleen McKinley also presented at the PCTM meeting. Presenters at the Fall 2013 ATMOPAV meeting were Amanda Schantz, Charles Dao, Calvin Wang, Dr. Herb Green, Tykee James, Will Lamborn, Emily Wetzel, and TUteach Alumnus Anup Somalwar, Mathematics with Teaching 2012.
TUteach at the Noyce NE Conference. TUteach was represented at the Noyce NE Conference in March by Amy Gutekunst, Chemistry with Teaching 2013, Calvin Wang, Physics with Teaching 2014, Co-Director Doug Baird, and Master Teacher Herb Green. The conference was attended by scholars, teachers and faculty from universities that award NSF Noyce scholarships to STEM majors preparing to be teachers. The conference featured inspiring presentations by Superintendent Hite on the inequities in education, and noted scholar Paul Gorski, on teaching poor students and the prevalent, yet misguided theories of deficit ideologies of poverty. Amy Gutekunst was selected to speak on the “Voices from the Field” panel. Calvin Wang presented a poster on physics education and physics teacher preparation at Temple. Dr. Baird and Dr. Green and Calvin presented a talk, “Thinking outside the classroom: How service learning prepares future teachers to tutor, mentor and support informal and formal science and math education.” The presentation focused on the benefits of community engagement on future teachers who participated in the CST 1385 Community Engagement course and who volunteered with Jennifer Berman’s non-profit, Education United.

Farewell to Linda Jones. In March 2014, the College of Education re-assigned Linda Jones to the position of Director of Operations, where she has assumed responsibility for a number of critical areas, including the granting of teaching certifications. TUteach will greatly miss Linda’s dedication and strong focus on student concerns when she served first as Coordinator and later as Co-Director. We take comfort that Linda remains at Temple, and in a capacity where she will continue to work with TUteach students and faculty.

TUteach Alums Cherry On and Land Plum Positions. TUteach alums are showing they have the skills to crack a tough nut of a job market in the Philadelphia Region and beyond. Many alums successfully competed with hundreds of applicants and with experienced teachers to land top education jobs in Philadelphia and in other districts. Sofia Friedman, Chemistry with Teaching 2012, is completing her first year teaching and advising at Eastern University Academy Charter School in the East Falls section of Philadelphia. Nick Keith, Chemistry with Teaching 2012, is completing his second year teaching chemistry at his alma mater, Mechanicsburg Area High School in Mechanicsburg, PA. Megan Jennings, an honors Chemistry with Teaching graduate (2012), plans to teach at the university level, and is pursuing a Ph.D. in Chemistry at Temple. This year, Megan was awarded a prestigious NSF graduate
fellowship. **Ariel Kavulich**, General Science with Teaching 2012, is completing her second year at the Commonwealth Connections Academy, a state-wide cyber school based in Bryn Mawr. **Anup Somalwar**, Mathematics with Teaching 2012 and McNair Scholar, completed his first year at Philadelphia String Theory High School for Arts and Sciences, a new, highly regarded public charter school. Anup has helped design and implement new curricula utilizing iPads, which all String Theory HS students have. After a year teaching middle school science and math, **Helena Sautner Walsh**, Chemistry with Teaching 2012, is returning to Kensington Academy for the Creative and Performing Arts. In 2012, Helena was the first chemistry teacher hired by Kensington CAPA.

**Jennifer Berman**, Mathematics with Teaching, Biology Minor 2013, founded “Education United,” a non-profit that provides education services to underserved students. This summer, Jen will join Mayor Nutter’s Office in an AmeriCorps position focused on providing STEM education services to Philadelphia schools. **Quinn Brady**, Mathematics with Teaching 2013, just completed a successful stint with City Year at Overbrook High School. At Overbrook, Quinn was able to develop a number of her skills, including mathematics teaching, mentoring and classroom management. **Jamie D’Amario** and **Patrick Yoka**, both Mathematics with Teaching 2013 and Noyce Scholars, are completing their first year teaching at the Franklin Towne Charter High School in Philadelphia. **Amy Gutekunst**, Chemistry with Teaching 2013, former TUteach Society president and Noyce Scholar, is completing her first year teaching chemistry at Esperanza Academy High School. Amy puts her Spanish minor to good use at this school attended by many students whose first language is Spanish. Amy will be joined at Esperanza this fall by **Al Tielebein**, Mathematics with Teaching 2012, former TUteach Society president, and Noyce scholar. **Sean Kennedy**, Biology with Teaching 2012, is completing his second year at La Academia Partnership Charter High School in Lancaster. Last summer, La Academia sent Sean to San Diego, CA for professional development to prepare Sean to teach classes in technology as well as biology. **Miranda Katkovcin**, Mathematics with Teaching 2013, is completing her first year teaching math at Conestoga High School, a highly regarded school. **Hadley King**, Biology with Teaching 2013, is completing his first year teaching biology at Philadelphia Electrical and Technical Charter High School. **Elizabeth Szablaya**, Biology with Teaching 2014 co-taught with Hadley at PETCHS this semester. **Mary Walizer**, Mathematics with Teaching 2013, is completing her first year at Foothill High School in Henderson, NV, near where she grew up.

This fall, **Kimberly Pohl**, Mathematics with Teaching 2014 and former Temple Women’s Soccer Club President, will join **Allie Saracino**, Mathematics with Teaching 2013, at Cristo Rey Philadelphia High School in the Olney section of North Philadelphia. All students who attend Cristo Rey have high financial need, and to support their studies work one day per week as interns at a number of employers in Philadelphia, including Temple and Comcast. Kim and Allie will help anchor the math faculty at this new and innovative school, one of about 30 Cristo Rey schools nationally. A pattern is developing: schools want more than one TUteach graduate!
TUteach, Community Engagement Course Students Exhibit at Five Science Festival Events. At the 2014 Philadelphia Science Festival, students from the TUteach Society and CST’s Community Engagement course showed participants how their camera phones can be easily adapted for use as microscopes, as part of Temple’s largest presence at this annual, city-wide event. Hadley King (Biology with Teaching 2013) found the camera phone microscope idea online; it proved to be popular. The TUteach Society and Community Engagement course exhibited it at five of the Philadelphia Science Festival events. The TUteach & Physics Club booth at the giant Science Festival Carnival featured the camera phone microscope and a number of physics activities including a non-Newtonian fluid composed of cornstarch and water. Children love to play with this gooey material that sometimes acts as a liquid, sometimes more like a solid. The Temple/TUteach exhibit was one of the few featured in a Philadelphia Inquirer article about the Science Carnival, which included 170 exhibitors. Jordan Neiman, an Earth and Space Science with Teaching major, is featured in the article.
Two of the five exhibits staffed by students in the TUtecth Society and Community Engagement course. Exhibitors help young students use camera phone microscopes. Left: Dr. Baird, Amy Lam and Alexis Rylander at the Neighborhood Science event at the Ramonita de Rodriguez Library Branch. Right: TJ Ierubino at Discovery Day in Hunting Park.

**Education United Providing Area Youth with Out-of-School STEM Education.** It’s obvious that many students in our region do not receive the preparation they need in to succeed in STEM subjects, while many affluent families are easily able to supplement even rigorous programs in science math with additional out-of-school activities. Many see this issue; however, few do much about this inequity that endangers our region’s supply of STEM-prepared graduates. Jennifer Berman, Mathematics with Teaching 2013 saw these problems and took action. She wrote a prize-winning business plan, collected her winnings at the Fox School’s Be Your Own Boss Bowl and started Education United, a non-profit that provides STEM education services to underserved students throughout the region. Education United provides students with tutoring, mentoring and various after-school and out-of-school STEM education programs. Most recently, Education United has teamed up with Teen Sharp to provide math activities based on the Common Core standards for middle and high school students as part of a weekly Saturday morning program in Camden.

Education United volunteers at Teen Sharp in Camden, NJ:
LaTasia Simmons, Dr. Herb Green, Nicole Guynn, Jennifer Berman, and Will Lamborn.