One Year at UMass Lowell!

It was on a warm, tranquil morning in June of 2011 when Dr. Anita Greenwood - then the Interim Dean at the Graduate School of Education, and now the Dean - first introduced me to UTeach.

Having spent a good part of that morning reading through the UTeach Institute website, I was fascinated by the program, and excited about the possibility of bringing UTeach to UMass Lowell.

UTeach is a teacher preparation pathway that was designed and developed at The University of Austin in Texas back in the mid-1990s in response to national concerns about the quality of education at middle and high school level in the areas of Science, Technology, Engineering, and Mathematics (STEM). The program was immensely successful in Austin in producing certified teachers skilled in pedagogy with excellent subject knowledge, that the replication of the program at universities around the United States was initiated. Currently, 34 universities across the country are implementing the UTeach Program. UMass Lowell is proud to be the first university in New England to be part of this network.

UTeach UMass Lowell was launched in Spring 2012 with funding from the Massachusetts Department of Elementary and Secondary Education Race to the Top award. It represents a unique collaboration between the Graduate School of Education and two of the largest colleges on campus: College of Sciences and the Francis College of Engineering.

I started working in the UTeach UMass Lowell program as the first and only master teacher with Co-Directors Dr. Anita Greenwood (Graduate School of Education), Dr. David Kazmer (College of Engineering), and Dr. Ken Levasseur (College of Sciences), and Robin Hall the Program Manager.

The first UTeach course (Step 1) was offered as two sections on Friday January 27, 2012 with just 28 students. Now, one year on, we have over 80 students enrolled in UTeach courses, a second master teacher, a refurbished room in Pasteur 108 for the staff and students, as well as a relatively large teaching area. We also have a student organization, WeTeach UMass Lowell, and have begun to offer our UTeach students, who we like to refer to as interns, scholarships and internships. However, what we have most of all is the support from the faculty from the Graduate School of Education, Francis College of Engineering, College of Sciences, and the School Districts of Lowell, Methuen, Lawrence, Dracut, and Chelmsford.

I am proud to be part of this program and working with undergraduate students as they progress through the steps of this program to become the next generation of qualified, and effective STEM teachers in the United States.
Bringing UTeach to UMass Lowell

It all began in the Spring of 2011 when Dr. Anita Greenwood and Dr. Fred Martin, an Associate Professor of Computer Science, attended a DESE (Department of Elementary and Secondary Science) webinar about applying to be a UTeach site.

They both thought this was an exciting opportunity as UMass Lowell had the potential of recruiting not just Science majors, as many UTeach sites around the United States appear to be doing, but also recruiting Engineering majors.

Dr. Greenwood approached Dr. Dave Kazmer, Professor of Plastics Engineering, College of Engineering, and Dr. Ken Levasseur, Professor of Mathematics who has always been involved with various K-12 education projects.

They both shared Greenwood’s enthusiasm and agreed to be co-PIs. Together, they wrote a proposal to bring UTeach to UMass Lowell.

Housing UTeach

Housing UTeach at UMass Lowell was not an easy task. In the first semester (Spring 2012), UTeach shared premises with the long running Design Camp in Pasteur Hall Room 106. The area underwent a major refurbishment such that it maintained and functioned as a workshop for afterschool engineering projects for middle school students, and as a teaching and working area for UTeach interns. New work tops were purchased for the already existing workbenches, and a new media system was installed for teaching.

In one month, all the t’s were crossed and the i’s were dotted, and Pasteur 106 was ready for a new teaching and learning experience.
Staff of UTeach

Dr. Sumudu Lewis is UTeach UMass Lowell’s Program Director and master teacher. She oversees the day-to-day operations, builds relationships with our school partners, as well as teach. Robin Hall is the program manager, she ensures that students have a welcoming place to work, maintains the budget and manages data collection.

Irene Martin, the second master teacher, was hired at the beginning in Fall 2012. Irene was a teacher of mathematics at a high school in New Hampshire prior to leaving all that behind to join UTeach. With her Electrical Engineering background, and her knowledge of high school mathematics, she adds valuable experience to the UTeach UMass Lowell team.

We are also happy to have John Wren and Edward Tonelli working with us. John, a technology support specialist, created our UTeach website and our Facebook page. He also handles the advertising, thus keeping UTeach in the public eye. Edward works with the interns, helping them with planning their lessons and observing them teach.

A Pathway to Success

UTeach is a unique program here at UMass Lowell due to the symbiotic relationship it has formed with the College of Sciences, the College of Engineering, the Graduate School of Education and the local school districts – Lowell, Methuen, Lawrence, Dracut, and Chelmsford.

UMass Lowell attracts high caliber students into the sciences and engineering programs, UTeach offers these students another career option. There is always a demand for effective math, technology/engineering and science teachers. This means that students can maintain their interest in science and engineering courses, and also graduate as a certified teacher.

UTeach has been hailed as an effective teacher preparation pathway for not just preparing STEM teachers, but also for the high rates of retention of UTeach teachers in schools throughout the country. This is a result of the early and intensive field experiences that UTeach interns receive at local elementary, middle, and high schools. UTeach initially began working with Lowell, Lawrence, and Methuen, and later reached out to Chelmsford and Dracut for support. The superintendents of these school districts, as well as the math and science coordinators are very supportive, and excited about the opportunity to work with UTeach interns, and hence UMass Lowell.
Mentor Teachers

UTeach relies on school districts to supply teachers to mentor the UTeach interns as they explore teaching math and science topics to elementary (in Step 1) and middle (in Step 2) grade students.

Mentor teachers are central to the UTeach program, as it is the mentor teachers who have the most impact on the development of the UTeach interns. The Mentor teacher’s role is to teach the intern what he or she needs to know about the art of teaching; to guide the intern to develop those skills essential to be an effective teacher; to provide opportunities for the intern to take risks in a supportive setting; and to encourage the intern to reflect on his or her own teaching in his or her journey to becoming an effective teacher.

UTeach UMass Lowell now works with around 30 elementary school mentors, 15 middle school mentors, and five high school mentors.

Mentor Teacher Appreciation Dinner

To appreciate the crucial role of mentor teachers, on November 14, 2012 UTeach UMass Lowell held a dinner at the Inn and Conference Center in Lowell.

Mentor teachers, Principals, Superintendents, and Science/Math Coordinators from Lowell, Methuen, Lawrence, Dracut, and Chelmsford were invited to the event. This event provided the mentor teachers and school administrators from the four school districts to meet and socialize.

Pam Migos, a grade 5 math teacher at the Comprehensive Grammar School in Methuen, and Cheryl Ortega, a grade 4 science teacher at the Pawtucketville Memorial Elementary School in Lowell are two of the very first Elementary School teachers to take on the role of UTeach mentor teachers to the first Step 1 cohort.

Both Ms. Migos and Ms. Ortega worked with two sets of interns, and they together with other teachers shared their experiences of being a mentor to UTeach interns.
UTeach Interns — The Next Generation of STEM Teachers

UTeach interns at UMass Lowell are some of the most enthusiastic, dedicated, and exceptionally talented individuals that UMass Lowell attracts into the Science and Engineering programs. Although not all those who start with Step 1 will pursue a career in teaching, they agree that UTeach provides them with the experience to decide whether teaching is suitable for them, and teaches them skills that can be used in throughout their degree and in whatever other career path they may choose.

The UTeach Experience

As well as going out into the field to experience teaching, the UTeach interns have regular class sessions where they learn how to plan lessons and how to use different strategies to teach and engage students. They then share their experiences - successes and challenges - of being a UTeach teacher at a poster presentation event organized by UTeach UMass Lowell.
Student Organization—WeTeach UMass Lowell

In the summer of 2012, having just completed Step 1, Ashley Bretton, Matthew Desmond, Erin McLaughlin, Seamus Beirne, Corrine Clifford, and Margaret Reagan got together and formed the student organization WeTeach.

Though still in the developing stages, the individuals who have formed this organization are the ambassadors for UTeach UMass Lowell. Now in their third semester of UTeach courses, these students have represented UTeach at University organized events such as freshman orientation, convocation, and various departmental open houses. In addition to this, WeTeach representatives hosted two open house events to publicize UTeach to Science/Engineering freshman, and then later to Science/Engineering advisors. They also visited classrooms and lecture halls to share their experiences of being a UTeacher.

WeTeach of course is not just an organization formed to recruit new students. They are committed to making a difference through reaching out into the local community offering math and science tutoring programs at the local elementary and middle schools, and working alongside teachers as classroom assistants. Above all, WeTeach students are determined to form a community of support for the students who embark on the UTeach program as well as other STEM majors. Thus they have formed buddy systems and peer support for the new UTeach interns leading study sessions for organic chemistry, calculus I, etc. in Pasteur 106. WeTeach truly is an organization providing, friendship, support, guidance, and fun social events for students at UMass Lowell.

WeTeach Representatives of the Executive Board
Left to Right: Corrine Clifford (Math Major - Secretary), Erin McLaughlin (Math Major - Vice President), Matthew Desmond (Math Major – Treasurer), and Ashley Bretton (Biology Major – Community Outreach)
# Student Enrollments

<table>
<thead>
<tr>
<th>Course</th>
<th>Spring 2012</th>
<th>Fall 2012</th>
<th>Spring 2013</th>
<th>Total Per Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>28</td>
<td>43</td>
<td>31</td>
<td>102</td>
</tr>
<tr>
<td>Step 2</td>
<td>n/a</td>
<td>14</td>
<td>24</td>
<td>38</td>
</tr>
<tr>
<td>Functions and Modeling</td>
<td>n/a</td>
<td>7</td>
<td>n/a</td>
<td>7</td>
</tr>
<tr>
<td>Knowing and Learning</td>
<td>n/a</td>
<td>18</td>
<td>n/a</td>
<td>18</td>
</tr>
<tr>
<td>Interactions and Equity</td>
<td>n/a</td>
<td>n/a</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Perspectives in Mathematics and Science</td>
<td>n/a</td>
<td>n/a</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>28</strong></td>
<td><strong>82</strong></td>
<td><strong>84</strong></td>
<td><strong>194</strong></td>
</tr>
</tbody>
</table>

**Enrollments**

- **Step 1**: Purple
- **Step 2**: Red
- **Knowing and Learning**: Green
- **Functions and Modeling**: Blue
- **Perspectives**: Cyan
- **Interactions**: Orange

![Pie Chart](image)
Scholarships and Internships

Providing Internships and Scholarships is an integral part of UTeach. As the program is still in its early stages, we are still investigating all avenues to find suitable scholarships and internships for those who participate in the program.

In the Fall 2012, the Cheney and Cook Scholarships were awarded to four Engineering UTeach UMass Lowell interns:

- Seamus Beirne (Mechanica Engineering),
- Harrison Donahue (Electrical Engineering),
- Chris Leger (Electrical Engineering)
- Kenneth Amici (Mechanical Engineering).

Each student received $1,000 by the Scholarship Committee.

The internships offered to our UTeach participants provide them with more experience at an educational site, working with young people. The interns learn to make connections and are often inspired by the experience. Moreover, the sites accommodating our interns value the service the interns provide, and affirm a greater trust and connection with the University.

This semester we were contacted by the Lowell Public Schools seeking tutors for mathematics for their middle school students. The tutors work at Stoklosa School providing personalized assistance to struggling students. The interns will be working for 10 hours a week for 14 weeks receiving $10 per hour. The internships were awarded to four UTeach interns:

- Nicolas Rossetti (Mathematics)
- Corrine Clifford (Mathematics)
- George Katsaros (Mathematics)
- Luisanna Crespo (Mathematics).