

Role Descriptions of UTeach Faculty, Master Teachers, and Staff

Building a UTeach program devoted to math and science teacher preparation involves assigning faculty to new roles, recruiting new faculty, hiring master teachers, and bringing on staff to support the program. The dynamics for building a cross-college and department team will vary at each institution and there is no defined strategy for making this happen.

This document provides a snapshot of the major job descriptions of the UTeach program at the University of Texas at Austin (UT Austin). It provides examples of how the UT Austin UTeach program co-directors, master teachers, advisors and faculty work together, how they communicate, and also provides guidance for other programs based on lessons learned over the past decade.

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Co-Directors in Natural Sciences and Education

At UT Austin, the Co-Directors of UTeach in Natural Sciences and Education have jobs similar to those of a department chair, and perform several functions:

PLANNING

The basic function of the Co-Directors is to visualize the future of the UTeach program and to set in motion all the actions that will lead to the creation and improvement of a new unit responsible for teacher preparation. As the program is created, planning includes continually considering the future and identifying upcoming tasks that are not yet anyone's responsibility, and determining how to accomplish them.

NEGOTIATION

Teacher preparation depends upon cooperation between many groups, including University administration, the Colleges of Sciences and Education, and one or more school districts. The presence of Co-Directors in meetings involving any of these groups is usually essential, particularly when addressing potential conflict and resource allocation issues.

MANAGEMENT

At UT Austin, the Co-Director from Natural Sciences oversees the hiring and performance of Master Teachers and UTeach support staff within Natural Sciences. The Natural Science Co-Director reports to a Dean or Associate Dean in Natural Sciences, communicating budget requests and job performance evaluations. The Co-Director from Education oversees hiring of education faculty, scheduling of courses, assignment of teaching assistants, and acquisition and management of resources. The Education Co-Director reports to the Dean or Associate Dean in Education, communicating issues related to budget, staffing, and facilities. The Co-Directors decide jointly on teaching assignments.

INSTRUCTION

The UTeach Co-Directors can also teach UTeach courses. This arrangement is desirable, since it provides closer and more realistic contact with students than would otherwise be possible. At UT Austin, the UTeach first Education Co-Director supervised the creation of Knowing and Learning, Classroom Interactions, and Project-Based Instruction, and taught Classroom Interactions. The Natural Sciences Co-Director oversees Research Methods and teaches one of the sections.

CEREMONIES AND CONFERENCES

The Co-Directors represent UTeach at functions both within and outside the university, and include events such as graduation dinners, fundraisers, and conferences.

STUDENT RELATIONS

The Co-Directors arbitrate disputes between students and faculty and serve on committees to grant scholarships and to decide on student appeals for waivers of UTeach rules.

FUNDRAISING

The Co-Directors write and administer federal and state grants, and assist University and college development officers in raising funds for UTeach.

COMMITTEES

The Co-Directors assign UTeach instructors to committees and oversee their operation. Co-Directors chair the Steering Committee, and one or the other is a member of most other committees.

OTHER DUTIES

Co-Directors tend to be viewed as spokespersons for the improvement of education, within the university and outside, and therefore can acquire a variety of roles, such as *ad hoc* arbitration of disputes within the school district, direction of science fairs, consultation with state and national education leaders, and many other things.

The UTeach undergraduate program at UT Austin is currently in a state of refinement and maintenance, in contrast to the hectic growth of the first five years. Still, communication between co-directors is very frequent. There are regularly scheduled meetings every week, on alternating weeks in the presence of the Steering Committee, frequent phone calls, and daily copies of email exchanges.

A question to which there is no satisfactory answer right now concerns the term of UTeach Co-Directors. They serve at the discretion of their respective Deans. In Education the issue of succession seems simpler, since all faculty in the College have a specialized professional interest in improving education, but is complicated by the fact that not all faculty have teaching experience in science and mathematics. This is not true in Natural Sciences. Faculty hired to participate in the UTeach courses are the most likely pool on which to draw if a new Co-Director is needed, but this pool is right now small.

Master Teachers

At UT Austin, Master Teachers are unique in the university structure because they are non-tenured faculty members with an MA, MS, or PhD and are part of the Dean's Office of Special Projects in the College of Natural Sciences. Their salaries are part of the instructional budget. Master Teachers are extremely skilled and knowledgeable, have strong credentials in public school teaching, and may or may not be involved in conducting research.

From the earliest planning stages of the UTeach program, a decision was made to include the use of Master Teachers as a core component of the teacher preparation program. This decision has proven to be one of the most important elements of success.

By definition, Master Teachers have experienced years of successful teaching and are widely recognized for their educational leadership. They are credible because they have actually taught in the public school environment. It is essential to have this credibility when working with district personnel and UTeach students. People of similar cultures can talk to each other and be understood because they have a common language. Teachers know how to talk to other teachers, administrators, and students.

Master Teachers are totally committed to the success of implementing and maintaining a quality teacher-preparation program, and must be willing to do whatever it takes for this goal to be obtained. Faculty in Colleges of Education may be committed to this goal, but they have other commitments such as conducting research, publishing, and securing tenure. Master teacher have the single pursuit of building a program to produce highly qualified teachers.

CURRENT ROLES & RESPONSIBILITIES

The salaries of UTeach Master Teachers are part of the instructional budget. Their responsibilities include supervising field experiences and teaching Step 1, Step 2, Knowing and Learning, Classroom Interactions, Project-based Instruction, Research Methods, and Reading in the Content Areas. A Master Teacher has a content-heavy Master's

degree, a minimum of 3 years secondary public school teaching experience, and demonstrated ability to use best practices as evidenced by local, state, or national awards. In addition to deep content knowledge in mathematics or science, the master teachers should be recognized leaders in the local school district, ensuring extensive knowledge of key district mathematics and science personnel, curriculum, and district policies and procedures. Master Teachers should also be excellent teachers, writers, and presenters.

Master Teachers are expert models and guides, they are knowledgeable about what new teachers face and need, and they are indispensable in providing connections with local school district teachers and administrators. There should be at least one Master Teacher for every 100 students in the program, although one Master Teacher to 50 is recommended. The number of students in the program is defined as the number that has taken a course specifically required for UTeach certification in the last two long semesters or last three quarters.

The focus of a Master Teacher is to provide expertise to UTeach students. They are totally focused on UTeach field experiences and how to model effective and efficient classroom instruction.

Their time needs to be protected because they serve as informal advisors of students on demand. Master Teachers help students with lesson design and personal advice that builds trust and strong connections to UTeach. Master Teachers provide a support structure for students.

TEACHING

At UT Austin, Master Teachers teach Step 1 and Step 2, and teach or assist in the following College of Education and College of Natural Sciences courses:

- Research Methods
- Project-Based Instruction
- Classroom Interactions
- Knowing and Learning
- Reading in the Content Areas
- Functions and Modeling
- Calculus
- Perspectives

Master Teachers also organize and coordinate field experiences for UTeach students in Step 1, Step 2, Classroom Interactions, and Project-Based Instruction.

UNIVERSITY AND COMMUNITY CONNECTION

Master Teachers serve as a bridge between the university program and the local public schools. Because they have extensive experience in schools and in school districts, they understand how these systems work. They know which persons to contact about which issues, and they know how to talk to district personnel. They also know how to access information about the district's curriculum, school schedules, and other logistics.

PROGRAMMATIC SUPPORT

Master Teachers write and administer grants. They frequently present at local, state, and national conferences. They serve on the UTeach steering, scholarship, appeals, and post-baccalaureate admissions committees.

SERVICE TO THE UNIVERSITY

Master Teachers may be involved in influencing university policy. For example, at UT Austin two Master Teachers chaired the technology e-outreach committee that developed the technology plan for the UT Austin. They worked with university departments and faculty on their course and curriculum development and revisions. Each fall they organize a two-day teaching conference for all new tenure-track faculty in the College of Natural Sciences.

INVOLVEMENT IN THE GREATER COMMUNITY

A UT Austin Master Teacher gave a keynote address at a 2004 regional meeting of NSTA and the 2005 national NSTA convention. Several Master Teachers chair and work on committees that plan and implement the Conference for the Advancement of Science Teaching (CAST), the statewide science teacher conference. One served on an NRC committee that investigated and recommended establishing a program to transition recent PhD recipients to become science and mathematics teachers. They also conduct professional development workshops from the local to the international level.

ATTRIBUTES OF A MASTER TEACHER

INNOVATORS AND CREATORS

Master Teachers are successful at moving beyond the textbook, which often becomes the curriculum. They are able to take risks, study student responses, and make changes as necessary. They have experience in being creative in real classrooms. They know how to ask probing questions to elicit what students are thinking, guiding them to generate their own questions.

INTERPERSONAL SKILLS

Interpersonal skills are vitally important. Master Teachers may be called upon to represent the university. They need to relate to and work with a wide variety of people in educational settings including:

- Students
- Teachers and principals at campuses
- Superintendents and district administrators
- Presidents, provosts, regents, and deans at the university and other state university systems
- Potential donors and business leaders
- State and national legislators and their representatives
- Heads of state agencies and their representatives
- Professors in colleges: Natural Sciences, Education, Liberal Arts

MEETINGS/COMMUNICATION

Master Teachers are in constant communication. At UT Austin Step 1 and Step 2 Master Teachers meet once a week for planning. The Master Teachers who assist in College of Education or College of Liberal Arts courses meet regularly with the instructors of those courses.

LESSONS LEARNED

- Master Teachers should be hired with the expectation that they will fill a variety of niches. If a public school teacher is looking forward to a job with fewer demands and shorter hours than what they experience in their current positions, becoming a Master Teacher is the wrong course of action.
- Physically locating Master Teachers in one office complex improves their effectiveness by encouraging idea sharing and problem solving. If one Master Teacher is not available when a student comes in for help with a lesson plan, other Master Teachers can generally meet the student's need.
- New Master Teachers will likely be unfamiliar with the university environment, requirements, protocols, and related degree plans. Continuous advice may be needed about university procedures to accomplish the most elementary tasks.
- Because course numbers in the various departments may have to be used while waiting for UTeach courses to be approved, initial Master Teachers may need to be appointed in the department in which the course numbers are offered.
- As support staff are hired, they can take over many of the tasks that the initial master teacher must perform. Simultaneously, because of their unique ability to innovate and create new programs, Master Teachers have taken on unanticipated new roles. For example, at UT Austin when a Master Teacher became the coordinator of Discovery Learning, the College of Natural Sciences project to improve teaching throughout the College, her energy and creativity added new life to the project. UT Austin currently has nine Master Teachers, most of whom fulfill jobs that are beyond the scope of "Master Teacher" as initially defined.

Faculty

COLLEGE OF EDUCATION

One of the major issues with faculty in Colleges of Education is likely to be ownership. Prior to 1985, teacher preparation programs in Texas tended to be owned by Colleges of Education. This was the case at the University of Texas, and there was resentment at what appeared to be a complete transfer of responsibility to the College of Natural Sciences. Unless new faculty members are recruited specifically for the program, faculty are likely to have to revise and rethink the courses they have traditionally taught. It is important to acknowledge these efforts in job evaluations and compensate them in some way.

Perhaps even more important is the need to secure faculty members whose research areas are closely aligned with teaching and learning secondary mathematics and science. The College of Education at the University of Texas was fortunate to be able to bring onboard several such researchers in the initial phases of the program, and their research was instrumental in developing the courses for which the College of Education was primarily responsible: Knowing and Learning, Classroom Interactions and Project Based Instruction, as well as Functions and Modeling. Being able to work in a state-of-the-art mathematics and science teacher preparation program was certainly a draw for recruits who came after the initial cadre.

Another critical issue is the tenure process for College of Education faculty who are involved. On the College of Natural Sciences side, although researchers were reported to be attracted to UT by the possibility of working with future teachers, the primary research areas are not in secondary science and mathematics teaching and learning. Teaching for UTeach is not their primary job assignment. On the other hand, if College of Education faculty are to secure tenure, scholarly recognition must come from working with UTeach, or they must take on the added responsibility for research in other areas. Their work effort cannot be primarily devoted to teacher preparation, as it can be in the case of the Master Teachers. Thus, it is critical that research be a major driver from the College of Education side, and indeed it has been at UT. UTeach has provided many funding and research opportunities for College of Education faculty and, in equal portion, has benefited from the research done.

COLLEGE OF NATURAL SCIENCES

One of the most common questions about faculty in science and math and their relation to teacher preparation is how one gets all of them to buy in. The quick answer is that buy-in from all science and math faculty is not needed. The main function that science and math faculty serve is to teach regular courses to majors and non-majors, and this is all they are asked to do.

However, it is essential to have at least a few really committed faculty allies in every department. These are faculty who have thought about the significance of teacher preparation and are willing to devote some time and energy to it. In many cases, they are recruited to the cause by their children. They observe science and math education in the schools through the daily progression of assignments and tests, and realize that it is not enough just to blame some vague external forces for the low quality education their child receives. In many cases, pressure from the National Science Foundation through Criterion II plays a role in adopting a sense of responsibility. Faculty allies can play many roles. They help shepherd degree plans through their department. They provide mentoring and support for pre-service teachers majoring in their discipline. They help locate materials and supplies for projects.

In some cases, faculty may develop a strong enough commitment that they decide to develop special courses for pre-service teachers, or special sections sensitive to their needs. Often these faculty have for years taught classes that are especially appropriate for pre-service teachers, and UTeach steers students their way; sometimes special courses or

sections are newly created. The mathematics department has offered several modified Moore method courses that are recommended to UTeach students. A new such course, specifically developed for UTeach, is currently under development. A faculty member in Geology has long offered a field course that UTeach highly recommends. There are several Discovery labs in biology that students can take, and a special discussion section for teachers associated with Evolution is under development. The existence of the Master of Arts in Science and Mathematics Education was only made possible by the willingness of several faculty in the departments of Mathematics, Chemistry, Biology, Physics, and Geology, to develop a number of new graduate courses for in-service teachers. Finding College of Natural Sciences faculty who are willing and able to teach appropriate courses for the Summer Masters program has posed a challenge. In some cases, College of Education faculty with appropriate backgrounds in the discipline have had to assume responsibility for the classes.

In the particular case of the required Research Methods course, UTeach was not able to find regular faculty willing to take on the teaching assignment. It made most faculty nervous to think of teaching an open-ended class cross-listed between three departments. Two hires authorized by Dean Rankin solved the problem by bringing new faculty to the university with the specific understanding that they would teach sections of this course. The individuals who came in this way to the Departments of Astronomy and Integrative Biology also have extremely strong research credentials, and might not have been attracted to UT Austin in any other way.

Since there has been an emphasis on Discovery courses in the discussion about faculty, it should be emphasized that UTeach does not have an agenda of eliminating all courses from UTeach degree plans except for those in a discovery mode. UTeach's hope is that students be exposed to really excellent teaching in variety of formats, including lecture, lab, and independent inquiry. UTeach wants students to learn their subjects deeply, to observe different modes of teaching carefully, and have a variety of role models to select from when they themselves go to teach.

COLLEGE OF LIBERAL ARTS

UTeach operates on the principle that subjects should be taught by specialists who know them best; therefore, administrators approached the departments of history and philosophy for courses on the history and philosophy of science and mathematics. A particular faculty member from one of these two departments allowed UTeach the capability to offer four sections a year of a course called Perspectives in Science and Mathematics.

It was more difficult to fill a position in the College of Liberal Arts for this purpose than it was to fill either of the UTeach-related positions in the College of Natural Sciences or the faculty positions in the College of Education. The faculty hires in Natural Sciences could have an unlimited range of research specialties as long as they were committed to working with pre-service teachers, while the College of Liberal Arts faculty hires needed to be specialists in philosophy or history of science and mathematics, which is a specific and relatively small discipline. Eventually the History department was able to hire an excellent candidate. This faculty member stated rather strongly that a great attraction for her was

the charge of developing a new course, subject to some guidelines. If there had been a tightly regulated course she was mandated to teach, the position would have been much less desirable.

Advisors

UNDERGRADUATE ADVISING

The UTeach program at UT Austin currently has one and a half academic advisors dedicated to UTeach. These individuals are knowledgeable about the many College of Natural Sciences degree plans, as well as other degree plans that apply to some of the students. The advisors are also familiar with state certification requirements and state testing requirements.

There are several student populations who are advised through UTeach.

UNDERGRADUATES PURSUING COLLEGE OF NATURAL SCIENCES DEGREE WITH TEACHER CERTIFICATION

As the largest group of students advised through UTeach, these students earn a Bachelor's degree in their major field and need only to see their UTeach advisor. They are issued transcripts with "Teaching Option" as an indication that their degree plan included the UTeach professional development courses. Pending successful completion of state testing requirements, they are recommended for certification by the College of Education. (See appendix for Certification Progression check lists and Degree Requirement Checklists).

UNDERGRADUATES PURSUING COLLEGE OF NATURAL SCIENCES DEGREE, NOT IDENTIFIED AS TEACHING OPTION

Some undergraduate students are pursuing certification with a major degree plan in the College of Natural Sciences, but are not identified as "Teaching Option" students. These students are generally majoring in science, computer science, or math. The degree plan for these students fulfills most or all of the content courses required for teaching certification, but they must take professional development courses in addition to their degree requirements. Elective space in the major may be used to accommodate some of the professional development sequence and any additional content courses. These students must work with both their department advisors and the UTeach advisor.

UNDERGRADUATES PURSUING DEGREES IN OTHER COLLEGES

Other undergraduate students are pursuing certification with a major degree plan in a college other than the College of Natural Sciences. For example, a student may pursue a degree in Radio/Television/Film (RTF) and wish to gain a teaching certification in mathematics. This student would take the professional development courses in UTeach along with the required mathematics content courses for certification while pursuing the RTF Bachelor's degree in the College of Communication. These students must work with both their department advisors and the UTeach advisor.

POST-BACCALAUREATES

Post-baccalaureates (post-bacs) are a relatively new student population to the UTeach program and require a unique set of advising tools. Having completed an undergraduate degree, they now wish to earn certification in secondary mathematics, science, or computer science. These students require a thorough review of their college transcripts and careful advising on how to proceed to meet both the content and professional development requirements for certification. Transcript evaluations are performed by faculty in the appropriate departments to confirm transfer of comparable course work and to offer recommendations to the advisors for remediation or compliance. To work effectively with the post-bacs, the UTeach advisor must also be knowledgeable in the State Content Requirements for Teacher Certification.

In addition to more traditional advising tasks, the UTeach advisor also manages the portfolio requirements for all UTeach students (see information on UTeach Portfolios at: <https://uteach.utexas.edu/go/uteachweb/Information/Current-Undergraduate-UTeach-Students/Portfolio>). The advisor also sponsors MASST (Math and Science Teachers of Tomorrow), the student organization.

THE EVOLUTION OF UTEACH ADVISING

Initially students in the UTeach program were assigned to advisors in their majors' departments. However, those advisors knew little about the new teacher preparation program and did not have the knowledge to advise students who had joined UTeach, especially because the UTeach curriculum and new degree plans were under development. Advisors did not like the uncertainties that lasted for several years before the new degree plans were negotiated and finalized.

Meanwhile, the Master Teacher knew about the details of UTeach, but little about the degree plans related to students' majors. She was unfamiliar with the infrastructure of the university and the rules governing decisions related to degree plans. Because of her lack of knowledge, numerous meetings were required involving the advisors, the associate dean for student affairs, and the master teacher. After two years, UTeach hired a person who was a half-time advisor and a half-time program evaluator. She worked only with UTeach students, although she attended the College of Natural Sciences advisors meetings and communicated with them on a regular basis.

UTeach was determined not to allow students to suffer negative consequences during this transition period. Flexibility in determining credits was critically important in the beginning. If it became apparent that a student's graduation date was in jeopardy, the UTeach advisor took requests for exceptions to an associate dean who made student-friendly decisions about requirements. Fortunately, this path was rarely needed.

In addition to advising students, the first UTeach advisor took on the role of managing the UTeach portfolio requirement. The advisor continues to manage this task.

LESSONS LEARNED

- UTeach advisors should be enthusiastic cheerleaders for teaching as a viable career choice for talented students.
- Advisors should project an image that lets students know they are a special and honored group who will receive unusual personal attention and support.
- During the transition years in which the UTeach program was being established, with ongoing development of degree plans, and with students entering UTeach after they had begun other degree plans, it was essential for advisors to be flexible.

RECOMMENDATIONS

As soon as it is feasible, hire a dedicated advisor. The advisor should work with the original Master Teacher to recruit the first group of students. UTeach advisors should be familiar with the following resources:

- Certification Checklist
- Degree Requirement Checklist
- Sample Portfolio

Executive Assistant

The Executive Assistant relieves the director of day-to-day administrative activities. He or she completes any tasks that are not competed elsewhere, including administrative oversight of the office and staff, budgeting, and course and room scheduling.

UTeach's current Executive Assistant was hired during the second year of operation. Originally he was responsible for many tasks that were eventually taken over by other staff: reception, purchasing, accounting, materials management, appointments, payroll, budget, conference and meeting coordination, and helping people with classes. As other staff personnel were hired, his job became more management oriented. The Executive Assistant's major activities include:

- Staff management
- Oversight of organizational efficiency processes and compliance with rules
- Responsibility for the annual budget and budget process compliance
- Management of the hiring process, including posting new jobs, scheduling interviews, ensuring that everyone is officially appointed and paid
- Space management, including scheduling and maintenance of rooms
- Advising on the grant proposal process regarding budgets, application process, university requirements, submission procedures, and documentation
- Contracts processing

MEETINGS/COMMUNICATION

In addition to frequent consultation with the UTeach Co-Director, the Executive Assistant meets regularly with the administrative and teaching staff. He or she attends meetings with Development, as well as with the Business Affairs staff from the dean's office, and the university level. The Executive Assistant also frequently attends meetings with individuals or foundation representatives who are major contributors to UTeach.

SPECIAL TECHNOLOGY NEEDS

The Executive Assistant must have available a computer with a large screen that permits working on adjacent documents that often have many small numbers. He or she must also have access to Microsoft Office and a scanner.

LESSONS LEARNED

This position requires a flexible person with excellent people skills. This Executive Assistant must be creative in finding ways to navigate university bureaucracy, rather than succumb to it. He or she needs to be able to judge which battles are worth fighting and adhere to the confidentiality requirements of academic, operations, and personnel areas. The Executive Assistant should be able to prioritize people's needs and separate needs from wants. It is essential to keep track of the work load so that the burden of the job does not become too big.

RECOMMENDATIONS

Hire someone with the ability to interact with all kinds of people, including students, faculty, potential donors, and impatient or angry people. The Executive Assistant should be someone who remains calm and does not become easily frustrated while constantly trying to fix other people's problems. The Executive Assistant often has to be the bearer of bad news, which occasionally results in someone "blaming the messenger." People get upset over what can and cannot be done, and sometimes blame the Executive Assistant, when he or she may have little or no control over something. Therefore, this person must be able to remain calm, positive, and confident. The Executive Assistant's office should be adjacent to the Director's office to permit ease of frequent and informal communication.