

**Teachers for a Competitive Tomorrow: Programs for  
Master's Degrees in Science, Technology, Engineering,  
Mathematics (STEM) or Critical Foreign Language (CFL),  
with Concurrent Teacher Certification (TCT-M)**

**Annual Performance Report**

Office of Postsecondary Education  
U.S. Department of Education

Teachers for a Competitive Tomorrow Program Master's (TCT-M) Program  
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**Cover Sheet**

Project Identification and Certification **June 16, 2009 through June 15, 2010.**

**A. Identification**

1. Report Period: 06/16/ 2009 to 06/15/2010  
Month/Day/Year Month/Day/Year
2. PR/Award Number: 203167
3. Name of Grantee: The University of Toledo
4. Address (City, State, Zip): 2801 W. Bancroft Avenue  
Toledo, OH 43606
5. Name of Project Director: Daryl Moorhead  
Phone Number: 419-530-2017 Fax Number: 419-530-2017  
E-mail Address: daryl.moorhead@utoledo.edu

**B. Indirect Cost Information (To be completed by your Business Office.)**

- a. Are you claiming indirect costs under this grant?  Yes  No
- b. If yes, do you have an Indirect Cost Rate Agreement approved by the federal government?  
 Yes  No
- c. If yes, provide the following information:  
Period Covered by the Indirect Cost Rate Agreement:  
From: 06/15/2009 To: 06/16/2010  
Approved rate: 8% percent  
Approving Federal agency:  ED  (Please specify): Health and Human Services  
Type of Rate:  Fixed  Final  Other (Please specify) \_\_\_\_\_
- d. Are you using a restricted indirect cost rate that:  
Is included in your approved Indirect Cost Rate Agreement? no  
Complies with 34 CFR 76.564(c)(2)? no

**C. Certification:** We certify that the performance report information reported and submitted on 06/28/2010 is readily verifiable. The information reported is accurate, reliable, and complete, with all known weaknesses fully disclosed, to the best of our knowledge and belief.

Michael Phillips, Chairman

Daryl Moorhead

\_\_\_\_\_  
Name of Certifying Official and Title (Print)

\_\_\_\_\_  
Name of Project Director (Print)

\_\_\_\_\_  
Signature of Certifying Official

\_\_\_\_\_  
Signature of Project Director

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

## **INSTRUCTIONS TCT-M Annual Performance Report (APR)**

The Department of Education uses this report to determine whether you have made substantial progress toward meeting the objectives of your project as outlined in your grant application or work plan in this reporting period. As required by the Government Performance and Results Act (GPRA) of 1993, the APR is also used to collect data addressing the performance of the TCT-M program on a national level. Annual submission of the APR is a requirement of your grant and will be used to determine continuation funding.

This APR consists of a cover sheet, the executive summary, and eight sections. The cover sheet must be completed and signed by the project director and certifying official, and the entire report must be submitted to the Department of Education on or before the due date. A separate announcement including these instructions and due date will be sent to each grantee annually. Grantees are expected to complete all questions in the APR. Please write "Not Applicable" or "N/A" if a question does not currently pertain to your project.

Please use the form you fill out in year one as a starting point for yearly APR reporting. Since much of the information will not change, you will want to save the year one APR for future use.

**The reporting period for your grant is from June 16, 2009 through June 15, 2010.**

**Please note:** The critical foreign languages in the Teachers for a Competitive Tomorrow Program, and thereby for purposes of this APR, are: Arabic, Chinese, Japanese, Korean, Russian, Hindi, Urdu, Persian, and Turkish.

## **EXECUTIVE SUMMARY**

**Synopsis:** Our project will provide current science teachers in the Toledo Public Schools (TPS) district (high needs LEA) with a Master of Science (MS) degree in Biology (Ecology Track) from the Department of Environmental Sciences (DES) at UT, aided by the Department of Curriculum & Instruction (DCI). TPS helped identify graduate courses that best fit the learning needs of its students by matching Ohio content standards in science with student performance on the Ohio Achievement Test: earth sciences and biology, the two primary foci of DES. Our teachers will take 24 semester hours of graduate level content courses and 4 hours of a translational pedagogy course (DCI). In their first year, teachers completed 13 hours of coursework in content areas and 3 hours in pedagogy. Participants are now working under the direct supervision of DES advisors who most closely share their individual scholarly interests. All members of this cohort attended a scientific conference in spring 2009, several attended another scientific conference in July 2009, and others attended a teacher conference in February 2010. These teachers have become part of a larger, learning community of scientists, graduate students of science, high school science teachers and high school science students, by attending scientific seminars at UT and by conducting a cooperative research project (in summer 2010).

### **Program activities and components: outcomes, successes, and concerns.**

Our accomplishments over the past year closely follow the scheduled activities and timeline described in our proposal:

1. **Recruitment:** We have already started recruiting our second cohort of teachers although they will not enter the program until summer 2011. This began with updating our informational flier from the previous year, and having current participants share with their colleagues in TPS schools. We are also contacting other Toledo area schools to identify teachers who could participate. We had far too many applications for the available positions last year, and anticipate a similar response for the second cohort next spring. The enthusiasm of the first cohort suggests that the teachers, themselves, may be our biggest source of recruits for next year, through word-of-mouth and via interaction with peers in their home schools.
2. **Admission:** There were delays in admitting the first cohort of participants into the UT College of Arts and Sciences Graduate Program last year, due to problems with the on-line admission programs administered by the UT College of Graduate Studies (COGS). However, the new paperless application processes and new admissions software programs are now working properly. Nonetheless, our program manager will compile copies of all application materials to facilitate timely consideration and admission of the next cohort.
3. **Advising:** The current cohort of teachers was guided through much of the first year of the program by an ad hoc committee of DES faculty (Moorhead, Gottgens, Mayer and Weintraub) who are participating in the IMPACT program. In the spring of 2010, each participant selected an independent advisor from DES faculty, who most closely

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shared their study interests. These advisors are now working directly with students to guide them through independent research projects.

4. **Conferences:** All teachers were scheduled to participate in both an education and a science conference annually, as part of the IMPACT program of study. This began with all participants attending the International Association for Great Lakes Research (IAGLR) scientific conference May 18-22, 2009. This included a special, one-day session dedicated primarily to science education and outreach (Tuesday 19 May 2009) with an evening poster session highlighting projects conducted by local area high school teachers and their students, and the NSF GK12 teachers, fellows and students. IAGLR waived \$245 of the \$295 registration fee for each teacher, thus making an in-kind contribution to the IMPACT program of about \$2450. Four teachers then attended the joint Soil Ecology Society/Society of Nematologists meeting at the University of Vermont in Burlington, Vermont (July 12-15). A poster explaining both the IMPACT and GK12 programs, and their interaction, at UT was presented. Four teachers then attended the Science Education Council of Ohio meeting in Columbus, Ohio (February 24-26). Finally, one teacher attended the Association for Science Teacher Education meeting in January 14-16. Thus all teachers have attended at least one conference in their first year of the program and each is expected to attend at least two more before they graduate. They are also being encouraged to present the results of their studies in a future meeting.
5. **Formal Courses:** As planned, participants began their formal classes on 15 June 2009, with a full week of intensive field studies followed by a second week of more detailed laboratory studies and data management/analysis. In autumn 2009, students had formal courses in ecology and pedagogy, and a seminar in ecology (see schedule and description in proposal). In spring 2010, students had a formal course in conservation biology. An additional 2-weeks of intensive summer courses will run 14-25 June 2010. No departures from the proposed plan of study have occurred nor are any expected.
6. **Science Community:** IMPACT teachers had the opportunity to interact with the GK12 program teachers and graduate fellows, as part of engaging in a larger learning community. This began with the IAGLR conference, in which the IMPACT teachers met and became familiar with the GK12 graduate fellows, teachers and their students, through attending a poster session dedicated to science education (see above). A monthly seminar in aquatic ecology was held during the autumn semester of the academic year and included participation by both GK12 and IMPACT teachers as well as GK12 Fellows. Additional meetings were not possible during the academic year, due to scheduling conflicts between the GK12 and IMPACT classes. However, the summer course scheduled for 14-19 June 2010 specifically integrated both groups in a highly interactive field study.
7. **Evaluation:** IMPACT has six program objectives and within each program objective there are performance measures (PM). The evaluation plan measures GPRA, program, and project objectives and outcomes. Herein we address those elements of these evaluation plans that can be performed at this stage of program development.
  - o Objective 1: Increase the number of high quality science teachers in Toledo Public Schools (high-need LEA) by assisting 20 in-service science teachers in the attainment of a MS in Biology.

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- *PM A:* Recruit and enroll 10 participants per cohort. This objective was accomplished with the successful enrollment of the first cohort in May 2009.
- *PM B:* Recruit and retain 30% of the participants from under-represented groups. Our first cohort of 10 IMPACT teachers includes two from underrepresented populations or 20%.
- *PM C:* Program participants will maintain adequate progress towards degree completion earning the degree in two years. All 10 IMPACT teachers successfully completed their first year of coursework.
- *PM D:* All participants will pass the Praxis II in biology within 6 months of earning the MS degree. (This objective cannot be addressed at this time.)
- *PM E:* All participants will engage in professional development activities by attending two regional conferences per year while earning their degree. 80% will present at one of the conferences during the second year. All 10 IMPACT teachers attended their first scientific conference (May 2009).
- Objective 2: Maintain a minimum 90% retention of project participants
  - *PM A:* A minimum of 90% of IMPACT participants will graduate with a MS degree in Biology within two years. Again, all 10 IMPACT teachers successfully completed their first year of coursework, are making adequate academic progress towards their degree, and enrolled for courses this summer and fall 2010. Our retention rate is 100%.
- Objective 3: 100% of program participant completers will remain as science teachers in Toledo Public Schools or another high needs school for at least two years after degree completion.
  - *PM A:* Beginning 2011, provide post-graduate follow up activities (professional development) that focus upon teaching science in urban schools. A minimum of 75% of the participants will engage in these activities at least once per year. (This objective cannot be addressed at this time.)
  - *PM B:* Within the first year of the project, develop and maintain an IMPACT online community of learners for both participants and graduates with 75% participation rate. An IMPACT web page has been established, with curriculum materials, links to key web sites on campus, and directions relevant to program. Communications among teachers, staff and faculty has been established. Faculty teaching all courses make use of the website as a means of communicating with the participants about course requirements (reading assignments, homework assignments) and as a means of interacting with the participants outside of the classroom. The evaluator also uses the website as a way to contact and gather data from the participants.
- Objective 4: Improve student academic achievement in science in IMPACT classrooms by providing inquiry-based instruction.
  - *PM A:* All participants will deliver inquiry-based science instruction directly linked to Ohio Content Standards. Each participant was observed delivering a project-based lesson to their students. Observations were rated using the Horizon Inside the Classroom Observation protocol, a reliable and valid method for assessing the quality of project based science instruction. Average rating of the 10 participants was 3—some evidence of inquiry-based instruction. The Design section of the protocol reflects lessons that incorporate the inclusion of activities, tasks, roles and interactions leading to a

collaborative approach to learning. Included also are indicators of careful planning and time for concluding the lesson, including an overt plan for sense-making. The overall highest and lowest ratings in this section were 5 and 2. The average rating of this section was 3. The adequate time and structure for “sense-making” and wrap up received lower ratings. Collaborative approach to learning among the students, instructional strategies and the contribution of the available resources were found to be the common strengths of the design. Implementation indicators reflect the importance of a teacher’s ability to carry out the design confidently, incorporating a pace that adapts to students’ levels of understanding, and questioning applied to develop conceptual understanding. The overall highest and lowest ratings in this section were 3 and 5. Teacher’s questioning strategies received lower ratings in general but the teachers’ confident appearance and ability to understand students’ level of understanding were highly rated for all. The Science Content section places importance on significant, accurate content appropriate to the development of the student, including appropriate levels of abstraction, presented contextually, and promoting conceptual development and sense making. Many of these indicators could be categorized as pedagogical content knowledge indicators. A common weakness was the lack of appropriate connections between contents and real life situations. Another weakness was found to be the “sense- making” nature science contents for appropriate grade level. The common strengths of this category were students’ engagement in the activities intellectually and the teacher’s ability to demonstrate the science concepts clearly. Classroom Culture indicators describe a classroom where there is respect for students and teachers, ideas and rigor are valued and collaborative work is the norm. In general, indicators of the classroom culture were highly rated. **Overall impact of instruction on students’ understanding, self-confidence, interest, capacity to carry out their own inquiries and their ability to apply or generalize skills and concepts to other disciplines or real life situations was positive.**

- *PM B*: Scores on the Ohio Achievement Test of Science (OAT) of students who are in participant classrooms will show a medium to large effect size increase over baseline and control group scores.
  - Student scores on the science Ohio Graduation Test (OGT) will be collected as appropriate. The test in science is given in grades 5, 8 and 10. The tenth grade test is the OGT grade level and may be retaken in grades 11 and 12 if necessary. Each summer, TPS will forward the test scores of students enrolled in our participants’ classes and from those in the control group classrooms. Baseline data (OGT scores) from both groups will be collected during the spring prior to project commencement. Each year effect sizes will be calculated to compare changes between control and treatment groups and the baseline data. This type of pretest/posttest—control/treatment group comparison will allow us to better isolate the effect participation in IMPACT has had. Baseline data has been collected; however, first year comparison data will not be available until August.
- Objective 5: Increase the number of secondary school students enrolled in upper level science courses by 20% in the schools where participants teach.

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- *PM A:* Increase the number of students eligible for upper level science courses by increasing the student passing rate (grade of C or better) in science classes by 25% in schools where participants teach. Baseline data has been collected; year 1 comparison will be provided in August.
- *PM B:* Student increased interest in advanced science as evidenced by participation in local science fairs will increase by 25%. This year 103 students were surveyed as to their participation in extra-curricular science activities. Of the 103, 20 indicated participation (19%). This data will be used as baseline for comparison next year.
- Objective 6: Increase the number of secondary school students who plan to pursue postsecondary education in a science-related field by 15% in the classes taught by IMPACT teachers.
  - *PM A:* Students in IMPACT classrooms will show a statistically significantly better understanding of scientific career opportunities on a project-based survey than students in the control group. Students from participant classes (103) were compared with a matched control group (48 students) on an assessment from the NSF Online Evaluation Resource Library that measured interest in science and understanding of the nature of science. Responses showed no differences between treatment and control students on either scale. However, Rasch analysis of the instruments indicated that the survey is not unidimensional and therefore is not a valid measure. This year the evaluator will refine the survey in order to correct its flaws.
  - *PM B:* The increase in the number of students in the IMPACT classrooms that plan to pursue postsecondary education in a science-related field will be greater than the number in the control classrooms. Baseline data was collected this year. 44% of students in the treatment classes indicated an interest in pursuing a science-related post-secondary education as opposed to 41% of those in the control classrooms indicating that this goal has been achieved this year.



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**Section I: Active Partners**

1. Specify the program(s) of study at the grantee institution's school, department or program that are included in the partnership (for example, biology, mathematics, engineering, technology, or Chinese).

Department of Environmental Science at The University of Toledo

2. Identify the school, department or program of education within the eligible recipient, or a two-year institution of higher education that has a teacher preparation offering or a dual enrollment program with the eligible recipient.

Judith Herb College of Education at The University of Toledo

3. Identify the high-need local educational agencies (LEA(s)) that participate in this grant:

Toledo Public Schools

4. Identify the partner school(s) (or consortium(s) of schools) that participate in this grant. Specify the NCES School Name, School ID(s) or District ID(s). IDs may be found at <http://nces.ed.gov/ccd/schoolsearch/>.

NCES School Name	District ID
Start High School	3404490
Scott High School	3404490
Libbey High School	3404490
Woodward High School	3404490
Waite High School	3404490
Rogers High School	3404490

5. Identify the schools determined by the partnership to be most in need. Specify the NCES School Name, School ID(s) or District ID(s). IDs may be found at <http://nces.ed.gov/ccd/schoolsearch/>. Specify the primary school(s) served and place an asterisk next to each school that meets the requirements for high-need school(s).

NCES School Name	School ID or District ID
Scott High School	3404490
Libbey High School	3404490
Woodward High School	3404490
Waite High School	3404490
Rogers High School	3404490

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6. Describe the methodology for determining which schools are “most in need”.

We looked at free and reduced lunch percentages for the junior high schools associated with each high school (all over 45%) and the science scores on the Ohio Achievement Test (below 60% proficient in science at the 10<sup>th</sup> grade).

7. Identify any nonprofit organization(s) participating in this project. Specify the name, contact person, address, city and state of any active partner nonprofit organizations.

No non-profit organizations are participating in this project.

8. Since the TCT proposal was submitted: (a) Have any partners been added to your grant? Yes\_\_\_No\_X\_ If Yes, please describe.

(b) Have any partners discontinued their participation in your grant? Yes \_\_\_  
No\_X\_ If Yes, please describe.

(c) Has the role of any existing partner changed significantly? Yes\_\_\_ No\_X\_ If Yes, please describe.

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**Section II: Services and Activities**

1. Describe activities to encourage the participation of (a) individuals who are members of groups that are underrepresented in the teaching of science, technology, engineering, mathematics, or critical foreign languages; (b) members of the Armed Forces who are transitioning to civilian life; and/or (c) teachers teaching in schools determined by the partnership to be most in need.

This year we did not recruit new participants as it is a two-year program and our teachers are just completing their first year. However, we have already begun recruiting efforts for the next cohort of teachers, who will begin in summer 2011.

**2. Services provided to pre-service teachers**

***\*\*This project does not work with pre-service teachers***

<i>Place an "X" in This Column if Your TCT Program Provides This Type of Service</i>	<i>Type of Service</i>	<i>Number of Pre-Service Teachers Who Received the Service in Current Reporting Period</i>	<i>Estimated Hours of Service Per Participant Receiving the Service in Current Reporting Period</i>
	Student teaching		
	Education in strategies to improve student literacy		
	Clinical classroom experience		
	Research experience		
	Laboratory experience		
	Internship experience		
	Curricula development		
	Other (please specify): <input style="width: 100%;" type="text"/>		
	Other (please specify): <input style="width: 100%;" type="text"/>		
	Need-based tuition assistance		\$

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**3. Activities participated in by in-service teachers**

<i>Type of Service</i>	<i>Number Who Received the Service in Current Reporting Period</i>		<i>Estimated Hours of Service Per Participant Receiving the Service in Current Reporting Period</i>	
	<i>First-Year Teachers</i>	<i>Second-Year Teachers</i>	<i>First-Year Teachers</i>	<i>Second-Year Teachers</i>
Receiving "teacher mentoring"	0	10	0	90
Mentoring other teachers	0	0	0	0
Interdisciplinary collaboration	0	10	0	90
Curricula development	0	0	0	0
"Enhanced and ongoing" professional development	0	10	0	90
Assistance in evaluating data and assessments to improve student academic achievement	0	0	0	0
Other (please specify): <div style="border: 1px solid black; padding: 2px; width: fit-content;">Enhanced content mastery</div>	0	10	0	90
Other (please specify): <div style="border: 1px solid black; height: 20px; width: 100%;"></div>				

4. Describe the role of the LEA(s) in the partnership in developing and administering the program, and how feedback from the partner LEA(s), partner school(s), and participants will be used to improve the program.

Because the coursework teachers take did not begin until June 2009, TPS has primarily assisted in helping us to design the project and to recruit teachers, although TPS also expedited scheduling substitute teachers so that all IMPACT participants could attend conferences (see executive summary for details). However, LEA will play a larger role as teachers continue to integrate content learned into their classrooms. At that point we will meet with the Science Coordinator to gather feedback to improve the program to best fit the needs of the LEA if necessary.

5. (a) Describe the procedures used to assess, throughout the operating years of the program, the content knowledge **and** teaching skills of the program participants. How will the program ensure that teachers' skills and content knowledge are being enhanced?

Content knowledge is assessed through university course grades and the Praxis II for content (at conclusion of program). Teaching mastery is assessed by using the Horizon Observation Protocol, that examines the extent to which science teachers make use of

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inquiry-based lessons and a learner centered teaching strategy. Teachers were observed spring 2010 (see evaluation results earlier). Observations will also occur next year both fall and spring semesters in order to examine growth.

(b) Describe the methods to ensure applicants to the master's degree program for professionals in a science, technology, engineering, mathematics, or critical foreign language field demonstrate "advanced knowledge" in the "relevant subject."

All course content is delivered at a graduate level. Each course meets UT Department of Environmental Science and Graduate School requirements for the MS in Biology (non-thesis). The average GPA for this cohort of students is currently 3.63, ranging 3.168-3.951; all students are in good standing.

6. Describe how your TCT-M program will prepare participants to assume leadership roles in their schools.

TPS, our LEA partner, recognizes the value the IMPACT teachers will bring to their classrooms. TPS encourages our participants to share lessons and teaching strategies through professional development workshops. In addition, all IMPACT participants attend up to two science and/or science education conferences per year. During the second year they will be encouraged to present at one conference.

7. Describe the planned and current "ongoing activities and services" provided to program graduates.

We continue to develop our "ongoing activities and services". An IMPACT web page has been established, with curriculum materials, links to key web sites on campus, and directions relevant to our program. Based upon previously funded projects, we also maintain an online community of support using existing and familiar technology, such as NING ([www.NING.com](http://www.NING.com)), which allows for secure social networking. All participants attended formal, monthly scientific seminars at the University of Toledo's Lake Erie Center during fall 2009, designed to provide both relevant content material and foster an identity within a larger, scholarly "community of science" in the region.

8. What aspects of your program do you think are most successful (have the greatest impact)? Why?

The summer programs appear to make the biggest impact because they provide "hands-on" familiarity with scientific methods of research, challenge students to formulate meaningful scientific hypotheses, and interpret research data. It is the philosophical underpinnings of science that seem to be most unfamiliar to science teachers.

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9. What barriers or problems have you encountered in planning, implementing, developing, and administering the TCT-M grant project? For example: Please note any concerns related to compliance with the TCT statute and Department of Education regulations with which you may require assistance.

The funding cycle is awkward. Being on a semester calendar, our courses begin in August, January, and June. The award notice was too late in 2008 to allow us to recruit for a January start date. As a result, we are perpetually out-of-phase with the funding cycle. This gives the appearance that we are not progressing; however, we are on track as outlined in our proposal, beginning at the earliest possible entry into the UT graduate program. It is also difficult to get TPS to provide student achievement data in a timely manner. We are working with district administration to streamline this process.

10. What warranted programmatic adjustments to your programs (e.g., type, frequency, duration, location, delivery modes) have you made or do you expect to make this year and/or next year?

None.

11. Describe the progress you have made during this reporting period in implementing your evaluation plan as described in your TCT funded application.

The project evaluation has been implemented as outlined in the project proposal. Baseline data was collected last summer and fall and student understanding of nature of science and science interest pretest/post tests were administered in the fall and spring. The evaluator also conducted a focus group interview with the participants spring semester. Findings are provided in Section IV and VII.

12. Describe any significant changes in your project design since the approval of your grant application. Please respond to the following questions.

- Do you anticipate making changes to your project design in the next reporting period? Yes \_\_\_ No \_\_\_X\_\_\_
- If Yes, please describe.

N/A

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- How will these changes impact expected (quantifiable) outcomes and your ability to meet the project's longer-term goals?

N/A

13. Describe how your project's activities/services and beneficial outcomes are likely to be sustained over time after the federally funded performance period ends.

The MS Biology—Ecology Track already existed. Slight modifications were made to ensure that the courses needed to meet MS degree requirements were offered at a time convenient for teachers. As more teachers engage in the project, the Environmental Science faculty has already planned to offer additional masters level courses later in the day. As the coursework becomes more accessible for teachers, it is expected that more teachers will take these courses as part of their State licensure requirement of continuing education.

14. Describe any systemic changes that have occurred in your partner LEA(s) and schools(s) in this reporting period.

None to date.

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**Section III: Participants**

**1. TCT Participant demographics**

<i>Category</i>	<i>Number of Pre-Service Teacher Participants</i>	<i>Number of In-Service Teacher Participants</i>
1. Total participants	0	10
2. Hispanic origin	0	0
3. Not of Hispanic origin	0	10
4. American Indian or Alaska Native	0	0
5. Asian or Pacific Islander	0	0
6. Black	0	2
7. White	0	8
8. Unknown	0	0
9. Males	0	1
10. Females	0	9
11. Low-income participants (see Attachment I for Annual Low-Income Levels)	0	0
12. Participants with physical disabilities	0	0
13. Participants with learning disabilities	0	0
14. Previous members of the Armed Forces	0	0
15. Previous teachers in schools determined to be most in need	0	8
16. Previous professionals in science, technology, engineering, mathematics, or a critical foreign language	0	0

**2. Academic majors of participants**

<i>Academic Majors of Participants</i>	<i>Number of Participants Studying Each Major</i>
MS Biology—Ecology track	10



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**3. Program graduates**

a) TCT Graduate summary – respond with respect to STEM or CFL fields

**\*\*No program graduates to date.**

<i>Academic Major of Graduates</i>	<i>Number of Graduates</i>				
	<i>Total in Major</i>	<i>Employed as Teachers</i>	<i>Placed in Partner LEA(s) and Public School(s) (or Public School Consortium(s))</i>	<i>Placed in Schools Determined to Be Most in Need</i>	<i>Placed in Other High-Need Schools*</i>

\* The term “other high-need schools” refers to partner high-need schools that are not designated as “most in need”, and high-need schools not located in a partner LEA.

b) Schools in which graduates were placed: Specify the NCES School ID(s). IDs may be found at <http://nces.ed.gov/ccd/schoolsearch/>.


**4. Employment retention of program graduates in a STEM of CFL field**

**\*\*No program graduates to date.**

<i>Program Graduation Year</i>	<i>Number of Graduates</i>					
	<i>Total</i>	<i>Currently Employed as Teachers</i>	<i>Currently Teaching in Partner LEA(s) and Public School(s) (or Public School Consortium(s))</i>	<i>Currently Teaching in Schools Determined to Be Most in Need</i>	<i>Currently Teaching in Other High-Need Schools*</i>	<i>Currently Teaching at Least 3 Years in Schools Determined to Be Most in Need</i>
2008–09						
2009–10						
2010–11						
2011–12						
2012–13						
2013–14						

\* The term “other high-need schools” refers to partner high-need schools that are not designated as “most in need”, and high-need schools not located in a partner LEA.

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**Section IV: Project Objectives**

Cite the objectives from the application or annual workplan that are tailored to the specific LEAs and schools served.

<i>Project Objective</i>	<i>Target: Projected Percentage or Projected Raw Number</i>	<i>Actual Progress: Actual Percentage or Raw Number</i>
1. Increase the number of high quality science teachers in Toledo Public Schools (high-need LEA) by adding 20 science teachers with a MS in Biology—10 years 1 & 2; 10 years 3 & 4	10	10
2. Maintain a minimum 90% retention of project participants	10	10
3. 100% of program participant completers will remain as science teachers in Toledo Public Schools or another high needs school for at least two years after degree completion.	10	N/A
4. Improve student academic achievement in science in IMPACT classrooms by providing inquiry-based instruction	Minimum 3 out of 5	3
5. Increase the number of secondary school students enrolled in upper level science courses by 20% in the schools where participants teach.	20%	(information will be provided in next year's annual report)

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6. Increase the number of secondary school students who plan to pursue postsecondary education in a science-related field by 15% in the classes taught by IMPACT teachers	15%	Baseline data obtained
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**Section V: Program/Statutory Objectives**

**Note:** Please address these questions with respect to your partner schools.

TCT Program for master's degrees [America COMPETES Act, Sec. 6114(c)(10) + Sec. 6114(d)]

<i>Program Objective Increase the Following:</i>	<i>Target Raw Number (Approved with Application)</i>	<i>Actual Raw Number</i>
The number of teachers in each subject area who have a master's degree, are teaching in schools determined to be most in need, and who taught in such schools prior to program participation		
1. Science teachers	60	40
2. Technology teachers	N/A	N/A
3. Engineering teachers	N/A	N/A
4. Mathematics teachers	N/A	N/A
5. Critical foreign language teachers	N/A	N/A

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<i>Program Objective Increase the Following:</i>	<i>Target Numerator</i>	<i>Target Denominator</i>	<i>Target Percentage (Approved with Application)</i>	<i>Actual Numerator</i>	<i>Actual Denominator</i>	<i>Actual Percentage</i>
The percentage of teachers in each subject area who have a master's degree, are teaching in schools determined to be most in need, and who taught in such schools prior to program participation	60	94	64%	40	94	43%
6. Science teachers	60	94	64%	40	94	43%
7. Technology teachers	N/A	N/A	N/A	N/A	N/A	N/A
8. Engineering teachers	N/A	N/A	N/A	N/A	N/A	N/A
9. Mathematics teachers	N/A	N/A	N/A	N/A	N/A	N/A
10. Critical foreign language teachers	N/A	N/A	N/A	N/A	N/A	N/A

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<i>Program Objective Increase the Following:</i>	<i>Target (Approved with Application)</i>	<i>Actual Number</i>
The number of teachers in each subject area who have a master's degree, are teaching in schools determined to be most in need, and who did <u>not</u> teach in such schools prior to program participation		
11. Science teachers	0	0
12. Technology teachers	N/A	N/A
13. Engineering teachers	N/A	N/A
14. Mathematics teachers	N/A	N/A
15. Critical foreign language teachers	N/A	N/A

**\*\*All of our participants are teachers in a high need LEA so no new teachers are being added.**

<i>Program Objective Increase the Following:</i>	<i>Target Numerator</i>	<i>Target Denominator</i>	<i>Target Percentage (Approved with Application)</i>	<i>Actual Numerator</i>	<i>Actual Denominator</i>	<i>Actual Percentage</i>
The percentage of teachers in each subject area who have a master's degree, are teaching in schools determined to be most in need, and who did <u>not</u> teach in such schools prior to program participation	0	0	N/A	0	0	N/A
16. Science teachers	0	0	N/A	0	0	N/A
17. Technology teachers	N/A	N/A	N/A	N/A	N/A	N/A
18. Engineering teachers	N/A	N/A	N/A	N/A	N/A	N/A
19. Mathematics teachers	N/A	N/A	N/A	N/A	N/A	N/A
20. Critical foreign languages	N/A	N/A	N/A	N/A	N/A	N/A

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<i>Program Objective Increase the Following:</i>	<i>Target Number (Approved with Application)</i>	<i>Actual Raw Number</i>
The number of <b>science</b> , technology, engineering, mathematics, or critical foreign language teachers who are in the partner public school(s), and who		
21. Have a master's degree and are "members of a group underrepresented in teaching in the STEM or CFL fields"  Specify the underrepresented groups included: <div style="border: 1px solid black; padding: 2px; display: inline-block;">             African American              Hispanic              Multi-racial           </div>	6	0
22. Were previously science, technology, engineering, mathematics, or critical foreign language professionals	62	62

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<i>Program Objective Increase the Following:</i>	<i>Target Numerator</i>	<i>Target Denominator</i>	<i>Target Percentage (Approved with Application)</i>	<i>Actual Numerator</i>	<i>Actual Denominator</i>	<i>Actual Percentage</i>
The percentage of science, technology, engineering, mathematics, or critical foreign language teachers who are in the partner school(s), and who						
23. Have a master's degree and are "members of a group underrepresented group in teaching in the STEM or CFL fields"	6	13	46%	0	13	0%
24. Were previously science, technology, engineering, mathematics, or critical foreign language professionals	13	13	100%	13	13	100%

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<i>Program Objective Increase the Following:</i>	<i>Target Numerator</i>	<i>Target Denominator</i>	<i>Target Percentage (Approved with Application)</i>	<i>Actual Numerator</i>	<i>Actual Denominator</i>	<i>Actual Percentage</i>
25. The percentage of elementary school students scoring proficient or above on mathematics assessments	N/A	N/A	N/A	N/A	N/A	N/A
26. The percentage of elementary school students scoring proficient or above on science assessments	N/A	N/A	N/A	N/A	N/A	N/A
27. The percentage of elementary school students scoring proficient or above on technology/engineering assessments, where applicable	N/A	N/A	N/A	N/A	N/A	N/A
28. The percentage of secondary school students scoring proficient or above on mathematics assessments	N/A	N/A	N/A	N/A	N/A	N/A
29. The percentage of secondary school students scoring proficient or above on science assessments	75%	N/A	75%	55.6%	N/A	55.6%
30. The percentage of secondary school students scoring proficient or above on technology /engineering assessments	N/A	N/A	N/A	N/A	N/A	N/A



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<i>Program Objective Increase the Following:</i>	<i>Target Number (Approved with Application)</i>	<i>Actual Raw Number</i>
31. The number of secondary school students enrolled in upper-level mathematics courses (e.g., number of middle school students enrolled in Algebra I)	N/A	N/A
32. The number of secondary school students enrolled in upper-level science courses	20% above current enrollment	Data currently being collected
33. The number of secondary school students enrolled in upper-level technology and engineering courses (where available)	N/A	N/A
34. The number of elementary school students enrolled in critical foreign language courses	N/A	N/A
35. The number of elementary school students continuing in critical foreign language courses	N/A	N/A
36. The number of secondary school students enrolled in critical foreign language courses	N/A	N/A
37. The number of secondary school students continuing in critical foreign language courses	N/A	N/A

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**Section VI: Government Performance and Results Act (GPRA) Measures**

**\*\*All participants are already “teacher of record”.**

<i>GPRA Measure</i>	<i>Target Numerator</i>	<i>Target Denominator</i>	<i>Target Percentage</i>	<i>Actual Numerator</i>	<i>Actual Denominator</i>	<i>Actual Percentage</i>
1. Of the program participants who earned a master's degree in this reporting period, the percentage who achieved certification or licensure in a science, technology, engineering, mathematics, or critical foreign language area (includes previously licensed teachers who receive a master's degree).	N/A	N/A	N/A	N/A	N/A	N/A
2. Of the program participants in this reporting period, the percentage who became or remain a teacher of record in a science, technology, engineering, mathematics, or critical foreign language area in a school determined to be a high-need school.	N/A	N/A	N/A	N/A	N/A	N/A
3. Of the program participants who completed the TCT program, the percentage who remain teaching in the science, technology, engineering, mathematics or critical foreign language area in a school determined to be a high-need school for two or more years.	N/A	N/A	N/A	N/A	N/A	N/A

## **VII: Additional Programmatic and Evaluation-Related Information**

1. Please provide any additional information about your project that you think would be helpful to the Department of Education in evaluating your performance or understanding the contents of your annual report.

Results of Evaluator focus group interview: All 10 participants attended the focus group interview on April 8, 2010. The purpose of the interview was to measure participant satisfaction with project deliverables and to gather data for project formative assessment. The discussion followed three themes: summer program, academic year coursework, and operational activities (such as registration).

Summer Program: The teachers felt the summer field work operated under the assumption of student prior knowledge that was not necessarily there, particularly in the area of statistics. Teachers felt the summer program would be more meaningful now that they have mastered some content knowledge—that the first summer they struggled to find meaning in what they were doing.

Academic Year: All of the teachers found the content to be valuable. They indicated that the seminar in the fall was helpful and liked that it was organized. The spring semester content, while they enjoy the topics and the variety of instructors (3), they are concerned about how they will be graded (faculty expectations) as each instructor has a distinct teaching and assessment style. In some cases, the content and assignments were not clearly presented.

Teachers felt the project-based science (PBS) course taken in conjunction with the content courses to require more work and time than the credit hours awarded. They suggested PBS principles be introduced during the first summer (1 credit hour) and then applications of PBS to content learned over the academic year be offered in the following summer as a two credit hour course perhaps offered through distance learning (this means they would not graduate until the end of summer semester). Also, as high school teachers, they would like some high school level examples.

Support: Teachers who attended conferences felt they were meaningful and helpful; however, SECO seemed to focus too much on elementary and middle school. All were happy with the assistance they have received cutting the red tape at the University and noted that Daryl Moorhead in particular facilitated the resolutions of operational-type problems.

**Section VIII: Budget and Expenditures**

**A. Actual and projected expenditures of U.S. Department of Education funds during current report period:**

1. Did U.S. Department of Education TCT grant funds supplant other federal or state funds? Yes \_\_\_\_\_ No X

2. If Yes, please explain.

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3. Budget Summary and Expenditures

<i>Budget Category</i>	<i>Current Budget (A) Year 2</i>	<i>Actual Expenditures (B) Year 2</i>	<i>Obligations &amp; Projected Expenditures (C) Year 2</i>	<i>Estimated Balance (A-B-C) Year 2</i>
1. Salaries and Wages	79,075.00	33,762.60	31,080.55	14,231.85
2. Employee Benefits	37,482.00	16,834.25	10,114.63	10,533.12
3. Travel	20,540.00	6,156.75	5,490.68	8,892.57
4. Materials & Supplies	11,078.00	1,377.68	1,291.96	8,408.36
5. Contractual	8,000	1,417.74	0	6,582.26
6. Other	21,000	1,586.45	0	19,413.55
7. Total Direct Costs (Add lines 1-6)	177,175.00	61,135.47	47,977.82	68,061.71
8. Indirect Costs	14,174.00	4,941.99	3,838.23	5,393.78
9. Equipment	0	0	0	0.00
10. Training Stipends/Tuition Assistance	41,000.00	21,087.05	12,738.00	7,174.95
11. Total Costs (Add lines 7-10)	232,349.00	87,164.51	64,554.05	80,630.44

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4. If the project has an estimated remaining balance greater than 50 percent of the current budget, please explain the reason for the change and the timeline for spending the carryover funds.

Funding was received in the middle of an academic year, but teachers could not be enrolled in classes until the start of the following year. This will continue to delay the expenditure of funds in this project until the last cohort graduates.

**B. Actual and projected expenditures of non-federal matching funds during report period:**

1. Matching requirement (approved with application) for current project year:  
~~28.24%~~ percent of federal award for current project year
2. Planned and Actual Matching Contributions Summary

<i>Planned and Actual In-Kind and Financial Matching Contributions Category</i>	<i>Current Budgeted Match (a) Year 2</i>	<i>Actual Match Expenditures (b) Year 2</i>	<i>Obligations and Projected Matching Contributions (c) Year 2</i>	<i>Estimated Balance (a-b-c) Year 2</i>
1. Salaries and Wages	80,687.00	64,696.18	0	15,990.82
2. Employee Benefits	26,626.00	20,400.32	0	6,225.68
3. Travel	2,500.00	0	0	2,500.00
4. Materials & Supplies	0		0	0.00
5. Contractual	0		0	0.00
6. Other	3,600.00	1,693.77	0	1,906.23
7. Total Direct Costs (Add lines 1-6)	113,413.00	86,790.27	0	26,622.73
8. Indirect Costs	0	0	0	0.00
9. Equipment	0	0	0	0.00
10. Training Stipends/Tuition Assistance	20,500.00	13,800.00	0	6,700.00
11. Total Matching Contributions (Add lines 7-10)	133,913.00	100,590.27	0	33,322.73

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3. Planned and Actual Matching Contributions Narrative: Specify the sources of matching funds and for in-kind donations. Explain the process for valuing each in-kind resource.

The Department of Environmental Sciences provided fringes, salary and tuition for a graduate assistant and IAGLR reduced the registration fees for teachers to attend the annual science conference. However, fringes and salary for faculty and staff represented the bulk of the matching contributions.

4. Please explain if you encountered a matching contributions shortfall during this reporting period. That is, the percentage of the Federal award matched (by cash and/or in-kind contributions) this reporting period was a lower percentage than that in the approved grant proposal. Please explain how you plan to meet your matching requirements and describe the steps taken to prevent any future shortfalls in matching contributions.

Funding was received in the middle of an academic year, but teachers could not be enrolled in classes until the start of the following year. This delayed the expenditure of funds.

**C. Personnel funded by TCT grant and matching sources during current report period**

1. For the current reporting period, please list the names and titles of all individuals paid by TCT Federal or matching funds, and indicate the percentage of time each individual spends working on the TCT-M grant. (If the percentage of time is not available, you may indicate the number of hours that individual was paid with TCT funds instead.)

D Moorhead, professor (25%); C Czerniak, professor (29.9%); H Gottgens, professor (23.25%); M Weintraub, assistant professor (20%); J Kuskowski, administrative assistant II (15%); R LeMay, science education coordinator (50% 10/2007-8/2009); D. Wallin, science education coordinator (50% 11/16/2009-present), Gale Mentzer, grant evaluator (5%)

2. Describe any changes to key personnel of this grant that have come about over the reporting period, including changes in titles, changes in percentage of time that a person is devoting to the project, hiring of a key staff person, departure of a key staff person, or addition or elimination of a position. Discuss any significant changes to key personnel proposed or anticipated for the coming year. (*Do not request replacement of key personnel or the addition / elimination of position(s) here. That type of request is a change that requires an **administrative action** (completed by your TCT program officer) and must be addressed separately from this report. Your response should be a summary of approved and completed changes that have take place **during** this reporting period.*)

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Ms. Rolinda LeMay served as program coordinator until leaving UT to re-enter teaching. Ms. Dawn Wallin was recruited to become the program coordinator on 11/16/2009. Wallin dedicates 50% of her time to our TCT-IMPACT project. Her credentials include: B.Ed., ME Educ Admin & Superv, Superintendent Licensure, 7 years teaching experience at the Elementary/Junior High level, 11 years administrative experience, 7 of which as an Elementary Assistant Principal and Elementary Principal.





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**ATTACHMENT I  
2008 Annual Low Income Levels**

(Effective February 2008 Until Further Notice)

<b>Size of Family Unit</b>	<b>48 Contiguous States, D.C., and Outlying Jurisdictions</b>	<b>Alaska</b>	<b>Hawaii</b>
<b>1</b>	\$15,600	\$19,500	\$17,940
<b>2</b>	\$21,000	\$26,250	\$24,150
<b>3</b>	\$26,400	\$33,000	\$30,360
<b>4</b>	\$31,800	\$39,750	\$36,570
<b>5</b>	\$37,200	\$46,500	\$42,780
<b>6</b>	\$42,600	\$53,250	\$48,990
<b>7</b>	\$48,000	\$60,000	\$55,200
<b>8</b>	\$53,400	\$66,750	\$61,410

For family units with more than eight members, add the following amount for each additional family member: \$5,400 for the 48 contiguous states, the District of Columbia and outlying jurisdictions; \$6,750 for Alaska; and \$6,210 for Hawaii.

The term "low-income individual" means an individual whose family's taxable income for the preceding year did not exceed 150 percent of the poverty level amount.

The figures shown under family income represent amounts equal to 150 percent of the family income levels established by the Census Bureau for determining poverty status. The poverty guidelines were published by the U.S. Department of Health and Human Services in the Federal Register, Vol. 73, No. 15, January 23, 2008, pp. 3,971-3,972.