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# Outgrowths of USG STEM Initiatives: Service Learning Courses and a STEM Honors Camp

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## Service Learning Courses – UTeach Columbus’ Step 1 & Step 2

Patterned after UGA’s Project FOCUS and the University of Texas’ UTeach Program

### About UTeach Columbus

UTeach Columbus is a new, innovative program involving mathematics, science and education faculty at Columbus State University and teaching experts in local schools. Together, these faculty and teaching practitioners prepare CSU students for an exciting career teaching mathematics or science. This program allows participating students to acquire a deep understanding of their fields of study; explore mathematics or science teaching as a career; and develop the knowledge, skills and dispositions needed for teaching. Upon completion of the program, students will earn a CSU degree in biology, chemistry, earth and space science, or mathematics and be qualified to teach in a middle school or high school after passing the appropriate state certification examinations. The first graduates of this program are expected in May 2014.

#### About Step 1: Inquiry Approaches to Teaching

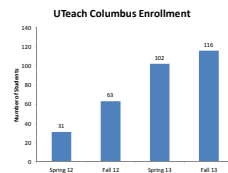
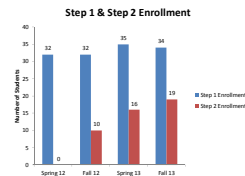
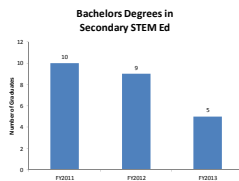
An introduction to the theory and practice necessary to design and deliver excellent instruction in grades 3-12. Students will have an opportunity to explore teaching in science or mathematics as a career through field experiences in elementary classrooms. Through a Race to the Top grant, the in-state tuition and fees for the course are rebated to students who successfully complete the course.

#### About Step 2: Inquiry-based Lesson Design

This course builds on the knowledge and skills developed in Step 1, with an emphasis on the middle school environment and curricula. Students continue to explore teaching in science or mathematics as a career. Course includes field experience in a middle school classroom.

#### Step 1 and Step 2 goals:

- Increase the number of secondary teachers of STEM in the region
- Enhance the science learning experiences of elementary and middle school students through 5E based lessons (Engage, Explore, Explain, Elaborate, Evaluate)
- Foster positive attitudes about STEM disciplines



## STEM Honors Camp

Building on the Academy of Future Teachers

### About STEM Honors Camp

The camp functions both as a recruiting tool to interest high school students in STEM fields and as a spark to ignite interest in teaching among university students. Rising high school juniors and seniors, university freshmen and sophomores<sup>1</sup>, and university personnel assemble for a two-week residential camp to engage in exciting hands-on activities that nurture and develop interest in STEM areas, and learn about connections between classroom lessons, real world applications, and potential STEM related careers. The camp’s culminating experience includes a student colloquium in which participants teach others about their own inquiries. This camp builds on a historically successful Future Teachers Academy hosted by CSU.

<sup>1</sup> University students’ work supported through \$4500 internships funded by NSF grant DUE 1136356

#### Sample Camp Schedule

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-9:00 AM	Registration	Registration	Registration	Registration	Registration	Registration	Registration	Registration	Registration	Registration	Registration	Registration
9:00-10:00 AM	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
10:00-11:00 AM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
11:00-12:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
12:00-1:00 PM	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
1:00-2:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
2:00-3:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
3:00-4:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
4:00-5:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
5:00-6:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
6:00-7:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
7:00-8:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction
8:00-9:00 PM	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction	STEM Introduction



#### Internships

13 internships funded through NSF, 1 funded by Coca Cola Space Science Center  
5 interns took at least one UTeach Columbus Course  
3 interns are now actively considering teaching at the secondary level



#### High School Participants

46 participated in STEM Honors Camp in 2012 or 2013  
43 campers completed a survey assessing their learning gains at the camp  
Complete survey instrument available upon request

Asked campers to rate their learning gains in 37 question items. Rating choices included “no gain”, “small gain”, “moderate gain”, and “large gain”.



#### Survey highlights

- 53% indicated large gains using technology to gather, analyze, and interpret data
- 53% indicated large gains understanding how STEM impacts life
- 53% attributed large gains to industry field trips
- 70% attributed large gains to hands-on workshops
- 60% associated large gains with their interactions with camp interns

## UTeach Columbus and STEM Honors Camp Sponsors

