

STEM Institute

A Collaborative Project of USD 383 and
Kansas State University's College of Education

Summer 2016

The STEM Story: A Tale of Collaboration

For six years, the Institute has provided learning and enrichment opportunities for hundreds of USD 383 students and KSU pre-service teachers.

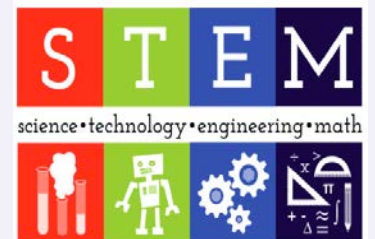
The project, funded through a \$1.7 million U.S. Department of Defense Education Activity Grant to USD 383, was held June 6-30. KSU pre-service teachers helped lead a variety of STEM (Science, Technology, Engineering and



Math) classes. Through the four-week program, they worked individually with students, taught lessons with their teaching team, and spent an extended amount of time reflecting on past lessons and planning future ones with their cooperating teachers.

The KSU students, while teaching STEM classes, had a variety of content areas—music, agriculture, English, speech, modern languages, business, math, biology, social studies, earth science, chemistry, and art. Additionally, for the first time ever, the

KSU students included elementary students, as well as secondary. This report shows a few of the highlights of the program.



The Team That Makes It Happen

Welcome to our report on the 2016 Summer STEM Institute. A special thanks to COE Dean Debbie Mercer, Curriculum and Instruction Department Chair Todd Goodson, and instructor Kaylee Myers, as well as USD 383's Carol Adams, Chris Herald, Larry Liotta, Brett Nelson, Deb Nauerth, Duke Harmon, Deb Mohler and Diane Daniel.

~Lori Goodson



KSU students gained authentic teaching experiences, including bus duty, when they greeted the USD 383 students at the busses each morning in McCain's circle drive and then returned them to the busses at the end of the daily activities.

The Institute is a part of the Core Teaching Skills course for elementary and secondary students during the summer semester at Kansas State University. Because traditional field placements are unavailable through the summer, this provides an excellent



opportunity for the KSU students to gain quality contact and teaching time within a real classroom.

The KSU students begin the course with an intensive, two-week "frontloading" of the lecture portion of the course. This

allows four uninterrupted weeks for them to be in the various classrooms. They are divided into teaching

teams of two to four undergraduates and then teach at least one lesson to the STEM class

The 383 students are able to select from a variety of classes, which typically last one week, before students move on to another class. The class topics ranged this summer from drones to 3-D printing.

The STEM Institute continues to expand across the university campus. This summer, classes were held in a record number of seven buildings: Bluemont, Ahearn, Engineering, Justin, Seaton, Shellenberger, and Trotter. Other KSU colleges joining in were Architecture, Planning and Design; Human Ecology; Veterinary Medicine; Agriculture; and Engineering. And, with construction under way in Bluemont Hall, the other sites—and involvement—were greatly welcomed! Students also visited a number of other sites on campus.

Another major element of the project is the military connection. This summer, the Institute spent one morning visiting the Fort Riley Army Post, where they saw the roles technology plays in the military, including a visit to the new Fort Riley hospital.

School Name	Count
AMANDA ARNOLD ELEMENTARY	36
ANTHONY MIDDLE SCHOOL - MVA	1
BLUEMONT ELEMENTARY	18
DWIGHT D. EISENHOWER MIDDLE SCHOOL	45
FRANK BERGMAN ELEMENTARY	35
LEE ELEMENTARY SCHOOL	23
MANHATTAN CATHOLIC SCHOOLS	1
MANHATTAN HIGH SCHOOL	11
MARLATT ELEMENTARY SCHOOL	32
NORTHVIEW ELEMENTARY SCHOOL	19
OGDEN ELEMENTARY SCHOOL	8
SUSAN B. ANTHONY MIDDLE SCHOOL	40
THEODORE ROOSEVELT ELEMENTARY SCHOOL	9
WOODROW WILSON ELEMENTARY	13
Not Enrolled in USD 383	31
Grand Total	322

Gender	Grade Level					Total
	5	6	7	8	9	
F	59	35	28	13	6	141
M	67	58	34	15	7	181
Grand Total	126	93	62	28	13	322

CLASSES OFFERED
5/6 grade
Bio Engineering
CSI
Electronic textiles
Hollywood Science
Monster Storms
Robotics 1
Robotics 2
Rocking Coasters
Rube Goldberg
Rube Goldberg
Science of Sports
Simulating The Martian
Solar Construction
Vet Med
Wind Energy
7 -9 grades
3D printing
Chemistry of Candy
City of Minecraft
Engineering w/Nanotech
Exploring Drone Tech
Fill Your Toolbox
Grain Science
Intro to Passive Architecture
Mighty Micro Controllers
Robotic Design

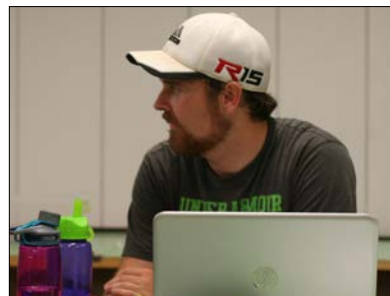


- 322 USD 383 students
 - 67 KSU students
 - 25 USD 383 faculty, administrators, and staff
- 2 KSU COE faculty members
- 6 hours of plan time between 383 teachers and KSU students
 - 7 KSU buildings used
- 48 hours of classroom teaching time for KSU students
- Box after box of "homemade" snacks to energize KSU students

SCIENTIFIC SUMMER

A few of the sights in Bluemont and beyond







Want to Know More?

To learn more about the program, please contact:

**Chris Herald,
STEM Project
Coordinator**

chrish@usd383.org

785-587-2841, Ext. 1353

**Lori Goodson,
Curriculum and
Instruction**

**Assistant Professor
College of Education
Kansas State University**

lagoodson@ksu.edu

785-532-3597



*Photos by Mary Hammel
and Chris Herald*