"FACULTY MENTORED TEAM PROJECTS FOR ENGAGING AND RETAINING KCTCS STUDENTS IN STEM DEGREE AND TRANSFER PROGRAMS"

THE PROJECT GOALS

- Attract, retain and graduate or transfer CTC students
- Increase the use of NASA content in CTC courses
- Create and enhance strategic relationships between NASA Kentucky and KCTCS

THE BASICS

- Engaging teams of students in hands-on projects
- Scholarships/stipends tied to performance
- Faculty buyout
- Travel money for local conferences
- Materials and Supplies

KCTCS

GATEWAY
MAYSVILLE
ASHLAND
JEFFERSON
BLUEGRASS
HENDERSON
OWENSBORO
ELIZABETHTOWN
BIG SANDY
MADISONVILLE
SOMERSET
HAZARD
WEST KENTUCKY
HOPKINSVILLE
SOUTHCENTRAL KENTUCKY
SOUTHEAST KENTUCKY

College Participants

- Bluegrass Community and Technical College
- Hopkinsville Community College
- Owensboro Community and Technical College

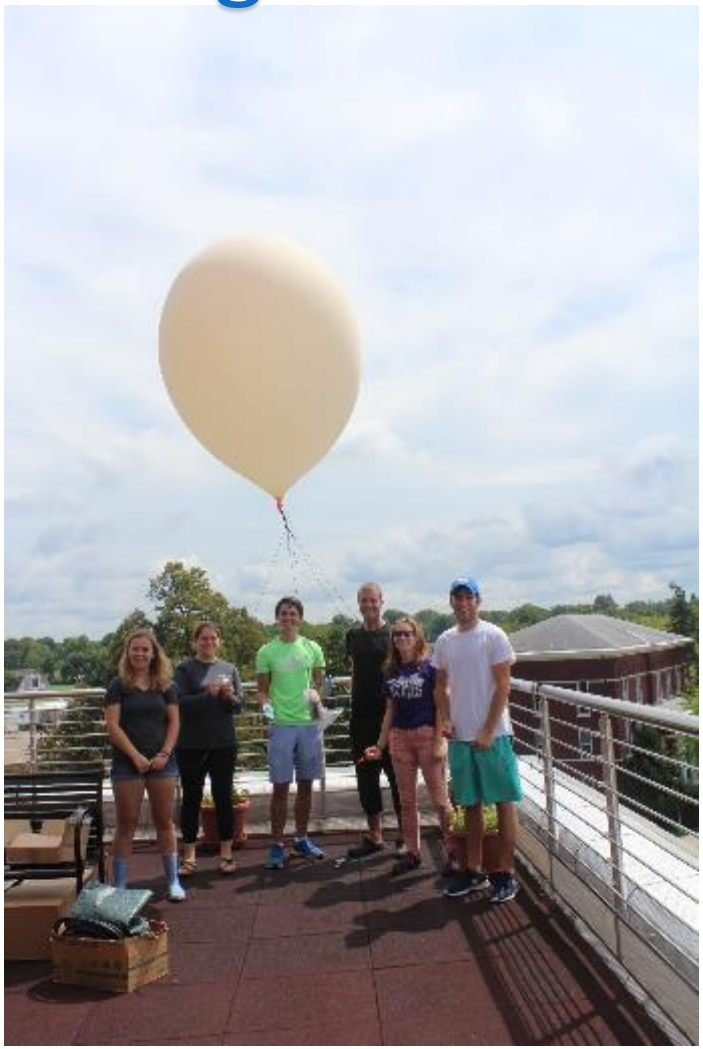
Bluegrass CTC

BCTC Balloon Sat Team

NASA Kentucky
Space Grant Consortium and EPSCoR Programs

Tracy Knowles
Chemistry and Environmental Science

Bluegrass CTC

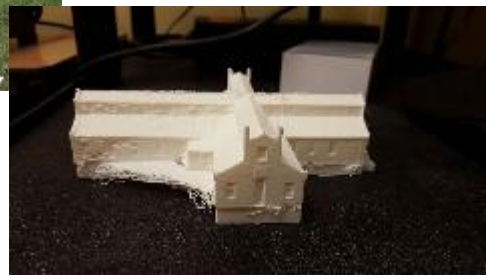


One of the balloon launches was from a local middle school and carried school projects.

Practicing for the Eclipse flight.

Bluegrass CTC

Melanie Williamson
Cindy Tucker
Computer Information Technologies



Students developed website and android app to collect data for the project and BCTC Balloon Sat.

Year 2 project included Drone technology and 3D printing.

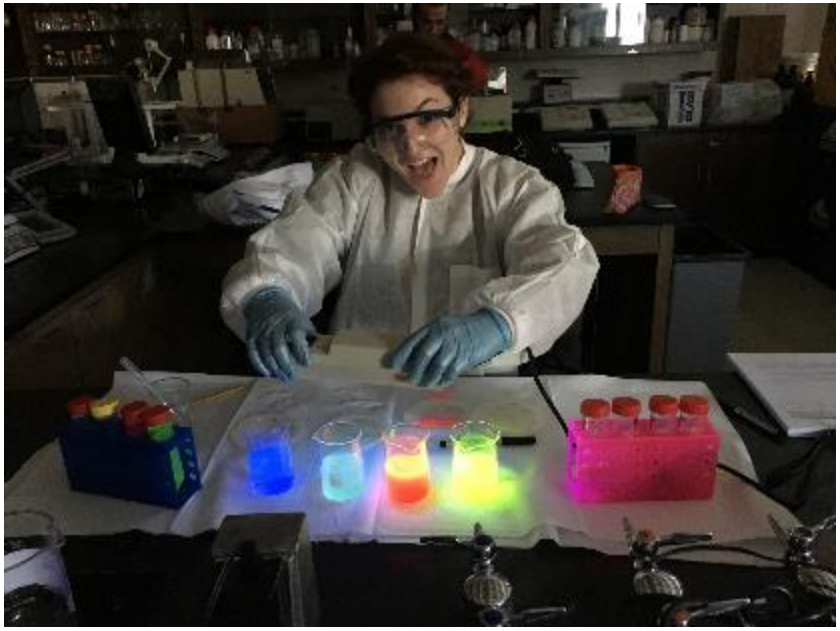
Bluegrass CTC

Bluegrass CTC – Biofuels / Soil Metagenomics

Dr. Jeanne Wages

Students isolated DNA from soil samples to establish genomic libraries. The goal was to look for enzymes to break down perchlorates.

Bluegrass CTC – Biofuels / Soil Metagenomics



- Sent soil samples as balloon payload
- Developed partnerships with other colleges to promote undergraduate research

Hopkinsville CC

Marshall Space Flight Center

Sherry McCormack
Assistant Professor, Math

HOPKINSVILLE HIGHLIGHTS

- 4 NASA National CC Aerospace Scholars
- Presentations at state conferences
- Local school competition for payload design
- Travel to Marshall Space Flight Center
- Representatives to Eclipse training in Montana

Bluegrass Community & Technical College

HIGHER EDUCATION BEGINS HERE

KENTUCKY COMMUNITY & TECHNICAL COLLEGE SYSTEM

Owensboro CTC

Shawn Payne
Mechatronics Coordinator

- First Lego League Competitions
- Boy Scout programs
- Girl Scout programs
- Robot programing
- presentations

CHALLENGES

- Student payments (NASA Kentucky)
- College participation / faculty
- Survey participation – students

YEAR 1 SUCCESSES

(spring 2015 semester)

- 22 students funded
- 6 faculty mentors
- 10 students completed degree
- 11 students transferred to university
- Incorporated NASA content into 11 courses
- Team building PD presented at two conferences
- Student and faculty presentations

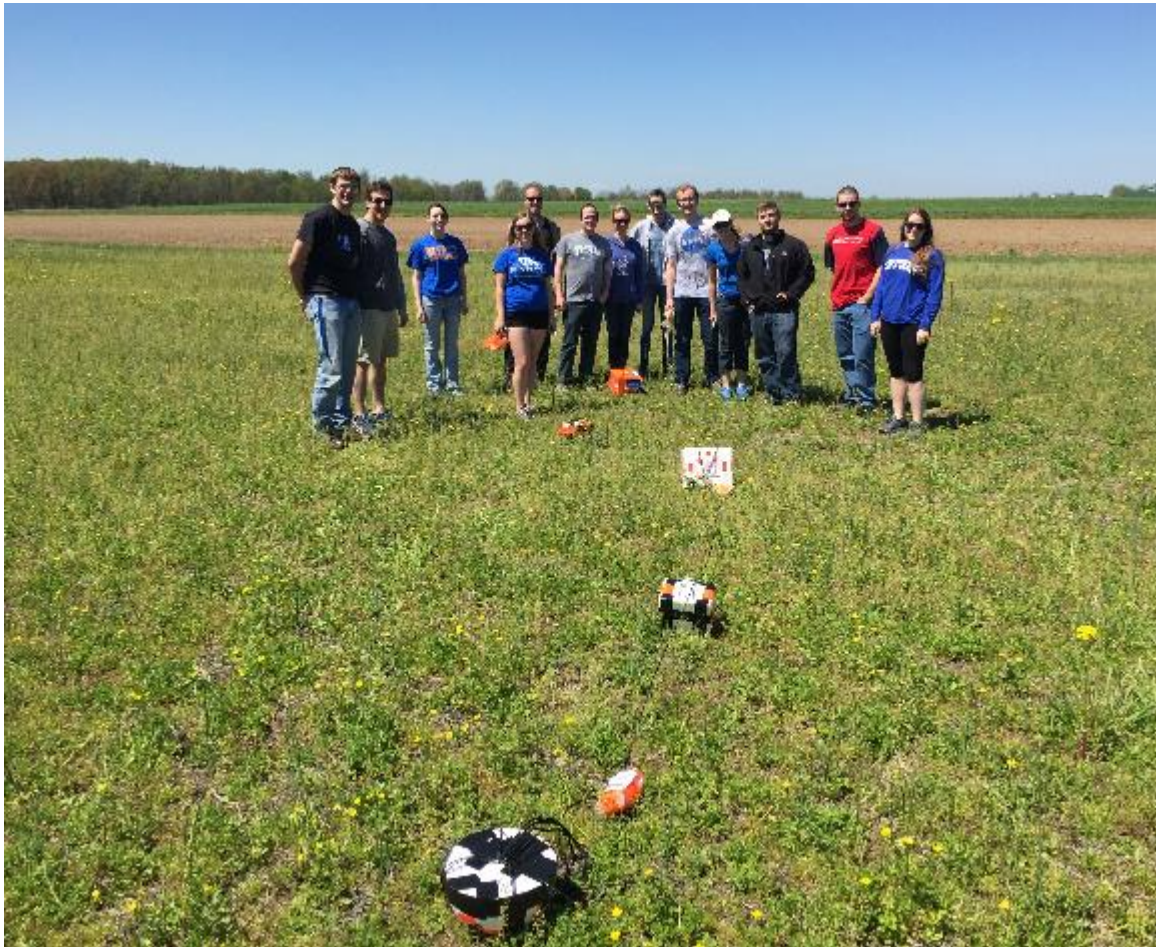
YEAR 2 SUCCESSES

- 45 students supported – unduplicated
- 57 scholarships provided (continuing / peer mentors)
- 42.9% / 55%women; 25% / 14% URMs
- 9 faculty funded
- 20 students completed degree
- 6 students obtained job in STEM career
- 13 students transferred to university
- NASA content incorporated into 17 courses
- Student and faculty presentations

NASA Kentucky

Enhance Relationships with NASA Kentucky and KCTCS

- Hopkinsville CC and Ashland CTC joined the Space Grant Consortium
- Project support has been phenomenal
- Team work between KCTCS teams and UK
- University visits



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THANK YOU!

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