



THE GLOBE PROGRAM

2012-2013

North American GIAC

Activity Reports from US Partners

* Abbreviated Version

because of time, all GIAC members were limited to 5 slides

- * New GLOBE Director
- * New US Country Coordinator
- * Next Generation Science Standards
- * eTraining Modules developed
- * 16th GLOBE Annual Partner Meeting (Minnesota)
 - * 24 countries, 20 US partners



Newest GLOBE daddy

* **Around the US**

- * April, San Antonio
- * Prior to NSTA annual convention
- * 100+
 - * Breakout and poster sessions



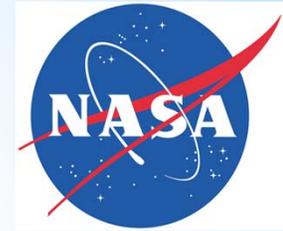
* **NA Regional Partners' meeting**

- * GLOBE booth with partner presentations
- * Sessions
- * On site teacher training



GLOBE at NSTA: a STEM Showcase

* NSTA



- * NASA Discover AQ and Air Quality (California, Pennsylvania, Virginia)
- * Partner/Train the Trainer (Arkansas, Colorado, Nevada, Virginia)
- * Climate Change in ESS (Michigan)
- * Preservice (Illinois, Ohio, West Virginia, Pennsylvania)
- * Biomass (Mississippi)
- * Spotlight Day on STEM (Iowa)
- * Teachers (Alabama, Alaska, Arkansas, Massachusetts, New Hampshire, South Dakota, Texas)
 - * Latin American Educators Academy (Montana)
- * Students (Alabama, North Carolina)

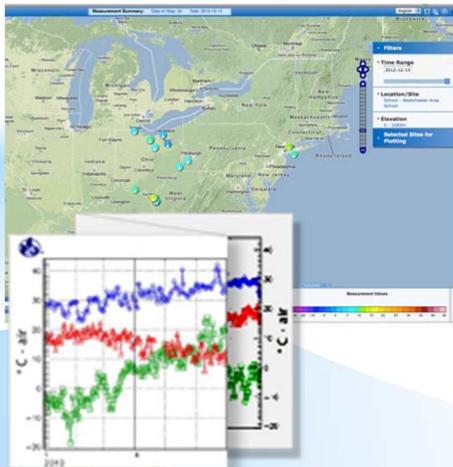
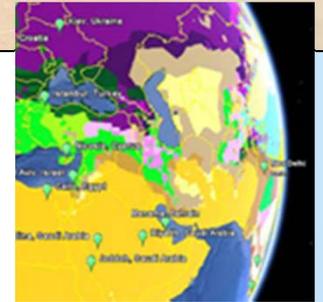


* Happenings and Trainings

- * Climate
- * Earth at Night
- * NASA Transit of Venus
- * GLOBE Surface Temperature Field Campaign
- * Earth Day (Washington, DC)
- * State Science Teacher Conferences



- * GLOBE Stars
 - * John Glenn High School, Michigan (Local Climate)
- * GLOBE mobile/STEM Lab (Texas)
- * GLOBE Earth Day Video Competition (Kingsburg High School)
- * GLOBE Teacher - one retires and one GLOBE star student takes her place
 - * Peggy Folletta and Leigh-Ann Olsen



* Campaigns, Stars, and Extras





*** What I didn't have time to highlight!**
Check out what partners around the nation are doing!

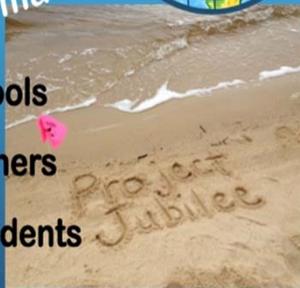
Project Jubilee
GLOBE
Baldwin County
Alabama



22 Schools

24 Teachers

1000+ Students



2012-2013 School Year
GLOBE Protocols:

- Hydrology
- Cloud Cover
- Soil Characterization
- Atmosphere/Climate
- Budburst/Green Up-Green
- Down
- Land Cover

Statewide Participation:
Pre-service Training - 300+
Teacher Training – 800 +
Classroom Support



ALABAMA

Lynn Vaughan - lynn@amsti.org



UAF GLOBE Partnership
3-8 June 2013

Seasons and Biomes Teacher Workshop



focusing on and integrating

- GLOBE protocols
- Earth as a system
- Best teaching practices
- Science Investigation Model
- Human interactions with the environment



Follow-up support provided

Co- taught with IARC¹, INE²
and EPSCoR³ scientists

- Sponsored by IARC, the Alaska EPSCoR Program, the Bonanza Creek LTER⁴ and NSF Grant GEO 0627941



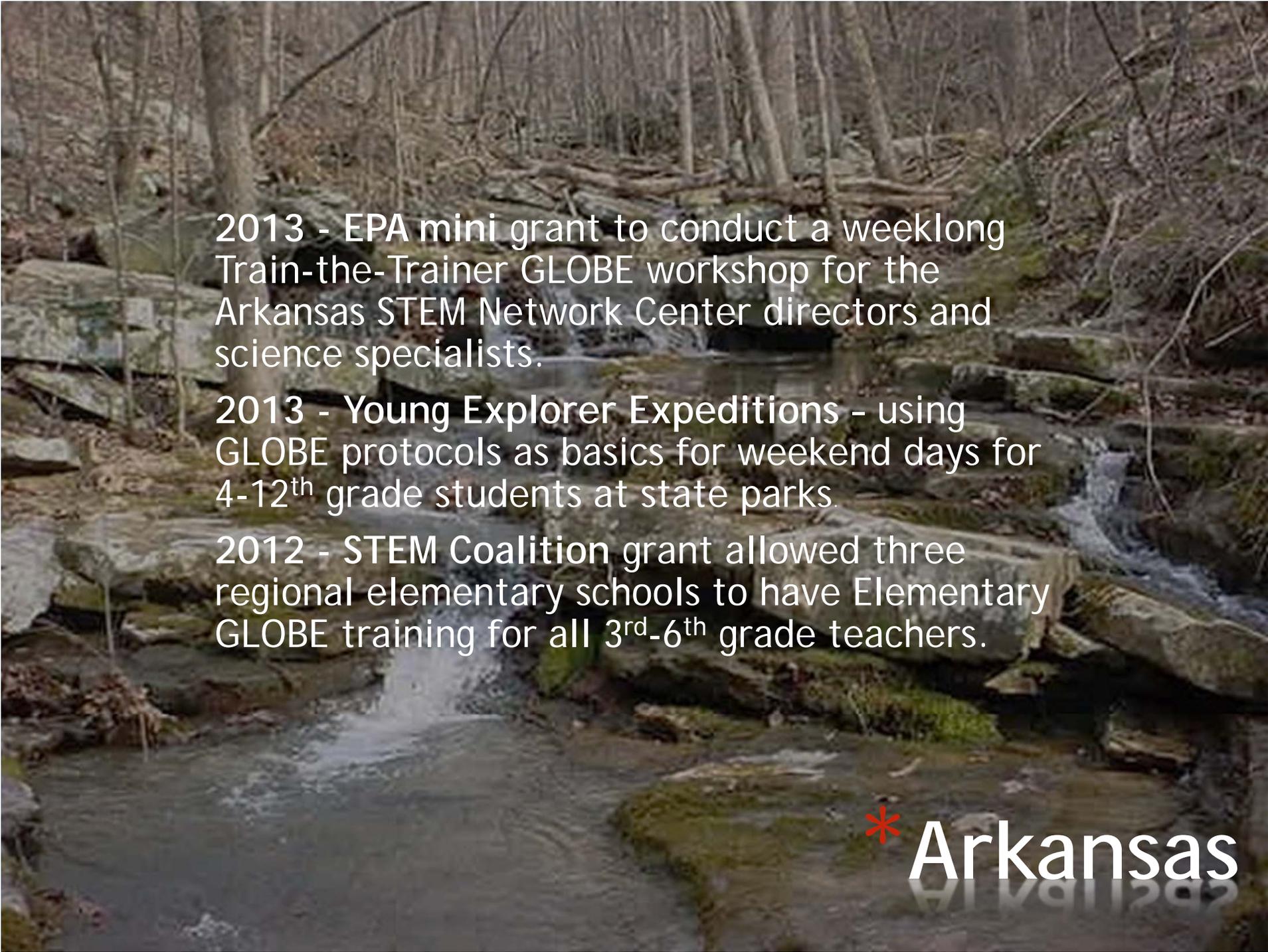
¹International Arctic Research Center

²Institute of Northern Engineering

³Experimental Program to Stimulate Competitive Research

⁴Long Term Ecological Research





2013 - EPA mini grant to conduct a weeklong Train-the-Trainer GLOBE workshop for the Arkansas STEM Network Center directors and science specialists.

2013 - Young Explorer Expeditions - using GLOBE protocols as basics for weekend days for 4-12th grade students at state parks.

2012 - STEM Coalition grant allowed three regional elementary schools to have Elementary GLOBE training for all 3rd-6th grade teachers.

* Arkansas



NASA's Discover AQ program Workshop
February 23 -24, 2013 for greater Los Angeles Area teachers
N. Hollywood High School

Focus:

- Next Gen Science Standards
- Atmosphere Protocols/ Intro. Phenology

 **California**

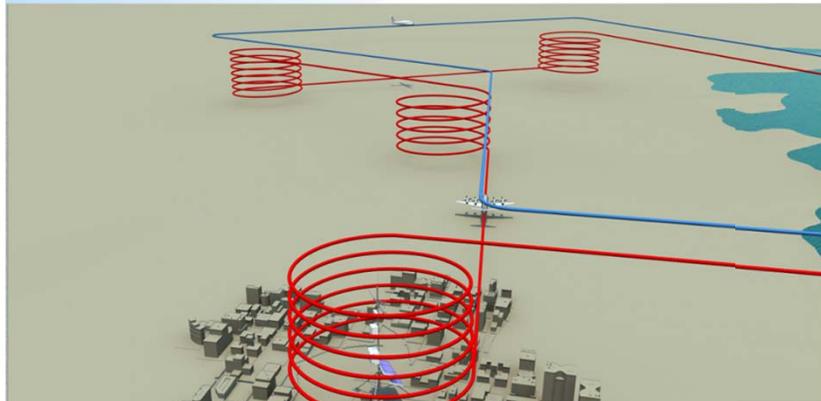


California Central San Joaquin Valley GLOBE Partnership 2012-13

Workshop held March 9-10, 2013, in Kingsburg focused on air quality in conjunction with NASA Langley and the DISCOVER-AQ project

Kingsburg High wins the GLOBE Earth Day 2013 video competition!!!!

Kingsburg Yosemite River Project continues.



Ex-GLOBE star student becomes GLOBE teacher at Kingsburg High : Leigh-Ann Olsen



GLOBE teacher Peggy Foletta retires from Kingsburg High School.



BEACHES

Becoming Environmentally Aware: Climate Change in ESS

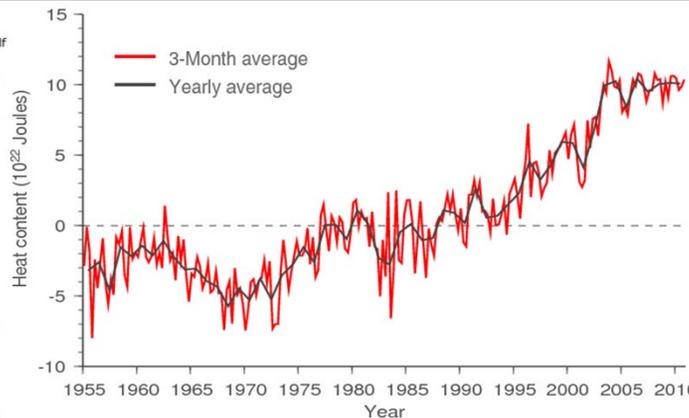


Dr. Mitchell Klett

Global Ocean Heat Content [Subscribe to RSS Feed](#)

Data distribution figures, temperature anomaly fields, and heat content fields associated with *Global ocean heat content (1955-2008)* in light of recent instrumentation problems published in *Geophysical Research Letters*. See the manuscript below for details.

- [Manuscript \(pdf - 1.40 MB\)](#)
- [Explanation of heat content changes \(pdf - 0.50 MB\)](#)
- [Temperature data distribution figures](#)
- [Temperature anomaly figures](#)
- [Heat content figures](#)
- [Climatological temperature fields ASCII files](#)
- [Temperature anomaly fields ASCII files](#)



Dr. Scott Graves

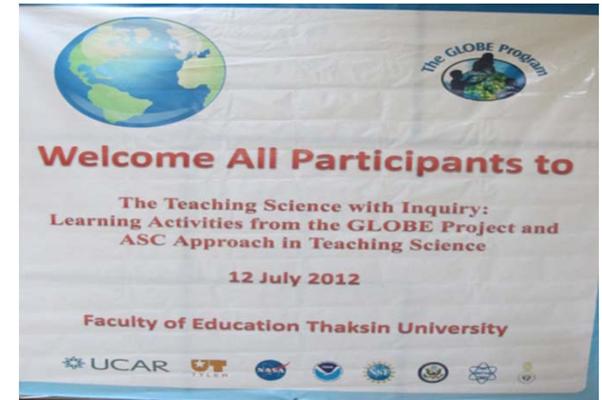


Northern Michigan University



Southern Connecticut State University

GLOBE workshops Provided by Illinois State University



Where	When	Who
Illinois State University	3/20/2012	Preservice Elementary Teachers
Illinois State University	10/15/2012	Preservice Elementary Teachers
Wheeling, Chicago	10/26/2012	Preservice Elementary Teachers, High school science teachers (NY, Chicago)
Illinois State University	3/17/2012	Illinois Geographic Alliance
Bangkok, Thailand	7/12, 16, 18/2012	Science Teachers (K-12), Administrators

Spotlight Day on STEM Friday, March 1st, 2013

GLOBE teachers and their students from across the state presented their innovative classroom activities to University of Northern Iowa faculty and pre-service educators.

UNI preservice students, faculty, members of the local community, GLOBE and non-GLOBE teachers from across the state and their students.



Enthralling Education GLOBE Partnership Greenbelt, MD, USA



Pennsylvania STEM
Partnership Grant workshop
July 29 – August 2, 2013.



GLOBE Soils Master Trainer, Izolda Trakhtenberg, trained 253, Elementary, Middle, and High School Math and Science Pennsylvania teachers on the Soil Field Characterization Protocols at Immaculata University, Immaculata, PA, USA.



Woods Hole Oceanographic Institution

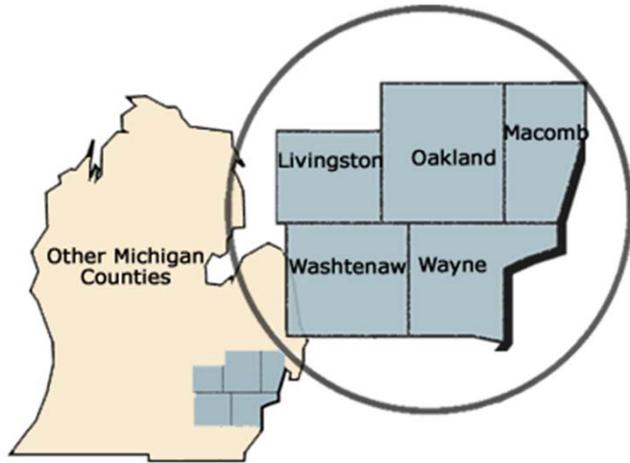
Woods Hole, Massachusetts

GLOBE Teacher Training Workshop

October 2012

- 12 teachers were certified in Hydrology and Atmosphere protocols with an emphasis on investigating coastal waters
- WHOI scientist Dr. Amy Maas presented on “Plankton in our Changing Coastal Chemistry” and assisted with plankton sampling and ID
- GLOBE teacher Mr. Kevin Dickson (West Haven, CT) presented on student research projects





Wayne County
Mathematics and
Science Science
GLOBE Partner

David Bydlowski,
bydlowd@resa.net

Wayne, MI

October 2012: GLOBE Star

Amanda Laidlaw, John Glenn High School, Westland, MI
“Michigan HS Students Investigate Local Climate”



December 2012

Detroit Zoo -- Royal Oak, MI
GLOBE Student Climate Research Campaign

January 2013

Detroit Zoo -- Royal Oak, MI
Elementary GLOBE

July 2013

Co-hosted the 1st webinar in the new series:
*Aligning the GLOBE Program with the Next Generation
Science Standards*



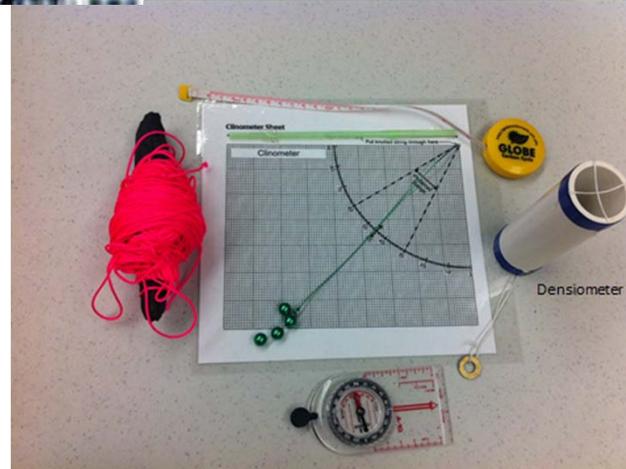
NATIONAL CENTER FOR STEM
ELEMENTARY EDUCATION

16th GLOBE Annual Partner Meeting
Hosted by St. Catherine University Partner,
St. Paul, Minnesota, USA
Dates: July 15-20, 2012
Partners from 24 Countries
Partners from the USA: 20



ST. CATHERINE
UNIVERSITY





CAMPUS BIOMASS: IT'S A GOOD THING!
GLOBE Activities from the University of Southern Mississippi

2013 GLOBE North American Partners Meeting
Sherry S. Herron



Explorations in the Pascagoula Watershed

*Mississippi, Summer 2013

The Nature Conservancy heads the Pascagoula River Basin Alliance to promote the health of the only unimpounded watershed in the contiguous 48 states. With assistance from The National Audubon Society, the Pascagoula runs mostly wild through about 50,000 protected acres along 50 miles of the river's 81-mile route. Its tributaries originate up to twice that distance away, however. Eleven doctoral students from the University of Southern Mississippi canoed or kayaked, camped, and collected GLOBE Land Cover, Hydrology, Soil, and Cloud Data. Required reading included "A Sand County Almanac" by Aldo Leopold.

June 1: 4 hour class meeting: June 7-9: Chunky River
June 14-16: Leaf River and Black Creek
June 28-30: Pascagoula River July 27: 4 hour class meeting



On Chunky R (above) Pascagoula R (below)





* **Montana**

2nd Annual Latin American Educators Academy
Costa Rica, June 24 -29, 2012

Georgia, GLOBE Director:

- Trained Joshua Klaus of Ecology Project International (EPI) Summer 2012 who trained 26 secondary science educators from 9 countries in Latin America
- Recently became a GLOBE Partner

Through grant funding from a Math Science Partnership (MSP) grant, NHEET has been working with 30 teacher leaders from two school districts, Governor Wentworth and Nashua, to vertically integrate field investigations into the science curriculum K-8. Teachers attend a week-long summer institute each summer for three years and participate in several one-day workshops throughout the school years.



The NCES NH GLOBE Partnership is part of the New Hampshire Education and Environment Team (NHEET) which includes members of NH Project Learning Tree, Project WILD, Project HOME and Project WET, along with the USDA Forest Service.

* New Hampshire



NH Teacher Professional Learning



University of Nevada, Reno
Fall 2012 and Spring 2013

Dr. David Crowther trained 24 pre-service educators as part of an Elementary Science Methods class and 47 in-service educators in the Soil protocols funded through a statewide MSP.

In addition, UNR sent two new teacher partners to the “Train the Trainer” program in Boulder, CO., allowing the partnership to increase its presence into Las Vegas and the rural communities of Nevada.

Our new trainers are Arlene Hayman and Camille T. Stegman

* North Carolina

Training GLOBE Protocols

Overhills Middle School

Spring Lake, NC Pope Air Force Base,
January 10, 2013

Honors Science and Career & Technical
Education Students

Trinity Episcopal Center

Sound to Sea Staff

January, 2013 Salter Path, NC

Elementary GLOBE

40 K-5 Science Facilitators

June 21, 2013 UNC Charlotte



Bowling Green State University

Bowling Green, Ohio

GLOBE U.S. Partnership Activities: 2012-2013

- 10 4th – 12th grade teachers trained in Student Climate Research Campaign projects: Great Global Investigation of Climate & Land Cover and Climate and Land Cover through GLOBE/NOAA mini grant funds.
 - January – April, 2012.
- 20 undergraduate students GLOBE Trained from ENVS 4150 Course: Investigating Earth as a System (also received Carbon Project training)
 - August – December, 2012.
- Advising undergraduate research team (4 students): *Land cover as an indicator of climate change in the Bowling Green State University Area.*
 - August – Present, 2012



Ohio: University of Toledo GLOBE Partnership

Sponsored Kaitlin Stessney to present at the GLOBE Partner Conference in Minneapolis, Minnesota, July 2012

My Town: Akron Girl Goes to International Science Fair

Posted on: 9:35 pm, June 8, 2012, by Jennifer Windt

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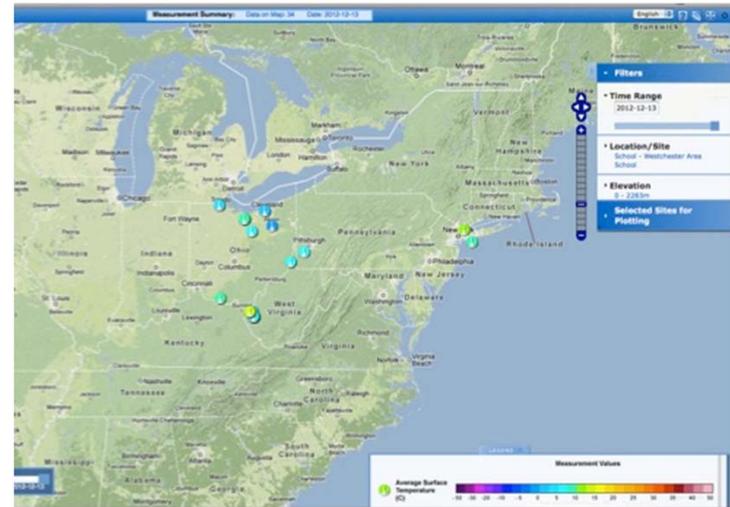
AKRON — A 12-year-old Akron girl makes it to the International Science Fair.

Kaitlin Stessney, a seventh grade student at Roswell Kent Middle School in Akron, has been to six science fairs this year, including the State Science Fair in Columbus where she received a "Superior" rating for her work. She is the first student from her school to receive a "Superior" rating at the State Science Fair in all nine years the school has been attending.



Kaitlin's next stop is the International Science Fair at St. Catherine University in Minnesota, which will take place July 15 through July 20. She is the only student from Ohio selected to go. Her parents couldn't be more proud.

GLOBE Surface Temperature Field Campaign, December 2012 and on Earth Observation Day, April 16, 2013



Hosted GLOBE Training July 15-19, 2013

- Surface temperature
- Air temperature
- Soil temperature
- Snow depth
- Green up/green down budburst
- ESS Poster
- Impervious surfaces





Teachers from seven different schools in Clarion Venango and Armstrong counties

Air Quality workshop using the Zikua measurement instrument and technique.

March 20 & 21, 2013

Clarion University

Clarion, PA

 **Pennsylvania**



This protocols practicum event was the first GLOBE workshop to be held at The Outdoor Campus – West and the first workshop hosted by SD GF&P as a new GLOBE Partner. The workshop was organized by SD GF&P GLOBE Program Coordinator, Nicomas Red Horse.

It was attended by SDGF&P employees supervisors, naturalists, and undergraduate student interns

Protocols -

- Atmosphere Max/Min/Current Temperature (Basic)
- Atmosphere Clouds (Basic)
- Atmosphere Precipitation (Basic)
- Land Cover Biometry (Basic)
- Land Cover Land Cover Site (Basic)
- Land Cover Manual Mapping (Basic)
- Land Cover Use of MUC (Basic)



GLOBE WORKSHOP

March 26 & 30, 2012

South Dakota Game, Fish & Parks
The Outdoor Campus-West

Rapid City, South Dakota



University of Texas at San Antonio

Integrated into University Courses

- * IDS 3211 Earth Systems Lab: Basic GLOBE Protocols (trained over 300 elementary preservice teachers)
- * C&I 4353 Approaches to Teaching Science EC-6: Elementary GLOBE (trained over 300 elementary preservice teachers)
- * C&I 6053 Advanced Science Methods: Inquiry Investigations (20 graduate teachers)

U.S. Partners Meeting, Spring 2013

- * Co-hosted reception for U.S. Partners
- * Gave presentation regarding collaboration with area Watershed entities

Inservice Teacher Professional Development

- * Educators Academy in the Amazon Rainforest: Earth as a System (30 educators from across the U.S.)

The University of Texas at Tyler GLOBE Partnership



U.S. Partner Coordinators: M. Odell and T. Kennedy

- **Integrated into University Courses:** GEOL 3314 – Oceanography and Meteorology
- **Ingenuity Center Mobile STEM Lab:** Training and Follow-up
- **Inservice and Preservice Teacher Training events**
- **Camp Tyler GLOBE Training Facility**



<http://www.uttyler.edu/globe/>



UT Tyler GLOBE Training Facility at Camp Tyler



Examining Collected Macroinvertebrate Specimen



Testing Dissolved Oxygen levels



Determining Turbidity levels



GLOBE Master Trainer John Ophus explains relation of macroinvertebrates and pond health to Camp Tyler staff, GLOBE International Division staff, and UT Tyler Professor Dr. Arun Kulkarni and his students



Searching for Macroinvertebrates

GLOBE at NASA Langley

in Hampton, Virginia



Local Teacher Workshops

Aug 2012 – July 2013

Carbon Cycle, SCRC, Elementary GLOBE, Clouds & Contrails, Temperature, Ozone, Sky Conditions, Plant Phenology

Train-the-Trainer Workshops

Atmosphere: California (Nov 2012) & Texas (Jun 2013) Partners, Surface Temp (Apr 2013)



Special Events

Elementary GLOBE Storybook Event for Earth Science Week (Oct 2012), **Open House** (Sep 2012), **Virginia Assoc. of Science Teachers Conference** (Nov 2012), **4 Student Interns** (Aerosol Instrument Comparison, Ozone Studies, Satellite Imagery Resources for GLOBE) (Jun-Aug 2013)



<http://www.globe.gov/web/nasa-langley-research-center/>





NASA Earth Month Activities



The **GLOBE** Program

~ Cloud in a Bottle Activity ~

**Union Station
Washington D.C.**

April 6, 2013

GLOBE activities will also be
part of the larger Earth Day
activities Monday, April 22,
2013





* West Virginia



- * West Virginia University
- * Spring Semester, 2013
- * Dr. Jim Rye, Dr. Melissa Luna and Todd Ensign trained 75 pre-service educators in the WVU Benedum Collaborative (5-year program) in Elementary GLOBE activities, GPS, Clouds, and Soil protocols, and learned to use Pasco SPARK units to integrate technology into their future classrooms.

