

EDUCATION EVENT REPORT AND RECOMMENDATIONS

National Science Teachers Association (NSTA) 2005 Annual Convention

Attendee's Name and Report Writer:

Joseph J. Kerski - Geographer - Denver

Location: Dallas Texas

Other USGS Attendees:

Bob Ridky – USGS Education Director – Reston

Pete Modreski - Geologist-Communications- Denver

Cheryl O'Brien – Information Specialist – Reston

Billy Tolar –National Atlas Program - Reston

Event Date(s): 29 March – 3 April 2005

Purpose of Event:

Science Educators Convention
(www.nsta.org)

Our Activities at the NSTA Convention:

- (1) Conduct GIS workshop on selecting study sites for riparian vegetation using GIS, and on analyzing plate tectonics using the Global GIS data in ESRI's Geospatial Zone.
- (2) Operate USGS information exhibit; network with educational partners such as GSA, NESTA, ESRI, NOAA, GLOBE, and others.
- (3) Hold telecon with educators, GIS coordinators, and others about future directions for GIS education in Texas.



This year's NSTA convention was held at the Dallas Convention Center. The 2006 NSTA convention will be held in Anaheim, California from 6-9 April.

The NSTA was founded in 1944 and is headquartered in Arlington, Virginia. NSTA is the largest organization in the world committed to promoting excellence and innovation in science teaching and learning. NSTA's current membership of more than 55,000 includes science teachers, science supervisors, administrators, scientists, business and industry representatives, and others committed to science education.



As expected, the conference was enormous and attendees were quite passionate about science education.



Just under 11,000 teachers attended this year's NSTA convention.

discuss science at the USGS exhibit.



The exhibitors and conference program illustrated the diversity that exists in science education—everything from zoology (above, with live animal from Sea World) to earth systems science, chemistry, geography, geology, environmental science, hydrology, botany, biology, and much more.



USGS exhibit and staff, from Left: Pete Modreski, Cheryl O'Brien, Bob Ridky, Joseph Kerski.



Conference attendees examine their programs and chart their course for the next four days.



Bob Ridky and Laura Middaugh (AGI)



These high school students were one of the best parts about the exhibit hall. I talked with them about the solar car they had designed, built, and raced in Australia (flat panel behind students).

meet someone I have wanted to meet for years—Bill Nye the Science Guy!



NASA's exhibit at the convention (above) was also quite popular.



It was a highlight of my career to finally



NOAA's exhibit was adjacent to ours and was impressive for its size and resources, including a tsunami book and resource packet in two languages and classes offered throughout the conference.



NOAA's exhibit featured a wonderful changeable, computerized globe.



Our exhibit featured a hazards background, emphasizing USGS resources that support real-world scientific investigations in the classroom, using our web resources such as real-time streamflow, wildfire, and earthquake information, online topographic maps and aerial photographs, documents about the importance of earth science in the curriculum, and much more. We distributed books, maps (illustrated below), lessons, guidelines, web resources, and more items as described at the end of this report. We demonstrated USGS online resources via two computers with Internet connections. In a different part of the exhibit hall, Billy Tolar demonstrated The National Atlas and its applicability to science education.

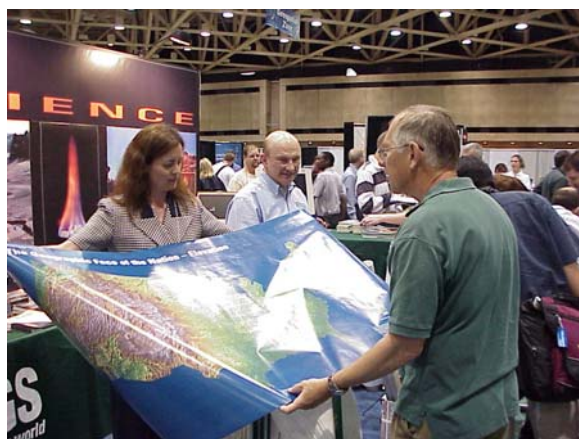


Some of the exhibits at the conference were more aptly termed "islands" or "cities" as they include entire classrooms, as was the case with the impressive exhibit from Texas Instruments (above).

USGS Information Exhibit

The USGS information occupied 20 feet of space and was located near NOAA, the ESRI Geospatial Zone, and not far from an earth science aisle that included GSA, GLOBE, AGI, and others.

[Click here for a video with sound of the USGS exhibit and the NSTA convention hall.](#)





It was a pleasure to talk with conference attendees, such as these four preservice science educators from Ohio.



My workshops covered a site selection lesson using ArcGIS 9, and a plate tectonics lesson using the Global GIS data from USGS and the American Geological Institute.

ESRI Geospatial Zone



Thanks to the invitation of the ESRI Education Staff, I taught four workshops in the Geospatial Zone. The Geospatial Zone was an entire aisle in the exhibit hall dedicated to the use of GPS, GIS, and Remote Sensing technologies in education. ESRI and their business and education partners staffed the Zone. Hands-on classes were conducted there during the entire conference. Among other things, I learned that ESRI Press is publishing a new book this year entitled Fun with GPS by Donald Cooke of GDT-TeleAtlas.

Observations and Recommendations

The NSTA is the major professional organization representing science educators, and as the USGS is one of the largest science organizations, I believe that it is important that we remain involved with this convention. More importantly, it is critical that we remain involved with the educational community—teachers, professors, district, state, and national officials.

I believe that the USGS should play a major role in preparing teachers and students to use our data and products, as well as spatial data and technologies. This effort supports our research and our mission, and it benefits our entire society.

Our relationship with NSTA is longstanding, particularly through Bob Ridky's involvement in the creation of the National Science Standards and NSF review boards. Many of us have had articles published in NSTA journals such as *The Science Teacher*, we have participated in regional NSTA conventions, and throughout the

year, we work with science educators.

The reason for conducting workshops at the convention was to add value to our presence above and beyond our exhibit. The traffic at the exhibit is, as is the case during many of the conferences we attend, is lighter than during break times. By conducting workshops, we have the opportunity of working one-on-one with the teachers. We have the opportunity of obtaining their feedback on curricular materials that we develop. We work with educators to demonstrate **how** our products and spatial data in general can be used in conjunction with national science and geography standards. It does more than telling folks **what** products are available.

We emphasized USGS strengths in real-world data and technology in education, particularly geospatial and scientific information. Both the growth in educational technology and the curricular content standards present excellent opportunities for us to introduce our data and products to students and educators across the country. Educators who are trained in the types and applications of scientific data are a powerful advocate for the USGS and all science organizations. Students familiar with our data will form a geospatially-literate society.

The only disappointing thing about the NSTA convention was that the traffic in the exhibit hall was lower than I and many others expected. This could reflect the fact that teachers have more difficulty obtaining release time in the past, particularly with the emphasis in recent years on standards-based tests.

Acknowledgements

I appreciated USGS support of the time and travel for my attendance at this event. I

thank Bob Ridky for his efforts in securing the funding for USGS participation in this event. Without his efforts, we would not have been at NSTA this year. I thank my colleagues Billy Tolar, Pete Modreski, Bob Ridky, and Cheryl O'Brien for their expertise and enthusiasm. I also thank ESRI, and in particular Charlie Fitzpatrick and George Dailey, for inviting me to be a part of their Geospatial Zone.

USGS Material Distributed

Fact Sheets and Pamphlets

16921 Educational Materials from the USGS

Earth Science Week packets

2004-3072 Landslide Types and Processes

049-02 The Parkfield Experiment-Capturing What Happens in an Earthquake
030-01 Did You Feel It?

Community-Made Earthquake Shaking Maps

002-97 What are Volcano Hazards?

018-02 The National Map

023-03 Landsat: A global Land-Observing Program

022-03 The U.S.G.S. Land Remote Sensing Program

Earth Inquiry Investigations by Bob Ridky

Putting down roots in **earthquake country**

Why Earth Science by USGS and AGI

Forces of Nature (Poster)

NOAA/USGS Statement on the Importance of Earth Science Education

Topo Salad Tray model

Geographic Information Systems

Maps & Minds		and compass	50
Discovering the Legacy of Lewis and Clark			50
Fossils, Rocks, and Time	112719	Map Scales	50
Ground Water	16475	Severity of an Earthquake	50
The Geology of Radon	112296	Birth of the Mountains	50
Topographic Map Symbols	16508	Fossils Rocks and Time	100
USGS GeoData	16504	Deserts	
Map Projections	16424	GIS	50
Book Marks (How do I get answers ...)	16588	USGS GeoData	100
Book Marks (Water for Schools)	16486	USGS Maps	500
Flyers about Water for Schools	100454	Texas Map Index	100
	16504	Deserts: Geology-Resources	
<u>Materials created by Joseph Kerski:</u>	16573	Map Projections	
GPS guidelines	16447	Maps of the World	
GIS-based lessons using USGS data	16433	Groundwater	
Map Mysteries	16643	Scientists in Action	
Teaching with Topographic Maps	100799	Topographic Map Symbols	
Terraserver procedures	16398	This Dynamic Planet	
How to Load USGS Data into a GIS			
GIS in education fact sheet	15041	Downstream Effects of Dams	
Global GIS information	15052	Groundwater and Surface Water	
Educational Map Catalog			
National Map Corps		Coasts in Crisis – Circular 1075	
<u>Materials created by Pete Modreski</u>		A Strategy for Monitoring Glaciers (1132)	
US Pubs about the USGS and beyond		http://ak.water.usgs.gov/glaciology/reports/circular1132/	
How to Get information from the USGS			
Earth Science Websites		Ground Water and Surface Water – A	
What's that Mineral		Single Resource (1139)	
What is Feldspar?		http://water.usgs.gov/pubs/circ/circ1139/	
What do you know about Quartz?			
Common minerals and rocks		Land Subsidence in the United States	
Rocks of the US and the World		(1182)	
Mountains, Rocks, Sand, Silt		http://water.usgs.gov/pubs/circ/circ1182/	
Rock Type chart			100
		Sustainability of Ground-Water Resources	
FS-010-01	Science Society Solutions	(1186)	
16713	Earthquakes in and near the	http://water.usgs.gov/pubs/circ/circ1186/	
Northeast			
		Materials in the Economy (1221)	
114892	Discovering Legacy of Lewis	http://pubs.usgs.gov/circ/2002/c1221/	
and Clark			
		The Quality of our Nation's Waters (1225)	
16855	USGS WWW information	http://water.usgs.gov/pubs/circ/circ1225/	
16866	Finding your way w/maps		

Maps

TX-Mexico border orthophotomaps
Central Region Earthquake maps
USA Physical Regions maps
Big Bend National Park maps
Misc. TX topographic quadrangles

100038 Dallas 100K Topographic
99941 Texas State Topographic
114767 North America Tapestry
114587 Geographic Face: Elevation

112765 Geographic Face: Land
Cover

112733 North America Shaded Relief
28395 Digital Landforms of USA

28394 Digital Landforms of USA –
booklet

Some featured Websites

Rockyweb Education
<http://rockyweb.cr.usgs.gov/public/outreach/>

Education Map Catalog
<http://rockyweb.cr.usgs.gov/public/outreach/mapcatalog/>

USGS Map Store
<http://store.usgs.gov>

Real-time streamflow
<http://waterdata.usgs.gov/nwis/>

National Geologic Map database
<http://ngmdb.usgs.gov/>

The National Map Viewer
<http://nationalmap.gov>

Terraserver
<http://terraserver-usa.com>

Seamless Data Server

<http://seamless.usgs.gov>

National Atlas of the United States
<http://www.nationalatlas.gov/>

The National Map:
<http://nationalmap.gov>

USGS Learning Web:
<http://education.usgs.gov>

USGS Earthquake Center
<http://neic.cr.usgs.gov/>

*** End of NSTA 2005 Convention Report
