

OUTREACH EVENT REPORT AND RECOMMENDATIONS

Event: Career Fair and GIS Institute.

Location: University of Texas - El Paso

Dates: 20-22 September 2001

Attendee's Name and Report Writer:
Joseph Kerski, Geographer:
Education/GIS, USGS, Denver,
Colorado.

Other USGS Attendees: Diane Stephens,
Staff Cartographer, RMMC.

Acknowledgements

I would like to thank John Seeley, Raeda Aldouri, Bob Gray, and Alberto Barud Zubillaga at UTEP for their willingness to work with us, for advertising the institute, for technical assistance in the lab, with data, teaching part of the institute, with our materials, and helping in so many other ways. These folks went above and beyond the norm in helping us feel welcome and making sure that the fair and the institute were successful. I also thank Diane Stephens, USGS RMMC Staff Cartographer, for involving me in this event and for her professionalism and expertise. I also thank our workshop attendees for participating and sharing their own GIS stories with the group. They all were excellent people to work with and I look forward to working with them in the future.

Highlight

The following highlight made the final cut to DOI headquarters and the White House:

USGS and UTEP Co-Host GIS Workshop:
On September 21 and 22, cartographers from the USGS will conduct a GIS workshop

for students and faculty at the University of Texas at El Paso to teach them how to conduct analyses in geography, hydrology, biology, environmental studies, business, engineering and history using real-world spatial data and maps on the computer. Attendees will learn how to download images, maps, and tabular information from the Internet into a GIS for geospatial analyses. (Diane Stephens, Denver, CO 303-202-4133)

Background



UTEP's architecture is modeled after that of the country of Bhutan. UTEP is located in El Paso, Texas, a city of 800,000 at the westernmost tip of the state. UTEP's student population is more than two-thirds Mexican American, and another 9% of its students are from Mexico.

Diane Stephens, RMMC staff cartographer, applied to the DOI Human Resources Initiative funds during Fall 2000 to add a GIS component to the recruitment-retention work that Diane has been doing for years at the University of Texas El Paso (UTEP). Diane had been receiving inquiries about GIS, and because GIS is mentioned in several of the vacancy announcements we hand out at the career fairs, it seemed natural to include a hands-on GIS institute.

UTEP is one of the universities targeted by DOI and the USGS for recruitment efforts. Specifically, funds were requested for travel for both of us to UTEP for a planning meeting and for the GIS institute itself.

The plan for the GIS institute was funded. Diane and I scheduled a planning meeting on 21 August and a GIS workshop on 21-22 September 2001 in conjunction with the UTEP career fair.



Juárez, Mexico, seen from the UTEP Campus. Juárez, whose population now stands at 1.8 million, joins with El Paso to form the largest binational metropolitan area in the world.

On 20-21 August 2001, Diane and I traveled to UTEP and met with professors from the Geological Sciences Department and from the Center for Environmental Resource Management (CERM).

CERM was where Chip Groat worked before he came to the USGS, so it was great to work with folks who knew Dr Groat. We finalized the agenda and plans for publicity. One of our goals is to attract those students to the workshop who might not otherwise have thought that GIS would apply to their career plans or to their research.

Career Fair

UTEP has 2 career fairs each year; the one for the whole university in September, and one emphasizing science and engineering, in February. Diane Stephens represents the USGS at both of these events.



The all-campus career fair was held in the UTEP events center.



The recruiting organizations for the career fair were placed on the concourse in the events center.

I was very impressed at the quality of the students who were interested in working at the USGS. Some had **years** of experience in field methods, scientific research, or computer programming. The Carnegie Foundation recently ranked UTEP in the Doctoral/Research University-Intensive category, placing it among the top 7% of all colleges and universities in the country. This reclassification reflects UTEP's expanding doctoral programs. In 1990, UTEP had only one academic degree program at the doctoral level. Today it offers ten, eight on the UTEP campus, and two in cooperation with other UT components, with more planned.

It was especially gratifying to be able to show real job vacancies at the exhibit--Diane brought at least eight of them, representing all four USGS disciplines. I must note that while I did work with Diane during part of the career fair, she did not really need my help, having done this many times before and having the situation well under control. Still, it was great to work this fair, a different type of event from my typical exhibits at GIS and education conferences. The stream of students stopping by began

slowly but built steadily throughout the two-day fair.



Diane Stephens at our USGS exhibit. Our exhibit featured USGS information, vacancy announcements, job application procedures, and samples of the types of research that we engage in.



Diane Stephens explains the USGS and our vacancy announcements to a UTEP student.

GIS Workshop

Diane and I were amazed that the number of attendees exceeded our hopes. We had 40 people in the workshop plus a few more who attended for a little while and then had other commitments.



We had an excellent cross-section of attendees comprised of university faculty, graduate students, undergraduates, as well as people from the regional council of governments and the municipal government of Juarez (pictured).



The lab's setup was a bit challenging, featuring two rows of computers that met at right angles, but once again, the UTEP staff made sure that we could still conduct a successful workshop.



Joseph Kerski works with participants in GIS institute.



The institute included a small fieldwork segment where we collected coordinates using GPS units and brought them into our GIS package, displaying them on top of a DOQ and DRG of El Paso.

President's Acknowledgement

I received this note from UTEP President Diana Natalicio

Joseph: Thanks so much for your message and the positive comments about UTEP staff members who worked with you conducting the GIS institute. I am never

surprised to learn that UTEP faculty, staff and students have done an exemplary job, but that doesn't mean that I don't like to hear it again...and again! I appreciate your taking the time to share your impressions with me.

President Natalicio:

I serve as geographer at the USGS in Denver. We recently participated in your career fair and conducted a GIS institute on your campus. I thought you might be interested in my impressions from each event [attached in MS Word 2000]. I would like to thank John Seeley, Raeda Aldouri, Bob Gray, and Alberto Barud Zubillaga at UTEP for their willingness to work with us, for advertising the institute, for technical assistance in the lab, with data, teaching part of the institute, with our materials, and helping in so many other ways. These folks went above and beyond the norm in helping us feel welcome and making sure that the fair and the institute were successful, and I wanted you to be aware of that! If you have any suggestions as to how we at the US Geological Survey can better serve you in the future, let me know. Your people are excellent!

Advertisement for GIS Institute



USGS
science for a changing world

UTEP

Explore Your World with a Geographic Information Systems (GIS) Workshop

**Friday and Saturday
21 and 22 Sept 2001**

**Friday: 1pm – 6pm
Saturday: 8:30am-3pm**

**Geological Sciences,
Room 409, UTEP**

**To Register, contact:
seeley@geo.utep.edu
(915) 747-5305**

- Learn how** to conduct analyses in geology, geography, hydrology, biology, environmental studies, business, engineering and history using real-world spatial data and maps on the computer.
- Explore** phenomena using computerized maps, satellite images, aerial photographs, and 3D elevation models of the earth's surface.
- Discover** how to download and use images, maps, and tabular information from the Internet into a GIS.

Poster we created for the GIS institute. The UTEP faculty also sent email advertisements for the workshop.



UTEP Geological Sciences Building, host site of the GIS institute.

Software Used

ArcView Version 3.2 -
ArcView 3.2 3D Analyst
ArcView 3.2 Spatial Analyst
ArcView version 8.1
IE or Netscape
WinZIP

Objectives

1. To be aware of the principles, applications, trends, and pertinent issues of geographic information systems and peripheral technologies, and geographic information science, particularly to those not previously exposed to GIS.
2. To become competent in solving demographic, hydrologic, geologic, biologic, and geographic problems with spatial analysis by using geographic information systems software (ArcView).
3. To understand the nature of spatial data and its format.
4. To feel more confident in downloading and using spatial and tabular data on the Internet, with an emphasis on Texas data.

Format

Each day's class contained some discussion time and demos, but emphasized hands-on work with GIS software and spatial data to solve problems. We used a computer lab that is normally used for GIS and remote sensing in the geological sciences building.

Observations and Recommendations

I was very impressed by UTEP's spirit of intra-campus cooperation, which I have not observed in all universities. UTEP and El Paso-Juarez have a fantastic cultural and physiographic diversity. The faculty is also very willing to work with us, fostered, undoubtedly, by Diane working with them these past few years. I also have a profound impression of politeness and efficiency of all whom I encounter on the UTEP campus.

This project was Diane's idea, which I was very pleased to be a part of. This is a great example of the interaction between outreach, researchers, and recruitment-retention efforts.

UTEP's location helps provide perspectives on a wide range of national and international issues, and gives students rich social and cultural experiences not available on most university campuses. UTEP's faculty conduct nationally competitive research which capitalizes on its unique setting in such areas as environmental science and engineering, history, manufacturing engineering, psychology, and international trade. UTEP has attracted more than \$115 million in new research grants and sponsored projects in the past 5 years.

I have already received several inquiries from participants after the workshop with requests for information. I sent an followup email to the participants in the course, thanking them for allowing us to be a part of their "GIS journey."

Skills Addressed in GIS Institute

Computer file and data management
Selecting features and attributes
Querying features and attributes

Analyzing tabular information
Site selection
Projecting Spatial Data
Joining tabular information
Registering Imagery
Downloading Internet spatial data
Formatting data for use within a GIS
Collecting and using GPS coordinates
Hotlinking photographs to maps
Buffering spatial data
Merging spatial data
Creating and Using 3D Scenes
Analyzing grid data
Analyzing and overlaying spatial data to make an informed decision.

Agenda for GIS Institute:

Day 1: Friday

PM Introductions and Logistics
Workshop Goals
Philosophy on the class and on GIS
Review materials from USGS
What is GIS?
GIS Overview slideshow
View Geography Matters video

Examine USGS, ESRI, and BLM
GIS Posters and other resources

Discuss hardware, software, data,
people (thinking explorer).

Thematic Mapping

Earthquakes Around The World

World Demographics

Break

USA Counties, 1900-2000 with 3D

Election of 2000 by County

Texas County Data Analysis

Hurricane Analysis

Discussion
Evaluation

Day 2: Saturday

AM

Discussion

Tornadoes in the USA Lesson

Field Work: Collecting GPS
coordinates and attributes

Bring GPS coordinates into GIS and
analyze patterns

Hotlinking Images

Satellite Imagery, Digital Elevation
Models, Digital Orthophotoquads,
Digital Line Graphs

Discussion:

Data Available for GIS

Discuss data availability and
types, with an emphasis on
local and TX data sets

A. Base Mapping Data:

1] Vector Data sets:
Digital Line Graphs (DLGs)
River Reach Files
TIGER files

Themes:

Transportation
Hydrography
Hypsography (contour lines)
Boundaries

2] Grid Data Sets: Digital Elevation Models (DEMs)	USGS training and workshops
3] Image Data Sets:	Paso del Norte Health Application
Landsat data Other satellite data Digital Orthophotoquads (DOQs) Historical aerial photos Digital Raster Graphics (DRGs)	Paso del Norte Resource Management Application
B. Thematic Mapping Data: Land Use/Land Cover Geology Census demographics EPA BASINS	Texas Geology and Hydrology Lesson Final discussions Evaluation
1] Organizations - - State, federal, local government Private companies Community Colleges Universities Professional Societies: AAG, URISA, SWAAG, Texas Alliance, NCGE, GITA,	Next steps: Future training opportunities, networking, etc.
2] People Listserves Educational Technology	**End of institute**
Consultants ESRI Staff Federal-state-local agency Staff Universities	Materials For Institute
3] Materials USGS, Census Bureau, EPA, NOAA, NASA, ESRI, Intergraph, other GIS companies	How to Get Information from the USGS Science, Society, Solutions Earth Explorer USGS GeoData Aerial Photographs and Satellite Images Texas Fact sheet USGS web sites Scientists in Action Map Projections Landsat cards
4] Projects and Training Opportunities	Lessons Syllabus Signs for Doors Sample GIS publications GIS 2000 Perspectives Implementation and Effectiveness of GIS in Education GIS Touches our Everyday Lives Videos ArcView GIS pamphlets and posters ArcVoyager CDs
ESRI Livable Communities Grant GITA , AAG, NCGE, URISA conferences	**end of report**