EDUCATION EVENT REPORT AND RECOMMENDATIONS

Attendee's Name: Joseph Kerski Title: Cartographer, PM

Event: 20th Annual ESRI User Conference, San Diego CA

Other USGS Exhibitors: Bob Pierce, Mark Negri, Dave Hester, Helmut Lestinsky, Maria McCormick, Kathy Phelps, Vicki Lukas, Tracy Fuller, Debbie Cruse, Susan Benjamin, Connie Hoong, Terry Glass, Karen Hanson, Alexander Evans, and others.

Trip Date(s): 25-30 June 2000

My activities at conference:

1. Operate USGS Exhibit at Conference
2. Attend 2 meetings of URISA - UCGIS on GIS Certification
3. Conduct 1 user demonstration on GIS in Education.
4. Attend educational GIS sessions and ESRI software sessions.
5. Receive Special Achievement Award in GIS

Conference Summary

Although the USGS has participated in the annual ESRI conference for each year almost since its inception in 1980, this is only the third opportunity that we have had to operate an exhibit at the conference. Billed as the "largest GIS conference in the world", this conference attracted over 9,500 people, an increase of 3,500 from 1997. Next year's attendance target is 10,000. The over 90 countries represented underscore the international nature of this event. By participating, we sought to demonstrate the leadership that the USGS has in geospatial standards, research, partnerships, and in digital data such as NHD that users can and have used in their work.

The theme of the conference was "Geography-Our Global Network." The role of geographic data, partnerships, and research is central to the USGS. Our presence at this conference capitalized on this theme, and visitors crowded to our exhibit, sometimes standing 3 or 4 people deep.

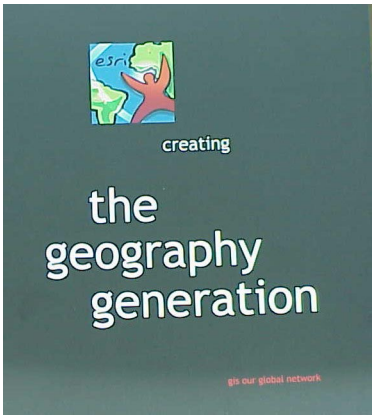
Al Gore sent a letter to the conference attendees, expressing his support of GIS and Digital Earth. This showed the importance that this conference carries.

Our goal at the conference is to reflect applications and use of GIS at the USGS, rather than simply the base data we produce. We also seek cooperative research and development agreements, and production agreements with those we come into contact with.

ESRI Conference, San Diego Convention Center, Main Hall, 28 June 2000.

I believe the customer networking, ties to key organizations, and issues raised at this conference are important to the future of the USGS, and it was important to be involved. I thank those who approved my attendance at this conference.

One theme at the conference was "Creating the Geography Generation." A generation who uses GIS tools can have a significant effect on the future of the planet. The USGS can play a key role in making this a success.



USGS Visibility at Conference

Opening Day

During the opening day sessions in front of over 5,000 people, the USGS received a great deal

of publicity. NED was highlighted in a presentation by Dave Greenlee, which we highlighted with a NED digital demonstration and backdrop in our exhibit. Jay Donnelly also talked about the National Atlas. Dr. Groat was the keynote speaker, addressing how GIS and integrated science fit together. Dr Groat received an article on the front page of the UC Daily, the newsletter for the conference. One phrase I liked that Dr Groat used was that the USGS has the "opportunity and *responsibility*" to disseminate information, and that communications/outreach was key to ensuring that this is accomplished. Some of these messages become an underlying theme throughout the conference.


Dr Chip Groat, giving ESRI conference keynote address.

Map Gallery

The USGS had at least 20 posters in the map gallery, ranging from hazards to abandoned mine lands to Mount Shasta. The high quality of these presentations

Highlights from ESRI

This report is compiled from my notes at the conference; possible gaps or misunderstandings may exist; visit www.esri.com for the latest information.

ArcGIS

ESRI unveiled ArcGIS at this conference. This is a family architecture of software made up of clients and data servers. The clients include the new ArcView 8.1, ArcInfo editor, ArcInfo 8.1, clients on the Internet, and data servers through the Geography Network [see below]. Each desktop client will have the same user interface and share parts of the same applications, and have the same development environment, extensions (such as Spatial Analyst [which will incorporate all of Arc GRID] and 3D Analyst, and data models. ArcInfo editor represents a mid-range functionality. The two GIS servers in ArcGIS are ArcIMS and ArcSDE. ArcIMS is the Internet Map Service, which incorporates more Java-oriented technology. ArcSDE is the Spatial Database Engine that provides a gateway to databases such as Oracle.

What does this mean for the ArcView 3.x users? ESRI will support ArcView 3.x and Avenue for

years to come. They are working on a 3.2a patch right now, which we hope to have on the web, freely downloadable. ArcView 8.1 requires 128 MB of RAM at a minimum, optimally 256 MB.

ESRI is going to try to maintain the 1:10 cost ratio between ArcView and ArcInfo, even when ArcView is based on the same technology, and wants to offer some other price points in between the $1,000 and $10,000, They are experimenting with the notion of an ArcInfo Editor seat.

ArcView 8.1

As I stated above, ESRI is bringing ArcInfo and ArcView together on the same interface and development platform, and ArcView 8.1 will be the first AV release that accomplishes this, due out by the end of 2000. ArcView is a floating seat mapping application for ArcGIS, built on MapObjects, for Windows. Thus, the licensing will be different from ArcView 3.x. ArcView 8.1 contains ArcMap [visualization, editing, mapping, queries], ArcCatalog [data management, browsing, metadata], and ArcToolbox [data conversion]. All 3 are similar to ArcInfo, but ArcView of course will have fewer available functions than ArcInfo.

The plan is that the next generation of ArcView, which will be called ArcView 8.1, will be released simultaneously with ArcInfo 8.1; and it will be built from the same common technology in ArcInfo 8.01 and 8.02. It will essentially be ArcMap and ArcCatalog, minus the ability to edit coverages and geodatabases. Their goal is to do everything ArcView 3.2 does, in the new framework. There might be an .apr to .mxd converter.

Get ready for new terms! ArcMap is like the “view” that ArcView users are accustomed to now, and has a layout view and a data view. A map is like a project, but instead of .apr’s, there will be .mxds. These are not ascii files and cannot be edited, but ArcView 8.1 has a “save with relative pathname” function to allow for transportable projects. A data frame is like a ‘view.” A layer is like a “theme,” and they can be grouped into a “group layer.”

All windows are tear-off-able and dockable. One can set named map extents as bookmarks. One really great thing is that one can load and save a query expression! In ArcMap, you can use Grids, TINs, and other things that previously only ArcInfo users could. Projections have been improved. Layers can be drawn in transparent mode! Annotations are supported. There are geoprocessing, query, and cartography wizards. 3D charts and reports via Crystal Reports represent a big improvement. One can register images, and more formats are supported, such as .png. One can store data in a MS Access database. Developer tools such as Visual Basic and C++ will be included. One can use metadata to search for data by geographic extent, by banding a certain section on a world map.

One can access data directly from the Internet, such as the geography network, displaying the data in the map, without actually downloading it. This, to me, represents the way of the future.

In summary, ArcView 8.1 will be a big paradigm shift over the next few years, but the expanded functionality and analysis will be worth it in the long run.

ArcPad

ArcPad was highly visible at this conference. ArcPad is GIS for mobile computing and field collection. ArcPad on a Palmtop computer allows the collection of data that can be then directly imported into the master database in the office. It is amazing to see DOQs, DRGs, and vector data displayed on a palmtop computer, things that people dreamed about just a few years ago!

ArcExplorer

The next generation of ArcExplorer will be Java based, and it will be cross platform. ArcExplorer is the freeware spatial viewing software package from ESRI.

ArcIMS

I attended a technical session by Angela Lee on ArcIMS [see above for description]. It replaces ArcView IMS and incorporates tools in the product "GIS DataServer." Tools within it allow the user to author a map, design a website, and administer the site. XML and ArcXML are used to create these applications. Examples include VISA ATM locator at http://atm.infonow.net , Realtor Net at http://www.realtor.com, and the University of Connecticut at http://magic.lib.uconn.edu/geospatialdata.

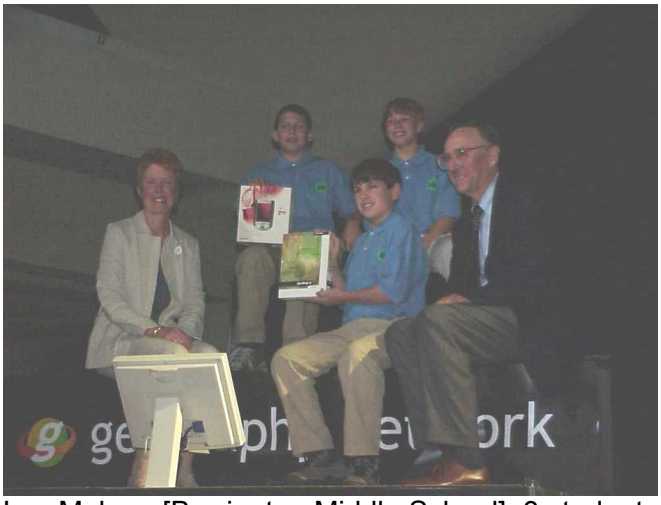
Geography Network

Probably the most recurring theme at the conference was the announcement of the "Geography Network," http://www.geographynetwork.com Jack Dangermond described it as "the most exciting thing that we have ever done." It is a collaborative, multi-participant system for publishing, sharing, and using geographic information on the Internet. In my mind, it has similarities to the National Spatial Data Infrastructure and the Geodata Alliance [http://www.geoall.net]. The Geography Network is a global community of data providers who are committed to making geographic content available. This content is published from many sites around the world, providing access to maps, data, and related services. Much of the data on the site is free. Many of the exhibitors at the conference had signs indicating that they were participants in the Geography Network.

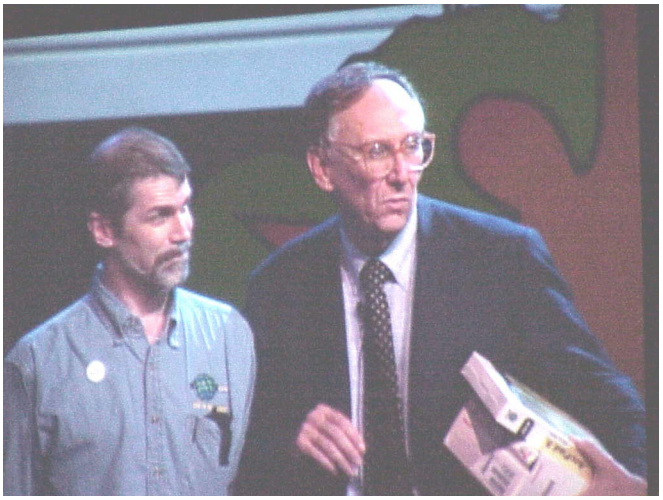
Educational GIS Recognition

I have been working with teachers using GIS for many years. In 1998, the USGS sent me to Southwest Texas State University to co-teach a GIS institute with ESRI staff. Lyn Malone was one of the 32 teachers we trained. She and her students were invited to address the conference attendees during opening day. It was phenomenal to see Jack Dangermond, Roger Tomlinson, and others waiting to shake the hands of this group after the presentation. Imagine being a middle school student, addressing 10,000 people, about your school project! The project was the community atlas project in Rhode Island. Students in the Community Atlas project use GIS and Internet technologies to tell others about their own communities. I will conduct a workshop in community atlas in August in Fort Collins, Colorado. For more information, go to http://www.esri.com/communityatlas. What a privilege to be working with

such outstanding people!



Lyn Malone [Barrington Middle School], 3 students, and ESRI President Jack Dangermond.



Charlie Fitzpatrick [education team, ESRI] and Jack Dangermond, ESRI President.

Special Achievement Award in GIS

Undoubtedly the most special event at the conference for me was to receive the Special Achievement Award in GIS on behalf of the RMMC education and outreach program from ESRI at a ceremony on 29 June 2000. This was to acknowledge our continual efforts in training teachers and students in the use of GIS and geospatial data and for the lessons we have written based on GIS [see http://rockyweb.cr.usgs.gov/public/outreach] for more information. Approximately 100 organizations were chosen from more than 60,000 organizations worldwide for this award. This ceremony also honored Karen Siderelis, our first Geographic Information Officer [who was not present]. ESRI President Jack Dangermond said of the recipients, “Every year the Special Achievement Award honors an elite group of organizations that have embraced

GIS technology to better serve the world. I believe their outstanding accomplishments have laid the groundwork for others to follow."

Joseph Kerski [USGS], Jack Dangermond, George Dailey, Esther Worker [ESRI].

Joseph Kerski accepts Special Achievement Award in GIS from ESRI, 29 June 2000.

Exhibit Highlights from Other Vendors

Hardware

I think the most impressive new piece of hardware I saw was a "Reality Center 3300W" from SGI. This was monitor nearly 10-feet wide. Not a plasma screen, but an actual monitor! I

watched a TNRIS staffperson give a fly-through demonstration on it, and it was *quite* impressive to say the least. The SGI staffperson there gave me a spec sheet on it, but it appeared to be about $150,000.

Exhibit

The most innovative exhibit I saw, in my opinion, was near our USGS exhibit, from Erdas. The exhibit booth was a miniature city--the carpet was an actual DOQ image, the furniture was the buildings, and they included street signs to complete the effect. Quite innovative!

ERDAS exhibit at ESRI conference.

Promotional Item

The most impressive promotional item, in my opinion, was an image of the San Diego harbor from the Space Imaging Corporation. The Space Imaging staff had gone out with a 15-foot wide banner that contained the words “ESRI ‘00” on the banner at the exact moment when the IKONOS satellite traveled overhead. The resulting image was captured, downloaded, and printed 24 hours later for the exhibit. This picture spoke 1,000 words to be able to see the ground banner on the one meter image. Why can’t the USGS do something similar with a NAPP flight?

Map Gallery

The USGS was well represented in the map gallery. The special exhibit “Mapping Our World” explored the history of GIS, and featured the Library of Congress, Space Imaging, and NASA.

Hammer Awards

The National Partnership for Reinventing Government (NPR) announced that ESRI and six teams from the National Spatial Data Infrastructure (NSDI) Community Demonstration Project have won Hammer Awards. Pam Johnson, NPR deputy director, presented the awards during the opening session. Pat Jorgenson came from Western Region to cover the event. The NSDI Community Demonstration Project program was initiated in 1998 with support from many partners including ESRI and several federal departments and agencies. ESRI responded to a public invitation and announced its support of the NSDI Community Demonstration Project in 1999. Its contributions to the six project sites include donations of more than $500,000 in software, training, ongoing technical support, and support services at the Community/Federal Information Partnership Demonstration Facility in Washington, D.C. Each site in the NSDI Demonstration Project serves as an example of the benefits that can be realized through expanded cross-sharing of geographic information between federal and local agencies, and ESRI's technology is the common thread that runs through all of these projects. ESRI was honored for its role in developing the software that has enabled the six different pilot projects to implement procedures and techniques that demonstrate efficiency.

"Innovative communities-like those recognized today-are showing how this kind of mapping can help solve their toughest problems. Today's maps can represent every dimension of a community-its area, its resources, its infrastructure, the quality of the air and water-all the things that make a community livable. Maps can capture information that helps communities plan and helps them protect the safety of each citizen," said Vice President Al Gore.

Secretary of the Interior Bruce Babbitt said, "The NSDI Community Demonstration Project's greatest contribution is to prove that geographic information systems and other technology can be shared and used effectively to fight crime, encourage smart growth, and help make communities disaster resilient. Secretary Babbitt chairs the Federal Geographic Data Committee (FGDC), the implementing body of the NSDI.

"GIS is not a new technology," explained ESRI President Jack Dangermond. "It is successfully used within government agencies around the nation. What is wonderful about the Community Demonstration Projects is that they demonstrate the importance of using NSDI standards for building and sharing data."

According to John Moeller, FGDC executive secretary, the pilot projects showed:

Geospatial data collected by the federal government can be used by local communities to address a variety of issues and problems. Mapped information helps communities make sound management decisions. Sharing data among agencies is possible without substantial expenditures and reduces duplication of data collection while finding new and different uses for the data. NSDI standards applied to GIS data provides communities with access to the data they need to make local management decisions.

Hammer Awards are presented by current U.S. Vice President Gore's National Partnership for Reinventing Government, an interagency task force established in 1993 to find ways to make

government work better, cost less and get results Americans care about. The awards got their name from hammers that once cost the government $400 because of cumbersome purchasing procedures that were eliminated through reinvention.

Lewis and Clark Special Interest Group Meeting

I attended a meeting organized by George Dailey, ESRI, and Jimmy Johnston, USGS - NWRC, to learn about national efforts in preparation for the Lewis and Clark bicentennial.

USGS Exhibit Summary

I was able to convince ESRI to waive our exhibit booth fee of $3,000, and the space was in the main exhibit hall. Our theme at the exhibit was "GIS at the USGS" and included demos and information on NED, research projects, partnerships, NHD, Mount St Helens, Abandoned Mine Lands, and other applications of USGS geodata. Our exhibit included one laptops and a monitor. Digital demonstrations included ArcView and PowerPoint demonstrations on NHD, partnerships, status graphics query, computer video of remote sensing data, digital data formats, and digital data applications. The most frequent questions were on how to format our data to use with ESRI software, NED, and NHD.

The digital demonstrations, backdrop posters, and handout materials with which we operated the USGS exhibit were excellent. The staffing was handled primarily by Central and Western region personnel but Bob Pierce was also present from Eastern.

USGS exhibit at 2000 ESRI conference.

The only items that I would have liked to exhibit at the ESRI conference were the new

"USGS GeoData" GIP which was delivered to Denver one week after the conference, and the GIS GIP, which is still out of stock.

The exhibitors were well-equipped to handle the technical nature of this audience. They had experience in using and manipulating USGS data, were familiar with data and services from NMD and other divisions, and were those who work well with the public. We have a great many of these types of individuals at the USGS, and I am proud to work with them. I agree with Vicki Lucas' comments that many times, USGS employees outside of mapping think they have to be aware of all NMD programs to be useful at the exhibit. On the contrary, each person's "discipline depth" and experience in GIS to their own projects creates a seamless presence and enhances our overall effectiveness.

This conference's exhibit was a joint venture between RMMC and WMC, and showed how effective a cross-center outreach effort can be.

I once again recommend that the ESRI conference be placed on the list of conferences supported by headquarters. If this is added, candidates to drop include the GITA, ASPRS, or ACSM conferences. The ESRI conference is larger, and while it does exclude MapInfo and Intergraph, the international and partnership nature of this event make it one to consider over smaller venues. For next year, I will pursue obtaining the exhibit space for free once again. However, I believe even the $3000 fee would be worthwhile if we can cancel our exhibit at a different conference and use the funds for ESRI. It seems ironic that the ESRI conference is not a bureau-sponsored outreach event. Our director gave the keynote, the USGS had at least 100 attendees there, we have had a CRADA with ESRI, we use their software a great deal, [probably second only to Lotus Notes and Microsoft Office in terms of our agency use], and the USGS hosted many workshops and presentations there.

Our laptops, which all date (at RMMC) from 1996, are a serious problem, particularly at a high-tech conference such as ESRI. We also need more memory on new laptops if we want to run 3D Analyst and Image Analyst in the future. Fortunately, we used WMC's laptop for this exhibit.

Acknowledgments:

Many people at the USGS combined to make this a success. I thank all those who provided demos and posters, and Mary Wadding for materials. I especially thank Kathy Phelps, Mara Tongue, and Jennifer Sieverling for assistance in setting up the USGS exhibit, and Kathy Phelps and all who staffed it. Once again, the WRD San Diego office helped with shipping and loaning us a monitor, particularly Julia Huff and Said Mirzad. This saved us more than $300 for a computer rental. I thank Susan Stitt, BRD, for attending and photographing the Special Achievement Awards ceremony. If I have neglected anyone from the acknowledgements, know that I am appreciative of all help for this worthwhile event.

GIS Certification Meetings

As I am on the GIS education team at RMMC and teach many classes each year in GIS, I attended GIS certification meetings at the ESRI conference. It was a privilege to work with Joel

Morrison and representatives from ESRI, URISA, and other organizations. The essence of these meetings is to determine whether GIS professionals should be certified, like photogrammetrists and surveyors, and also how to accredit college and university programs in GIS.

In its conference call of June 6, the Certification Committee agreed to meet at the ESRI User Conference. Since Chairperson Nancy Obermeyer was unable to attend the Conference, I (David DiBiase) volunteered to organize a meeting. As it turned out, we met twice in San Diego: once from 5.30 to 7.00 pm on Tuesday the 27th, then again at the same time on Thursday the 29th. The meetings were announced in the daily conference schedules. Visitors were welcome.

MINUTES FROM THE MEETING OF TUESDAY, JUNE 27
Attendees included: Jochen Albrecht, University of Wisconsin-Milwaukee and AURISA; Judy Boyd, ESRI; David DiBiase, Penn State University; Scott Fabbro, City of Glendale, CA; Gail Hobbs, Pierce College; Bill Huxhold, University of Wisconsin-Milwaukee, UCGIS, and URISA; Bruce Joffe, GIS Consultants; Ann Johnson, ESRI; Joseph Kerski, USGS; Bob Maher, Centre of Geographic Sciences; Joel Morrison, Ohio State University; Mike Phoenix, ESRI; Mike Renslow, ASPRS; Barry Waite, City of Carson, CA; Suzanne Wechsler, CSU Long Beach; Lyna Wiggins, Rutgers University, URISA and UCGIS.

Bill Huxhold began with a brief review of the certification and accreditation movement. Having just presided over a UCGIS Summer Assembly, he reported that UCGIS Council had resolved to "take an active role in defining skills for GIS Professionals*" He stated also that UCGIS intended to revive its Model Curriculum initiative. Bob Maher then reviewed the status of the ISO/TC211 proposal. He discussed briefly the nature of the proposal, and the recent international questionnaire. I think I heard him say that the the questionnaire results will be considered TC211 Committee's next meeting, which will take place in Reston this September.

Next, Bruce Joffe reported on recommended changes to the NCEES Model Law. Bruce seemed convinced that the surveying community is prepared to work with the GIS community to modify the model law, provided that we take responsibility for defining our profession.

Mike Renslow then described the ASPRS certification process. ASPRS has certified about 1,200 photogrammetrists, about 350 mapping scientists who specialize in remote sensing, and about 55 GIS/LIS mapping scientists. A new certification program for mapping technologists (in collaboration with community colleges) is in the works. Mike indicated that ASPRS is eager to work with URISA and other concerned professional organizations to develop an improved, and unified, certification process.

Lyna Wiggins followed by looking ahead to the URISA Conference in August. Her feeling was that the time has come to act. Joel Morrison pointed out the need to assemble representatives from all concerned organizations - including ASPRS, AAG, UCGIS, ACSM, GITA, NSGC, and perhaps others - to seek consensus on core competencies. He urged URISA to invite representatives to its August conference.

I sent the group a paper that Alan Ward and I wrote on GIS education at the USGS, which will

be published in GIM International.

The Committee discussed the need to populate a "certification matrix." Like the one proposed by AGI, the matrix should consist of rows representing levels of responsibility, and columns representing different disciplines. Each cell in the matrix should represent a category of GIS professional, and should be populated with the competencies that a GIS professional of that type needs to be successful.

MEETING 1 SUMMARY

1) We need to act. There is a pressing need to define the GIS profession, to outline the knowledge and skills that GIS professionals need to acquire and maintain, and to provide guidance to GIS educators. (For good reasons, this point remains contentious. Most committee members seem to agree that action is necessary, however.)

2) We need to act together. Concerned professional organizations should work together to develop a unified certification strategy for the GIS professionals. Multiple certification processes is a symptom of the current problem.

3) We need to build upon what already exists. New certification initiatives should take the existing ASPRS certification program into account.

MINUTES FROM THE MEETING OF THURSDAY, JUNE 29
Attendees of the second meeting included: Jochen Albrecht, University of Wisconsin-Milwaukee and AURISA; Todd Bacastow, Penn State University; David DiBiase, Penn State University; Shorch Elhami, Organization not specified; Steve French, Georgia Tech; Gail Hobbs, Pierce College; Bill Huxhold, University of Wisconsin-Milwaukee, UCGIS, and URISA; Ann Johnson, ESRI; Karen Kemp, University of Redlands; Joseph Kerski, USGS; Joel Morrison, OSU.

We began by reviewing the points of apparent agreement outlined in the summary above. Discussion turned to defining action items for the URISA Committee, because of the approaching conference.

Bill Huxhold proposed a series of white papers to focus members' attention on specific proposals. For example, he volunteered to write a paper specifying the form and content of a certification matrix (based in part on a list compiled by Gail Hobbs and Ann Johnson at an ESRI Conference Panel Discussion earlier that week). Other potential paper topics and authors discussed included: A strategy for peer reviewed GIS education; ABET accreditation; Consensus-building among GIS professional organizations; A summary of the AGI professional development scheme; and the AURISA certification strategy.

We discussed whether white papers could be written soon enough that they might be made available to members prior to the Orlando conference. We doubted it. We also considered whether these papers might be presented in the certification sessions scheduled for URISA.

end of report