EDUCATION-PARTNERSHIP REPORT AND RECOMMENDATIONS

Event Name:
Association of American Geographers 101st Annual Meeting - 2005

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

Location: Denver, Colorado

Event Date: 5-9 April 2005

Summary

I joined 5,000 colleagues in the 101st 2005 annual meeting of the Association of American Geographers (AAG). In attendance were colleagues serving as university and community college professors, graduate students, geographers from government, nonprofit, and private industry, K-12 teachers, and researchers from many countries around the globe. We collectively presented 3,000 papers, operated information exhibits, served in panel sessions, and shared and learned from each other. One has to only look at the thousands of sessions at the AAG conference to understand the diversity of geography in the 21st Century

The USGS participated in the annual meeting by directly supporting the meeting financially, by serving as co-chair of the Local Arrangements Committee (Joseph Kerski), through a 20x30' information exhibit, by conducting field trips to the USGS Rocky Mountain Mapping Center, Ice Core Lab, Rock Core Research Center, Colorado Front Range, and National Water Quality Lab, through serving in the press room, and USGS scientists gave over 40 papers, panels, and plenary sessions.

The 101st Annual Meeting of the AAG was held in Denver, Colorado. Above, downtown from City Park. All photographs by Joseph Kerski.

The Adams Mark Hotel (above and below) was the venue for the 2005 Annual Meeting.

Denver proved to be an excellent location for the AAG conference, as many geographic issues find their home here—the boundary between two major physiographic regions, urban sprawl, water quality and availability, and more.

Above, sprawl along E-470 in Aurora.

The annual meetings are an experience that energizes everyone present. They are one of the highlights of each year that we all look forward to. The next meeting will be held in March 2006 in Chicago, Illinois.

This year, the weather in Denver was wonderful until the day after the conference ended. I hope everyone escaped before the airport was shut down due to our spring blizzard on 10 April, but if not, I hope they were able to enjoy the snow's beauty.

The meeting was held adjacent to the 16th Street Pedestrian Mall in downtown Denver, an excellent example of reclaiming an urban center.

The USGS was created by an Act of Congress on 3 March 1879, and the AAG was created in 1904. Nine of the 48 charter AAG members in 1904 were USGS scientists. Last year, the USGS (sign, below, at the 2005 conference) became a corporate member of the AAG.

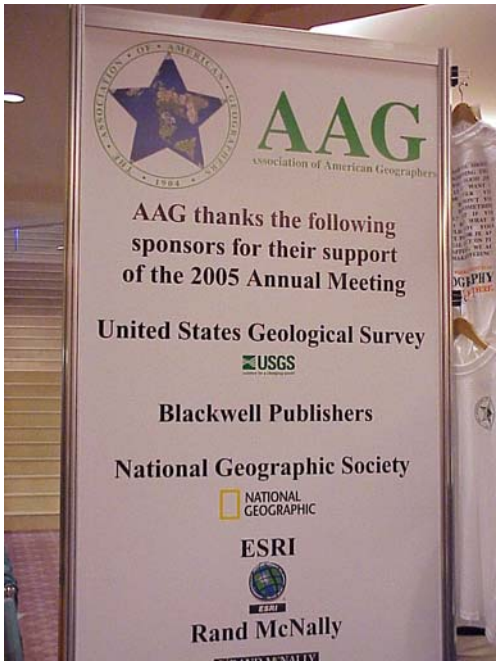
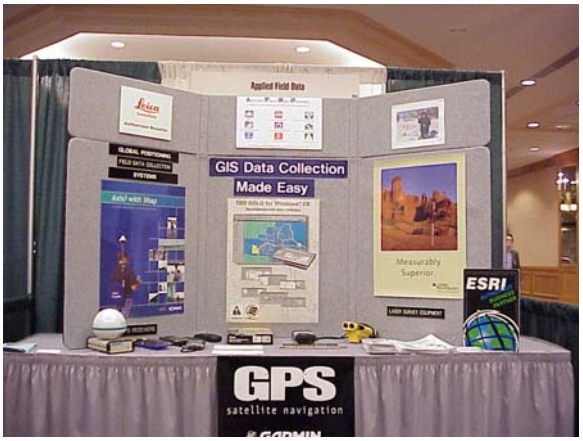


Exhibit Hall



This year's exhibitors included publishers (University of Texas Press, Hodder Arnold, Blackwell, and Wiley, for example), map companies (such as Rand McNally), geography organizations (such as the National Council for Geographic Education (NCGE)), government organizations (such as the USGS, Bureau of Census, and the National Geospatial Intelligence Agency), services (such as Digital Data Services), software companies (such as ESRI), field equipment and service companies (such as Applied Field Data Systems, above), and others.

The AAG exhibit hall is a wonderful place to network with colleagues, and learn about the latest maps, books, software, and projects.

The opening evening featured an international reception, a presentation by Barry Lopez, a busy time with colleagues in the exhibit hall, a Native American drum and dancing ceremony, and a band (above).

USGS Exhibit

The USGS exhibit was prominently displayed in the front of the exhibit hall as a 20x30-foot space. Click here for a panorama with sound of the USGS exhibit.

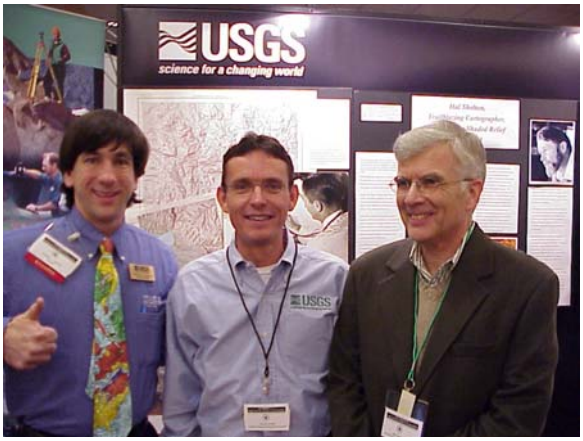
Some of the USGS exhibit staff: Steve Vandas, Joseph Kerski, Heather Friesen, Karen Renee Wood, Pete Modreski, and Roxanne Lamb. We staffed the USGS exhibit with scientists from our Reston, Denver, Sioux Falls, and other offices and, I thought we made an excellent team.

Above, southwest corner of USGS exhibit. . We featured four sides to the USGS exhibit—including our classroom area, remote sensing, The National Map/Geospatial One-Stop, Human Resources and Recruiting, General USGS Information, spatial data (GIS and remote sensing), and appropriate research (hazards, urban growth, biodiversity, water quality, and more). Carol Mladinich also created posters in tribute to USGS cartographer and shaded relief expert Hal Sheldon who passed away in 2004.

Southeast corner of USGS exhibit featuring Landsat mosaic of central Colorado.

Steve Vandas and Heather Friesen (above) and Roxanne Lamb (below) talk to visitors at the USGS exhibit.

This was undoubtedly the most wired and well connected exhibit I have ever been a part of. We featured 11 Internet-connected computers with which we demonstrated a wide variety of USGS data and research.



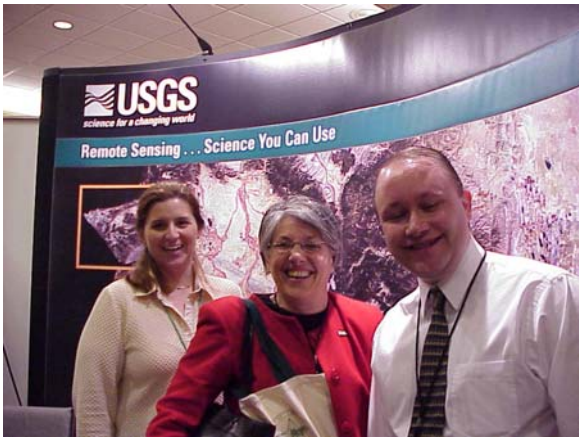
It's always excellent at the AAG conference to meet people we admire. Above, Geographer Joseph Kerski and Central Region Communications Chief Dave Ozman were visited by professor Mark Monmonier, author of How To Lie With Maps *and other insightful books on cartography and geography.*

I and about 10 others at the USGS conducted presentations at our exhibit. This was a wonderful forum to talk with the attendees, share what we have been doing, and get their feedback on these projects. My presentation was entitled "Integrating GIS in watershed and flood in geography education."

Thanks to our excellent computerized exhibit, we were able to effectively answer attendees' questions. I even helped a professor upload his GPS coordinates into ArcExplorer software. We tried to make this the "full service exhibit!"

Conference attendees, as in years past, cleared out all of the thematic maps we brought in a few hours; fortunately, we were close to our mapping center in Denver, and could replenish these and other items daily.

AAG Executive Director Doug Richardson (right) visits our exhibit. Also pictured (left) is Alan Mikuni, Chief of our USGS Western Geographic Science Center.



The USGS exhibit was quite busy throughout the annual meeting and it was a pleasure to speak with those who visited. Above, USGS's Barb Ryan (center) visits with USGS EROS Data Center scientists. Barb Ryan gave several talks at the

conference about the future direction of the USGS geography program.

Karen Siderelis and other USGS staff at the east side of the exhibit.

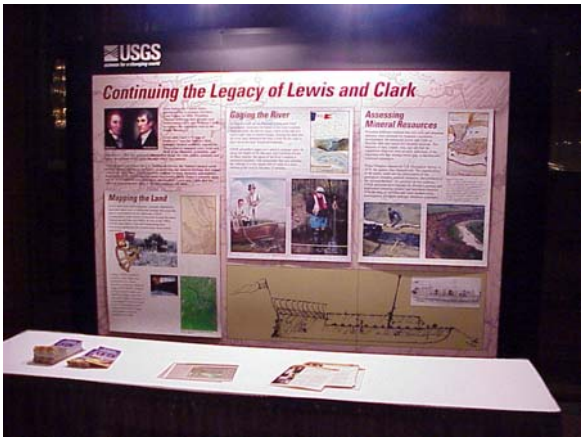
Geography Education Specialty Group Meeting

The AAG includes at least 60 specialty groups representing regions of the world, and topical specialties such as GIS, remote sensing, cartography, cultural geography, historical geography, and geography education. I participated in the geography education specialty group meeting, above; Bruce Sievertson is our chairperson. We discussed scholarships, bringing students to the AAG conference, our role and our vision for the future, the AAG's requirements and support of specialty groups, AAG 2006 plans for the specialty group, developments in geography education, and other topics.

Session Honoring Hugh Calkins

I attended a session honoring the achievements of Professor Hugh Calkins. Jack Dangermond, David Mark, Michael Goodchild, and other prominent GI Science researchers were on hand to present an informative and touching tribute.

Lewis and Clark Exhibit



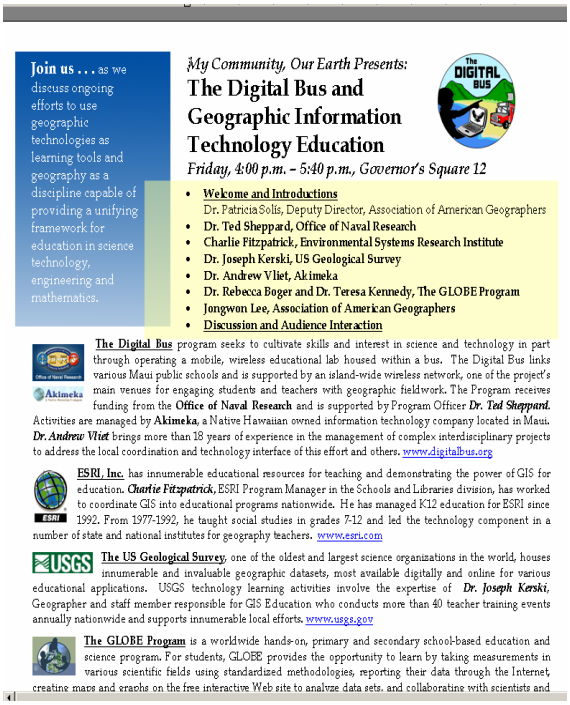
Jon Campbell, USGS, set up this Lewis and Clark exhibit at the conference site. The USGS has a great many resources available for the study of Native Americans and Lewis and Clark.

My Community Our Earth Presentation

The AAG invited me to speak on a panel about the My Community Our Earth Maui Digital Bus project. My report about this project is on:

http://rockyweb.cr.usgs.gov/public/outreach/reports/mycoe05t.pdf

Flyer for the panel, below.



Join us . . . as we discuss ongoing efforts to use geographic technologies as learning tools and geography as a discipline capable of providing a unifying framework for education in science technology, engineering and mathematics.

My Community, Our Earth Presents:

The Digital Bus and Geographic Information Technology Education

Friday, 4:00 p.m. – 5:40 p.m., Governor's Square 12

- **Welcome and Introductions**
  Dr. Patricia Solis, Deputy Director, Association of American Geographers
- **Dr. Ted Sheppard, Office of Naval Research**
- **Charlie Fitzpatrick, Environmental Systems Research Institute**
- **Dr. Joseph Kerski, US Geological Survey**
- **Dr. Andrew Vliet, Akimeka**
- **Dr. Rebecca Boger and Dr. Teresa Kennedy, The GLOBE Program**
- **Jongwon Lee, Association of American Geographers**
- **Discussion and Audience Interaction**

The Digital Bus program seeks to cultivate skills and interest in science and technology in part through operating a mobile, wireless educational lab housed within a bus. The Digital Bus links various Maui public schools and is supported by an island-wide wireless network, one of the project's main venues for engaging students and teachers with geographic fieldwork. The Program receives funding from the **Office of Naval Research** and is supported by Program Officer ***Dr. Ted Sheppard.*** Activities are managed by **Akimeka**, a Native Hawaiian owned information technology company located in Maui. ***Dr. Andrew Vliet*** brings more than 18 years of experience in the management of complex interdisciplinary projects to address the local coordination and technology interface of this effort and others. www.digitalbus.org

ESRI, Inc. has innumerable educational resources for teaching and demonstrating the power of GIS for education. ***Charlie Fitzpatrick***, ESRI Program Manager in the Schools and Libraries division, has worked to coordinate GIS into educational programs nationwide. He has managed K12 education for ESRI since 1992. From 1977-1992, he taught social studies in grades 7-12 and led the technology component in a number of state and national institutes for geography teachers. www.esri.com

The US Geological Survey, one of the oldest and largest science organizations in the world, houses innumerable and invaluable geographic datasets, most available digitally and online for various educational applications. USGS technology learning activities involve the expertise of ***Dr. Joseph Kerski***, Geographer and staff member responsible for GIS Education who conducts more than 40 teacher training events annually nationwide and supports innumerable local efforts. www.usgs.gov

The GLOBE Program is a worldwide hands-on, primary and secondary school-based education and science program. For students, GLOBE provides the opportunity to learn by taking measurements in various scientific fields using standardized methodologies, reporting their data through the Internet, creating maps and graphs on the free interactive Web site to analyze data sets, and collaborating with scientists and

I joined colleagues from the AAG, the Office of Naval Research, Akimeka LLC, ESRI, and GLOBE, above, for this panel. This project represents a perfect example of educational partnerships making a difference in geography education and in our world. See http://www.geography.org/sustainable.

GIS In Education Session

Organized by Dr Ming-Hsiang Tsou of San Diego State University, I presented a paper about GIS in education focused on using inquiry-driven lessons and GIS to understand flooding along mountain fronts. I used the Colorado Front Range as a successful example of this project, which uses historical and current aerial imagery, buildings, floodplains, historical accounts, and other data sources. We had a lively session that included GIS in education examples in all educational levels and in diverse locations.

USGS Tours

The USGS sponsored three field trips during the 2005 AAG conference:

MONDAY, APRIL 4
Urbanization of the Colorado Front Range – Past, Present, and Future
Organizer/Leader: Beverly Friesen and

Mark Feller, USGS.

Key sites will be visited to illustrate the dramatic story of landscape change in the Colorado Front Range. The field trip will include a walking tour of colorful LoDo (Lower Downtown) in Denver and lunch at the spectacular Red Rocks amphitheater in Morrison. Water and air quality, geologic features, and urban redevelopment will be addressed by experts from the city, state, and U.S. Geological Survey. The tour will end at the Oxford Hotel, where participants can relax in the Cruise Room, a historic bar in the heart of old downtown Denver. Please note that this is a companion trip to the paper session with the same name.

THURSDAY, APRIL 7

USGS National Water Quality Laboratory – Denver Federal Center Thursday, April 7: 8am – 1pm Organizer/Leader: Gary Cottrell, USGS.

The USGS National Water Quality Laboratory (NWQL) is a full-service laboratory that specializes in environmental analytical chemistry. The NWQL's primary mission is to support national USGS programs requiring environmental analyses that provide consistent methodology for national assessment and trend analysis. This mission directly supports the USGS, which, in part, is charged with providing the Nation with reliable, impartial earth-science information to help decision-makers manage the Nation's water resources. The NWQL has a highly trained and talented work force, and a history of quality leadership in development of analytical methods for water, sediment, and tissue. The NWQL offers comprehensive services through a state-of-the-art facility designed for efficient and safe operation. The combination of high capacity, low detection levels, and strong quality assurance draws visitors from around the world to the benchmark laboratory processes at the NWQL.

USGS Rocky Mountain Mapping Center, National Ice Core Lab, Rock Core Research Center – Denver Federal Center Thursday, April 7: 8am – 1pm Organizer/Leader: Joseph Kerski, USGS.

Do you love maps? Tour the world's largest map depository at the USGS Rocky Mountain Mapping Center. Over 50 million maps, books, and CDs are housed in a 17-acre facility. Your tour will also include the USGS Spatial Data Production Facility, where elevation, land use, and hydrologic data are created, the USGS Geographic Research Group, Biological Informatics, and the Central Region USGS Visitors Center. The tour will also include the National Ice Core Laboratory, where ice from Antarctica and Greenland are examined as part of global climate research studies. Lastly, you will see the nation's largest single rock core depository, where 1.5 million linear feet of granite, oil shale, and other rock core are scientifically analyzed for earth processes and energy research.

The photographs below were taken during the USGS maps-rocks-ice tour.

I was pleased that 60 international guests signed up and paid for this tour. We received more positive comments from the attendees than almost any other tour we have conducted in the past 15 years. My thanks to the USGS staff who helped me with it (see acknowledgements).

The field trip started in the USGS Central Region Visitors Center by Regional Director Tom Casadevall (at right, pointing).

Participants had time to browse and purchase maps from the USGS map and product sales center.

The field trip included the USGS products distribution center, home of 85,000 USGS product titles and 40 million maps, books, CDs, and posters.

Above, right, Gene Jackson discusses the work done for people in libraries, business partners, scientific organizations, and other entities around the world at the USGS Rocky Mountain Mapping Center.

Above, John Guthrie discusses his work with wildfire analysis and web mapping.

Above, Gene Jackson points at Colorado raised relief image made from USGS DEM data.

Tom Michalski discusses the mission of the USGS Core Research Center.

Above, David Kraemer and Jeffrey Simley demonstrate the collection of National Hydrography Data.

Above, Todd Hinkley provides a description of the mission of the National Ice Core Laboratory and why climate change studies are important.

Frozen field trip attendees inside the ice core laboratory!

Local Arrangements Committee

AAG Executive Director Doug Richardson asked Dr John Wyckoff, University of Colorado-Denver, and I to serve on the Local Arrangements Committee as co-chairs for the 2005 Annual Meeting. We planned field trips, helped organize the sessions for the conference, contacted local exhibitors, and more, and were fortunate to have the following individuals on our team. If I am missing any names, know that we are appreciative of your efforts as well.

Amanda Gierow – Community Mapping Program and Arapahoe Community College
Curtis Holder - University of Colorado-Colorado Springs
Deb Thomas- University of Colorado-Denver
Donald G Sullivan- University of Denver
Esther Worker - ESRI
Fred Chambers- University of Colorado-Denver
James Pardue- Vargis
Jeff Young - Leica
John & Corki Dietz- University of Northern Colorado
Pat Schwartz - Front Range Community College
Rafael Moreno – University of Colorado-Denver
Robb Menzies- Denver Public Schools
Rudi Hartmann – University of Colorado-Denver
Steve Hick, University of Denver
Tyler Otto, Digital Globe

USGS Participants Presenting Papers

The USGS had an excellent representation in papers presented at the conference. In addition to the papers given below, USGS staff such as Karen Siderelis and Barb Ryan presented at plenary sessions.

Session: Urbanization of the Colorado Front Range – Past, Present and Future
Title: **Development and Application of Human and Environmental Indicators in the Colorado Front Range**
Presenter: Tom Owens

Session: <u>Urbanization of the Colorado Front Range – Past, Present and Future.</u>
Title: **Historic Current, and Future Landscapes along the Colorado Front Range**

Presenter: Michael Stier

Session: Urbanization of the Colorado Front Range – Past, Present and Future.
Title: **Using distance to road as an indicator of landscape change and habitat fragmentation in the Colorado Front Range**
Presenter: John McCammon

Session: Urbanization of the Colorado Front Range – Past, Present and Future.
Title: **Water Quality Impacts of Landscape Change in a Colorado Front Range Watershed**
Presenter: Sheila Murphy

Session: Urbanization of the Colorado Front Range – Past, Present and Future
Title: **Nitrogen Emissions Along the Colorado Front Range: Response to Population Growth, Land and Water Use Change and Agriculture**
Presenter: Jill Baron

Session: Experiences and Lessons in GIS Education – I
Paper Title: **Integrating GIS In Watershed and Flood Geography Education**
Presenter: Joseph Kerski

Session: Characterizing Population and Urban Areas with Remotely Sensed Data
Time: 4:00 p.m.
Title: Mapping Urban Land Cover Sub-Pixel Imperviousness Change Detection
Presenter: Cory McMahon

Session: Conservation
Title: **Creation of geospatial y rectified digital archive for South Florida and the Everglades: The 1940 Aerial Photography Photoset**
Presenter: Alisa Coffin

Session: Conservation
Title: **Land-cover Trends in the Sierra Nevada Ecoregion**
Presenter: Christopher Soulard

Session: Conservation
Title: **Old(er) Trees in the U.S. Southeast: Forest Land Cover Stability and Change in Five Southeast Ecoregions, 1973-2000**
Presenter: Roger Auch

Session: National Parks and Landscape Appreciation
Title: **Using Resident Employed Photography as a tool to study quality of life and sense of place on the Colorado Plateau**
Presenter: Phadrea Ponds

Session: Geomorphology and Agriculture
Title: **Earthquake geology and urban areas east of the U.S. Rocky Mountains**
Presenter: Russell Wheeler

Session: Geomorphology and Agriculture
Title: Geologic Map of the Canyon Ferry Dam Quadrangle, West-Central Montana
Presenter: Theodore Brandt

Session: Contemporary Land Cover Change in the U.S. (USGS Land Cover Trends Project)
Title: **U.S. Land Cover Trends in the Beaufort Coastal Plain, Alaska**
Presenter: Emily Binnian

Session: Contemporary Land Cover Change in the U.S. (USGS Land Cover Trends Project)
Title: **Contemporary Land Cover Change in Eastern United States**
Presenter: Kristi Sayler

Session: Contemporary Land Cover Change in the U.S. (USGS Land Cover

Trends Project)
Title: **Rates of Contemporary land cover change in the Mojave Basin and Range ecoregion**
Presenter: Benjamin Sleeter

Session: Contemporary Land Cover Change in the U.S. (USGS Land Cover Trends Project)
Title: **Edwards Plateau: Analysis of Land Cover Trends**
Presenter: Beverly Friesen

Session: Contemporary Land Cover Change in the U.S. (USGS Land Cover Trends Project)
Title: **Projecting Land Use Change Through 2020 using theoretical, statistical and deterministic modeling techniques**
Presenter: Terry Sohl

Session: Urban and Transportation Geography
Title: **Monitoring of Urban Landscape Change in the Austin-Round Rock Metropolitan Statistical Area**
Presenter: Kathleen Casey

Session: Urban and Transportation Geography
Title: **Landscape Change and Socioeconomic Trends in the Austin, Texas Region**
Presenter: Paul Martin

Session: Urban and Transportation Geography
Title: **Twentieth Century Population Trends in the San Antonio-Austin, Texas Region (The Rural-to-Urban Transition)**
Presenter: Maria McCormick

Session: Experts exchange on hyperspectral and hypertemporal image analysis
Title: **Mapping Altered Minerals to Characterize Porphyry Copper Deposits Using AVIRIS Data**
Presenter: Keith Livo

Session: Rural Change and Resource Management in the Great Plains and Western U.S.
Title: **Agriculture, Water, and Land Transformation in the High Plains: Contemporary Processes and Characteristics of Regional Change**
Presenter: Mark Drummond

Session: Urban Constructions
Title: **Distance from Nearest Road as an Indicator of Human Activity**
Presenter: Raymond Watts

Session: Human Health and the Environment
Title: **The Spread of West Nile Virus in the United States: Geographic Structure and Mechanisms**
Presenter: Steve Guptill

Session: Human Health and the Environment
Title: **A Web-based System for Environmental Mercury Mapping, Modeling, and Analysis**
Presenter: Paul Hearn

Session: Human Health and the Environment
Title: **Using Bayesian Techniques to Forecast West Nile Virus**
Presenter: Lee DeCola

Session: Visualization IV: Visualizing Trends
Title: **Rapid Delivery of Surveillance Maps for the USGS West Nile Virus Web site**
Presenter: Susan Price

Session: Conservation Techniques

Title: **Communicating Geographic Information in the 21st Century: The GBIP/SAGEMAP/Science Locator Model**
Presenter: Sean Finn

Session: Water Supplies and Hydrology
Title: **Surface Water Hydrology for the Nation**
Presenter: Jeffrey Simley

Session: Vegetation and Climate
Title: **Linking In Situ and Satellite Data for Monitoring Vegetation Phenology**
Presenter: Doug Muchoney

Session: Medical Geography: Public Health Applications
Title: **Uses of Environmental Data for Public Health Applications along the US/Mexico Border**
Presenter: Jean Parcher

Session: Identification of Forest Fragmentation, Forests, and Invasive Species Using Remote Sensing
Title: **The Use of Earth Observing 1-Advanced Land Imager (EO1-ALI) Data for Mapping Invasive Leafy Spurge in Theodore Roosevelt National Park, North Dakota**
Presenter: Susan Stitt

Session: Land Use and Land Cover Change
Title: **Land use and land cover change in the Blue Ridge Mountains Ecoregion: Exploring Landscape Persistence**
Presenter: Rachel Kurtz

Session: The Dynamics of Change in Urban Landscapes
Title: **Northern Colorado Front Range Regional Landscape Change**
Presenter: Carol Mladinich

Session: The Dynamics of Change in Urban Landscapes
Title: **Urban Dynamics in Alaska: A 30 Year Study of the Municipality of Anchorage**
Presenter: Carl Markon

Session: The Dynamics of Change in Urban Landscapes
Title: **The Historical Development of the Nation's Urban Areas**
Presenter: William Acevedo

Session: The Dynamics of Change in Urban Landscapes
Title: **Analyzing Albuquerque's Landscape Evolution in the 20th and 21st Centuries**
Presenter: David Hester

Session: Government Impacts on Agriculture
Title: **Agricultural Land Use Trends in the Edwards-Trinity Aquifer Region**
Presenter: Ben Sherrouse

Recommendations

We absolutely must increase our involvement with the AAG in education and research. The AAG is the number one geography professional society in North America and one of the leading such organizations in the world. Many of the exhibitors and participants at AAG were USGS partners or users of our data and resources. I believe we must also increase the viability of our education program that helps communicate the message and mission of the USGS. Geography education and research is a fundamental part of the mission of both the AAG and the USGS. It only makes sense that we work more closely together.

Acknowledgements

I thank the Local Arrangements Committee for their work over the past year to ensure that this annual meeting was a success.

I thank the AAG staff for their support for our USGS presence at the conference and for their help to our Local Arrangements Committee, particularly Doug Richardson, Oscar Larson, Patricia Solis, Michael Solem, Robert Andelman, and Corey Siembeda.

I thank my USGS colleagues who helped with the exhibit, particularly Roxanne Lamb, Steve Vandas, David Ozman, Ranae Gonzales, Karen Renee Wood, Jon Campbell, Pete Modreski, Heather Friesen, and many others.

I appreciated those who helped with the USGS field trip, particularly Tom Casadevall, Todd Hinkley, Tom Michalski, Richard Shields, Ken Gerson, Gene Jackson, Rusty Grout, David Kraemer, Melanie Hood, John Guthrie, Dana Shippy, and others.

I thank all of those who are continuing to make geography a relevant and exciting discipline and look forward to working with you all in the future.

*** End of 2005 Association of American Geographers Annual Meeting Report ***