

# Central Region Newsletter

## American Society for Photogrammetry & Remote Sensing

Volume 15, Issue 6

December 2003

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The University of Arkansas Libraries hosted a GIS Day Open House and helped ASPRS Central Region's efforts to establish a student chapter at the University.

The program kicked off at 10:00 am with Student Posters on display and a tour of the Center for Advanced Spatial Technologies (CAST) (<http://www.cast.uark.edu/>) facilities. During the CAST tour, the group was given a demo of GeoStor (<http://www.cast.uark.edu/cast/geostor/>) and other web-mapping projects. During lunch, which was delicious and provided by the Library, Brian Culpepper gave a presentation on the Rural Geospatial Innovations (RGIS) office located at the University. Next on the agenda were the following presentations:

- National Hydrography Dataset Concepts and Applications – Gladys Conaway, USGS
- *The National Map* – Bill Sneed,

USGS

- *The National Map Corps* – Jerry Wagner, USGS
- Monitoring the Environmental Impacts of Confined Animal Feeding Operations (CAFOs) – Shelley Silch, USGS
- Suspended Sediment Effect on Spectral Reflectance - Vijay Garg, Graduate Assistant, University of Arkansas

The day ended with a brief talk about the benefits of ASPRS and the incentives available to start a Student Chapter at the University. A variety of door prizes were awarded including a free student membership that was won by Ashish Ratn Mishra.

### Francis E. 'Gene' Lortz Scholarship Winners

The Central Region is pleased to announce the winners of this year's Francis E. 'Gene' Lortz Scholarships. More of you applied this year than in previous years. The Board received eleven graduate and seven undergraduate applications. The schools represented include the University of Kansas, Kansas State University, the University of Arkansas, Southwest Missouri State University, and the University of Missouri—Rolla. The Scholarship Committee reports that the scoring was close and that it was unfortunate that the Region can afford to give only one scholarship in each category since there were many deserving applicants. However, in the end there can be only one graduate and one undergraduate winner. And the winners are...

#### Matt Dunbar - Graduate

Matt is working on a Master of Arts degree in Remote Sensing at the University of Kansas. He is currently a graduate research assistant for the Kansas Applied Remote Sensing Program in the Geography Department. His latest research project is NASA funded and it is entitled 'Quantifying and Visualizing 60 Years of Forest Cover Change in the Midland, Kansas United States Geological Survey Quadrangle.'

#### Bradley B. Hammerschmidt -

Bradley is working on a Bachelor of Science degree in Geography at Kansas State University. He is currently a Geographic Information Systems technician and researcher for the Global Information Systems Spatial Analysis Laboratory for the Geography Department.

## Public Safety and Welfare Examples Resulting from Non-Licensure of Photogrammetry

The Licensure Committee of the Professional Practice Division released an article on 25 November 2003 discussing examples of the negative impacts on public safety and welfare that could occur if the photogrammetry and GIS professions remain unlicensed. The examples below describe situations where the public's safety and welfare were jeopardized due to non-licensure of photogrammetry. The examples were compiled in response to several requests made to ASPRS for occurrences of harm caused by photogrammetry firms practicing in an unregulated environment. The examples are reported from a variety of sources in the public and private sectors. Individual names, firm names, agency names, etc., have been intentionally excluded from the content of this document. ASPRS believes these statements represent accurate descriptions of the actual occurrences but makes no guarantees regarding the accuracy or validity of each.

### **Example 1**

A locality used the low-bid method to procure rectified aerial enlargements. The RFP included language regarding ground control, scaling, etc. for overlaying the enlargements with the localities existing parcel maps. When the enlargements were received, it was quickly discovered that they had not been rectified. The firm providing the work stated that they had followed the requirements of the RFP.

Public harm is demonstrated in the fact that the locality did not receive the product that they desired, therefore wasting public funds on a useless product. It is evident that involvement of a licensed professional and the use of a qualifications based procurement vehicle (required when procuring professional services from a licensed professional in this jurisdiction) would have facilitated an improved dialogue, resulting in a scope of work that was clearer and unquestionable, and would have thus prevented this situation. Furthermore, had a licensed professional conducted the project in the manner as described, they would have been subject to disciplinary action by the respective regulatory board, and the locality would have had at least that recourse.

### **Example 2**

A photogrammetry firm providing services to a government agency was found utilizing inappropriate accounting practices. Legal action ensued, and the company was barred from performing work for the agency for a set time period. At a later date, the firm was pur-

chased by another firm and the principals of the original company split up and reformed new companies and continue to practice photogrammetry. This example has obvious impacts on the welfare of the public due to the fact that these individuals are still practicing photogrammetry. Had licensing been in place, they would have lost their license and would not be able to practice in that state today. Since the individuals are still practicing, the public is at risk for inappropriate activities to occur again.

### **Example 3**

A government entity contracted with a photogrammetry firm to provide data for their GIS system. The language of the proposal was written in a very clear and specific manner. The first set of products were delivered ahead of schedule and met a high standard of quality. The second set of products were to be developed with the assistance of field survey crews under the responsible charge of a licensed professional provided by a sub-contractor on the contract. The prime firm decided to fulfill their obligations without the use of the licensed survey sub and consequently told the sub that their services would not be required. The product was not delivered to the entity by the scheduled due date causing the entity to question what was occurring. The photogrammetry firm produced a partial deliverable containing errors and inaccuracies. The remaining deliverables continued to be delayed and the entity again asked why. The photogrammetry firm attempted to accuse the entity of not knowing what they wanted. The project continued experiencing delays. Finally the entity asked the firm to return whatever data they had developed up to that point and stated that the contract would be terminated. The firm was unable to provide the data because the work had been sent offshore. The entity then requested proposals from another firm to finish the project. The second firm was awarded the contract to finish the work. The project was completed by the second firm in a reasonable timeframe, but due to the lack of action by the first firm, the deliverables were approximately 18 months late. Public harm is demonstrated in the excessive delays preventing the entity from making reviews and decisions for improvements that affected their citizens. Additional costs were also incurred due to the necessity of hiring the second firm to complete the work. Additionally, the delay in implementing an operational GIS system caused the entity to terminate GIS personnel hired by a number of departments based on

the original deadline for completed services. As of this date the entity still has been unable to find suitable re-placements for those individuals that were released.

#### **Example 4**

A transportation agency received photogrammetric mapping for a highway project that proved to be in error. Several ground surveys were required to be performed to verify the inaccurate data and to correct the inaccuracies. This entire process took additional time and money. The project experienced delays as a result of the inaccurate data. Legal action was also taken extending the cost overrun of the project. The taxpayers and traveling public were harmed in two ways: the additional survey costs for the project, and the delay in completing the project for public use. The individuals from the company that provided the inaccurate data continue to practice because they have no license to lose. The public is at risk to this occurring again.

#### **Example 5**

Photogrammetric mapping was utilized by developers to plan, design, and build a coastal resort. Gross errors in the mapping ultimately resulted in the resort being built within a hazard area susceptible to rapid shoreline erosion. The coastline eroded to within feet of several structures, placing the structures and property owners in eminent danger and accelerating losses due to the erosion and wave-induced damage. Public harm and safety is easily demonstrated by this example due to the costs and related actions necessary by each property owner to correct damage and amend the situation.

#### **Example 6**

For flood insurance studies, FEMA requires cross section elevation points with a vertical root-mean-square-error (RMSE) of 15-cm or better. An engineering firm performing the hydrologic and hydraulic analyses for a specific study, determined that stream cross-sections would not need to be field surveyed because critical cross-sections could be determined from LIDAR data which was claimed to be better than 6cm RMSE and even more accurate than ground surveys. FEMA's independent accuracy assessment, however, indicated that the LIDAR data actually had an RMSE of approximately 60cm (10 times worse than the accuracy claimed), causing FEMA to demand that stream cross-sections be field surveyed.

If such errors had not been identified and corrected, the Flood Insurance Study would have inaccurately mapped the floodplain, home owners would have been unaware of actual flood risks, new homes would have been built at unsafe, flood-prone elevations in violation of building codes, and old and new homes would have been uninsured that actually needed to be

insured for actual flood hazards. Public safety and welfare would have clearly been adversely affected.

#### **Example 7**

A locality hired a photogrammetric firm to produce topographic maps that were to satisfy National Map Accuracy Standards for maps with 2' contours. The intended use of the mapping was for the design of new water and sewer systems and for storm water/infrastructure management. Several years later, when the locality wanted to update its geospatial data, it tested the elevation data for the first time and found very large errors, causing them to hire a different firm to remap the topography which previously did not have the accuracy claimed by the original vendor and required by the locality. The additional expenses incurred to obtain the new data, and the prior use of the inaccurate data, grossly contributed to harming the public safety and welfare.

#### **Example 8**

A photogrammetric firm performed a mapping project where the actual flight line missed the planned flight line, causing one target to be completely missed and another target to show up on only two of three successive photos. After the flight was made, the project area was revised causing the firm to map to the extreme edges of the photos in order to cover the new project area. The mapping closest to the photo edges produced a discrepancy of over eight inches in elevation between field surveyed pavement elevations and photogrammetrically mapped pavement elevations. This magnitude of discrepancy far exceeded the requirements for design-grade projects. The abrupt change in elevation of 8+ inches would have been disastrous. If the design had been completed with no further survey, numerous problems would have occurred during the construction phase causing additional costs and delays in order to determine and correct the problem. Potential public harm can be demonstrated in this example due to the incorrect data and the problems that would have occurred if survey data had not been available and used as a check.

#### **Example 9**

An accurate airport survey needed to be performed. The photogrammetry firm chosen to provide the mapping stated that it could produce the data at the required level of accuracy. Upon completion of the project, the elevation data was checked and it failed to meet the accuracy requirement originally promised, resulting in the data being discarded. A ground survey crew was subsequently hired to provide the vertical data. Public harm is demonstrated by the additional costs incurred by the prime consultant for the ground-

based survey that provided the accurate data. The additional costs could not be charged back to the client. This also attributed to a delay of the project.

### **Conclusions**

In each of these examples, use of licensed photogrammetry practitioners would have prevented overstating the accuracy, delivering sub-standard products, and providing sub-standard services, or would have enabled disciplinary action to be taken if those actions had occurred. When government agencies, localities, and private clients do not receive the accurate products for which they pay, public and private funds are wasted, time is wasted in identifying and correcting errors, and (if uncorrected) the public safety and welfare is jeopardized because water/sewer systems don't work correctly, flood risks are inaccurately mapped, transportation systems fail to meet safety standards, new homes are built at dangerous flood-prone elevations, and property owners are uninsured when they unknowingly should be insured. Each of these significantly impacts public safety and welfare.

Currently in most states, remote sensing professionals (photogrammetrists, LIDAR and IFSAR specialists) have no license to lose; they simply aren't rehired when clients realize they didn't receive the product accuracy for which they had already paid. If the profession had licenses to lose, aerial remote sensing practitioners would be forced to be more careful to ensure that professional standards were satisfied - recognizing and fearing that malpractice could more easily result in the loss of privilege to practice in that state, and in others states as well.

## **Classifieds**

The Region Board of Directors has decided to start a Classifieds section in the newsletter. Region members seeking to hire or to be hired should send information to the Newsletter editor.

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**Help Wanted – Volunteer Assistant Web Master.** The Central Region is looking for a volunteer to assist the web master in keeping our page up-to-date. General computer skills and good computer aptitude are required. Knowledge of HyperText Markup Language (HTML) would be helpful, but is not necessary. It is estimated that the effort would entail approximately three hours a month. Communications technology, such as File Transfer Protocol (FTP), allows this position to be filled independent of geographic location. For questions or to express interest, contact Mike Finn ([mfinn@usgs.gov](mailto:mfinn@usgs.gov)) or Shelley Silch ([ssilch@usgs.gov](mailto:ssilch@usgs.gov)).

**Help Wanted—Technical Editor.** We are seeking to fill the position of Technical Editor for Photogrammetric Engineering & Remote Sensing (PE&RS). The current PE&RS Technical Editor, James B. Case, has recently announced his intention to retire from this position after more than 20 years. The position is a half-time compensated position that will begin as soon as the candidate selected can initiate work.

For information on the Duties and Responsibilities, Qualifications, Compensation/Benefits, and How to Apply, please go to <http://www.asprs.org/PERStecheditor>.

Review of applications will begin January 9, 2004.

## **Landsat Update**

By a majority vote of the American Society for Photogrammetry and Remote Sensing (ASPRS) Board of Directors, the Society has issued a resolution calling for immediate support and funding for the continuation of the nation's Landsat Program. Due to a technical failure in the Enhanced Thematic Mapper Plus (ETM+) instrument on-board the Landsat 7 spacecraft in May 2003, collection of useful moderate-resolution, multispectral remote sensing data has been jeopardized. Collection of these data of the Earth's land masses on a continuous basis is critical to the environmental integrity of the Earth as the Landsat images (have been) are used to monitor global crop status and predict yields, map environmental conditions for defense-intelligence purposes, assess rates of deforestation and reforestation, monitor land cover changes and urban growth, plot wildfire boundaries and assess post-fire burn severity, and more.

In the resolution, ASPRS cautions the U.S. Government to not try to commercialize the Landsat program, since moderate-resolution, multispectral remote sensing satellite systems have not proven to be commercially viable. To date, the U.S. Government has rejected the only bid it received for the Landsat Data Continuity Mission (LDCM) in a competition designed to commercialize the Landsat Program. In addition, ASPRS urges the National Aeronautics and Space Administration and the U.S. Department of the Interior to join with the U.S. Department of Defense, U.S. Department of Agriculture and other government agencies to build and launch a government owned-operated Landsat within the next 24 to 36 months.

Finally, in the spirit of the recent Earth Observation Summit in July 2003, ASPRS requests that the U.S. Government pursue international cooperation as a long-term approach for supporting, managing, and sustaining moderate-resolution, multispectral land observation systems. "The U.S. Government must plan for constant data continuity and immediate replacement of the Landsat



7 spacecraft,” said ASPRS President Donald T. Lauer. “In the long-run, however, the most efficient, sustainable and cost-effective way to ensure the continuous flow of Landsat or Landsat-like data is for the U.S. Government to pursue international cost-sharing partners, starting with the European Space Agency, who have the same or very similar program objectives,” he emphasized.

This resolution has been sent to President George W. Bush; the Cabinet; Senate and House Leadership; Members of the Senate Committee on Commerce, Science and Transportation; Geospatial Industry Executives; Members of the House Appropriations Subcommittee on Interior; and others.

Founded in 1934, ASPRS is an international professional organization of 6,500 geospatial data professionals. ASPRS is devoted to advancing knowledge and improving understanding of the mapping sciences to promote responsible application of photogrammetry, remote sensing, geographic information systems and supporting technologies.

## **The American Society for Photogrammetry and Remote Sensing RESOLUTION on the Nation's Landsat Program November 12, 2003**

**WHEREAS:** *The American Society for Photogrammetry and Remote Sensing (ASPRS), founded in 1934, is a scientific and educational organization of more than 6,000 geospatial information specialists and 150 sustaining corporate members, operating both nationally and internationally.*

**WHEREAS:** *The ASPRS is devoted to advancing knowledge and improving understanding of the imaging and mapping sciences to promote responsible applications of photogrammetry, aircraft and satellite remote sensing, geographic information systems, and supporting technologies.*

**WHEREAS:** *ASPRS constituents are among the major participants in, and benefactors of, the nation's Landsat Program.*

**WHEREAS:** *Since the United States launched its first Earth Resources Technology Satellite (later renamed Landsat 1) in 1972, land planners, resource managers and environmental scientists have made excellent use of the continuous flow of moderate resolution (15 m to 100 m), multispectral images of the Earth's land masses.*

**WHEREAS:** *Landsat images are used to monitor global crop status and predict yields, map environmental conditions for defense-intelligence purposes, assess rates of deforestation and reforestation, map vegetation types, monitor land cover changes and urban growth, plot wildfire boundaries and assess post-fire burn severity, monitor glacier movement, map coral reef decline, and for other applications that are too numerous to name in this resolution.*

**WHEREAS:** *The 31-year series of Landsat satellites (1-5 & 7) has unquestionably been the most successful long-term civilian land remote sensing satellite system (which includes data collection, transmission, processing, archiving, access, and distribution) deployed by the U.S., or any other space-faring nation.*

**WHEREAS:** *The U.S. Government first proposed the satellite series in the 1960's as an operational program, redefined it as an experimental program in the 1970's, unsuccessfully tried to commercialize it in the 1980's, continued it as a government owned-operated system in the 1990's, and (starting in 1999) has tried to commercialize it with the proposed Landsat Data Continuity Mission (LDCM).*

**WHEREAS:** *On May 31, 2003 unusual artifacts began to appear within the image data collected by the Enhanced Thematic Mapper Plus (ETM+) instrument on-board the Landsat 7 spacecraft, and the U.S. Government has since determined that the sensor malfunction cannot be fixed.*

**WHEREAS:** *On September 16, 2003 the U.S. Government rejected the only bid it received for the LDCM in a competition designed to commercialize the Landsat Program whereby government users would purchase data products from a private sector data provider.*

**WHEREAS:** *The U.S. Government announced on October 28, 2003 at the ASPRS Fall Specialty Conference held in Charleston, South Carolina that the requirement remains to continue providing Landsat-quality data beyond Landsat 7, as stated in the Land Remote Sensing Policy Act of 1992 (Public Law 102-555), and that the National Aeronautics and Space Administration and the U.S. Department of the Interior are currently having discussions within the Administration and the Congress, and hope to make an announcement soon about the next steps.*

*It is hereby **RESOLVED** by a majority vote of the ASPRS Board of Directors that:*

- 1) Since moderate-resolution, multispectral remote sensing satellites are designed to acquire global coverage of the Earth's land masses on a continuous basis and are critical to the environmental integrity of the Earth, we request that the U.S. Government immediately provide support and funding for the continuation of the nation's Landsat Program.*
- 2) With an understanding and acknowledgment of Public Law 102-555 and the new U.S. Commercial Remote Sensing Policy,*

authorized by the President on April 25, 2003, that is directed primarily at high-resolution (10 m or less) land remote sensing capabilities, we request that the U.S. Government not try to commercialize the Landsat program, since moderate-resolution, multispectral remote sensing satellite systems are demonstrably not commercially viable.

- 3) With the support and engagement of U.S. private industry, we request that the National Aeronautics and Space Administration and the U.S. Department of the Interior join forces with the U.S. Department of Defense, U.S. Department of Agriculture, and other major federal government user agencies and move forward with urgency to build and launch (within the next 24 to 36 months), using established federal procurement procedures, a government owned-operated Landsat, or Landsat-like, follow-on system, which will minimize the gap in high-quality data continuity occurring since May 31 of this year. We also request that these government agencies join forces to implement an operational follow-on system, consistent with the previous systems but at the lowest possible cost, and ask for emergency funding from the Congress to cover the cost of this system.
- 4) In the spirit of the recent Earth Observation Summit, hosted by the U.S. Department of State in Washington, D.C. on July 31, 2003, we request that the U.S. Government pursue international cooperation as a long-term approach for supporting, managing and sustaining moderate-resolution, multispectral land observation systems. This approach would ensure data continuity and frequent global coverage, continuation of "open skies" and nondiscriminatory data distribution, affordable data prices, evaluation and verification of other remote sensing systems, reduced redundancy among similar systems, enhanced roles for nongovernmental organizations, increased opportunities for joint programs with developing countries, new private markets for data analyses and derivative information products, economic benefit through cost sharing, and increased opportunities for global environmental security and stability.

## News From The Mt Oread Student Chapter

The last half of the fall semester at KU was a busy one for the ASPRS student chapter. On GIS Day, November 19<sup>th</sup>, the chapter was a sponsor of the day's activities. We had 10 presenters from both the public and private sector. Dr. Ed Martinko, Director of the Kansas Applied Remote Sensing Program, led off the festivities. Bryce Hirshmann, GIS Coordinator for the City of Lawrence, gave a comprehensive presentation of their advanced municipal GIS activities. Scott Perkins from Western Air Maps provided powerful insight into the GIS and Remote Sensing industry. We again would like to thank Scott for his active

support and leadership for our student chapter. We had a number of other very interesting presentations that made the day educational and insightful.

There were over 100 people who attended some or all of the day's events, which were held in the Geography department in Lindley Hall on the campus of KU. 23 percent of the non-KU affiliated attendees were from fed-

### *A Letter to the Board*

Dear ASPRS Central Region Board Members - My name is Jude Kastens, and I am a Ph.D. student at the University of Kansas and a staff researcher at the Kansas Applied Remote Sensing Program (KARS). This note is to thank you for your support of the Mount Oread Geospatial Technologies Club's field trip to EROS Data Center (EDC) in Sioux Falls, SD. We had a fantastic trip. I've been working with data (and people) from EDC for several years now, so this provided me with a great opportunity to see where it is coming from. Also, the talks on recent research involving the latest technologies (such as LIDAR, SAR, GeoWall visualization, etc.) that we heard while we were there were quite informative. Without a doubt the trip was worthwhile.

Thanks again,  
-Jude

eral agencies, 42 percent from the state, 16 percent from private companies and 19 percent from municipalities. These numbers represent the growing collaboration across various government agencies and between public and private GIS users.

In other news, Matt Dunbar, KU Masters student in Remote Sensing and GIS, was the winner of this year's ASPRS Central Region student scholarship. Matt will receive a \$1000 award, which he plans to put toward his research into cutting edge visualization techniques for geographic data.

In the coming semester the student chapter will be working with the Kansas Biological Survey (KBS) and the KU marketing club to promote

and sell the Kansas Vegetation Map, the Satellite View of Kansas Map and the Kansas Land Cover Patterns Map that were produced by KBS. Look for those at retailers near you. We will keep the community updated on where those maps will be available.

—submitted by Patrick Taylor

## News From the SMSU Student Chapter

The student chapter of ASPRS at Southwest Missouri State University has been involved in a lot of activities this semester.

At SMS, the student chapter sponsored a guest speaker to talk on campus about different geospatial technology systems. The guest speaker was Dr. Monika Moskal, a professor at SMS. Dr. Moskal talked about different geographic data collecting sources that are commonly used by both civilians and professional mapping agencies. Some of these data collecting sources include GPS, remote sensing, and the general use of a GIS system. The student chapter hosts a guest speaker each semester/school year to inform themselves and other students and faculty about geography and geographic mapping technologies.

The student chapter also participated in GIS Day. The student chapter hosted a tutorial session for middle school students from West Plains, Missouri. The tutorial session was interactive; the students got to play around with different mapping software packages. One such software package was Key-

hole, which allowed the students to browse different satellite images from all over the world! The other application the students used was ArcInfo. In ArcInfo, the students did a tutorial on earthquakes prevalent around the world. This program helped the students get familiar with different components in the software, such layers and data frames. The student chapter plans on hosting another tutorial session next semester.

The last event the student chapter participated in was a service project with four other student organizations from SMS. The service project was a city-wide leaf raking event to help out individual home owners as well as charitable organizations that needed their yards raked and bagged. Local newspaper and television crews were on-hand to publicize and inform others of the event.

— submitted by Robert C. Touzinsky

## Technical Presentation: Radar Imagery from Shuttle Assists Evaluation of Drainage Evolution in Missouri

The geologic history of the streams that carried meltwaters away from melting Pleistocene ice sheets has long been a topic of scientific debate. Biologists studying the distribution and evolution of freshwater fishes in the mid-continent have proposed large-scale shifts in the location of the meltwater streams, while geologists generally prefer a more stable drainage network. On September 9, Neil Elfrink, a geologist with the Missouri Department of Natural Resources, presented his latest assessment on the evolution of the Mississippi drainage system in Missouri.

To support his theories on the development of the current drainage pattern of the Mississippi River, Neil presented analyses for various types of information—such as, research on sediment deposits in the Gulf of Mexico, phylogenetic relationships among small river fish, field samples of surface and sub-surface water and materials, and satellite imagery. It was particularly interesting when Neil displayed how former

courses of ice-age meltwater streams can be seen on images collected by NASA's Shuttle Radar Topography Mission (SRTM).

Relying on such evidence and his knowledge of geologic processes, Neil surmises that tectonic forces have tilted a large portion of the earth's crust in central North America down to the Gulf of Mexico. This tilting has caused areas that once drained north to flow south to the Gulf of Mexico. Consequently, large drainage shifts appear to have occurred on the Mississippi drainage system within the last million years or less, which explain stratigraphic, geomorphic, hydrogeologic, and biologic observations in Missouri.

If you have any questions regarding this material or would like additional information, please contact Neil Elfrink ([nrelfrn@mail.dnr.state.mo.us](mailto:nrelfrn@mail.dnr.state.mo.us))

## ASPRS Fall 2004 Specialty Conference coming to Central Region

The Central Region is pleased to announce that it will be hosting the ASPRS Fall 2004 specialty conference in Kansas City, Missouri. The conference has been booked at the Hyatt Regency Crown Center in Kansas City from September 12th through September 16th, 2004. Be sure to look in subsequent editions of this newsletter for more information and for opportunities to volunteer.

### Conference Calendar

March 2-5, 2004 **SATELLITE 2004**, Washington Convention Center, Washington D.C. [www.satellite2004.com](http://www.satellite2004.com)

May 24-28, 2004 **ASPRS Annual Conference**, Adams Mark Hotel, Denver Colorado [www.asprs.org/asprs/meetings/calendar.html](http://www.asprs.org/asprs/meetings/calendar.html)



## Southwest Missouri State University Students Visit Western Air Maps

Undergraduate and graduate students from Southwest Missouri State University, Department of Geography, Geology and Planning, Air Photo Interpretation and Advanced GIS courses ventured north to the Kansas City metro area Friday, November 21<sup>st</sup> to examine the different avenues of the geospatial career world, specifically those of aerial photography, GIS, and GPS technologies. Professor Monika Moskal, led the group of ten students to three venues. The first of the adventures took the group to Overland Park and Western Air Maps, where the students were given the grand tour of the facility by Scott Perkins. Mr. Perkins showed the students Western Air's facilities for photo development, the flight office, and their various GIS and photogrammetry labs. The group wishes to thank the employees that took time out of their day to demonstrate some of the tasks they constantly face. Lunch was provided by the generous folks at Western Air Maps at Meadowbrook Country Club, where the students were hospitably served and also given a presentation over the basics of aerial photo interpretation by Mr. Perkins and Mr. Cody Buhrmeister. Mr. Perkins and Mr. Buhrmeister also entertained the group's questions, providing valuable and insightful information relating to employment and issues that a privately owned aerial photography and surveying firm would encounter and what a prospective employee could expect to find.



The Western Air Maps building in Overland Park.

Based on, Mr. Perkins suggestion the group next traveled to Olathe to visit AIMS, Johnson county's Automated Information Mapping Systems. Here, students were

lead to the GIS lab by Mr. Matt Wennstedt and Ms. Stephanie Bany, GIS analysts who gave the group an online tour of the Johnson county government's online mapping capabilities, map production, custom application development, geocoding services, and data development. The two shared with the group the amount of teamwork that goes into such a department, along with the wide base of knowledge, education, and expertise each employee brings to the unit.

Lastly, the group visited the Garmin facility, where Mr. Jakob Goldman took the group to the engineering department of the facility. He explained how the corporation is divided into aviation, marine, and recreational applications. He then showed the group the expanse of the building, focusing on the cartographers of the engineering department of the recreational GPS division. Mr. Goldman explained to the visitors some of the ongoing projects the group of cartographers is responsible for, including



Scott Perkins, far right, captivates his audience.



the attribution, maintenance and digitization of cartographic data, along with assisting in the research, definition, creation and evaluation of maps produced for use in Garmin GPS products. Mr. Goldman then led the group to have some hands on experience with many of Garmin's GPS devices and also gave a brief overview of some of the mapping products being produced by the cartographers in the engineering department. These included over the road applications such as City Select® and Roads & Recreation®, on the water applications such as Fishing Hot Spots®, and backcountry products such as the US Topo 24k National Parks, West®.

After a full day of events, the ride back to Springfield gave the band of geographers time to absorb the happenings of the day. The group of students, consisting of Michael Addis, Stacey Armstrong, Tracie Cupp, Marcus Heilman, Ryan Hohenadel, Nathan Huggins, Teri Hunsinger, Derek Martin, Tyler Moore, and Bobby Touzinsky,



wishes to thank all those that made the 1<sup>st</sup> Annual

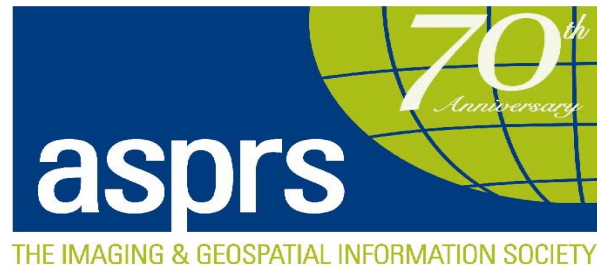
Mr Perkins and the visitors from SMSU.

SMSU Geospatial Technologies Field Trip possible and a great success.

—Submitted By Their Hunsinger (Graduate Student at SMSU)



Mr Buhrmeister discusses aerial photography.



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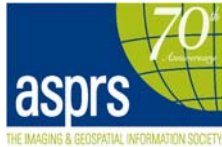
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Wireless**

**Geographic Information Systems  
eBusiness  
Software Development  
Program Management**