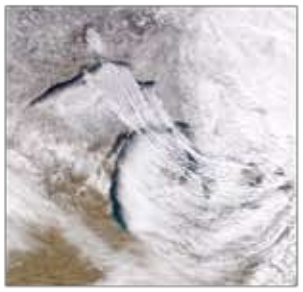
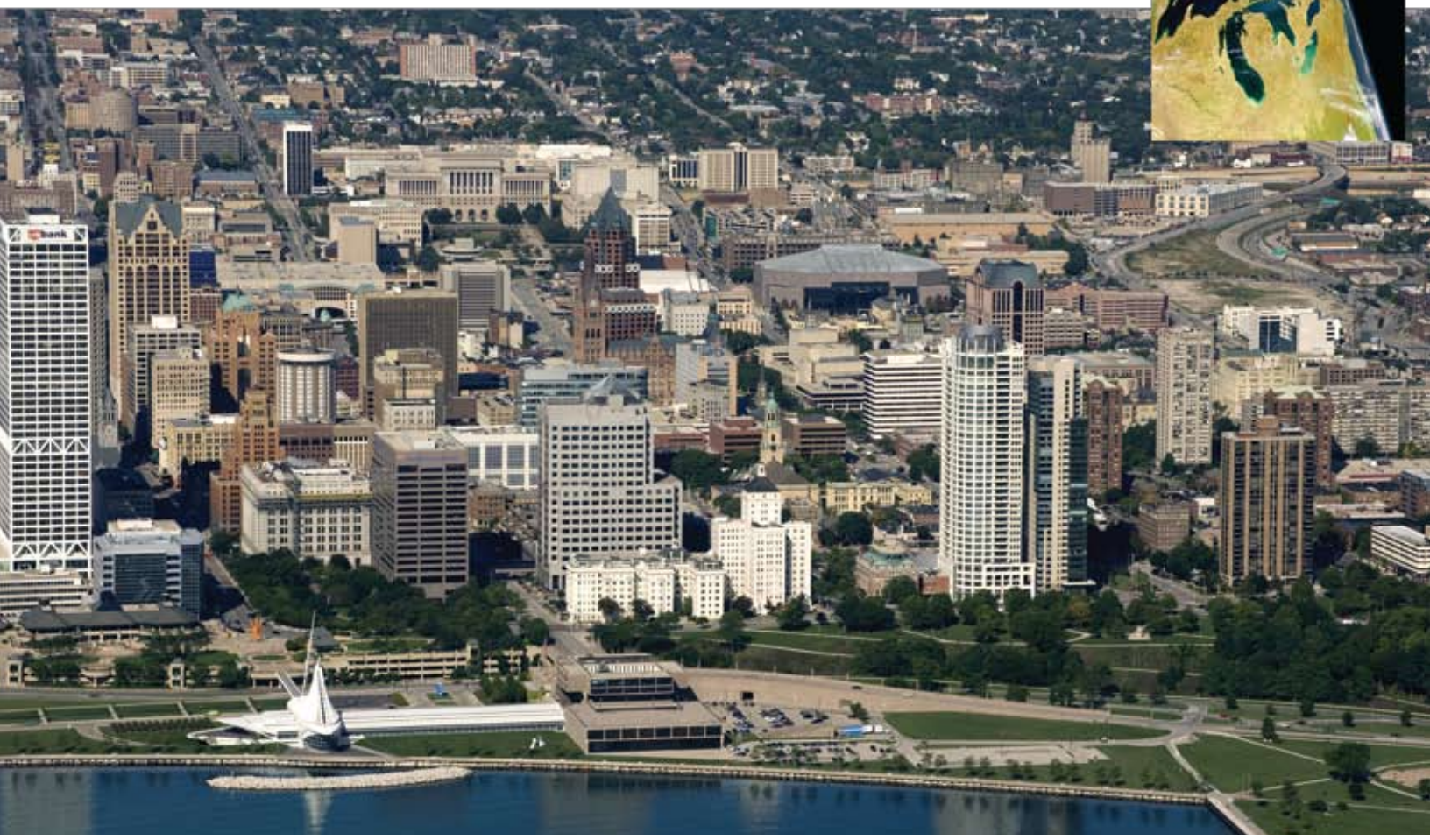
ASPRS 2011 Annual Conference

Ride On The Geospatial Revolution





May 1-5, 2011
Frontier Airlines Center, Milwaukee, Wisconsin

Final Program

www.asprs.org/milwaukee2011

ENVI software covers the imagery workflow, from data ingest to analysis to output. And, with a diverse and comprehensive set of scientifically proven tools, ENVI is the only solution you need to get information from geospatial imagery. The newest version of ENVI delivers advanced image analysis tools directly to the ArcGIS® desktop and ArcGIS Server environments in a familiar ArcToolbox – allowing you to easily include information from maps and geospatial imagery in your scientific applications.

ENVI. The complete software solution to analyze imagery.

▸ LIVE Demonstrations in Booth #209:

Tuesday, May 3rd

11:00 AM	|	Using Image Analysis for Disaster Relief: A Japan Case Study
1:00 PM	|	Streamlining the Image Analysis Workflow: ENVI Tools for ArcGIS®
5:00 PM	|	Integrating Imagery with a GIS for Disaster Relief: An Australian Case Study
6:00 PM	|	Mapping Land Displacement with SAR Data: ENVI and SARscape Analysis Tools

Wednesday, May 4th

11:00 AM	|	Extracting Building Footprints from Imagery: ENVI Feature Extraction
1:00 PM	|	Locating Helicopter Landing Zones: ENVI for Defense and Intelligence
3:00 PM	|	Assessing Forest Health: ENVI Tools for Vegetation Analysis

▸ Stop By Our Booth For a One-on-One Demo

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Tom Barrett
Mayor, City of Milwaukee

May 1, 2011

GREETINGS!

On behalf of the City of Milwaukee, I would like to extend a warm welcome to all attendees of the 2010 American Society for Photogrammetry and Remote Sensing conference. I commend ASPRS for its work to provide aerial and satellite imagery for mapping. Technologically advanced economies such as ours are dependent on the accomplishments and breakthroughs of organizations such as the ASPRS.

Milwaukee's exciting attractions combined with its renowned warmth and hospitality assure all participants of a memorable visit. Along with attractions such as the Milwaukee Art Museum, Milwaukee Public Market, Milwaukee Public Museum and Potawatomi Bingo Casino, the unique neighborhoods of Old World Third Street, Walker's Point, Brady Street, Dr. Martin Luther King Drive and the Historic Third Ward all invite you to experience the City's rich cultural tradition and diversity.

I extend to you best wishes for a positive and productive conference. I hope you have the opportunity to explore Milwaukee and see all our City has to offer. Enjoy the conference!

Sincerely,

Tom Barrett
Mayor

Office of the Mayor • City Hall • 200 East Wells Street • Milwaukee, Wisconsin 53202
(414) 286-2200 • fax (414) 286-3191 • mayor@milwaukee.gov

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Sponsors

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Gold Medallion

Gold Sponsor

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Directions
GEO Informatics
GIM International
GIS Café
Highlights
Imaging Notes
KMI Media Group
Point of Beginning
Professional Surveyor
Vector 1 Media

Dear Geospatial Friends and Colleagues,

Welcome to Milwaukee and the ASPRS 2011 Annual Conference at the Frontier Airlines Convention Center. As the hosts of this year's annual conference, the ASPRS Western Great Lakes Region is proud to offer you a conference week packed with educational sessions, networking opportunities, and social events.

We have an exceptional group of sponsors, volunteers, students, and presenters lined up to make this a memorable conference. Technical Program Chair Dr. Frank Scarpace has outlined an intriguing variety of session tracks for all of us to attend. All sessions are in the same building with the exhibitors so plenty of space is available to listen and interact with participants.

Please join us Monday night for the ASPRS Western Great Lakes Region Reception at the new Harley-Davidson Museum, a nice walk from the convention center, to kick off the week.

We have an outstanding lineup of speakers to move us along the geospatial road for the next generation. Kicking off the conference is the premier showing of Episode 4 of the Geospatial Revolution film from Pennsylvania Public Broadcasting. This is the newest in the series that is being funded by the ASPRS Foundation, many ASPRS Sustaining Members, and others. Following that will be Keynote speaker Paul Ramsey, co-founder of PostGIS, an open source geospatial database used globally in the geospatial industry.

Wednesday opens with an address from incoming ASPRS President Gary Florence. Then we take a moment to look back at our geospatial history with a roundtable discussion led by ASPRS President Carolyn Merry, who will be joined by three esteemed geospatial leaders—Dr. Terry Keating, Dr. Charles Olson, Jr. and Ronald Ondrejka. These gentlemen will all give us an oral history lesson of where the geospatial road has been, where we are now, and where we need to go.

There are special sessions organized specifically for students and young professionals entering the workforce, plus informal evening activities organized by the ASPRS Student Advisory Council. The annual Exhibitors' Reception takes place Tuesday evening, followed by the Social Event taking place Wednesday evening at the prestigious Milwaukee Public Museum.

There is a lot to do and see this week, so make sure to read through this program so that you won't miss any of it.

Brian Huberty

Miles Strain

Brian Huberty, Conference Co-Chair

Miles Strain, Conference Co-Chair

Frequently Asked Questions

How do I get help in an Emergency?
Contact an ASPRS staff person or pick up any house phone in the Frontier Airlines Center and ask for Security. Give all details of the emergency including the location.

Where is the Conference Registration Desk?
The Conference Registration Desk is located in the Frontier Airlines Center on the second floor, next to the double escalators, in the foyer of the Skywalk to the Hyatt Regency Milwaukee.

What are the Conference Registration Desk Hours?

Saturday, April 30	4:00 PM to 7:00 PM
Sunday, May 1	6:30 AM to 5:00 PM
Monday, May 2	6:30 AM to 5:00 PM
Tuesday, May 3	7:00 AM to 5:45 PM
Wednesday, May 4	7:00 AM to 5:00 PM
Thursday, May 5	7:00 AM to 11:00 AM

Once the Conference Registration Desk is closed, materials will not be available until the following morning.

What are the Exhibit Hall Hours?

Tuesday, May 3	10:00 AM to 7:00 PM
Exhibitors' Reception	5:30 PM to 7:00 PM
Wednesday, May 4	9:00 AM to 5:00 PM
Thursday, May 5	8:00 AM to 11:00 AM

Are Workshops included with the registration fees?
No. Workshops require individual registration and a separate fee in addition to the general conference registration fees. Conference registration is not required to attend a workshop but early registration is advisable. Availability is based on space.

Is there a charge for the User Group Meetings?
No, the User Group Meetings are free of charge; however, some may require advanced registration.

Are Daily Registrations permitted for all categories?
Yes. Daily registrations are available on-site. If registering for only one day, you may purchase social tickets for that day only.

What does the Daily Registration include?
Daily Registrations include that day's general and technical sessions, exhibits and proceedings. Daily Registration for Tuesday, May 3 includes the Exhibitors' Reception from 5:30 PM until 7:00 PM. Other social function tickets for the same day as the Daily Registration may be purchased for an additional charge on a space available basis.

Is there an ASPRS staff office on-site?
Yes, the ASPRS staff office is located in the Frontier Airlines Center on the second floor in room 201 C.

What should presenters do after they register?
ALL PRESENTERS ARE REQUIRED TO CHECK IN AT THE CONFERENCE REGISTRATION DESK BY INITIALING THE MASTER FINAL PROGRAM NEXT TO THEIR NAME AND INCLUDING EITHER A CELL PHONE NUMBER OR A HOTEL ROOM NUMBER. A Master Program will be posted at the Conference Registration Desk. This information is essential for the moderators to determine that all presenters have arrived and are prepared to make their presentations.

Do presenters bring their own laptops?
Yes, ASPRS does not provide laptops or desktop computers, laser pointers or flip charts for speakers. Projectors will be provided in all meeting rooms.

Do Presenters have a Preparation Room?
Yes, room 203 E has been reserved for Presenters. The room will be available on a first come basis and should be used for rehearsal only.

Monday, May 2	8:00 AM – 5:00 PM
Tuesday, May 3	8:00 AM – 5:00 PM
Wednesday, May 4	8:00 AM – 5:00 PM
Thursday, May 5	8:00 AM – 12:00 Noon

This room will be equipped with an LCD projector and screen. **All presenters must bring their own laptops for all presentations**. We encourage all presenters to review their materials prior to their presentation.

Do Moderators need to check-in?
Yes, as soon as you arrive, at the Conference Registration Desk a Master Final Program will be posted. Please put your initials and cell phone number or hotel room number beside your name on this Master Program. We are asking the presenters to do the same thing. This will be our way of knowing that moderators and presenters have arrived.

Prior to your session, check back at the Conference Registration Desk Master Final Program to confirm that all of your presenters have arrived at the conference.

What are Poster Presenters expected to do?
ASPRS provides to each poster presenter one side of a poster board, measuring eight feet wide by four feet high, and push pins. All poster presenters should plan to arrive between 7 AM and 9:15 AM on Tuesday, May 3 to display their work and affix it to any available board. Poster presenters **MUST ALSO CHECK IN AT THE CONFERENCE REGISTRATION DESK BY INITIALING THE MASTER FINAL PROGRAM NEXT TO THEIR NAME AND INCLUDING EITHER A CELL PHONE NUMBER OR A HOTEL ROOM NUMBER**. A Master Program will be posted at the Conference Registration

Desk. This information is essential for the moderators to determine that all poster presenters have arrived and are prepared to make their presentations.

All posters must be removed by 11 AM Thursday, May 5. ASPRS is not responsible for posters that are not removed. All poster packaging must be removed from the poster area once posters are installed.

Where should Student Assistants and Volunteers report?

All Student Assistants and Volunteers should check in with the Volunteer Coordinator in the Greenroom on the first floor of the Frontier Airlines Center when they arrive to coordinator their work assignments. All volunteers should plan to arrive at least 30 minutes before their scheduled start time.

Why do I need a badge?

Your badge is proof that you paid your registration fee. For entrance to the General Sessions, plenary and technical sessions, and Exhibit Hall, you need to wear your name badge.

What if I forget or lose my badge?

A charge of $5 will be made for replacement of lost badges.

Why do I need tickets for certain events?

Your tickets are proof of payment for certain events and must be presented at the collection point. Lost tickets will not be replaced.

Is there an additional charge for the Milwaukee Public Museum Social Event?

All student and daily registrants, unregistered guests, and children must purchase tickets if they wish to attend the Milwaukee Public Museum Social event. The ticket cost for children under 13 is $35 each. Children 13 years of age and over must have an adult ticket. All tickets must be purchased in advance no later than 10 AM on Tuesday, May 3, 2011. The cost of an adult ticket is $85. See page 71 of this program for complete details.

How can I visit the Exhibit Hall if I am not registered for the conference?

Daily Exhibit Hall badges may be purchased at the Conference Registration Desk in the Frontier Airlines Center. Everyone entering the Exhibit Hall must have a name badge, including children over 13 years of age. Children under 13 years of age are not permitted in the Exhibit Hall at any time due to insurance and safety regulations.

Will it be possible to post resumes and job openings?

Yes, posting boards are provided near the Exhibit Hall for all resumes and job openings. Please bring multiple copies of all postings to allow interested parties to take one and check the board frequently for new materials.

How do I get a copy of the CD-ROM Proceedings?

All registrants, except for Spouse/Guest, will receive a copy on-site with the registration materials. Additional copies can be purchased for $20 at the ASPRS Booth in the Exhibit area.

How can someone from outside the hotel contact me?

Messages cannot be personally delivered to Conference attendees due to the varied schedules of everyone in attendance. Cell phone numbers should be made available to anyone needing to contact a conference attendee.

Is there a Lost and Found?

Please contact either the Hyatt Regency Milwaukee Hotel Security or the Frontier Airlines Center Security for all lost and found items.

Ride the Social Media Revolution

ASPRS is taking a ride on the social media revolution and we need YOU! Follow ASPRS and the Conferences on Facebook, Twitter and now Foursquare! Follow us at:

Facebook at www.facebook.com at ASPRSorg – "Like" the ASPRS Facebook page and follow all our conversations.

Twitter at www.twitter.com and #ASPRS11A as the 2011 Annual Conference hashtag – Checkout #ASPRS11A Tweets and stay connected with happenings at the Conference.

Foursquare at www.foursquare.com – "Check-in" to the ASPRS 2011 Annual Conference on Foursquare or leave a tip for fellow attendees.

Be there to witness a breakthrough.

UltraCam User Group Meeting/ASPRS 2011 Annual Conference
Monday, May 2nd 1:00 – 5:00 p.m.
Room 202 E (Frontier Airlines Center)

Register to tune in via the Live Webcast at **www.UltraCamEvents.com.**

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Awards for Outstanding Papers, Professional Achievement, Service and Region activities are determined by committee selection; scholarships and academic awards are also determined by committee selection but are chosen from among current applications. For details on the application process, see: http://www.asprs.org/membership/scholar.html

Keynote Address

Honorary Member Award
Photogrammetric (Fairchild) Award
Robert N. Colwell Memorial Fellowship

Honorary Member Award

2011 Recipients: Alan R. Stevens and **Jack Dangermond**

Alan R. Stevens is the International Program Manager (Retired) for the U.S. Federal Geographic Data Committee (FGDC) and the USGS Geospatial Information Office. He currently works as a Scientist Emeritus for the FGDC. He also works as a part of the Global Spatial Data Infrastructure (GSDI) Secretariat. Current efforts recently focused on managing the logistics and technical program aspects of the 12th Global Spatial Data Infrastructure (GSDI) meeting in Singapore, October 2010. He also initiated and manages the GSDI Small Grants Program and monthly GSDI electronic newsletters for the four regions of the globe: Africa, Asia/Pacific, Latin America, and Europe.

Prior to his current position he held several responsible positions within the US Geological Survey's National Mapping Division. These include but are not limited to the International Manager for the National Mapping Division and the Deputy Director, the CEO, and the Operations Manager (three different offices) for the National Mapping Division's Eastern Region. Part of this responsibility included developing cooperative production, applications, and research agreements with the 26 states and territories east of the Mississippi River.

His first assignment with the USGS was the Chief of the Mapping Division's Information distribution offices. Before coming to the USGS, he managed the photogrammetry and remote sensing research activities for the Tennessee Valley Authority (TVA). He received his bachelor's ('65), master's ('69), and PhD ('72) degrees in Civil and Environmental Engineering from the University of Wisconsin. While a graduate student at the University he coordinated all remote sensing research projects on campus and throughout the state of Wisconsin.

Stevens, an ASPRS Emeritus member and Fellow, has been a member since 1968. He has served as ASPRS President (1986-87), is chair of the ASPRS Awards Committee and the Fellow Award Selection Committee, and was a contributing author to the ASPRS *Manual of Remote Sensing*, First Edition. He is currently a Trustee of the ASPRS Foundation. Stevens served two terms as National Director of the ASPRS Potomac Region, Past President of the Mid-South Region, and Remote Sensing Division Director. He has received numerous ASPRS awards, including the Claude F. Birdseye Award – 1987, three Presidential Citations, two Meritorious Service Citations, and the Outstanding Service Award ('93).

Other awards Stevens has received include the naming of ***Stevens Cliff, Antarctica***, 78Degrees 50' S; 162 Degrees 40' W, named for his contributions to the US Antarctic Programs and presented at retirement (2008), the Department of the Interior Meritorious Service Award (1996) and Point of Light Award (1991), the Kodak Information Technology Award (1985), and the Army Accommodation Medal (1967).

Jack Dangermond is the founder and president of ESRI, the world's fourth largest privately held software company. Founded in 1969 and headquartered in Redlands, California, ESRI is widely recognized as the technical and market leader in geographic information system (GIS) software, pioneering innovative solutions for working with spatial data on the desktop, across the enterprise, in the field, and on the Web. ESRI has the largest GIS software install base in the world with more than one million users in more than 100,000 organizations representing government, NGOs, academia, and industries such as utilities, health care, transportation, telecommunications, homeland security, retail, and agriculture. He fostered the growth of ESRI from a small research group to an organization of 2,700 employees, known internationally for GIS software development, training, and services. ESRI now has 16 subsidiaries as well as more than 72 distributors worldwide. ESRI also has 11 regional offices throughout the United States and continues to grow at a rapid rate.

Dangermond is recognized not only as a pioneer in spatial analysis methods, but also as one of the most influential people in GIS. Over the last 30 years, Dangermond has delivered keynote addresses at numerous international conferences, published hundreds of papers on GIS, and given thousands of presentations on GIS around the world.

He is the recipient of a number of awards, honorary degrees, lectureships, and medals including the 2000 LaGasse Medal of the American Society of Landscape Architects, the Brock Gold Medal of the International Society for Photogrammetry and Remote Sensing, the Cullum Geographical Medal of the American Geographical Society, the EDUCAUSE Medal of EDUCAUSE, the Horwood Award of the Urban and Regional Information Systems Association, the Anderson Medal of the Association of American Geographers, and the John Wesley Powell Award of the US Geological Survey. He is a member of many professional organizations and has served on advisory committees for US agencies including the National Aeronautics and Space Administration's (NASA) Science and Technology Advisory Committee, the US Environmental Protection Agency, the National Academy of Sciences, the National Science Foundation, and the National Center for Geographic Information and Analysis (NCGIA).

Dangermond graduated with a bachelor of science in environmental science from California State Polytechnic University

in Pomona, California. He holds a master of science degree in urban planning from the Institute of Technology at the University of Minnesota and a master of science degree in landscape architecture from the Graduate School of Design, Harvard University, where he worked in the Laboratory for Computer Graphics and Spatial Design. He holds honorary doctorates from The City University of London, University of Redlands, and Ferris State University.

***

The Honorary Member is the highest award an ASPRS member can receive, and there are only 25 living Honorary Members of the Society at any given time. Candidates are chosen by a Nominating Committee made up of the past five recipients of the award and chaired by the most recent recipient. Initiated in 1937, this life-time award is given in recognition of individuals who have rendered distinguished service to ASPRS and/or who have attained distinction in advancing the science and use of the geospatial information sciences. It is awarded for professional excellence and for at least 20 years of service to ASPRS.

Purpose: to recognize an individual who has rendered distinguished service to ASPRS and/or who has attained distinction in advancing the science and use of the mapping sciences. It is awarded for professional excellence and for service to ASPRS and consists of a plaque and a certificate.

The total number of honorary Members may not exceed twenty-five at any given time, and no more than two will be elected in one year.

Donor: The ASPRS Foundation

ASPRS Honorary Members
Friedrich E. Ackermann
James M. Anderson
Robert H. Brock, Jr.
James B. Case
Clifford J. Crandall
Frederick O. Diercks
Frederick J. Doyle, Sr.
Lawrence W. Fritz
John J. Graham
William G. Hemple
Roger M. Hoffer
Thomas M. Lillesand
Edmond S. Massie, Jr.
Rex R. McHail
Dean C. Merchant
Edward Mikhail
Roy R. Mullen
Charles Olson
A.O. Quinn
William A. Radlinski
Revere G. Sanders
Harry Tubis
George J. Zarzycki

The Photogrammetric (Fairchild) Award

2011 Recipient: Ayman F. Habib

Ayman F. Habib, PhD, P.Eng., is currently full Professor and Head of the Department of Geomatics Engineering, at the University of Calgary, Canada. Habib holds Bachelors and Masters degrees from Cairo University, and another Masters and Doctorate from The Ohio State University.

Habib is awarded the Photogrammetric (Fairchild) Award for his wide-ranging multifaceted contributions to photogrammetry and its constituent technical areas. His work spans the fields of terrestrial and aerial mobile mapping systems, modeling the perspective geometry of non-traditional imaging scanners (e.g., line cameras), automatic matching and change detection between various datasets, automatic calibration of low cost/off-the-shelf digital cameras, incorporating analytical and free-form linear features in various photogrammetric orientation procedures, object recognition in imagery, and integrating photogrammetric data with other sensors/datasets (e.g., GPS/INS, GIS databases, multi-and hyper-spectral sensors, and lidar). Habib is also committed to developing inexpensive photogrammetric systems that would allow non-photogrammetrists to derive precise three-dimensional measurements using off-the-shelf digital cameras. This valuable work allows the linking of photogrammetry to other disciplines (e.g., medical, transportation, security, archeological, environmental, and industrial applications).

Habib's voluminous work extends from the rigorous and theoretical to the very practical, thus meeting all the requirements for this award. Perhaps nothing demonstrates that more profoundly that the fact that his work was recognized by our Society through winning three awards in the same year: The Talbert Abrams Grand Prize *and* First Runner Up, as well as the John Davidson President's Award for Practical Papers for "New Methodologies for True Orthophoto Generation".

Habib is an outstanding professional photogrammetrist whom the Society recognizes with the Photogrammetric Award for his excellent and far reaching achievements.

Purpose: the Photogrammetric (Fairchild) Award is designed to stimulate the development of the art of aerial photogrammetry in the United States. Practicability is the essence of the Award and is the basis for the review of all candidates.

The award consists of a silver presentation plaque mounted on a walnut wood panel and an engraved plaque.

Donor: The ASPRS Foundation and Lockheed Martin

Past Award Recipients:
2006: Gordon Petrie
2007: George Y.G. Lee
2008: Donald L. Light
2009: Charles K. Toth
2010: Qassim Abdullah

Robert N. Colwell Memorial Fellowship

2011 Recipient: Christopher D. Lippitt

Christopher D. Lippitt is a PhD candidate in a joint doctoral program in Geography at San Diego State University (SDSU) and the University of California, Santa Barbara. His dissertation research involves the development and testing of a framework for real-time assessment of dynamic processes and events based on time-sequential remote sensing observations. He is focusing on hazards assessment with emphasis on wildfires, working with US Forest Service personnel to develop an end-to-end wildfire mapping system using an aircraft-based thermal infrared imaging sensor. His research will also include a proposal for a novel conceptual remote sensing model based on information theory communication models. After receiving his degree, Lippitt plans to expand on this work by collaborating with international aid organizations to enable the synoptic prioritization of relief resources by remote sensing methods.

Lippitt holds a BA degree in Geography (2005) and MA degree (2006) in GIScience from Clark University. While at Clark, he gained experience in academic research, software and commercial product development, and resource agency applications studies. He has a variety of remote sensing applications experience, including regional scale forest cover monitoring in collaboration with resource managers in Massachusetts, tactical tunnel detection to support the U.S. Border Patrol, hyper-temporal ultra-high resolution phenological monitoring to support invasive vegetation management, and developing object-based image analysis techniques for mapping urban landscape features in Ghana at several different spatial scales. He already has authored or co-authored 10 papers in several peer-reviewed publications, including *Photogrammetric Engineering and Remote Sensing*, the *International Journal of Remote Sensing*, and *Ecological Monitoring*.

He currently operates a small business that specializes in the design, production, and use of micro-unmanned aerial sensor systems for acquiring and processing remotely sensed data for environmental and infrastructure monitoring. The initial customer for the system was the national emergency management agency of Italy. Lippitt co-founded and served as the first president of the SDSU ASPRS student chapter. He has initiated and managed several GIS-based projects at SDSU, all with ties to this student chapter. In 2007 he co-founded one of the most creative efforts, the Volunteer Hazard Mapping Corps (VHMC), a group of volunteer geospatial analysts that has assisted the city and county of San Diego in processing incoming data, analyzing results, and producing map products to aid disaster managers during and following natural and anthropogenic hazards such as the major wildfires that hit the San Diego area that year. This model is now being implemented at four other California universities. Lippitt has helped organize and participate in many ASPRS regional and student chapter events, and has made presentations at the last five ASPRS annual conferences. He has shown the same proficiency and promise as a teacher as he does for research and professional activities, having received very high student ratings for the courses in which he was the instructor of record.

***

Over the course of more than a half century, Dr. Robert N. Colwell developed a reputation as one of the world's most respected leaders in remote sensing, a field that he stewarded from the interpretation of aerial photographs during World War II, to the advanced acquisition and analysis of many types of geospatial data from military and civilian satellite platforms. His career included nearly 40 years of teaching and research at the University of California, Berkeley, a distinguished record of military service reaching the rank of Rear Admiral, and prominent roles in private industry and as a consultant for many U.S. and international agencies. Among the many awards bestowed upon Dr. Colwell, he had the distinction of being one of the 25 Honorary Members of ASPRS, chosen from the Society's 6000 members

Purpose: Established in 2006 to encourage and commend college/university graduate students or post-doctoral researchers who display exceptional interest, desire, ability, and aptitude in the field of remote sensing or other related geospatial information technologies, and who have a special interest in developing practical uses of these technologies.

Donor: The ASPRS Foundation, from funds donated by students, associates, colleagues and friends of Robert N. Colwell.

The Award now consists of a grant of $5,000 and a one-year student or associate membership (new or renewal) in ASPRS.

Past Award Recipients:
2006: Desheng Liu
2007: Michael Falkowski
2008: Jonathan Thayn
2009: Sergio Bernardes
2010: Frank D.W.Witmer

Tuesday, May 3rd

77th Business Meeting and 22nd Awards Luncheon

Welcome Carolyn J. Merry

Lunch

Introduction of Guests Carolyn J. Merry

Presentation of ASPRS Awards Alan R. Stevens
Carolyn J. Merry

Outstanding Papers Awards
Boeing Award for Best Paper in Image Analysis and Interpretation
John I. Davidson President's Award for Practical Papers
ERDAS Award for Best Scientific Paper in Remote Sensing
ESRI Award for Best Scientific Paper in GIS
Talbert Abrams Award

Scholarships and Academic Awards
William A. Fischer Memorial Scholarship
Robert E. Altenhofen Memorial Scholarship
Ta Liang Memorial Award
Abraham Anson Memorial Scholarship
John O. Behrens ILI Memorial Scholarship
Kenneth J. Osborn Memorial Scholarship
GeoEye Award
ERDAS Internship
Z/I Imaging Award
KODAK International Educational Literature Award

Service Awards
Outstanding Service Award
Ford Bartlett Membership Award
SAIC/Estes Memorial Teaching Award
Outstanding Workshop Instructor Award
George E. Brown, Jr. Congressional Honor Award

President's Report Carolyn J. Merry

Executive Director's Report James R. Plasker

Recognition of Retiring Members of Board of Directors and Executive Committee Carolyn J. Merry
Chris Aldridge
John T. Boland
Barry Budzowski
Allan Falconer
Maribeth Price
Mark Stanton
Gregory Stensaas
Charles Toth
A. Stewart Walker

Teller's Report Larry Hothem

Installation of New and Re-elected Directors and the Chair of the Sustaining Members Council Carolyn J. Merry
John T. Boland, Central New York Region
Barry Budzowski, Central Region
Chris Aldridge, Columbia River Region
TDA, Eastern Great Lakes Region
Barbara Eckstein, Potomac Region
A. Stewart Walker, Southwest US Region
Jim Green, Chair, Sustaining Members Council
Michael P. Finn, GIS Division
Robert E. Ryan, Primary Data Acquisitions Division

Installation of New Assistant Directors and the Vice-Chair of the Sustaining Members Council Carolyn J. Merry
David Alvarez, GIS Division
Allen E. Cook, Primary Data Acquisitions Division
Brian Murphy, Vice-Chair, Sustaining Members Council

Installation of President-Elect & Vice President
Roberta E. (Bobbi) Lenczowski, President-Elect
Stephen D. DeGloria, Vice-President

Installation of Incoming President Carolyn J. Merry
Gary Florence

Presentation of Birdseye Citation & President's Key to Retiring President Gary Florence
Carolyn J. Merry

Adjournment

Boeing Award for Best Paper in Image Analysis and Interpretation

2011 Recipients:

Thomas B. Pollard, Ibrahim Eden, Joseph L. Mundy, and David B. Cooper for "A Volumetric Approach to Change Detection in Satellite Images," *PE&RS*, 76 (7), 817–831.

Purpose: Established in 1965 as the Autometric Award, this grant recognizes development and achievement in the field of photographic interpretation through special acknowledgment of superior publications on the various aspects of image analysis and interpretation.

Donor: Boeing S&IS Mission Systems through the ASPRS Foundation

The Award includes an inscribed certificate and a cash award of $1,000, which represents a $500 increase over previous awards.

Past Award Recipients:

2006: Timothy Warner and Karen Steinmaus
2007: Ola Ahlqvist and Mark Gahegan
2008: Xiaoliang Lu, Ronggao Liu, Jiyuan Liu, and Shunlin Liang
2009: Robert A. Chastain, Jr., Matthew A. Struckhoff, Hong S. He, and David R. Larsen
2010: Xin Huang, Liangpei Zhang, and Pingxiang Li

The John I. Davidson President's Award for Practical Papers

2011 Recipients:

1st Place: Francis P. Padula and John R. Schott for "Historic Calibration of the Thermal Infrared Band of LANDSAT-5 TM," *PE&RS*, 76 (11), 1225-1238.

2nd Place: Tristan Goulden and Chris Hopkinson for "The Forward Propagation of Integrated System Component Errors within Airborne Lidar Data," *PE&RS,* 76 (5), 589–601.

3rd Place: Francisco Javier Ariza López, Alan D.J. Atkinson, José Luis García Balboa, and José Rodríguez Avi, for "Analysis of User and Producer Risk when Applying ASPRS Standards for Large Scale Maps," *PE&RS*, 76 (5), 625-632.

Purpose: The John I. Davidson Award was established in 1979 to encourage and commend individuals who publish papers of practical or applied value in *Photogrammetric Engineering & Remote Sensing (PE&RS).*

Donor: The ASPRS Foundation

The John I. Davidson Award First Place includes an engraved pewter tankard, a cash award of $500 and a hand-engrossed certificate. 2nd place is a cash award of $300 and a hand-engrossed certificate. 3rd place is a cash award of $200 and a hand-engrossed certificate.

Past Award Recipients:

2006:

1st Place: Rongxing Li, Steven W. Squyres, Raymond E. Arvidson, Brent A. Archinal, Jim Bell, Yang Cheng, Larry Crumpler, David J. Des Marais, Kaichang Di, Todd A. Ely, Matt Golombek, Eric Graat, John Grant, Joe Guinn, Andrew Johnson, Ron Greeley, Randolph L. Kirk, Mark Maimone, Larry H. Matthies, Mike Malin, Tim Parker, Mike Sims, Larry A. Soderblom, Shane Thompson, Jue Wang, Patrick Whelley, and Fengliang Xu

2nd Place: Christopher E. Parrish, Grady H. Tuell, William E. Carter, and Ramesh L. Shrestha

3rd Place: Paul M. Dare

2007:

1st Place: Brian D. Wardlow, Jude H. Kastens, and Stephen L. Egbert

2nd Place (tie): J. Chris McGlone, Tom Barclay, Ed Freeborn, Clifford W. Greve, Ayman Habib, Terry Keating, Roberta Lenczowski, Bryan Logan, Toni Schenk, Mladen Stojic, Alan Voss And: Ernesto Rodriguez, Charles S. Morris, and J. Eric Belz

2008:

1st Place: A. Baccini, M.A. Friedl, C.E. Woodcock, and Z. Zhu

2nd Place: P.S. Thenkabail, P. GangadharaRao, T.W. Biggs, M. Krishna, and H. Tural.

3rd Place: Ayman F. Habib, Eui-Myoung Kim, and Chang-Jae Kim

2009:

1st Place: Zhen Xiong and Yun Zhang

2nd Place: Hongxing Liu, Jaehyung Yu, Zhiyuan Zhao, and Kenneth C. Jezek

3rd Place: Caixia Wang, Anthony Stefanidis, Arie Croitoru, and Peggy Agouris

2010:

1st Place: John R. Jensen, Michael E. Hodgson, Maria Garcia-Quijano, Jungho Im, and Jason A. Tullis

2nd Place: Benjamin E. Wilkinson, Bon A. Dewitt, Adam C. Watts, Ahmed H. Mohamed, and Matthew A. Burgess

3rd Place: Xuelian Meng, Le Wang, and Nate Currit

ERDAS Award for Best Scientific Paper in Remote Sensing

2011 Recipients:

1st Place: Francis P. Padula and John R. Schott for "Historic Calibration of the Thermal Infrared Band of Landsat-5 TM," *PE&RS*, 76 (11), 1225–1238.

2nd Place: Yinghai Ke, Wenhua Zhang, and Lindi J. Quackenbush for "Active Contour and Hill Climbing for Tree Crown Detection and Delineation," *PE&RS*, 76 (10), 1169–1181.

3rd Place: Ben Somers, Stephanie Delalieux, Willem W. Verstraeten, Annelies Vanden Eynde, Graham H. Barry, and Pol Coppin for "The Contribution of the Fruit Component to the Hyperspectral Citrus Canopy Signal" *PE&RS*, 76 (1), 37–47.

Purpose: Established in 1991 as the ERDAS Award for Best Scientific Paper in Remote Sensing, it became the Leica Geosystems Award for Best Scientific Paper in Remote Sensing in 2002 and returned to ERDAS sponsorship in 2009. This award encourages and commends individuals who publish papers of scientific merit that advance our knowledge of remote sensing technology.

Donor: ERDAS through the ASPRS Foundation

The ERDAS Award first prize is $500 and a hand-engrossed certificate; second prize is $300 and a hand-engrossed certificate; third prize is $200 and a hand-engrossed certificate.

Past Award Recipients:

2006:

1st Place: Elijah Ramsey III and Amina Rangoonwala
2nd Place: Lei Ji and Albert J. Peters

3rd Place: Francesca Pozzi and Christopher Small

2007:

1st Place Brian D. Wardlow, Jude H. Kastens, and Stephen L. Egbert

2nd Place: Rebecca Musy, Randolph Wynne, Christine Blinn, John Scrivani, and Ronald McRoberts

3rd Place: Lei Ji and Kevin Gallo

2008:

1st Place: Frank Crosby

2nd Place: Zhong Lu

3rd Place: A. Baccini, M.A. Friedl, C.E. Woodcock, and Z. Zhu

2009:

1st Place: Jan A.N.van Aardt, Randolph H. Wynne, and John A. Scrivani

2nd Place: Eva Ivits, Alistair Lamb, Filip Langar, Scott Hemphill, and Barbara Koch

3rd Place: Nikolaos Galiatsatos, Daniel N.M. Donoghue, and Graham Philip

2010:

1st Place: Hua Liu and Qihao Weng

2nd Place: Stephen V. Stehman, James D. Wickham, Timothy G. Wade, and Jonathan H. Smith

3rd Place: J. Linke, G.J. McDermid, D.N. Laskin, A.J. McLane, A. Pape, J. Cranston, M. Hall-Beyer, and S.E. Franklin

The ESRI Award for Best Scientific Paper in GIS

2011 Recipients:

1st Place: Lee De Cola for "A Network Representation of Raster Land-Cover Patches," *PE&RS*, 76 (1), 61-72.

2nd Place: M. Mokhtarzade, M.J. Valadan Zoej, H. Ebadi, and M.R. Sahebi for "An Innovative Image Space Clustering Technique for Automatic Road Network Vectorization," *PE&RS*, 76 (7), 841-852

3rd Place: Geoffrey M. Smith and R. Daniel Morton for "Real World Objects in GEOBIA through the Exploitation of Existing Digital Cartography and Image Segmentation," *PE&RS*, 76 (2), 163-171.

Purpose: Established in 1991, the ESRI Award honors individuals who publish papers of scientific merit that advance our knowledge about GIS technology.

Donor: The Environmental Systems Research Institute, Inc. (ESRI) through The ASPRS Foundation

The ESRI Award first prize is $500 and a hand-engrossed certificate; second prize is $300 and a hand-engrossed certificate; third prize is $200 and a hand-engrossed certificate.

Past Award Recipients:

2006:

1st Place: Bisheng Yang, Wenzhong Shi, and Qingquan Li

2nd Place: Rodolphe Devillers, Yvan Bedard, and Robert Jeansoulin

3rd Place: Xutong Niu, Ruijin Ma, Tarig Ali, and Rongxing Li

2007:

1st Place: Suzanne P. Wechsler and Charles N. Kroll

2nd Place: Jeremy Mennis

3rd Place: Kurt H. Riitters, James D. Wickham, and Timothy G. Wade

2008:

1st Place: Rongxing Li, Kaichang Di, Jue Wang, Xutong Niu, Sanchit Agarwal, Evgenia Brodyagina, Erik Oberg and Ju Won Hwangbo

2nd Place: Rifaat Abdalla, C. Vincent Tao, Qiuming Cheng, and Jonathan Li

3rd Place: Pravara Thanapura, Dennis L. Helder, Suzette Burckhard, Eric Warmath, Mary O' Neill, and Dwight Galster

2009:

1st Place: Jie Shan, Sharaf Alkheder, and Jun Wang

2nd Place: Carlos F. Mena

3rd Place: David Potere, Neal Feierabend, Alanb H. Strahler, and Eddie E. Bright

2010:

1st Place: John R. Jensen, Michael E. Hodgson, Maria Garcia-Quijano, Jungho Im, and Jason A. Tullis

2nd Place: Hubo Cai and William Rasdof

3rd Place: Peng Hu, Xiaohang Liu, and Hai Hu

The Talbert Abrams Award

2011 Recipients:

Grand Award: Shahaf Levin and Sagi Filin for "Registration of Terrestrial Photogrammetric Data Using Natural Surfaces as Control," *PE&RS*, 76 (10), 1183 – 1193.

First Honorable Mention: Huayi Wu, Yong Li, Jonathan Li**,** Jianya Gong for "A Two Step Displacement Correction Algorithm for Registration of LiDAR Point Clouds and Aerial Images without Orientation Parameters," *PE&RS*, 76 (10), 1135 – 1145.

Purpose: The Talbert Abrams Award was established in 1945 to encourage the authorship and recording of current, historical, engineering, and scientific developments in photogrammetry. The Award is determined from papers published in *Photogrammetric Engineering & Remote Sensing (PE&RS).* The award consists of a check for $3,000 and an engraved plaque for the Grand Award an award certificate for the First and Second Honorable Mentions.

Donor: The ASPRS Foundation

Past Award Recipients:

2006: No award given

2007:

Grand Award: Jie Shan, Chiung-Shiuan Fu, Bin Li, James Bethel, Jeffrey Kretsch and Edward Mikhail

First Honorable Mention: C. S. Fraser and S. Al-Ajlouni

Second Honorable Mention: Hans-Gerd Maas and Uwe Hampel

2008:

Grand Award: Michel Morgan, Kyung-Ok Kim, Soo Jeong, and Ayman Habib

First Honorable Mention: Ayman F. Habib, Eui-Myoung Kim, and Chang-Jae Kim

Second Honorable Mention: Simon Clode, Franz Rottensteiner, Peter Kootsookos, and Emanuel Zelniker 2009 Recipients:

2009:

Grand Award: Junhee Youn, James S. Bethel, Edward M. Mikhail, and Changno Lee

First Honorable Mention: Elja Honkavaara, Jouni Peltoniemi, Eero Ahokas, Risto Kuittinen, Juha Hyyppa, Juha Jaakkola, Harri Kaartinen, Lauri Markelin, Kimmo Nurminen, and Juha Suomalainen

Second Honorable Mention: Nikolaos Galiatsatos, Danuel N.M. Donoghue, and Graham Philip

2010:

Grand Award: Karsten Raguse and Christian Heipke

First Honorable Mention: K. Gwinner, F. Scholten, M. Spiegel, R. Schmidt, B. Giese, J. Oberst, C. Helpe, R. Jaumann and G. Neukum

Second Honorable Mention: N. Akel, S. Filin and Y. Doytsher

William A. Fischer Memorial Scholarship

2011 Recipient: Sergio Bernardes

Sergio Bernardes, currently a PhD student with the Department of Geography at the University of Georgia has been selected to receive the 2011 William A. Fischer Memorial Scholarship. Bernardes is being presented this award in recognition of his significant academic accomplishments, very impressive record of research and publications, and teaching and outreach through the application of remote sensing and GIS technologies. The application review committee believes that Bernardes' research on the links between low frequency climatic events and vegetation primary productivity utilizing MODIS time-series data, the assessment of anthropogenic impacts on the Brazilian Amazon, and in the development and application of multi-scale image databases for ecological studies will have a very real and timely impact on our understanding of global change monitoring and ecology.

Purpose: The William A. Fischer Scholarship facilitates graduate studies and career goals of a worthy student adjudged to address new and innovative uses of remote sensing data and techniques that relate to the natural, cultural, or agricultural resources of the Earth. It was established in 1984.

Donor: the ASPRS Foundation through individual and corporate contributions in memory of William A. Fischer.

The William A. Fischer Memorial Scholarship consists of a $2,000 cash prize and a hand-engrossed certificate.

Past Award Recipients:

2006: Nora Csany
2007: Eva Paska
2008: Yuyu Zhou
2009: Suzanne Walther
2010: Benjamin W. Heumann

Robert E. Altenhofen Memorial Scholarship

2011 Recipient: Jaehong Oh

Jaehong Oh is a doctoral candidate at The Ohio State University, Department of Civil and Environmental Engineering and Geodetic Science, with a specialization in photogrammetry. He has an extremely strong background in analytical and digital photogrammetry and geodesy, experience in photogrammetric research, and excellent academic references. He is author or co-author of eighteen publications including refereed journals and eleven conference presentations and reports. His faculty advisor is Professor Dorota Brzezinska.

Purpose: First given in 1986, the Robert E. Altenhofen Memorial Scholarship is intended to encourage and commend college students who display exceptional interest and ability in the theoretical aspects of photogrammetry.

Donor: The ASPRS Foundation. This award was originally established by Mrs. Helen Altenhofen as a memorial to her husband, Robert E. Altenhofen, past president of ASPRS. He was an outstanding practitioner of photogrammetry and made notable contributions to the mathematical aspects of the science.

The Altenhofen Scholarship consists of a cash prize of $2,000 and a hand-engrossed certificate.

Past Award Recipients:

2006: Yushin Ahn
2007: Shahram Moafipoor
2008: In-seong Jeong
2009: Changjae Kim
2010: Caixia Wang

Ta Liang Memorial Award

2011 Recipient: Nicholas Roberts

The selection of Nicholas Roberts was based on his academic achievements, planned program of research-related travel, and extracurricular activities.

Roberts is a PhD candidate specializing in Earth Sciences at Simon Fraser University, Burnaby, British Columbia, Canada. His research interests and objectives center on hazardous processes and their impacts on society and natural environments. Roberts' goal is to contribute to reduction of losses from natural hazards through improved understanding of natural phenomena and their interaction with society.

Roberts' studies in remote sensing began when he was working toward his BSc in Geography and Earth Sciences at Simon Fraser University. Roberts was awarded ten scholarships during his undergraduate program and graduated with first class honors in 2004. Roberts continued to excel as he went on to complete a MSc at the University of Waterloo in 2007, earning two prestigious scholarships in the process. His master's thesis investigated the structural geology and dynamics of gigantic (>1 km3) landslides in carbonate and pelite sequences in the Rocky Mountains of Canada and the Zagros Mountains of Iran.

Roberts' doctoral research project is a multi‐faceted investigation of landslide activity and associated risk in two contrasting Bolivian communities: the urban center of La Paz and the rural village of Yocarhuaya. His aim is to enhance understanding of factors driving landslide activity and resulting risk at these localities, in order to reduce fatalities and economic losses from landslides. This research focuses on characterization of landslide processes in terms of their causal and triggering factors, spatial‐temporal occurrence, and mechanisms and behavior. Roberts is achieving his aims using an integrated remote sensing – and field – based approach that uses air photo interpretation to assist in determining the location and frequency of slope movements and their relation to anthropogenic landscape modification and radar interferometry (PS–InSAR) using high spatial resolution RADARSAT-2 scenes to determine the rate, timing and mechanism of slower failures. He has also performed geologic mapping to determine the geotechnical, structural and hydrogeologic properties of units commonly involved in failure and will use the Ta Liang Award to perform site–specific field investigation to characterize individual landslides and to ground-truth remote sensing interpretations.

Nicholas Roberts has excelled as a student at both the undergraduate and graduate levels. He is conducting important applied research on landslide disaster management in an international setting. He is involved in efforts related to community outreach, geosciences education, professional development and environmental stewardship. He is a truly deserving candidate of the Ta Liang Memorial Award.

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Established in memory of Ta Liang, a skilled civil engineer, an excellent teacher, and one of the world's foremost airphoto interpreters, the award consists of a $1,500 grant and a hand-engrossed certificate.

Purpose: To facilitate research-related travel by outstanding graduate students in remote sensing, including field investigations, agency visits, participation in conferences, or other travel which enhances or facilitates graduate research.

Donor: Individual and corporate contributions to the ASPRS Foundation in memory of Ta Liang.

Past Award Recipients:

2006: Heather Richards
2007: Jonathan B. Thayn
2008: Akira Kato
2009: Lucy Kammer
2010: Jason Parent

Abraham Anson Memorial Scholarship

2011 Recipient: Philip S. Salvaggio

Philip Salvaggio is selected as the third recipient of the Abraham Anson Memorial Scholarship. He is a second year student at the Rochester Institute of Technology (RIT), Rochester, New York, working on a bachelor of science degree with a double major in computer science and imaging science. Salvaggio has been the recipient of several academic honors and awards for scholastic achievements. He is an excellent student as evidenced by his 4.0 GPA and has been recognized by the honor society, Phi Kappa Phi (the RIT honors program), and with a Presidential Scholarship. He also received the ASPRS Central New York Region Student of the Year Award in 2009. In addition, Salvaggio has been the recipient of the 2009 and 2010 Carlson Scholarship from the RIT Chester F. Carlson Center for Imaging Science. Salvaggio has gained excellent research experience working on several hands-on, practical projects at the RIT Digital Imaging and Remote Sensing Laboratory and, in the industry, in a photogrammetric imaging organization. Salvaggio is expected to graduate in 2013 and intends to continue further studies in a graduate program exploring his interest in computer vision and graphics.

Purpose: To encourage students who have an exceptional interest in pursuing scientific research or education in geospatial science or technology related to photogrammetry, remote sensing, surveying and mapping to enter a professional field where they can use the knowledge of their discipline to excel in their profession.

Donor: This award is presented by the ASPRS Foundation from funds donated by the Anson bequest and contributions from the Society and the Potomac Region as a tribute to Abe Anson's many contributions to the field of photogrammetry, remote sensing, and long, dedicated service to the Society.

The award consists of a certificate, a check in the amount of $1,000 and a one-year student membership (new or renewal) in the society.

Past Award Recipients:
2009: Nicole Wayant
2010: Tyler Rigazio

John O. Behrens Institute for Land Information (ILI) Memorial Scholarship

2011 Recipient: Thomas Davis

Thomas Davis of Texas A&M University, Corpus Christi, is selected as the third annual recipient of the John O. Behrens ILI Memorial Scholarship. Davis is a person who represents the goals of John Behrens and has an exceptional interest in pursuing scientific research and education in geospatial science and land information. Davis is an excellent student as demonstrated by his 3.68 GPA. He is pursuing a degree in Geographic Information Science with an emphasis in geomatics. Davis has been a research assistant on two research grants and is viewed by his professors and administrators as a future leader in geospatial sciences. He plans on becoming a registered surveyor in Texas and then pursuing a PhD with a goal of becoming a geospatial science professor.

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The John O. Behrens ILI Memorial Scholarship was established by the Institute for Land Information (since officially dissolved) as a tribute to the many contributions of Mr. Behrens to the field of geographic and land related information and technology. John O. Behrens was a founder of the ILI and the author of many articles about the value of spatial information, land assessment and taxation, and land information policy. In recognition of Mr. Behrens outstanding contributions over his distinguished career, funds from the ILI have been donated to the ASPRS Foundation to be administered for the John O. Behrens ILI Memorial Scholarship.

Purpose: To encourage students/persons who have an exceptional interest in pursuing scientific research or education in geospatial science or technology or land information systems/ records to enter a professional field where they can use the knowledge of this discipline to excel in their profession.

Donor: The ASPRS Foundation from funds donated by the ILI.

The Award consists of a certificate and a check in the amount of $1,000 and a one-year student or associate membership (new or renewal) in ASPRS

Past Award Recipients:
2009: Christopher Griffith
2010: Elizabeth Young

The Kenneth J. Osborn Memorial Scholarship

2011 Recipient: Erielle Lamb

Erielle Lamb is pursuing a Bachelor of Science degree in Geomatics Engineering from the California State University at Fresno, and plans to graduate in the spring of 2011. She intends to pursue licensure in land surveying, after which she plans to join the family's land surveying business. She will be the third generation in the geospatial profession. Lamb exemplified the Osborn qualities of communication and collaboration through leadership of activities within the CSU Fresno campus community by serving as president of Lambda Sigma, the land surveying honor society, and through her service as vice president for both the California Land Surveyor and ASPRS student chapters. She also served as chair of the student scholarship program for the 49th Annual Geomatics Engineering Conference, Fresno State's student-organized and – managed conference. Her faculty advisor is Dr. James K. Crossfield.

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The Award consists of a one-year membership in the Society (new or renewal), an engrossed certificate and a check in the amount of $2,000.

Purpose: To encourage and commend college students who display exceptional interest, desire, ability, and aptitude to enter the profession of surveying, mapping, photogrammetry, or geospatial information and technology. In addition, the Award recognizes students who excel at an aspect of the profession that Ken demonstrated so very well, that of communications and collaboration.

Donor: The ASPRS Foundation from funds donated by the friends and colleagues of Kenneth J. Osborn. Recognized nationally and internationally, Ken was an outstanding practitioner of surveying, mapping, photogrammetry, and geospatial information and technology, and a great friend of the Society. As a professional cartographer with the U.S. Geological Survey, Ken made significant contributions to these fields. The award was first offered in 2005.

Past Recipients:

2006: Sean Bolender
2007: Katarina Doctor
2008: Nathaniel Ovans
2009: Jason B. Jones
2010: Eric S. Wilder

The GeoEye Foundation Award

2011 Recipient: Nicholas Roberts

Nicholas Roberts, a PhD student in Earth Sciences at Simon Fraser University in Burnaby, British Columbia, Canada, has been selected to receive a GeoEye Foundation data grant for his PhD dissertation work on landslide activity and associated risks to residents of La Paz, Bolivia. La Paz, located in a deeply incised river valley in the eastern Andes, experiences frequent destructive landslides during or immediately after the rainy season. The project utilizes an inventory of slides from 1935-1994 as well as geologic mapping to characterize the geotechnical properties of the units involved. The project will include field-based investigation of individual recent landslides and radar interferometry to characterize the location, times, and movement rates of landslides. The GeoEye imagery will be used to extend the temporal coverage of the landslide inventory to the present. The study will help mitigate the risk of landslides to the population of a vulnerable, impoverished country and can contribute to the development and testing of techniques for characterizing and mitigating landslides world-wide.

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The ASPRS GeoEye Foundation Award consists of a grant of data valued up to $4,000 each, and a certificate inscribed with the name of the recipient.

The Award was established in 1991. In 2001 it became known as the Space Imaging Award for the Application of High Resolution Digital Satellite Imagery and in 2006 it became The GeoEye Award.

Purpose: to support remote sensing education and stimulate the development of applications of high-resolution digital satellite remote sensing data through the granting of GeoEye imagery for applied research by undergraduate or graduate students.

Donor: The GeoEye Foundation through the ASPRS Foundation

Past Award Recipients:

2006: Yuyu Zhou, Qiaoping Zhang, Orien Richmond
2007: Govinda Basnet, Tim De Chant, and James Kellner
2008: Sergio Bernardes, Sheika Aragundi, and Hunter Allen
2009: Yinghai Ke and Erica Capuana
2010: David Meek and Chandi Witharana

ERDAS Internship

2011 Recipient: Harini Sridharan

The ERDAS Internship Committee has selected Harini Sridharan to receive their 2011 APSRS Internship award. Sridharan is currently pursuing her PhD in Geospatial Information Science with a specialization in Remote Sensing at the University of Texas, where she is also a research assistant. She has been involved in a number of GIS projects working with multispectral, lidar and hyperspectral data sources for improved classification results. For her internship project she has proposed "Object-Based Non-Parametric Approaches for Urban Land Cover Classification of High Spatial Resolution Hyperspectral Data."

Purpose: The ERDAS Internship is an eight-week internship for graduate students in photogrammetry. The selected intern works with ERDAS personnel at a selected ERDAS facility. The internship consists of a stipend of $2500 plus an allowance for travel and living expenses for the period of the internship.

Donor: ERDAS, Inc. through the ASPRS Foundation. The internship provides the award winner with an opportunity to carry out a small research project of his/her own choice, or to work on an existing ERDAS project as part of a team.

Past Award Recipients:

2006: Hongwei Zhu
2007: Kaiguang Zhao
2008: David Milledge
2009: No award
2010: No award

Z/I Imaging Award

2011 Recipient: Shadrock Roberts

Roberts is being presented this award in recognition of his academic achievements and the outstanding nature of his current research and future career goals for developing and implementing new and innovative uses of Earth imaging techniques for real world applications. Roberts is pursuing his PhD through the University of Georgia's (UGA) Department of Geography. His primary research goal is to re-position remote sensing in the humanitarian sector as the safest and most efficient way to provide population information during a humanitarian crisis. His work is unique in that it fuses volunteered geographic field study information, high resolution remote sensing imagery and automated feature extraction for the purpose of assisting in humanitarian aid. This new and innovative application of remote sensing and disaster response will result in direct benefits to society and especially to those persons displaced by political upheaval or natural disasters.

Purpose: The Z/I Imaging Award, is designed to facilitate graduate-level studies and career goals adjudged to address new and innovative uses of signal processing, image processing techniques, and the application of photogrammetry to real-world techniques within the earth imaging industry.

Donor: Z/I Imaging though the ASPRS Foundation

The Z/I Imaging Award carries a $2,000 cash prize and a hand-engrossed certificate.

Past Award Recipients:

2006: Taehun Yoon
2007: Nora Csanyi
2008: Eva Paska
2009: Ju Won Hwangbo
2010: Jaehong Oh

Kodak International Educational Literature Award (KIELA)

2011 Recipient: Department of Photogrammetry and Geoinformatics, Budapest University of Technology and Economics, Budapest, Hungary represented today by Prof. Arpad Barsi, Head of the Department.

The Department of Photogrammetry and Geoinformatics is part of the Faculty of Civil Engineering, Budapest University of Technology and Economics. The Department has long-standing experience in remote sensing (airborne and terrestrial laser scanning, high resolution satellite imagery), photogrammetry and GIS. The Department conducted remarkable studies on flood simulations, hydrodynamic flood modeling, risk mapping, 3D digital terrain modeling, and is involved in several projects dealing with intelligent transportation systems. Currently, the Department is focusing on processing digital satellite imagery using neural networks on the development of web-based photogrammetry software, and developing wireless sensor networks to support intelligent transportation system. The Department is also strongly committed to education, lecturing hundreds of students each semester.

Purpose: The KIELA was first bestowed in 1990. Its goal is to improve the quantity and quality of literature in the recipient's library, particularly in the mapping sciences (i.e. photogrammetry, remote sensing, GIS, and related disciplines) by providing ASPRS educational materials and publications.

The KIELA includes $350 worth of books, manuals, or other literature published by ASPRS; a five-year subscription to *PE&RS*, proceedings of the Annual Conference and Fall technical meetings for five years; one free registration to the Society's Annual Conference at the time of receiving the award for a member of the institution to whom the award is being given; and a hand-engrossed certificate.

This award has been augmented by

- a generous grant from the Environmental Systems Research Institute (ESRI) of the complete ESRI Press Library collection
- selected titles from the John Wiley and Sons, Publishers, catalog.
- The conference proceedings from the Geospatial Information Technology Association (GITA)
- The conference proceedings from The Association of American Geographers (AAG)

Donor: Eastman Kodak Company, through the ASPRS Foundation

Previous Recipients:

2006: The Institute of Geography, National University of Mexico
2007: University of San Carlos, Guatemala
2008: Egerton University, Njoro, Kenya
2009: *Universidad Autónoma de Ciudad Juárez*, Mexico
2010: The Waiariki Institute of Technology, Rotorua, New Zealand

ASPRS Outstanding Service Award

2011 Recipients:

Thomas Lillesand, for his outstanding leadership as President of the ASPRS Foundation Board of Trustees, from the Foundation's recovery by ASPRS in 2004 until 2010, overseeing tremendous growth in both the level of funds donated as well as the number of awards given.

Alan Voss, for his outstanding vision and devotion to the concept of using film media to document the history of photogrammetry and remote sensing as well as its impact on the evolution of ASPRS, leading to the successful development of the ASPRS Films Project.

Karen Schuckman, for her outstanding efforts in support of the ASPRS Films Project, and in particular for providing the vision and leading the effort to spin out from the Films Project the PBS Geospatial Revolution film production.

Purpose: Established in 1991, The Outstanding Service Award is given to society members in recognition of outstanding and unusual efforts in helping ASPRS develop and carry out its program over a sustained period. Recipients have performed outstanding service at the chapter, regional, or national level. Awardees' service includes any activities, including professional, that have helped the society achieve its goals and objectives.

Donor: The ASPRS Foundation

The Outstanding Service Award consists of a bronze plaque

Past Award Recipients:

2005: Chris McGlone, Roy Mullen, Mike Renslow, Jan Gervin
2006: Stewart Walker, BAE Systems, Don Lauer
2007: The Future of Land Imaging Interagency Working Group, Jack Dangermond, Dave Maune
2008: James W. Merchant, Bernard "Barney" Schur, James V. Taranik, George Y. G. Lee
2009: The Procurement Guidelines Committee, R. Douglas Ramsey, Russell G. Congalton, Roberta E. "Bobbi" Lenczowski, John Moeller
2010: Marguerite Madden, Lockheed Martin, Major contributors to the Geospatial Revolution Film Project

ASPRS Ford Bartlett Award

2011 Recipients:

Michaela Buenemann
Thomas R. Mueller
Steven P. Lennartz
Jonathan Li
Karen L. Schuckman
Steven J. Steinberg
Tim Warner

Purpose: First awarded in 1968, the ASPRS Ford Bartlett Membership Award honors members for actively promoting membership in ASPRS.

Donor: the ASPRS Foundation. (This award was originally sponsored by the firm of Lockwood, Kessler, and Bartlett, Inc.)

A member is eligible to receive the Award after sponsoring ten or more members in one year. Each recipient receives a hand-engrossed certificate and a one-year membership in the Society.

Past Award Recipients:

2006: Daniel L. Civco, Patricia G. Foschi, Brian Miyake, Thomas R. Mueller
2007: Brian Miyake, Thomas R. Mueller, Brian E. Murphy, Mary DeVries O'Neill
2008: Brian Miyake, Michelle R. Kinzel, Xiaojun Yang
2009: Daniel L. Civco, Brian Miyake, L. Monika Moskal, Brian Murphy
2010: James B. Campbell, Bon A. Dewitt, Brian Miyake, Karen L. Schuckman, Steven J. Steinberg, Xiaojun Yang

SAIC Estes Memorial Teaching Award

2011 Recipient: Marguerite Madden

Marguerite Madden is a Professor of Geography and the Director of the Center for Remote Sensing and Mapping Science at the University of Georgia, where she has been a part of the Center since 1990. She received a BA and an MA in Biology from the State University of New York, and her PhD in Ecology from the University of Georgia. Madden exemplifies the role of the faculty mentor. She has supervised thesis and dissertation work as major professor for nearly 30 students, and has served on committees of nearly 80 others. Many of these students appear as first authors in her extensive list of publications, and have received financial support from her long resume of grants and contracts. Her advising is not only distinguished by numbers, but by the quality mentoring she provides. Her students gather around her at conferences, and their applications frequently appear in scholarship competitions, attesting to her dedication in providing opportunities for professional development outside the classroom and thesis work.

Madden was instrumental in organizing the ASPRS Student Advisory Council and founded and currently advises the ASPRS Student Chapter at the University of Georgia. In addition to her regular university teaching she also has taught many workshops and short courses in mapping and remote sensing. Her publications span both scientific topics as well as educational issues. She has served as a reviewer for many journals, has been an editor for five journals, and has been editor or co-editor of five major books, including the *Manual of Geographic Information Systems*. She has served on the Franklin College of Arts and Science Diversity Task Force, and has been active in arranging and hosting visiting international students and scholars from historically black colleges. With the International Society for Photogrammetry and Remote Sensing (ISPRS), she has been Co-Chair, Commission IV Working Group 4- Landscape Modeling and Visualization, (2004-2008) and Chair, Commission IV Working Group 6 (2000-2004); she was the ASPRS Geographic Information Systems (GIS) Division Director, (2003 – 2005) and ASPRS delegate to the University Consortium for Geographic Information Science (UCGIS) (2002 – 2005). She was elected a Fellow member of ASPRS and has received the ASPRS Presidential Citation on two occasions.

Her long-term visibility and leadership in the traditionally male-dominated field of remote sensing and mapping, including serving as President of ASPRS (2007-2008), has provided an important role model for many young women entering the field over the past 20 years. Madden has many other major accomplishments, but her career throughout has shown a consistent, prolific, and positive impact on students whether she is mentoring her own students or shaping the institutions, ideas, and literature which nurture their professional development.

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The SAIC Estes Memorial Teaching Award was inaugurated in 2003 and is named in honor of Professor John E. ("Jack") Estes, teacher, mentor, scientist, and friend of the American Society for Photogrammetry and Remote Sensing.

Purpose: This award is designed to recognize individual achievement in the promotion of remote sensing and GIS technology, and applications through educational efforts. Award recipients are chosen based on documented excellence in education, teaching, mentoring and, training.

Donor: Science Applications International Corporation (SAIC) through the ASPRS Foundation and consists of a presentation plaque and a cash award of $2,000.

Past Award Recipients:

2006: Roy Welch
2007: Marvin Bauer
2008: Sam Goward
2009: Alan H. Strahler
2010: Daniel L. Civco

ASPRS Outstanding Workshop Instructor Award

2011 Recipient: Charles E. Olson, Jr.

Charles E. Olson, Jr. was selected as this year's winner of the Outstanding Workshop Instructor Award in recognition of his many years as an instructor of the Thermal Remote Sensing and Remote Sensing of Vegetation workshops.

Purpose: The Outstanding Workshop Instructor Award is conferred by ASPRS in recognition of special, personal, and meritorious contributions to continued organization, promotion, and/or delivery of workshops at the ASPRS Annual and Fall Conferences.

Donor: The award is administered by the ASPRS Foundation from funds donated by ASPRS members and participating sponsors through contributions to the ASPRS Foundation.

The award consists of a certificate and an inscribed laser pointer.

Past Award Recipients:

2007: Michael Renslow
2008: Kass Green and Robert Burtch
2009: David Fuhr and Brian Huberty
2010: Russell G. Congalton

George E. Brown, Jr. Congressional Honor Award

The award will not be given this year

Purpose: ASPRS created the award in honor of the late Congressman George E. Brown, Jr. and the contributions he made to advance the benefits of imagery and geospatial information to Society. Representative Brown was very supportive of the geospatial industry. He authored key legislation affecting the industry, supported geospatial information research, and promoted the development of the commercial remote sensing industry for the greater good of Society.

Donor: The ASPRS Foundation

This award is presented periodically to recognize members of the U.S. Congress whose leadership and personal efforts have advanced the science, engineering, application, education, and commerce of imaging and geospatial information. In addition to a plaque, the award consists of an opportunity for ASPRS to sponsor a geospatial sciences presentation to an elementary school, secondary school, or university of the recipient's choice in his or her District or State.

Past Award Recipients:

2000: Congressman George E. Brown, Jr. (D-Cal.) posthumously
2001: No award given
2002: Senator Trent Lott (R-Miss.)
2003, 2004: No award given
2005: Senator Wayne Allard (R-CO)
2006, 2007, 2008, 2009 – No award given

Col. Claude H. Birdseye President's Citation

2011 Recipient: Carolyn J. Merry

Purpose: The Col. Claude H. Birdseye President's Citation was established in 1965 as a tribute to one of the founders and the first president of the Society. Each year at the Annual Convention it is conferred on the outgoing president in recognition of her/his contributions to the Society.

Donor: ASPRS Foundation

The Birdseye Citation carries with it a gold Past President's Key, and a hand-engrossed certificate.

Past Award Recipients:

2006: Karen L. Schuckman
2007: Kari J. Craun
2008: Marguerite Madden
2009: Kass Green
2010: Bradley D. Doorn

General Session

Fellow Award
Francis H. Moffitt Memorial Scholarship
Paul R. Wolf Memorial Scholarship
BAE Systems Award
Conference Management Awards

ASPRS Fellow Award

2011 Recipients: Paul D. Brooks and Kass Green

Paul Brooks retired from the U.S. Geological Survey (USGS) in 1996 and currently works part-time as the Government Liaison Director for AERO-METRIC Anchorage, Alaska. He is responsible for public relations, proposal preparation, marketing, and project management activities in the fields of geographic data acquisition, mapping, and data management. Brooks received his Associate Degree in Forestry from the University of Massachusetts (‘61), a BS in Forest Management from the University of Maine (‘64), a MS in Geodesy and Photogrammetry from Iowa State University (‘70), and an Associate of Applied Science degree in Paramedic Technology, University of Alaska Anchorage (’99).

Out of school Brooks worked for the Defense Mapping Agency (formerly U.S. Army Map Service and U.S. Army Topographic Command) on many cartographic, photogrammetric, and geodetic projects including the Apollo Lunar Landing missions. He served as Project Engineer and Staff Production Manager making management and production decisions and solving highly technical problems in analytical photogrammetry, satellite geodesy, and extra-terrestrial mapping. In 1972 Brooks joined USGS as Chief, Control and Mensuration Branch, Special Mapping Center, managing, and developing the photogrammetric operations of the Branch which included planning and developing new procedures for achieving objectives and production standards. He also worked in the Office of Research and Technical Standards responsible for planning and directing individual and cooperative research investigations designed to test and evaluate advanced and operational photogrammetric mapping systems. He also spent time as a lecturer at George Washington University in the Cartographic and Geodetic Science Studies Program.

From 1977-1980 Brooks was secunded to the Office of Biological Services, U.S. Fish and Wildlife Service, where he assisted in establishing the National Wetlands Inventory project and planned, developed and managed the remote sensing and mapping activities for the program. He also coordinated the remote sensing and mapping activities of the Office of Biological Services for the National Coastal Ecosystems Team, and the Eastern and Western Energy Land Use Teams projects.

From 1980-96 he was the USGS Director’s Representative for Alaska and Chief, Alaska Office, National Mapping Division. In this position, he served as the Alaska point of contact for theme and outreach coordination and liaison with other Federal agencies, State and local governments, academic institutions, private industry and the general public, and was responsible for the oversight of the planning and execution of all inter-divisional and bureau-level programs within Alaska. Brooks also served as the Chief, Alaska Office, National Mapping Division supervising and managing all National Mapping Program activities in Alaska and was responsible for developing coordinating mechanisms and negotiating cooperative agreements and partnerships with Federal, State, and private organizations for aerial photography, photointerpretation projects, digital mapping activities, cooperative research projects, and cooperative agreements for cartographic base products.

A member of the ASPRS since 1973, Brooks served as the National Director for the Alaska Region from 1987 to 2010 as well as a member of the Society’s Executive Committee. He has also been a member of three ASPRS National Committees. Other positions held include: President, Alaska Region; Convention Director, ASPRS/ACSM 1986 Fall National Convention; Assistant Convention Director for 2003 ASPRS Annual Conference, Anchorage, AK, and Executive Committee Annual Alaska Surveying and Mapping Conference. Co-Chair for ASPRS/MAPPS Specialty Conference, San Antonio, TX, November 5-10, 2006. Brooks has received four Meritorious Service Awards and two Presidential Citations. He is a Hall of Fame recipient for his many years of service to the Alaska Surveying and Mapping Conference.

Other professional responsibilities include: Chair, Advisory Board, Department of Geomatics, School of Engineering, University of Alaska Anchorage (UAA); Member School of Engineering Advisory Board, UAA; Member of the Academic Policy Council, Highland Technical High School, Business Partner for Chugiak High School, Anchorage School District; and Member Resource Development Council of Alaska.

Past Professional responsibilities have included: Chair, Alaska Geographic Data Committee; Deputy Federal Liaison Officer (FEMA) for emergency response to natural disasters in Alaska (Alaska Regional Interagency Steering Committee); Chair, Alaska High-Altitude Aerial Photography program; Executive Board, Council on Northern Resource Information Management; and Program Manager, Arctic Environmental Data Directory project and member of the International Arctic Data Directory Working Group.

Additionally, Brooks has 12 years experience as a Mobile Intensive Care Paramedic with TransCare Medical Services, and ten years with American Care Air Ambulance, and 25 years experience as a Ski Patroller with the Alyeska Ski Resort, along with 17 years as a Professional Ski Patroller. He also has over two years of experience as an Adjunct Faculty with

the Alaska Outdoor and Experiential Education program at the University of Alaska Anchorage. He has served for 14 years as a Member (Lead Medical Tech and over four years as Team Training Officer) of the Alaska-1 Disaster Medical Assistance Team (DMAT), National Disaster Medical System, U.S. Public Health Service, Department of Health and Human Services.

Kass Green, President of Kass Green and Associates, consults on geospatial strategy, technology and policy issues to private, educational, and public organizations. Green also provides *pro bono* advice and consulting to public agencies and non-profit organizations.

Green received a BS degree in Forestry from the University of California at Berkeley, a MS degree in Resource Policy and Management from the University of Michigan, and advanced to PhD candidacy at the University of California at Berkeley.

Three years ago, Green retired as President of Space Imaging Solutions, a division of Space Imaging LLC, where she supervised over 200 employees involved in tasks including operation of a digital airborne system, acquisition of airborne and satellite imagery from numerous platforms and sensors, creation of land cover and land use coverages from remotely sensed data using both manual and automated techniques, and the development of desktop and web based geospatial analysis software.

Prior to joining Space Imaging, Green was President of Pacific Meridian, Resources, a geospatial services company she co-founded in 1988 and grew to seven offices throughout the United States.

An ASPRS member since 1988, Green has served the Society on the ASPRS Board of Directors, as cofounder of the GIS Division, Program Chair for the 2000 Pecora Conference, Registration Chair for the GIS 1987 conference, and has presented workshops at almost every ASPRS conference for the last decade. She has received numerous awards from the Society and served as ASPRS President (2008-2009).

Green has developed several courses and workshops on remote sensing and GIS applications, and is currently developing two web-based courses for the University of Mississippi. She serves on the Boards of several for-profit and non-profit organizations, and is currently a member of NOAA's Advisory Committee for Commercial Remote Sensing and the U.S. Geological Survey's National Satellite Land Remote Sensing Data Archive Advisory Committee. Past community service includes President and Board member of the *Management Association for Private Photogrammetric Surveyors*, and member of two NASA Advisory Committees.

Green has given several hundred research presentations throughout the world at various conferences and her published articles have appeared in numerous journals. Her scientific service includes membership on three National Research Council panels for the National Academy of Sciences, authorship of several chapters of books, as well as co-authoring the text book, *Assessing the Accuracy of Remotely Sensed Data*. She is currently Chair of the College of Natural Resources Advisory Committee at the University of California, Berkeley

Purpose: Started in 1992, the designation of Fellow is conferred on Society members who have been active for a total of at least ten years and who have performed exceptional service in advancing the science and use of the mapping sciences and related disciplines. It is awarded for professional excellence and for service to the Society.

Donor: the ASPRS Foundation

The ASPRS Fellow Award includes a hand-engrossed certificate.

Past Award Recipients:

2006: Anthony B. Follette, Barry N. Haack, Lloyd O. Herd
2007: Russell G. Congalton, Alan M. Mikuni, Nancy K. Tubbs
2008: Allan Falconer, Peggy J. Harwood, Frank Scarpace, Bernard "Barney" Schur
2009: Ray Helmering, Thomas R. Loveland
2010: George Hepner, Marguerite Madden, J. Chris McGlone. Clifford J. Mugnier

Francis H. Moffitt Memorial Scholarship

2011 Recipient: Scott J. Roberts

Scott Roberts is attending California State University, Fresno pursuing a Bachelor of Science degree in Geomatics Engineering. Prior to attending the California State, he attended Fresno City College where he received an Associate of Arts degree in Engineering in August 2009.

Roberts worked as a GIS technician at the Interdisciplinary Spatial Information Systems Center at California State, Fresno in 2009 and 2010 identifying historic aerial photos, locating their footprints on the ground and entering them into a GIS database.

Since June 2010 Roberts has worked for the State of California Resources Agency, Department of Fish & Game. In this position he manages and updates their spatial data collection and prepares maps, tables and charts for environmental scientists and biologists to support decision making and planning in the restoration of the San Joaquin River.

He has written research papers on "The Significance of Monumentation in Boundary Line Analysis" and "Mapping of the San Joaquin Experimental Range." He has also contributed an article titled "Surveying Project Design in GIS" to *Fore-Sight!* Magazine.

Roberts serves as the Treasurer of the ASPRS Student Chapter and President of the ACSM chapter at Fresno State and is a member of California Land Surveyors Association. He is a member of the Lambda Sigma honorary land surveying society and leader of the Fresno State NSPS (National Society of Professional Surveyors) competition team.

His future goals include pursuing a Masters of Science degree in the field of Civil Engineering with a Geomatics Engineering emphasis. He enjoys teaching and plans to eventually earn a PhD in order to continue teaching surveying and photogrammetry.

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In recognition of Professor Moffitt's many contributions to the surveying and photogrammetry profession and his devotion to the related professional societies, this Award is presented by the American Society for Photogrammetry and Remote Sensing (ASPRS), the Management Association for Private Photogrammetric Surveyors (MAPPS), and the American Congress on Surveying and Mapping (ACSM) through the ASPRS Foundation from funds donated by students, associates, colleagues and friends of Frank Moffitt as a memorial to his lifetime contributions to the photogrammetric surveying profession and the goals of these professional societies.

Purpose: The award was first presented in 2008 with the purpose of encouraging upper-division, undergraduate-level and graduate-level college students to pursue a course of study in surveying and photogrammetry leading to a career in the geospatial mapping profession.

Donor: The ASPRS Foundation from funds donated to the Foundation from former students, associates, colleagues and friends.

The Award consists of a certificate and a check in the amount of $4,000 and a new or renewal membership in ASPRS.

Past Award Recipients:
2008: Chad M. Schaeding
2009: Nathaniel Ovans
2010: Ivan D. Detchev

Paul R. Wolf Memorial Scholarship

2011 Recipient: Adam Benjamin

Adam Benjamin is being presented this award in recognition of his outstanding academic credentials and his plans and enthusiasm to become an education professional in Surveying, Mapping, and Photogrammetry. Benjamin is currently a 2011 MS candidate (graduation May 2011) in Geomatics (Surveying, Mapping, and Photogrammetry) at the University of Florida with plans to continue his PhD education and studies also at the University of Florida. Adam Benjamin has demonstrated his continued interest, dedication, enthusiasm, and aptitude to become an education professional and has been recognized at all levels for this. The committee wishes Benjamin much success and is confident that his current and future education efforts will continue to make important contributions to the Surveying, Mapping and Photogrammetry community.

Purpose: To encourage and commend college students who display exceptional interest, desire, ability, and aptitude to enter the profession of teaching surveying, mapping, or photogrammetry.

Donor: The ASPRS Foundation from funds donated by the friends and colleagues of Paul R. Wolf. Recognized nationally and internationally, Paul was an outstanding educator and practitioner of surveying, mapping, and photogrammetry and a great friend of the Society. As author, teacher, and mentor, Paul made significant educational and academic contributions to these fields. The award was inaugurated in 2003.

The award includes a grant of $3,000 and a hand-engrossed certificate.

Past Award Recipients:
2006: Jamon Van Den Hoek
2007: no award given
2008: Akira Kato
2009: Anthony Richard Vannozzi
2010: Benjamin E. Wilkinson

BAE Systems Award

2011 award results not available at press time. Please check the Final Program Errata Sheet for details.

Purpose: To reward top quality research and publication by young students (under age 35 as of the application deadline) at master's or doctoral level and to encourage researchers to use the ASPRS annual conference as a vehicle to publish and present their findings. The recipient's paper will be published in *Photogrammetric Engineering & Remote Sensing* (PE&RS), the official journal of ASPRS.

Donor: BAE Systems Foundation through the ASPRS Foundation

The award was first offered in 2005 and consists of a certificate and a grant of $2,000.

Past Award Recipients

2006: Pravara Thanapura
2007: Yuyu Zhou
2008: Xuerian Meng
2009: Ju Won Hwangbo
2010: Jaehong Oh

ASPRS Conference Management Awards

2011 Recipients: Conference co-chairs, Brian Huberty and Miles Strain, and Technical Program Chair, Frank Scarpace

Purpose: The intent of this award is to recognize the great effort put forth by the individuals who volunteer their time to assist in the planning and execution of a successful annual conference.

Donor: The ASPRS Foundation

The award is an engraved plaque with the conference program cover.

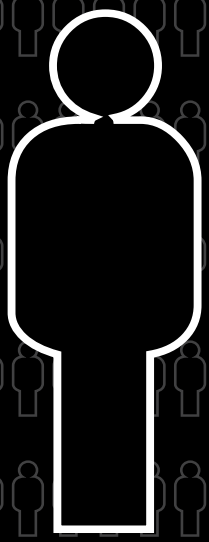
Past Award Recipients:

2006: George F. Hepner, Alan M. Mikuni, Patricia G. Foschi, Robert. D. Ramsey
2007: Gary Florence, Bon Dewitt
2008: Roger Crystal, Nancy Tubbs, and Geoffrey Duh
2009: James D. Hipple, Karen L. Schuckman, John S. Iiames, Jr., Douglas A. Miller, and Larry D. Hothem
2010: Steve Yool, Doug Stow, Cynthia Wallace, Soe Myint

STUDENTS!

JUMP START YOUR PROFESSIONAL CAREERS WITH THE

ASPRS PROVISIONAL CERTIFICATION PROGRAM



- ASPRS offers Provisional Certification in photogrammetry, remote sensing and GIS/LIS available to graduating seniors [undergrad or graduate] who meet the basic requirements. You must file an application, including your transcript and one reference from a faculty advisor and once you pass peer review, you will be eligible for the exam.
- Upon successful examination completion, the individual will receive Provisional Certification (ASPRS) status. You will then have ten (10) years to complete the six (6) year experience requirement for photogrammetrist or mapping scientist; for the technologist certification, you will have five (5) years to complete the three (3) year experience requirement.
- When the Work Experience requirement is complete, the Applicant must provide written documentation and three (3) references to ASPRS Headquarters, who will forward the experience summary and references to the Evaluation for Certification Committee. Applicants meeting all of these requirements will become certified for the specified time period of their certification

Details can be found in the Certification and Recertification Guidelines:
http://www.asprs.org/membership/certification/certification_guidelines.html

Or contact certification@asprs.org

Memorial Address
- Presidential Citations
- Region Awards
  - Region of the Year
  - Region Newsletter of the Year
  - Region Website of the Year

Presidential Citations

2011 Recipients:

William Philpot for his service as the Chair of the Selection Committee for the Ta Liang Memorial Award.

Don Vance for his support for the ASPRS Awards Program, and for negotiating a significant increase in the award amount for the Boeing Award for Best Paper in Image Analysis and Interpretation.

Marguerite Madden for her work as Program Co-Chair for the ASPRS-ISPRS Orlando Fall Conference.

Lynn Usery for his work as Program Co-Chair for the ASPRS-ISPRS Orlando Fall Conference.

Christopher Aldridge for his willingness to serve as Chair of the Convention Policy and Planning Committee when called upon to do so.

Daniel Civco for his service as Chair of the Education and Professional Development Committee.

Bob Redfield for his constant support and encouragement during my service with ASPRS.

Cindy Sopher for her administrative assistance for my work associated with ASPRS.

Rick Pearsall for his dedicated work in establishing the ASPRS Standards Committee and in working towards making standards development relevant to the ASPRS membership.

Jesse Winch for his dedicated service in support of the Awards and Scholarship Program, and in particular for his excellent and timely support to the many volunteers serving on the numerous selection committees.

Purpose: First awarded in 1992, Presidential Citations are presented by the ASPRS President to members of ASPRS and other societies, family members, and friends in recognition of special, personal, and meritorious contributions to the operation or advancement of the Society and its interests during the presidential year.

Donor: the ASPRS Foundation

The Presidential Citation is a hand-engrossed certificate.

Past Award Recipients:

2006:
A. Stewart Walker
Richard Aspinall
Stephen Yool
Eric Andeline
James Morrell
Peter Boniface
Duane Haselfeld
Ding Yuan
Lee Harbers
Bradish Johnson
Jim Hipple
Michael Thomas

2007:
Mary Clinthorne
Perry Hardin
Rakesh Malhotra
Albert Barnett
Paul Brooks
Randy Olsen

2008:
Sandra Hunkele
Kim Tilley
Gene Dial
Ed Freeborn
Tina Cary
Matthew Austin
Rae Kelley

2009:
Michael S. Renslow
Charles Mondello and George F. Hepner
Katie Mayo, Vaughn Rogers, and Jack Mayo
Richard A. Pearsall, Rebecca A. Morton, and Louis N. Graham
Gene Forsburg
George Y. G. Lee
Kimberly A. Tilley and Marguerite Madden
Michael R. Thomas and A. Stewart Walker
Mary Potter and Terrence J. Keating
The 75th anniversary committee, Russell G. Congalton, Stewart Walker, Karen Schuckman, Bill Hemple, and Brian Kloer

2010:
Paul Brooks
Larry Handley
Don Lauer
Al Stevens
Becky Morton
John Iiames
Doug Smith
Al Karlin
Bradley Rundquist
Rose Kearney
Mark Jackson

ASPRS Region of the Year Award

2011 Recipients:

First Place: St. Louis Region

First Honorable Mention: Mid-South Region

Second Honorable Mention: Potomac Region

The St. Louis Region is Region of the Year (up from First Honorable Mention in 2009) for its outstanding membership recruitment and retention program, including a successful student membership campaign showing a 28% increase over last year; for offering a one-year complimentary membership to promote student interests in geospatial technologies; for their numerous technical presentations; for their outstanding awards activities for 7th to 12th graders; for establishing a FaceBook account for region members, and for publishing and distributing five newsletter bulletins by mail and e-mail.

The Mid-South Region, First Honorable Mention**,** received the Region of the Month in April, July, August and November of 2010. Their ambitious board worked in conjunction with student chapters to conduct a meaningful and outstanding membership campaign, particularly among students, and showed a 7% increase in student membership over last year. The Region co-sponsored the 25th Annual Louisiana Remote Sensing and GIS Workshop, which included a student paper and poster competition, and offered a transportation award for student groups.

The Potomac Region, Second Honorable Mention, also won the Region of Month seven times in 2010. The Region had an outstanding student membership campaign showing a 25% increase over 2010 and created a new student chapter at George Mason University. The Region has an excellent scholarship program and continues to host a successful GeoTech conference each year.

The Region of the Year Award includes a hand engrossed certificate and possession of the Region of the Year banner for one year for the winner and certificates for first and second honorable mention.

Purpose: The Region of the Year Award was established in 1968 to recognize excellence at the regional level in providing service to the members and to the profession at large.

Donor: The ASPRS Foundation

Previous Award Recipients:

2006:The Rocky Mountain Region
2007: The Columbia River Region
2008: The Columbia River Region
2009: The Columbia River Region
2010: The Potomac Region

ASPRS Region Newsletter of the Year

2011 Recipients:

1st Place: *Wavelengths,* Columbia River Region

2nd Place: *The Central Perspective*, Central New York Region

3rd Place: *The Rocky Mountain Compiler,* Rocky Mountain Region

Wavelengths is an informative publication that covers national and regional news as well as reports on such subjects as the ASPRS Certification Program, Workshop Webinar Series, and the GIS in Action Conference. In highlighting student chapters and new members, *Wavelengths* reflects the dedication of the members to the region and its chapters.

The Central Perspective, Second Place, is an attractive bulletin that highlights such subjects as the President and National Director' message, the region's financial status, region conferences, student travel assistance, and their Student of the Year Award.

The Rocky Mountain Compiler, Third Place, maintains a consistently high level of content, reflecting a close involvement with the Society, and never fails to convey to its membership all important notices and timely topics of regional as well as national news.

Purpose: The Society first bestowed this award in 1980 to recognize excellence of the Region in providing service to the members and to the profession at large through publications of a newsletter.

Donor: The ASPRS Foundation

The Newsletter of the Year Award includes a hand engrossed certificate.

Past Award Recipients:

2006: *The Central Region Newsletter*
2007: *Wavelengths (*Columbia River)
2008: *Wavelengths* (Columbia River)
2009: *Wavelengths* (Columbia River)
2010: *Rocky Mountain Compiler*

Region Website of the Year

2011 Recipients:

1st Place: **Florida Region**

2nd Place: **Columbia River Region**

3rd Place: **Rocky Mountain Region**

A scoring and weighting system applied by an evaluation committee is used to decide the winners of the Region Website of the Year Award.

The winning websites demonstrate high quality look and feel in the site design and effectively convey accurate, informative and timely content. Each site is easy to navigate with few or no broken links and page file sizes are minimized to reduce page loading times. The sites display content of unique regional flavor and are in compliance with the Americans with Disabilities Act (ADA).

Purpose: The Region Website of the Year Award serves to recognize excellence among the regions in providing service to members and to the profession at large through web site publication.

Donor: the ASPRS Foundation

The Region Website of the Year Award, inaugurated in 2003, includes hand-engrossed certificates for all winners.

Past Recipients:

2006: Potomac Region
2007: Eastern Great Lakes Region
2008: Northern California Region
2009: St. Louis Region
2010: Florida Region

Need a Quick Lunch?

There is a mall and food court connected via skywalk to the Frontier Airlines Center and it's easy to get to! The Shops of Grand Avenue mall is a great place to grab a quick lunch, walk around and relax during your busy day or do a little shopping while in Milwaukee.

The mall is open Monday through Friday from 10:00 am until 7:00 pm. Enter the Shops of Grand Avenue mall through the skywalk leading to the Hyatt Regency Hotel. There are signs posted along the skywalk directing you to the Shops of Grand Avenue. You will find the food court, with over 15 food outlets, on the third floor of the mall.

Sensor Design and Development
- 8 NGA Paper Presentation I - Open Source Motion Imagery
- 11 NGA Discussion Session I - Open Source Motion Imagery
- 23 PDAD Special Session I - Airborne Digital Mapping Camera Systems: Manufactures Perspective
- 24 Integrated Spatial Sensors and Technologies I
- 33 PDAD Special Session I - Airborne Digital Mapping Camera Systems: Manufactures Perspective
- 37 Special Session - Sensor Modeling & Metadata Development for UAS Platforms
- 44 Commercial Session -- Full-motion 3D Imaging
- 50 Integrated Spatial Sensors and Technologies
- 62 Special Session - Geopositions from UAS Platforms
- 65 Advancements in Visualization and Simulation Technologies
- 68 PDAD Special Session IV - Modernization Program for the North American Reference Frame
- 77 Advancements in Sensor Calibration and Modeling

Satellite Applications
- 16 Satellite Data Collection and Calibration
- 19 Satellite Applications
- 67 Land Cover Assessment

Remote Sensing Applications
- 17 Advanced Remote Sensing Techniques and Analysis
- 18 Remote Sensing Applications for Ecosystem Characterization and Modeling
- 25 Remote Sensing Applications for Agriculture
- 28 Remote Sensing Applications for Environmental Monitoring
- 35 Remote Sensing Classification Algorithms and Approaches
- 36 Classification and Positional Errors and Accuracies
- 52 Using Multiple Data Sources
- 67 Land Cover Assessment
- 69 Use of SAR , MIS Spectrometer and Line Scanners
- 71 Remote Sensing Applications
- 74 Land Cover Assessment
- 78 Remote Sensing Applications for Wetland Mapping
- 80 Remote Sensing for Land cover Mapping
- 81 Extraterrestrial Spatial Sensors and Applications
- 86 Remote Sensing and GIS Applications

Poster Presentations
- 9 Poster Presentations I
- 21 Poster Presentations II
- 31 Poster Presentations III

Photogrammetric Applications
- 6 Innovative Approaches to DEM and Ortho Production
- 14 Topics in Digital Photogrammetric Techniques
- 42 Commercial Session - New Photogrammetric Products
- 43 Commercial Session - Vexcel UltraCam Investigations
- 85 Special Session - Photogrammetry and Next-Generation UAS Platforms

Global Climate Change
- 7 Special Session - Natural/Human Responses of Global Climate Change I
- 20 Special Session - Natural/Human Responses of Global Climate Change II
- 38 Special Session - Natural/Human Responses of Global Climate Change III

Lidar Applications
- 2 Using Lidar Data to Map Features
- 15 Lidar DATA Specifications and Product Characterizations
- 30 Analysis of Lidar Waveforms
- 34 Forestry Applications Using Lidar
- 49 PDAD Special Session III - Lidar Quality Assurance and Interoperability
- 66 Lidar Research and Applications
- 84 Lidar Applications for Forestry

Algorithm Development
- 10 Hot Topic: Breaking the 85% Classification Barrier
- 12 NGA Paper Presentation II - Geospatial Visual Analytics
- 22 NGA Special Session IIA - Geospatial Visual Analytics
- 32 NGA Special Session III - Sparsity and Compressive Sensing
- 41 NGA Special Session III - Compressive Sensing Session 2
- 45 Commercial Session -- New at ERDAS
- 47 Commercial Session - Advances at LizerdTech
- 48 NGA Paper Presentation III - Compressive Sensing Session 2 Continued
- 53 Advancements in Image Matching, Feature Extraction, and 3D Analysis
- 58 NGA Special Session IV - Tradecraft for Remote Sensing and Data Exploitation
- 59 Software and Algorithms
- 75 Image Registration
- 76 Object-Based Classification

Data Processing and Analysis
- 1 Hyperspectral and Photogrammetric Data
- 3 Deriving Tools to Automate Analysis
- 26 Assessing the Accuracies of Spatial Data
- 27 Advanced Remote Sensing Techniques and Analysis II
- 29 Innovative Methods of Geospatial Data Processing

Disaster Management and Responses
- 13 Special Session - Oil Impact Assessment Using Remote Sensing
- 40 Hazard Assessment
- 70 Oil Spill and Flood disasters
- 82 Remote Sensing of Disaster Sites

Education/Professional Development
- 54 Special Session - The History of the Future
- 56 Special Session - National Assessment of Business Use
- 64 Special Session - Academic Publishing
- 72 Special Session - U.S. Geospatial Workforce Needs Come Into Focus
- 73 Special Session - Career Planning and Professional Development
- 79 Special Session - Preparing Competitive Scholarship and Grant Proposals

Environmental Assessment
- 5 Assessing Environmental Dynamics
- 61 Advanced Mapping Applications
- 63 Special Session - Alaska Statewide Mapping Refresh Underway

Forestry Applications
- 4 Monitoring Forest Conditions
- 57 Remote Sensing and GIS Research for Forestry Applications

GIS Applications
- 46 Commercial Session -- ArcGIS innovations
- 51 GIS Modeling for Resource Management
- 60 Integrated Spatial Technologies
- 83 Web-Based Applications and Accuracy Analysis

Students & Young Professionals

Please join the Student Advisory Council (SAC) for some activities designed just for YOU!

Sunday, May 1st – Once you have arrived and found your accommodation we can start exploring Milwaukee together. We will meet in the lobby of the Hyatt Regency Milwaukee Hotel at 6:30 pm and walk straight to the nearby **Rock Bottom Restaurant and Brewery**. This is a good place to start the week by getting to know first time student and young professional attendees as well as remembering some of the good times we shared at previous ASPRS conferences. For those wanting to stay out later and experience a more modern Milwaukee downtown nightspot, **Zenden Bar and Lounge** is minutes away.

Monday, May 2nd – Monday is just packed with activities for students. Don't forget to attend the **Student and Employer "Meet and Greet"** from 12:00 noon to 1:00 pm. Last year this event was packed! It is an excellent opportunity to meet your potential employer or just to find out what the job situation is in the geospatial market. Later in the afternoon don't miss out on the fun at the **Speed Networking event** from 5:15 pm to 5:45 pm, followed by The **Student Advisory Council Meeting** from 5:45 pm to 6:45 pm. The Student Advisory Council Meeting is a place where you can come and let your voice be heard and give any suggestions, concerns and questions you might have about your place in ASPRS. Afterwards we will meet in the hotel lobby at 7:30 pm and head toward **Cubanitas**. After enjoying some Cuban specialties we can go to **Taylors**, an upscale trendy bar where you will have a chance to meet some of the local folks.

Tuesday, May 3rd – Just a reminder for you not to miss the **Exhibit Hall Guided Tour** from 2:30 pm to 3:30 pm as well as the **Exhibitors' Reception** from 5:30 pm to 7:00 pm where you can meet with the representatives from the most influential companies in the geospatial industry. We will let you refresh in your rooms until 7:30 pm when we will meet in the lobby again and try to find our way toward **The Safe House**. We will keep the mystery of this place here and encounter the adventure together. An intriguing place with great food and atmosphere should come as a reward for a busy day at the conference.

Wednesday, May 4th – The plan is to go to the ASPRS-organized Social Event and take the opportunity to visit the Milwaukee Public Museum. After the visit to the museum what better way to end our final night out at the conference in the "beer capital of the world" than visiting one of the local microbreweries? **Water Street Brewery** offers a variety of good food and great beer choices for everyone. If we decide on a change of scenery, we can walk over to **Bar Louie** across the street or the **Harp Irish Pub**, less then a minute away.

We hope you will join us in these activities and get to know more about your fellow students in the ASPRS. All the selected sites are within walking distance from the hotel, so bring some walking shoes and a light jacket and let's explore Milwaukee together.

Time	Event	Room	Attending
6:30 AM to 5:00 PM	Registration Desk Open	Mezzanine Level Atrium	
7:45 AM to 5:15 PM	Workshop #2 — Professional Airborne Digital Mapping Systems – An Overview	102 AB	
7:45 AM to 5:15 PM	Workshop #3 — Introductory Digital Image Enhancement	201 B	
7:45 AM to 12:15 PM	Workshop #4 — Looking Above the Terrain: Lidar for Vegetation Assessment	101 A	
8:00 AM to 4:30 PM	DACUM Job Analysis Workshop	201 D	
12:45 PM to 5:15 PM	Workshop #6 — Making SAR Accessible	101 A	
12:45 PM to 5:15 PM	Workshop #7 — Image Management and Dissemination – Best Practices for Storing, Managing, and Disseminating Imagery to a Wide Range of Applications	101 B	
8:00 AM to 12:00 Noon	User Group — ASD, Inc.	202 D	
8:00 AM to 12:00 Noon	User Group — BAE Systems (GXP)	202 C	
1:00 PM to 5:00 PM	User Group — New Tech Services, Inc.	202 E	
9:00 AM to 10:00 AM	ASPRS Committee Meeting — Division Directors	203 A	
9:00 AM to 10:00 AM	ASPRS Committee Meeting — Committee Chairs	203 B	
10:00 AM to 11:00 AM	ASPRS Committee Meeting — Electronic Communications Committee	203 A	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Photogrammetric Applications Division (PAD)	203 B	
1:00 PM to 2:00 PM	ASPRS Committee Meeting — Memorial Address Committee	203 A	
2:00 PM to 4:00 PM	ASPRS Committee Meeting — Evaluation for Certification Committee	203 B	
4:00 PM to 5:00 PM	ASPRS Committee Meeting — Defense and Intelligence Committee	203 A	
4:00 PM to 5:00 PM	ASPRS Committee Meeting — Region Officers	203 B	
6:30 PM	Student & Young Professionals Event	Offsite	

Registration Desk Open

6:30 AM to 5:00 PM
Mezzanine Level Atrium, near the Hyatt Regency Hotel Skywalk

Continuing Education Credits (CEU's)

ASPRS is pleased to announce that Continuing Education Units (CEUs) are awarded for the ASPRS workshops. This program is being offered in conjunction with George Mason University.

The Continuing Education Unit (CEU) is a nationally recognized unit of measurement for participation in non-credit continuing education programs. Adults who successfully complete George Mason University's approved programs will be awarded continuing education units. A permanent record of CEUs awarded will be maintained in the university database and will be easily accessible for certification and verification purposes.

The objective of the CEU is to:

- Provide a nationally established record of professional development learning activity
- Encourage adult students to utilize educational resources to meet their personal and educational needs
- Recognize individuals who continue their education and keep themselves current in their chosen professions
- Enable individuals to have an accurate source of their current CEU activity
- Provide a system to document continuing education experiences in meeting certification requirements.

NATIONAL REGISTRY OF CPE SPONSORS

George Mason University, Office of Continuing Professional Education is registered with the National Association of State Boards of Accountancy (NASBA), as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credit.

Workshops

Workshop #2

Professional Airborne Digital Mapping Systems – An Overview

Dave Fuhr, *Airborne Data Systems*
7:45 AM to 5:15 PM, CEU .8, Room: 102 AB

The primary objective of this tutorial is to review professional airborne digital mapping camera systems. We will discuss all advantages and disadvantages of these new, dynamic systems - technical, costs, feasibility, calibration and applications. Participants will leave with a better understanding of what it takes to map their projects by either contracting or acquiring airborne digital mapping camera systems.

Workshop #3

Introductory Digital Image Enhancement

Dr. Larry Fox, *Humboldt State University*
7:45 AM to 5:15 PM, CEU .8, Room: 201 B

This full-day, introductory workshop addressing digital image enhancement will incorporate presentations of fundamental concepts and hands-on exercises exploring methods and techniques. Participants will understand the basic measures of image quality, the fundamental concepts of image interpretability and gain skill in manipulating image parameters both globally and locally, to improve the quality of digital images. Participants will also gain understanding of image transformation methods and results. We will focus on two-dimensional, multispectral images with some extension to pseudo-color renditions of three-dimensional data clouds produced by lidar systems. We begin with the histogram as a measure of global radiometric condition and continue with manipulation of the histogram to enhance image contrast and brightness. Numerous ramping functions will be discussed including the min-max, standard deviation, and equalized histogram stretches. Presentation of concepts will be followed by hands-on image enhancement exercises using a free software package available from the internet. (Participants must bring a laptop to the workshop, preloaded with the software and images to be used for the exercises, detailed instructions to be made available to each participant before the conference). Single band global enhancement will be followed by multiband enhancement including tristimulus color theory and various assignments of spectral bands to the additive primary colors: red, green and blue. We will then address edge enhancements and edge detection with spatial filters including image smoothing. Finally we will explore image transforms including principal components, tasseled cap, de-correlation, IHS and various indices including NDVI. The topic of transforms will not include hands-on exercises due to the limitation of free software used for this workshop.

Workshop #4

Looking Above the Terrain: Lidar for Vegetation Assessment

Dr. Sorin C. Popescu, *Texas A&M University*
7:45 AM to 12:15 PM, CEU .4, Room: 101 A

The participants are expected to have a basic understanding of remote sensing techniques and image processing. The overall goal of this half-day workshop is to introduce participants to lidar concepts, processing techniques, and applications for deriving information on forest vegetation resources and canopy parameters. More specific objectives are to: (1) familiarize participants with basic laser ranging concepts and lidar data structure; (2) introduce types of lidar sensors for forest vegetation assessment – discrete-return, waveform encoding, flash lidar, etc., on ground-based, airborne, and satellite platforms; (3) the LAS lidar data format; (4) review algorithms for deriving information on terrain elevation and canopy height models; (5) introduce the concept of "multi-band" lidar height bins generated using lidar point cloud data; (6) review processing techniques for analyzing forest structure and deriving vegetation information at individual tree, plot, and stand level; (7) introduce participants to TreeVaW, a lidar processing software for identifying and measuring individual trees on lidar-derived canopy height models, and other software resources; and (8) present a comparison of forest structure metrics obtained by processing ICESat waveform data and spatially coincident discrete-return airborne lidar and ground-based laser scanner data of forest vegetation.

DACUM Job Analysis Workshop

8:00 AM to 4:30 PM, Room: 201 D

In association with ASPRS, the National Geospatial Technology Center is holding a Job Analysis panel for Remote Sensing Technicians on Sunday and Monday, May 1 & 2 prior to the Conference. Participation in the study has been pre-determined and is not open to the public.

Results will be reported at a Special Session entitled "Geospatial Workforce Needs Coming into Focus". This Special Session will be taking place on Thursday, May 5th from 9 am until 10:30 am in room 202 C. Findings will also be used by the GeoTech Center to help develop and update college and university introductory GIS and Remote Sensing curriculum.

Participants must be pre-registered and approved by DACUM to attend this workshop.

Workshop #6

Making SAR Accessible

Don Atwood, PhD, Chief Scientist, A*laska Satellite Facility, University of Alaska Fairbanks*
12:45 PM to 5:15 PM, CEU .4, Room: 101 A

This course will introduce Remote Sensing professionals to Synthetic Aperture Radar (SAR). At the conclusion of the course, the student will understand the fundamentals of SAR as well as how SAR data is acquired, processed, and used in a wide variety of scientific applications. Historically, SAR data has been used by a small group of experts, with specialized knowledge and processing tools. However, as more commercial sensors become available, there is an increasing demand to use SAR as a complementary data source for remote sensing and GIS applications. This short course will enable the student to process SAR data into terrain-corrected, geocoded images that can be combined with other kinds of sensor data. The fundamental concepts introduced will be reinforced through practical demonstrations and exercises. Lastly, the students will learn how data can be acquired in support of their own projects.

Workshop #7

Image Management and Dissemination – Best Practices for Storing, Managing, and Disseminating Imagery to a Wide Range of Applications

Peter Becker, *ESRI*
Steven Lambert, *ESRI*
12:45 PM to 5:15 PM, CEU .4, Room: 101 B

This workshop will review recommended methodologies for storing and managing imagery, metadata and processing parameters associated with the imagery. Different workflows for processing imagery and elevation data into multiple products and disseminating them to a wide range of applications will be covered. Methods for integrating photogrammetric and remote sensing project data with GIS systems will be reviewed so that participants can quickly implement them to obtain higher efficiencies. Most of the examples shown will make use of ArcGIS.

User Groups

ASD, Inc.
8:00 AM to 12:00 Noon, Room: 202 D

Learn how hyperspectral measurements can help solve your most challenging environmental measurement problems at the ASD User Group. Come by to discuss your applications, get an up-close view of the industry-standard FieldSpec 3 and the recently introduced FieldSpec HandHeld2, and talk with an ASD product expert. The FieldSpec® line of spectroradiometers is unparalleled in providing high-quality field results. ASD is the top choice for remote sensing and environmental sciences researchers. ASD Inc. • 303-444-6522 • 303-444-6825 (fax) • www.asdi.com.

BAE Systems (GXP)
8:00 AM to 12:00 Noon, Room: 202 C

BAE Systems welcomes SOCET SET® and SOCET GXP® users. SOCET GXP v3.2 implements the highly anticipated Advanced-Frame sensor model — with streamlined setup, processing, and no project file required. Images are read using the preferred coordinate system. Additional demonstrations include the new GXP Xplorer™ enterprise data management system with federated search and collaboration capabilities; video dashboard and editor; and enhanced visualization functionality: Height Measurement tool, Grid Reference graphic, and Simple Building tool for 3-D visualization.

New Tech Services, Inc.
1:00 PM to 5:00 PM, Room: 202 E

New Tech Services, Inc. specializes in the Sales, Service and Support of pre-owned Aerial Survey/Mapping equipment and markets a powerful, stand-alone 3D Flight Planning tool to calculate the amount of images needed anywhere in the world, accurately and cost efficient, streamlined with emphasis on Quality Control. All data can be exported to most Flight Management Systems. TopoFlight Navigator and WebViewer are new Products. Visit: www.nts-info.com and www.TopoFlight.com for more info. Please contact: nts@nts-info.com 1-281-573-8029. Llámenos, hablamos español!

ASPRS Committee and Board of Directors Meetings

Division Directors
9:00 AM to 10:00 AM, Room: 203 A

Committee Chairs
9:00 AM to 10:00 AM, Room: 203 B

Electronic Communications Committee
10:00 AM to 11:00 AM, Room: 203 A

Photogrammetric Applications Division (PAD)
11:00 AM to 12:00 Noon, Room: 203 B

Evaluation for Certification Committee
2:00 PM to 4:00 PM, Room: 203 B

Defense and Intelligence Committee
4:00 PM to 5:00 PM, Room: 203 A

Region Officers
4:00 PM to 5:00 PM, Room: 203 B

Student & Young Professionals Event
Courtesy of the ASPRS Student Advisory Committee (SAC)

Once you have arrived and found your accommodation we can start exploring Milwaukee together. We will meet in the lobby of the Hyatt Regency Milwaukee Hotel at 6:30 pm and walk straight to the nearby **Rock Bottom Restaurant and Brewery**. This is a good place to start the week by getting to know first time student and young professional attendees as well as remembering some of the good times we shared at previous ASPRS conferences. For those wanting to stay out later and experience a more modern Milwaukee downtown nightspot, **Zenden Bar and Lounge** is minutes away.

Time	Event	Room	Attending
6:30 AM to 5:00 PM	Registration Desk Open	Mezzanine Level Atrium	
7:45 AM to 5:15 PM	Workshop #8 — State-of-the-Art Automated Linear Feature Extraction for a Production Environment	101 D	
7:45 AM to 5:15 PM	Workshop #9 — Object-Based Image Analysis	102 AB	
7:45 AM to 5:15 PM	Workshop #10 — Airborne GPS and Inertia in Support of Triangulation and Orientation of Airborne Framing and Pushbroom Sensors	201 B	
7:45 AM to 12:15 PM	Workshop #12 — Lidar Waveform: The Potential and Benefits for Topographic Mapping	101 B	
8:00 AM to 4:30 PM	DACUM Job Analysis Workshop	201 D	
12:45 PM to 5:15 PM	Workshop #13 — Using International Charter Satellites for Emergency Response	101 A	
12:45 PM to 5:15 PM	Workshop #14 — Field Data Collection for the Development of Remote Sensing Ground-Truth	101 B	
8:00 AM to 5:00 PM	Classified Session — Activity-Based GEOINT	Offsite	
8:00 AM to 12:00 Noon	User Group — Esri	202 C	
8:00 AM to 12:00 Noon	User Group — Optech	202 B	
8:00 AM to 12:00 Noon	User Group — Topcon	202 A	
8:00 AM to 12:00 Noon	User Group — ERDAS	202 E	
8:00 AM to 12:00 Noon	User Group — LizardTech	202 D	
12:00 Noon to 1:00 PM	Student & Young Professionals Event — Student and Employer “Meet and Greet”	201 A	
1:00 PM to 5:00 PM	User Group — PCI Geomatics	202 D	
1:00 PM to 5:00 PM	User Group — ENVI	202 A	
1:00 PM to 5:00 PM	User Group — Microsoft	202 E	
1:00 PM to 5:00 PM	User Group — GeoCue/QCoherent	202 B	
9:00 AM to 10:00 AM	ASPRS Committee Meeting — Data Preservation & Archive Committee	203 A	
9:00 AM to 10:00 AM	ASPRS Board of Directors Meeting — New Board Members Orientation	203 B	
9:00 AM to 11:00 AM	ASPRS Committee Meeting — Education & Professional Development Committee	203 D	
10:00 AM to 12:00 Noon	ASPRS Committee Meeting — Journal Policy & Publications Committees (Joint Meeting)	203 B	
10:00 AM to 12:00 Noon	ASPRS Committee Meeting — Awards Committee	203 A	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Photogrammetric Applications Division (PAD) Mobile Mapping Systems	203 D	
1:00 PM to 2:00 PM	ASPRS Committee Meeting — Standards Committee	203 A	
2:00 PM to 3:00 PM	ASPRS Committee Meeting — Photogrammetric Applications Division (PAD) Lidar Subcommittee	203 B	
2:00 PM to 3:00 PM	ASPRS Committee Meeting — Membership Committee	203 A	
3:00 PM to 4:00 PM	ASPRS Committee Meeting — Professional Practice Division (PPD)	203 A	
3:00 PM to 4:00 PM	ASPRS Committee Meeting — Photogrammetric Applications Division (PAD) Transportation Surveys Subcommittee	203 D	
3:00 PM to 5:00 PM	ASPRS Committee Meeting — Convention Policy & Planning Committee	203 B	
5:00 PM to 6:00 PM	ASPRS Committee Meeting — By-Laws Committee	203 B	
5:00 PM to 6:00 PM	ASPRS Committee Meeting — Division Directors	203 A	
5:15 PM to 5:45 PM	Student & Young Professionals Event — Speed Networking	Street Level Atrium	
5:45 PM to 6:45 PM	Student & Young Professionals Event — The Student Advisory Council Meeting	203 D	
6:00 PM to 11:00 PM	ASPRS Western Great Lakes Region Reception	Offsite	

Registration Desk Open

6:30 AM to 5:00 PM
Mezzanine Level Atrium, near the Hyatt Regency Hotel Skywalk

Workshops

Workshop #8

State-of-the-Art Automated Linear Feature Extraction for a Production Environment

Dr. Raad Saleh, *Global Sensing Group*
Dr. Maha Jaafar, *ZMD America, Inc.*
7:45 AM to 5:15 PM, CEU .8, Room: 101 D

From a production point of view, the premise of advanced automated extraction of linear features, such as roads and transmission lines, is that automation would yield substantial savings in labor cost of skilled, and often expensive, human operators. There is a number and fairly distinct approaches of how to automate the extraction of linear features to attain a "production-viable" solution. Unlike the case with surface extraction, automation of linear feature extraction is an ill-defined problem, thus requires more understanding of the underlying theoretical impediments to ensure its cost effectiveness.

The goal of this workshop is to examine the above arguments through an intensive overview of the various approaches in the theory and conceptual design of automated extraction of linear features for mapping purposes. In addition, the workshop would examine user requirement and specification of deliverables; state-of-the-art extraction tools; derivative products from aerial and satellite imagery; throughput variables; current challenges, and pending breakthroughs.

The Intended Audience: Those service companies involved in producing linear feature maps, such as road networks; also, mapping professionals, cartographers, map production professionals, photogrammetrists, production managers, and decision-makers interested in cost-effectiveness and high performance through reliable automation.

Workshop #9

Object-Based Image Analysis

Jarlath O'Neil-Dunne, *University of Vermont*
Keith Pelletier, *University of Vermont*
7:45 AM to 5:15 PM, CEU .8, Room: 102 AB

This full-day, advanced workshop is designed to help participants harness the true power of object-based image analysis (OBIA). It is recommended that participants have a strong foundation in remote sensing and GIS, and at least some exposure to OBIA. This workshop is particularly well suited to individuals who are finding it difficult to extract information from the latest generation of high-resolution imaging and lidar sensors using OBIA techniques. Specific emphasis in this workshop will be paid to moving beyond the standard "segment and classify" approach that is typically employed in most OBIA projects, to an iterative workflow that better mimics the type of mapping carried out by human analysts by fully incorporating the spectral, geometric, and contextual information present in an image. Through a series of lectures, demonstrations, and hands-on exercises, participants will be exposed to the methods that will enable them to build effective and efficient OBIA routines.

The workshop will be divided into four parts. In the first part, the theoretical foundation for the effective application of OBIA technology will be laid out by drawing from the remote sensing, neurobiology, and cognitive sciences literature. This will be followed by a review of the current approaches to OBIA, with particular attention to some of the pitfalls that often prevent OBIA technology from being applied to its full potential. The second part will focus on effective approaches to and best practices for object-based feature extraction, including a thorough review of segmentation algorithms. The third part will cover more advanced topics, including: 1) image object fusion, 2) pattern recognition, 3) morphological routines, and 4) context-based classification. The workshop will conclude with recommendations on how to design and deploy enterprise OBIA systems capable of processing datasets containing billions of pixels.

Demonstrations and exercises will make use of a broad range of remotely sensed (e.g., imagery and lidar) datasets and a particular focus in the exercises will be integrating remotely sensed and thematic datasets in an OBIA context. Participants are encouraged to bring their own computers to use during the hands-on exercises. OBIA software will be provided (requires Windows XP, Vista, or 7).

Workshop #10

Airborne GPS and Inertia in Support of Triangulation and Orientation of Airborne Framing and Pushbroom Sensors

Dr. Qassim Abdullah, *Fugro EarthData Inc.*
Dr. Riadh Munjy, *California State University - Fresno*
7:45 AM to 5:15 PM, CEU .8, Room: 201 B

Workshop #12

Lidar Waveform: The Potential and Benefits for Topographic Mapping

Charles K. Toth, PhD, *Center for Mapping, The Ohio State University*
Nora Csanyi May, PhD, *Fugro EarthData, Inc.*
7:45 AM to 12:15 PM, CEU .4, Room: 101 B

Intended audience — In general, people involved in all aspects of lidar. The proposed workshop is primarily beneficial to lidar data providers, both who have already started to look into full waveform applications or those who are just about to explore this emerging technology. In addition, government program managers and decision-makers should also find this workshop valuable.

This workshop will provide an introduction to lidar waveform data concepts and processing. Participants are expected to have basic understanding of lidar technology.

DACUM Job Analysis Workshop

8:00 AM to 4:30 PM, Room: 201 D

In association with ASPRS, the National Geospatial Technology Center is holding a Job Analysis panel for Remote Sensing Technicians on Sunday and Monday, May 1 & 2 prior to the Conference. Participation in the study has been pre-determined and is not open to the public.

Results will be reported at a Special Session entitled "Geospatial Workforce Needs Coming into Focus". This Special Session will be taking place on Thursday, May 5th from 9 am until 10:30 am in room 202 C. Findings will also be used by the GeoTech Center to help develop and update college and university introductory GIS and Remote Sensing curriculum.

Participants must be pre-registered and approved by DACUM to attend this workshop.

Workshop #13

Using International Charter Satellites for Emergency Response

Brenda K. Jones, Disaster Response Coordinator, *U.S. Geological Survey EROS Center*
12:45 PM to 5:15 PM, CEU .4, Room: 101 A

This four hour short course will provide an overview of US and international satellites that are accessible through the International Charter Space and Major Disasters. It will focus on their characteristics in relationship to their use during emergency response. Accessibility, licensing, orbit cycles, sensor types, and coverage footprints will be covered along with scenarios for information extraction during different types of emergencies. There will also be a discussion on best available vector layers and routine products that can be generated based on the type of event. This is a newly developed introductory level workshop.

ASPRS Western Great Lakes Region Reception

6:00 PM to 11:00 PM

Come out to the new Harley-Davidson Museum, within walking distance from the convention center, for an unforgettable experience and a glimpse into a life less ordinary! This unique social will be a great place to unwind from workshops and travelling to get ready for the coming week. Dress code: black leather motorcycle vests!

Early Registration is suggested and available online at www.regonline.com/asprswgl. Registration is also available at the door for $45 and $25 for students.

Join the ASPRS Western Great Lakes Region as we welcome all conference attendees in true Milwaukee style.

Workshop #14

Field Data Collection for the Development of Remote Sensing Ground-Truth

Kenneth Stumpf, Director, *Remote Sensing Applications, Geographic Resource Solutions*
Christopher Stumpf, Field Botanist, *Geographic Resource Solutions*
12:45 PM to 5:15 PM, CEU .4, Room: 101 B

This workshop is designed to take the participant through a review of data collection methodologies, definitions, and pro and cons of different methodologies designed to assist the participant in designing and/or selecting the most appropriate reference data collection processes to suit their particular information needs, whether related to field training or accuracy assessment sites.

Methodologies presented will include ocular estimates, fixed area sampling, transect sampling, point sampling, and combinations of these approaches. The concepts of cover, closure, and frequency will be discussed. Techniques used to develop estimates of canopy cover and/or closure, trees per acre, quadratic mean diameter, average crown diameter, canopy structure, and species composition will be included. The estimation of categorical estimates will also be addressed, as well as discussion of potential bias and cost.

Examples from recent projects will be used to illustrate field data collection principles and the nature of information that can be developed from an integrated sample design to accurately assess the multitude of different features that may be sampled at any given site that includes trees, shrubs, herbaceous plants, non-vascular plants, ground surface condition, woody debris, snags, trace elements and other features.

Audience:

- Remote sensing project managers and analysts
- Land resource managers, scientists,
- Others involved in Inventory, Monitoring, or Mapping projects interested in development of accurate land cover data that can be used to assess and describe ecosystem characteristics for either training or accuracy assessment.

Classified Session — Activity-Based GEOINT

8:00 AM to 5:00 PM

Activity-Based GEOINT focuses on capturing activities as they occur and, based on understanding of patterns of life, analyzing those activities to determine normal from abnormal, to determine relationships, to discover networks, and to project and forecast in support of Anticipatory Intelligence Analysis.

Location: FBI Building, 330 East Kilbourn Ave, Milwaukee, Wisconsin (Just across the street from the convention center to the east in the Blue Federal Building.)

User Groups

Esri

8:00 AM to 12:00 Noon, Room: 202 C

The Esri User Group meeting at the ASPRS 2011 Annual Conference is a gathering of ArcGIS users interested in best practices for remotely sensed data, imagery and GIS. Highlights will include presentations on the future direction of the ArcGIS platform for GIS, imagery and remote sensing. The meeting will include presentations and demonstrations of ArcGIS solutions working different with a range of different data and leave time for user questions and answers.

To learn more about Esri's solutions for management, dissemination, visualization, and analysis of all forms of geospatial data and imagery, visit www.esri.com/imagery.

Optech

8:00 AM to 12:00 Noon, Room: 202 B

Integrating Lidar and Digital Camera Sensors: The Total Solution

This session will provide information on Optech's mission to provide the best digital camera options and support for integrated lidar-camera systems. Learn about Optech's complete camera product line, from large- and medium-format, patented True Forward Motion Compensation, electro-optical, infrared, multispectral systems to ruggedized, high-precision metric imaging systems. Discussions on the integration of lidar sensors and aerial cameras, and the advantages of using high-quality camera imagery to support lidar data, will directly benefit end-users. Please join us to see what's on the horizon in imaging technology at Optech.

Topcon

8:00 AM to 12:00 Noon, Room: 202 A

Gaining a Unique Edge with Topcon 3D Mobile Mapping

In today's economy it is imperative to discover ways to do more with less. The need for accurate and expansive mapping data has never been more important as it can lead to increased efficiencies. Come explore how Topcon 3D mobile mapping systems give users a needed edge by integrating LiDar with 360º color images. This unique integration allows for virtual mapping; a new paradigm enabling data mining and productivity increases never imagined before.

ERDAS
8:00 AM to 12:00 Noon, Room: 202 E

Together, Leica Geosystems, Z/I Imaging, ERDAS and Intergraph provide leading hardware and software tools to support the complete geospatial information lifecycle - accurately capturing high-quality imagery, providing photogrammetry and remote sensing data analysis, and managing and delivering data to transform vector, raster and terrain information into fully integrated geospatial solutions.

Leica Geosystems, Z/I Imaging, ERDAS and Intergraph are wholly owned subsidiaries of Hexagon AB, a leading global provider of precision measurement technology.

LizardTech
8:00 AM to 12:00 Noon, Room: 202 D

Join Robert Parker, LizardTech's sales engineer, in this presentation for an opportunity to learn about the ease of using LizardTech's products to compress, distribute and manipulate multispectral, hyperspectral and lidar datasets, as well as traditional RGB and grayscale imagery. You will walk away from this presentation knowing how to compress, reproject, color balance, and export your imagery for rapid delivery over the web.

PCI Geomatics
1:00 PM to 5:00 PM, Room: 202 D

High Speed Image Processing for Aerial and Satellite Imagery

Join PCI Geomatics and learn how the GeoImaging Accelerator Aerial (GXL-A) and Satellite (GXL-S) can shorten your project times from days to hours. The GXL-A is a best of breed processing system created specifically for Vexcel Imaging's UltraCam aerial cameras & UltraMap photogrammetric software and completes the UltraMap workflow with the addition of high-speed orthorectification & mosaicking capabilities. The GXL-S system also provides high speed ortho and mosaicking capabilities for commonly used sensors such as Quickbird, Worldview, GeoEye, Rapideye, and more. Using GXL's multi CPU/GPU distributed processing architecture, significant improvements in production throughputs are realized.

ENVI
1:00 PM to 5:00 PM, Room: 202 A

The ENVI® User Group is a chance for you to see the latest trends in user applications with ENVI. Learn about the latest new features in ENVI including easy to use workflows, a fully integrated ArcGIS® Toolbox, and new deployment methods for ENVI in enterprise environments. ENVI experts will also showcase new tools for SAR processing, lidar visualization, viewshed analysis, and additional hyperspectral tools.

Microsoft
1:00 PM to 5:00 PM, Room: 202 E

Join the technical experts and business leaders from Microsoft's photogrammetry division, Vexcel Imaging GmbH, along with business partners in this half day presentation for an opportunity to learn firsthand about the company's latest aerial mapping sensor and software product advancements as well as the latest business developments. Prizes will be raffled, refreshments will be served, and seating will be limited so be sure to arrive early.

GeoCue/QCoherent
1:00 PM to 5:00 PM, Room: 202 B

Please join us for the first combined GeoCue, QCoherent User Group Meeting. During this session, we will not only update you on the latest GeoCue workflow integration solutions but also provide a first look at lidar Production tools. These tools range from initial data processing through data dissemination and on to exploitation in an ArcGIS environment. In addition to updates on GeoCue and LP360, we will have a special focus on the complete integration of lidar data management from processing through distribution to end users via web tools.

Monday, May 2nd

ASPRS Committee and Board of Directors Meetings

Data Preservation & Archive Committee
9:00 AM to 10:00 AM, Room: 203 A

New Board Members Orientation
9:00 AM to 10:00 AM, Room: 203 B

Education & Professional Development Committee
9:00 AM to 11:00 AM, Room: 203 D

Journal Policy & Publications Committees (Joint Meeting)
10:00 AM to 12:00 Noon, Room: 203 B

Awards Committee
10:00 AM to 12:00 Noon, Room: 203 A

Photogrammetric Applications Division (PAD)
Mobile Mapping Systems
11:00 AM to 12:00 Noon, Room: 203 D

Standards Committee
1:00 PM to 2:00 PM, Room: 203 A

Photogrammetric Applications Division (PAD)
Lidar Subcommittee
2:00 PM to 3:00 PM, Room: 203 B

Membership Committee
2:00 PM to 3:00 PM, Room: 203 A

Professional Practice Division (PPD)
3:00 PM to 4:00 PM, Room: 203 A

Photogrammetric Applications Division (PAD) Transportation Surveys Subcommittee
3:00 PM to 4:00 PM, Room: 203 D

Convention Policy & Planning Committee
3:00 PM to 5:00 PM, Room: 203 B

By-Laws Committee
5:00 PM to 6:00 PM, Room: 203 B

Division Directors
5:00 PM to 6:00 PM, Room: 203 A

Student Advisory Council
5:45 PM to 6:45 PM, Room: 203 D

Student & Young Professionals Events

Monday is just packed with activities for students. Don't forget to attend the Student and Employer "Meet and Greet" (see below). Last year this event was packed! It is an excellent opportunity to meet your potential employer or just to find out what the job situation is in the geospatial market. Later in the afternoon don't miss out on the fun at the Speed Networking event from 5:15 pm to 5:45 pm, followed by The Student Advisory Council Meeting from 5:45 pm to 6:45 pm. The Student Advisory Council Meeting is a place where you can come and let your voice be heard and give any suggestions, concerns and questions you might have about your place in ASPRS. Afterwards we will meet in the hotel lobby at 7:30 pm and head toward **Cubanitas**. After enjoying some Cuban specialties we can go to **Taylors**, an upscale trendy bar where you will have a chance to meet some of the local folks.

Student and Employer "Meet and Greet"
12:00 Noon to 1:00 PM, Room: 201 A

This meet and greet is designed to connect members looking to apply for jobs in the digital mapping industry and employers looking to hire. Bring your resume, a business card, or just a smile and a handshake, and expand your job network at the conference.

ASPRS has been kind enough to set up an official interview room for this conference, so use this meet and greet to determine if you should sign up for an interview slot.

Speed Networking
5:15 PM to 5:45 PM, Room: Street Level Atrium, near 101 rooms

Whether this is your first ASPRS Conference or you have attended previous conferences, you are invited to join other students and young professionals from all over the world at this special event designed just for you! You've heard of Speed Dating, but now we're offering, Speed Networking. You will get to meet at least seven new people who may become your friends for the conference or the rest of your life.

Make time for this Fun Event!

The Student Advisory Council Meeting
5:45 PM to 6:45 PM, Room: 203 D

Get together with the other Students and Associate members of ASPRS and learn what the SAC has been working on and what is planned for the coming week. They would love to meet you and hear any ideas you may have about making ASPRS a great place for students. All are welcome to attend.

ASPRS Western Great Lakes Region Reception
6:00 PM to 11:00 PM, Harley-Davidson Museum

Time	Event	Room	Attending
7:00 AM to 5:45 PM	Registration Desk Open	Mezzanine Level Atrium	
7:00 AM to 7:00 PM	Posters Open	301 C	
8:00 AM to 9:15 AM	Technical Program — Keynote Address	104 D	
8:00 AM to 5:00 PM	Career Interview Room Open	201 D	
9:30 AM to 11:00 AM	Technical Sessions — 1 to 11	varies, see description	
9:30 AM to 11:00 AM	Poster Presentation I	203 A	
10:00 AM to 7:00 PM	Exhibit Hall Opens	Exhibit Hall 301 C	
11:15 AM to 12:15 PM	Hot Topics	varies, see description	
12:15 PM to 1:30 PM	22nd Annual Awards Luncheon & 77th Installation of ASPRS Officers	Ballroom 104 D	
1:30 PM to 3:00 PM	Technical Sessions — 12 to 21	varies, see description	
1:30 PM to 3:00 PM	Poster Presentation II	203 A	
2:30 PM to 3:30 PM	Student & Young Professionals Event — Exhibit Hall Guided Tour for Students	Exhibit Hall 301 C	
3:30 PM to 5:00 PM	Technical Sessions — 22 to 30	varies, see description	
3:30 PM to 5:00 PM	Poster Presentation III	203 A	
5:30 PM to 7:00 PM	Exhibitors' Welcome Reception	Exhibit Hall 301 C	
7:00 PM	Espionage for a Great Cause	Offsite	

The National Geospatial-Intelligence Agency (NGA) has organized a special unclassified track to run on Tuesday and Wednesday during the technical sessions. There are four special sessions, each followed by an open discussion session, in order for NGA to get important information and feedback from attendees. Those attendees interested in participating are encouraged to attend.

Registration Desk Open
7:00 AM to 5:45 PM
Mezzanine Level Atrium, near the Hyatt Regency Hotel Skywalk

Posters Open
7:00 AM to 7:00 PM, Room: Exhibit Hall 301 C

Technical Program — Keynote Address
8:00 AM to 9:15 AM, Ballroom 104 D

Mayoral Welcome
Milwaukee Mayor Tom Barrett

PBS Premier of "The Geospatial Revolution"

ASPRS will premiere Episode 4 of the Geospatial Revolution film by Penn State Public Broadcasting. The episode explores our interconnected planet, Map Kibera, disease tracking, and the benefits and challenges of using predictive technologies for cultural, agricultural, and environmental issues.

The Open Source Geospatial Revolution

Paul Ramsey is the co-founder and visionary behind the open source spatial database system called PostGIS. PostGIS is used around the world for business, government and academia. Paul is also a member of the Open Source Geospatial Foundation.

The concept of *Open Source* and free sharing of technological information existed long before computers. *Open Source* can pertain to businesses as well as to computers, software and technology. Early instances of open source and free software include IBM's source releases of its operating systems and other programs in the 1950s and 1960s to facilitate the growth of software development. Today, Google and Amazon run on open source. At this conference, you will see the National Geospatial-intelligence Agency leading a session on open source motion imagery.

Paul's talk will cover open source technologies available for remote sensing and geospatial organizations including approaches for adoption and implementation. Come with an open mind and get ready to lead the next geospatial revolution.

Awards Presentations
Honorary Members
Photogrammetric (Fairchild) Award
Robert N. Colwell Memorial Fellowship

Career Interview Room Open

8:00 AM to 5:00 PM, Room: 201 D

Prospective employers may use this room to conduct onsite interviews. Please reserve a timeslot through the sign-in sheet posted outside the room.

Technical Program

9:30 AM to 11:00 AM

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Hyperspectral and Photogrammetric Data

Moderator: Aaron Swanson, *Northrop Grumman Aerospace Systems*

Room: 201 A

Investigating the Utility of Wavelet Transforms for Inverting a 3-D Radiative Transfer Model using Airborne Hyperspectral Data to Retrieve Forest LAI

Asim Banskota, *Virginia Tech*

Randolph Wynne, Valerie Thomas, Jean Philippe Gastellu-Etchegorry, Shawn Serbin, and Philip Townsend

Description of the Second Generation Hyperspectral Airborne Terrestrial Imager (HATI)

Aaron Swanson, *Northrop Grumman Aerospace Systems*

Stephanie Sandor-Leahey, Miguel Figuroa, and Mark Folkman

Photogrammetric Triangulation of 3D Cubic Splines

Keith Blonquist, *Lidar Pacific Corporation*

Robert T. Pack

Automatic Aerial Triangulation of Vertical and Oblique Images

Yandong Wang, *Pictometry*

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Using Lidar to Map Features

Moderator: James Young, *Aero-Metric, Inc*.

Room: 201 B

Mapping Solar Potential Obstructions using Lidar Data

Krista Amolins, *University of New Brunswick*, Canada

David Coleman, Yun Zhang, and Peter Dare

Innovation in Lidar Feature Extraction

James Young, *Aero-Metric, Inc.*

Building Footprints Extraction of Dense Residential Area from Lidar Data

KyoHyouk Kim, *Purdue University*

Jie Shan

Building Roof Contour Extraction from Lidar Data

Aluir Dal Poz, *Sao Paulo State University*, Brazil

Edineia Galvanin

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Deriving Tools to Automate Analysis

Moderator: Hongwei Zhu, *ESRI*

Room: 202 B

Automated Image Georeferencing in ArcMap

Hongwei Zhu, *ESRI*

Peng Gao, Xiuguang Zhou, and Qian Liu

On the Utility of Models for Time-sensitive Remote Sensing

Christopher Lippitt, *San Diego State University/UCSB*

An Automated Method to Estimate In-flight Image Quality Parameters from High Spatial Resolution Imagery

Mary Pagnutti, *Innovative Imaging and Research*

Robert Ryan

Automated Object Height Retrieval from Lidar to Develop Complex Urban Scenario

Abduwasit Ghulam, *Saint Louis University*

ASPRS CONFERENCE SCHEDULE

ASPRS 2011 Fall Pecora Conference
Hilton Washington Dulles Airport Hotel
Herndon, Virginia
November 14-17, 2011

ASPRS/MAPPS 2012 Fall Conference
Marriott Tampa Bay Waterside Hotel
Tampa, Florida
October 29-November 1, 2012

ASPRS 2012 Annual Conference
Sacramento Convention Center
Sacramento, California
March 19-23, 2012

ASPRS 2013 Annual Conference
Baltimore Marriott Waterfront Hotel
Baltimore, Maryland
March 25-29, 2013

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Monitoring Forest Conditions

Moderator: Chris Aldridge, *Continental Mapping Consultants, Inc.*
Room: 202 A

Using Object-oriented Classification to Map Forest Community Types
Meghan MacLean, *University of New Hampshire*
Russell Congalton

A Geospatial Assessment of Mountain Pine Beetle Infestations and Their Effect on Forest Health in Okanogan-Wenatchee National Forest
Evan Johnson, *DEVELOP*
Andrew Nguyen, Evan Johnson, Emily Williams, and Stephanie Tsai

Spectral Analysis of Scotch Pine Infested by *Sirex noctilio*
Lindi Quackenbush, *SUNY ESF*
Nishan Bhattarai, Laura Calandra, Jungho Im, and Stephen Teale

Separating the Condition of Mangroves Within a Degraded Forest of the Mexican Pacific using Laboratory Hyperspectral Remote Sensing Techniques
Chunhua Zhang, *East Tennessee State University*
John M .Kovacs, Yali Liu, Francisco Flores-Verdugo, and Francisco Florest-De-Santiago

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Assessing Environmental Dynamics

Moderator: Doug Fuller, *Aero-Metric*
Room: 203 B

Assessing Remotely Sensed Techniques for Measuring Vegetation Phenology
Jonathan Thayn, *Illinois State University*

Vegetation Dynamics and Land Cover Change Trajectories Analysis for Understanding Environmental Implication in Lower Missouri River Area
Yuyan Chen, *St. Louis University*
Abduwasit Ghulam and Ana Londono

Analysis of Mass Balance Change in Imja Glacier of Nepal using Remote Sensing Techniques
Kabindra Joshi, *Mississippi State University*
Shrinidhi Ambinakudige

Assessing Available Woody Plant Biomass on Rangelands with Ground-based Lidar
Nian-Wei Ku, *Texas A&M University*
Sorin Popescu

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Innovative Approaches to DEM & Ortho Production

Moderator: Kerri Crowder, *University of Alaska-Fairbanks*
Room: 203 D

Automated Pattern Recognition of Vector Breeding Areas using Multispectral Imagery
Douglas Olcott, *ISD – GIS*

Imagery Data Management Strategies using Cloud Services
Steven Lambert, *ESRI*

High Performance Computing for Ortho and Mosaic Processes
David Piekny, *PCI Geomatics*

Precise DSM Generation using the GPU
Philippe Simard, *SimActive Inc.*

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Special Session — Natural/Human Responses of Global Climate Change I

Moderator: Cuizhen Wang, *University of Missouri*
Room: 203 C

The Response of Lake Variations to Climate Change in Tibetan Plateau in Last 40 Years
Jingjuan Liao, *Chinese Academy of Sciences*, China
Guozhuang Shen and Huadong Guo

The Effects of Climate Change on Water Level Variations in Tibetan Lakes
Feifei Pan, *University of North Texas*
Yingkui Li and Jingjuan Liao

Estimating Glacier Volume Loss using IKONOS Images and ASTER GDEM Data: A Case Study of Gangotri Glacier in the Himalayas
Pinliang Dong, *University of North Texas*

Surface Area Fluctuations of Major Lakes in Central and Northern Tibetan Plateau from 1972 to 2010 Investigated using Landsat Images
Yingkui Li, *University of Tennessee*
Zewen Liu, Chunhao Zhu, and Jingjuan Liao

MILWAUKEE

Old World Third Street — A few short blocks include the Milwaukee County Historical Center, The Spice House, Milwaukee Boat Line, Vecchio Bar and Grill and famous landmarks Usinger's Sausage and Mader's German Restaurant. Just outside the Hyatt Regency Milwaukee front doors and you are in the heart of history.

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NGA Special Session IA – Open Source Motion Imagery

Moderator: Dr. Young Suk Sull, *NGA*
Room: 202 C

Automated Video Analysis Using Low-Level Motion Tracks
Anil M. Cheriyadat, *ORNL*

A Video Positioning System: Matching Handheld Videos to Google Earth Images
Tony X. Han, *University of Missouri*

Video Synopsis of Persistent Aerial Video
Ryan Desmond, *ITT Geospatial Systems*
Shiloh Dockstader

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Poster Presentation I

9:30 AM to 11:00 AM
Moderator: Mary Balogh, *U.S. Fish & WIldlife Service*
Room: 203 A

NEW for 2011 - Oral Poster Presentation Sessions! In addition to the technical paper presentations, on Tuesday, May 3rd, Poster Presenters will also be discussing their information. Take this opportunity to hear directly from the Poster Presenters in a classroom environment. Hear about the research, development and hard work that each person has done in order to present this year. Poster Presentations are designed to showcase a variety of remote sensing and geospatial applications from around the world. Posters will also be on display from Tuesday, May 3rd at 8:00 AM until Thursday, May 5th at 11:00 AM. Don't miss this wonderful opportunity.

Latest Rover Localization and Topographic Mapping Results for MER 2003 Mission
Xuelian Meng, *The Ohio State University*
Onur Karahayit, Rongxing Li, Wei Wang, Xuelian Meng, Larry Matthies, Raymond Arvidson, Steve Squyres, and the MER Science Team

A Comparative Study of a Proposed Semi-automated Methodology and Community Remote Sensing of the 2010 Haiti Earthquake Damage
Christopher Clasen, *University College London*, England
Tiziana Rossetto and Beverley Adams

Spectral Identification of Wild Rice (*Zizania palustris L.*) using Local Indigenous Knowledge and Satellite Multispectral Imagery
Michael Price, *College of Forestry and Conservation*

Identifying Trees in an Urban Landscape using Small-footprint Discrete-return Imaging Lidar
Randolph H. Wynne, *Virginia Tech*
Rupesh Shrestha

Developing a Suitable Classification Scheme for Plant Communities in Groundwater-dependent Ecosystems, Ashley National Forest, Uinta Mountains, Utah
Michael Hernandez, *Weber State University*
James Arnold, Sonya Welsh, Lee Bartholomew, Richard Ford, Marek Matyjasik, and Darlene Koerner

Multi-temporal Land Cover Classification of the Konya Basin, South-central Turkey, Based on a LANDSAT TM-derived NDVI/ NDMI Time Series
Marc Mayes, *Center for Sustainability and the Global Environment (SAGE), University of Wisconsin-Madison*
Mutlu Ozdogan and Erika Marin-Spiotta

Assessment of Spatial Metrics to Determine Rangeland Degradation
Chandra Holifield Collins, *USDA-ARS*
Rae-Landa Gomez-Pond, Riaz Hedayati, Mark Kautz, and Jeffery Stone

Identification and Mapping Wetland and Riparian Vegetation: Test of Hyperspectral Remote Sensing in Fennessey Ranch, Texas
Tarlan Razzaghi, *University of Nebraska - Lincoln*
Donald Rundquist

Development of a Graphical User Interface for Streambank Delineation using High Resolution Aerial Imagery
Naresh Pai, *University of Arkansas*
Dharmendra Saraswat

Positioning for Next Generation Intelligent Transport Systems Services in SafeTRIP
Arpad Barsi, *BME*
Tamas Lovas, Artur Wieczynski, Maria Baczynska, Arkadiusz Perski, Imre Kertesz, Ashweeni Beeharee, and Attila Berenyi

A Test Result on Positional Accuracy of Kompsat-2 Pan Imagery
Jaehong Oh, *The Ohio State University*
Changno Lee

Exhibit Hall Opens

10:00 AM to 7:00 PM, Exhibit Hall 301 C

Beverage Break

11:00 AM to 11:15 AM, Exhibit Hall 301 C
Sponsored by Aero-Metric, Inc.

aerometric
Geospatial Solutions

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Hot Topics

11:15 AM to 12:15 PM

These one-hour HOT TOPIC discussion groups, hosted by ASPRS Divisions and Committees, are a high point of every conference. This is an opportunity for all attendees to weigh in with their thoughts on the issues being discussed.

Mobile Mapping Committee
Sponsored by PAD
Room: 201 A

This subcommittee of the Photogrammetric Applications Division (PAD) focuses on Mobile Mapping Systems technology and applications. A Mobile Mapping System (MMS) is an integrated system of sensors (e.g. laser scanners, digital cameras, position/orientation resolvers, pavement sensors, ground penetrating radar and so forth) that collect multi-sensor data while the platform (land or water vehicle) is in motion. If you're interested in this topic, come and give your input regarding the application of this growing technology.

Going to the "Mat" over Metadata. FGDC and NAP Metadata Standards, when are they too much or too little?
Sponsored by GISD
Room: 201 B

Writing Metadata is one of the most hated tasks in the geospatial community. Why is it necessary and how much is needed? What format is correct and who says which format is the "standard" for everyone? Bring your thoughts and opinions and come and discuss metadata. It should be a very lively "hot topic".

"3D GIS and the Topology of Time: Sharing Thoughts"
Room: 202 A

3D graphics used in entertainment, architecture, engineering, and molecular biology continues to improve. Visualizing geospatial information with those techniques has similarly advanced our human understanding of all aspects of geography, whether at the city planning or the earth observing levels. Beyond visualization, however, a robust 3D GIS approach, which incorporates both spatial and temporal topology, could enable more reliable, complete, and timely computer-aided analysis in spatial decision-making. Join us to discuss status of any work underway in this promising arena.

Breaking the 85% Barrier
Sponsored by RSAD
Room: 202 B

Despite roughly 35 years of new classification algorithms and improved approaches, it is rare to find statistically valid land cover classification studies with peer-reviewed accuracy estimates that exceed 85%. Join us to discuss the reasons we cannot consistently break the "85% barrier" and discuss potential ways we might do so in the future."

The Future of Sensor Calibration and Quality Assurance
Sponsored by the USGS Remote Sensing Technolgies Project
Room: 202 D

Come and discuss these important questions: Can I still calibrate my film camera? What are the calibration requirements for digital sensors? Are there standard processes for digital imagery evaluation? How can I test and evaluate my sensor? What about elevation data quality?

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NGA Special Session IA — Open Source Motion Imagery

Moderator: Dr. Young Suk Sull, *NGA*, and Dr. Marc Boysworth, *NGA*
11:15 AM to 12:15 PM, Room: 202 C

Open Discussion on this topic from the previous session.

22nd Annual Awards Luncheon & 77th Installation of ASPRS Officers

12:15 PM to 1:30 PM, Ballroom 104 D

Plan to join your colleagues at this year's luncheon to honor current award recipients and participate in the installation of the 77th slate of ASPRS Officers.

The award winners will be given special honor and the annual business meeting of the Society will include installation of the new ASPRS Officers. Carolyn Merry, retiring ASPRS President, will give a summation of the past year's events.

Tickets for this Luncheon are required and are separate from the conference registration. Tickets may be purchased from the Conference Registration Desk, no later than 2:00 PM, Monday, May 2nd.

On site ticket purchases are limited to availability. Limited seating in the rear of the room is available at no cost for conference registrants wishing to attend the ceremonies only.

Technical Sessions

1:30 PM to 3:00 PM

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NGA Special Session IIA - Geospatial Visual Analytics

Moderator: Dr. Ashley Holt, *NGA* and Dr. Beth Sweet, *NGA*
Room: 202 C

Exploring the Human Dimension of Geospatial Intelligence and Terrorism with Geography and Geographic Information Science (GISc)
Richard M. Medina, *ORNL*
George F. Hepner, *University of Utah*

GeoSketch
Tracey Hammond, *Texas A&M University*
Danielle Cummings

Integrated Benthic Habitat Mapping of Buck Island Reef National Monument
Sam Tormey, *NOAA*

Bridging the Semantic Gap Using Evolutionary Computation
Henrique Momm, *University of Mississippi*
Greg Easson

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Special Session – Oil Impact Assessment using Remote Sensing

Moderator: Bruce Davis, *Department of Homeland Security*
Room: 201 B

The Deepwater Horizon oil spill affected a wide range of habitat including open ocean, estuarine areas, beaches, and wetlands. During the response to map and quantify the extent of oil impact a variety of sensor systems were used to investigate these phenomena. This special session will have presentations from teams that acquired data using the ASPECT Thermal Line Scanner, the NASA AVIRIS Imaging Spectrometer, and the NASA UAVSAR L Band Synthetic Aperture RADAR instrument. These presentations will focus on distinct advantages offered by the particular sensor, the mission operation, use by response agencies, and results of data analysis to date.

Surface Oil Detection Using Multiple Wavelengths in the Long Wave Infrared Spectral Region
Robert Kroutil, *EPA ASPECT Program*

High Resolution Imaging for Oil Impact Assessment: The NASA UAVSAR Gulf Oil Spill Campaign
Cathleen Jones, *NASA Jet Propulsion Laboratory*

The Application of Imaging Spectroscopy in Response to the Gulf Oil Spill: Results from the NASA AVIRIS Sensor Team
Susan Ustin, *University of California Davis Center for Spatial Technologies and Remote Sensing*

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Topics in Digital Photogrammetric Technologies

Moderator: Sally Gehr, *Aero-Metric*
Room: 202 E

3D Images and Their Applications
Zheng Wang, *Global Geospatial Technologies, LLC*

Wide Coverage in High Resolution - Considerations, Applications and Case Studies
Erez Shor, *VisionMap*

Digital Photogrammetry Grid — DPGrid and its Application
Jianqing Zhang, *Wuhan University*, China
Zuxun Zhang, Yongjun Zhang, Yansong Duan, and Tao Ke

Reliable 3D Topographic Mapping using Unmanned Ariel Vehicle (UAV) Systems
Ahmed Elaksher, *St. Cloud State University*
Chunsun Zhang

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Lidar Data Specifications and Product Characterizations

Moderator: Barry Budzowski, *Wilson & Company*
Room: 202 B

The Role of Surface Complexity in Airborne Lidar Product Error Characterization
Charles Toth, *The Ohio State University*

Lidar Density and Spacing Specification
Michael Naus, *Fugro Horizons Inc.*

Verification Technologies for Co-collected Lidar and Orthophoto Products
Charles O'Hara, *Spatial Information Solutions*
Karen Schuckman, Rodrigo Nobrega, Bijay Shrestha, Bobby Tuck, and Matt Doty

A Comparison of Laser Scanners for Mobile Mapping Applications
Craig Glennie, *The University of Houston*
Jerry Dueitt

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Satellite Data Collection and Calibration

Moderator: Chris Gross, *Continental Mapping Consultants*
Room: 202 D

The Monoscopic and Stereo Geolocation Accuracy of the DigitalGlobe Satellite Constellation
Byron Smiley, *DigitalGlobe*

Radiometric Calibration of GeoEye-1
Phillip Downen, *GeoEye, Inc.*
Nancy Podger

Modeling the Optimal Remote Sensing Satellite Collection Opportunities for Large Disaster Areas
Shufan Liu, *University of South Carolina*
Michael E. Hodgson

An Accuracy Study on Airborne Lidar for DoT Aapplications
John Schmitt, *BAE Systems*
Ricardo Passini

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Advanced Remote Sensing Techniques and Analysis I

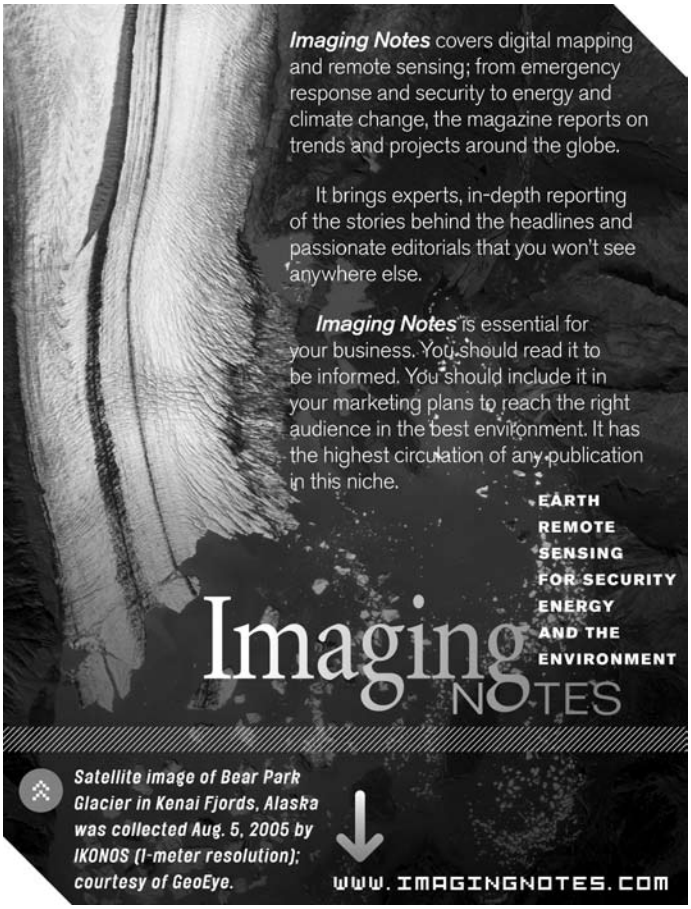
Moderator: Meghan MacLean, *University of New Hampshire*
Room: 203 D

An Assessment of Lidar Data for Enhancing Automated Land Cover Classifications using Aerial Photographs for Pool 5 of the Upper Mississippi River
Cynthia Berlin, *University of Wisconsin - La Crosse*
Jennifer Dieck

Application of Logistic Regression Modeling to Validate and Enhance Invasive Species Detection in Remote Sensing
Jason Tallant, *Eastern Michigan University*
William Welsh

NASA Ames Research Center Climate Change Effects and Adaptation Research: Hind- and Forecasting Flood Risk of NASA Ames Research Center using the Basins Model
Ariana Gonzales, *DEVELOP*

Object-based Land Cover Classification of Urban Areas using VHR Imagery and Photogrammetrically Derived DSM
Bahram Salehi, *University of New Brunswick*, Canada
Yun Zhang and Ming Zhong



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Remote Sensing Applications for Ecosystem Characterization and Modeling

Moderator: Xiaoliang Meng, *Eastern Michigan University*
Room: 202 A

Urban Ecosystem Carbon Cycling: Quantifying Vegetation Biomass through Remote Sensing in the Denver Colorado Urban Area
Carol Mladinich, *U.S. Geological Survey*
Stacy Curry, Gergo Szanko, and Dean Anderson

Remote Sensing and Modeling for Monitoring, Reporting and Forecasting Ecological Conditions of Protected Lands Along the Appalachian Trail
Y.Q. Wang, *University of Rhode Island*
Rama Nemani, Fred Dieffenbach, Ken Stolte, Glenn Holcomb, Matt Robinson, Casey Reese, Marcia McNiff, Roland Duhaime, Hiro Hashimoto, Geri Tierney, Brian Mitchell, Pete August, Peter Paton, and Chuck LaBash

Determining Driving Factors of Grassland Degradation through Image Analysis — A Case Study in Xilin River Basin, Inner Mongolia
Xiaoliang Meng, *Eastern Michigan University*
Yichun Xie

Using Remote Sensing Techniques and GIS to Detect Changes in Turf and Tree Canopy in the Urban Area of Las Vegas Valley, Nevada
Judith Brandt, *Southern Nevada Water Authority*

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Satellite Applications I

Moderator: David Johnson, *USDA/National Agricultural Statistics Service*
Room: 201 A

Feasibility of Spatial Resolution and Herbaceous Category Improvements to the Cropland Data Layer
David Johnson, *USDA/National Agricultural Statistics Service*

Techniques of Detecting and Delineating Archaeological Site Destruction using High Resolution Satellite Imagery: An Iraq Case Study
Benjamin Richason, III, *St. Cloud State University*

Creating and using Very High Density Point Clouds Derived from ADS Imagery
Stephan Gehrke, *North West Geomatics*

Investigating the Lake Patzcuaro Basin, Mexico, using ALOS PRISM and AVNIR
Stephen Leisz, *Colorado State University*

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Special Session: Natural/Human Responses of Global Climate Change II

Moderator: Jingjuan Liao, *Chinese Academy of Sciences*, China
Room: 203 C

Relative Abundances of C3 and C4 Grasses in North American Great Plains: Their Responses to Climate Change
Cuizhen Wang, *University of Missouri*

Mapping Grasslands in the Great Plains and their Spatio-temporal Variations Responding to Climate Change
Qing Chang, *University of Missouri*

Comparison of the MODIS-derived Drought Indices for Drought Monitoring in Southwest and North China
Li Zhang, *Chinese Academy of Sciences*, China
Li-gai Bai and Qin Yan

Spatial and Temporal Dynamics of Inner Mongolian Grasslands from MODIS NDVI Time Series
Li Zhang, *Chinese Academy of Sciences*, China
Linlin Lu and Huadong Guo

MILWAUKEE

Milwaukee Art Museum: During your visit to Milwaukee be sure to squeeze in a visit to the Milwaukee Art Museum, Wisconsin's premier destination for art and culture. The Art Museum is an architectural landmark, comprised of three buildings designed by three legendary architects: Eero Saarinen, David Kahler and Santiago Calatrava.

The museum is open Tuesday thru Sunday 10 a.m. to 5 p.m. and Thursday until 8 p.m.. Admission is $12 for Adults, $10 for Students, Seniors and Active Military. A short cab ride to the Lake Michigan shoreline area will provide you with an architectural treat to remember. The museum is located one mile east of the Convention Center on the shore of Lake Michigan at 700 N. Art Museum Drive, Milwaukee, WI 53202. The phone number is (414) 224-3200.

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Poster Presentation II

1:30 PM to 3:00 PM
Moderator: Jie Shan, *Purdue University*
Room: 203 A

NEW for 2011 - Oral Poster Presentation Sessions! In addition to the technical paper presentations, on Tuesday, May 3rd, Poster Presenters will also be discussing their information. Take this opportunity to hear directly from the Poster Presenters in a classroom environment. Hear about the research, development and hard work that each person has done in order to present this year. Poster Presentations are designed to showcase a variety of remote sensing and geospatial applications from around the world. Posters will also be on display from Tuesday, May 3rd at 8:00 AM until Thursday, May 5th at 11:00 AM. Don't miss this wonderful opportunity.

Character Maps from Close Range Multispectral Images
Ming-Chih Hung, *Northwest Missouri State University*
Yi-Hwa Wu

Tsunami Risk Assessment using Geomatics in Fujairah, UAE
Khameis AlAbdouli, *Florida State University*

Evaluating the Restoring Conditions for Those Areas Visited with Natural Disasters Employing Landsat-7 ETM+ Thermal Infrared Data
Yishuo Huang, *Chaoyang University of Technology*, Taiwan
Chih-Peng Yu and Shang-Yuh Lin

Mapping Evapotranspiration for Water Administration in Idaho
William Kramber, *Idaho Department of Water Resources*
Anthony Morse and Richard Allen

Regional Differences of Post-Soviet Forest Disturbance in Temperate European Russia
Matthias Baumann, *University of Wisconsin-Madison*
Mutlu Ozdogan, Volker Radeloff, Tobias Kuemmerle, Kelly Wendland, and Elena Esipova

Bridging the Gap between NASA Hydrological Data and the Geospatial Community
Hualan Rui, *Goddard Earth Sciences Data and Information Services Center (DISC), NASA*
Bill Teng, David Mocko, Hiroko Beaudoing, Bruce Vollmer, Mark Gray, Joe Nigro, David Maidment, and Rick Hooper

Remote Sensing to Detect Expansion of Irrigation in Xinjiang, NW China
Yang Yang, *University of Wisconsin - Madison*
Mutlu Ozdogan

Automated Characterization of Urban Expansion in Complex Landscapes in China using Dense Temporal Stacks of Landsat Data
Zhiwei Ye, *University of Wisconsin-Madison*
Annemarie Schneider

Remote Sensing of Tillage Practices using Multi-temporal Landsat Imagery
Baojuan Zheng, *Virginia Tech*
James B. Campbell

Robust Direct Georeferencing to Support Geospatial-intelligence Analysis
Jaehong Oh, *The Ohio State University*
Charles Toth and Dorota Grejner-Brzezinska

Using Lidar to Show Changes in Coastal Geomorphology
William Robertson, *Florida International University*

Automating the Correction of USGS Digital Elevation Models using Fourier Analysis and the Mean Profile Filter
Yusuf Siddiqui, *I-Cubed*

Student & Young Professionals Events

Courtesy of the ASPRS Student Advisory Committee (SAC)

Just a reminder for you not to miss the Exhibit Hall Guided Tour from 2:30 pm to 3:30 pm as well as the Exhibitors' Reception from 5:30 pm to 7:00 pm where you can meet with the representatives from the most influential companies in the geospatial industry. We will let you refresh in your rooms until 7:30 pm when we will meet in the lobby again and try to find our way toward The Safe House. We will keep the mystery of this place here and encounter the adventure together. An intriguing place with great food and atmosphere should come as a reward for a busy day at the conference.

Exhibit Hall Guided Tour for Students

2:30 PM to 3:30 PM

The ASPRS Sustaining Members Council is hosting a guided tour of the exhibit hall for students. This is your opportunity to meet the exhibitors, up close and personal. Exhibit halls can be intimidating, but not after this personal tour. See you there.

Beverage Break

3:00 PM to 3:30 PM, Exhibit Hall 301 C
Sponsored by Aero-Metric, Inc.

aerometric
Geospatial Solutions

Technical Sessions
3:30 PM to 5:00 PM

-22-

NGA Special Session IIB - Geospatial Visual Analytics
Moderator: Dr. Ashley Holt, *NGA*
Room: 202 C

Open Discussion on this topic from the previous session.

-23-

PDAD Special Session I — Airborne Digital Mapping Camera Systems: Manufacturer's Perspective
Moderator: Brian Huberty*, USFWS and* Greg Stensaas*, U.S. Geological Survery*
Room: 203 C

This is a follow-on session to the traditional panel session hosted at ASPRS for many years. The session is design to show and discuss digital mapping camera manufacturers' technology from around the world. Each representative will give a short presentation followed by a question and answer session with the audience. The goal is to provide a dynamic forum to address current systems and future developments in this important and rapidly evolving mapping technology. System vendors will highlight their specific technologies in order to meet the demand for aerial digital mapping images for specific markets.

Panelists
Digital Camera Manufactures

-24-

Integrated Spatial Sensors and Technologies I
Moderator: Eugene Levin, *Michigan Tech University*
Room: 203 B

Photogrammetric Small UAV in Geospatial Research and Education at Michigan Tech University
Eugene Levin, *Michigan Tech University*
Stephen Curelli

Sensing Position by Combining Photogrammetry and Optical Pattern Projection
Benrui Zheng, *University of North Carolina - Charlotte*
Brigid Mullany, Edward Morse, and Angela Davies

Conceptual Design of a Pedestrian Navigation System Supported by Star Tracking Techniques
Shaojun He, *The Ohio State University*
Rongxing Li and Alper Yilmaz

Advances in Thermal Remote Sensing Applications and Operation as a Photogrammetric Tool
Eatay Shechter, *Icaros, Inc.*

-25-

Remote Sensing Applications for Agriculture
Moderator: Claire Boryan, *USDA/National Agricultural Statistics Service*
Room: 202 E

Change in California's Central Valley Farmland Between 2007 and 2009
Audra Zakzeski, *USDA/National Agricultural Statistics Service*

Remote Sensing of Barley Crop Stressed with Carbon-dioxide and Herbicide
Sani Yahaya, *University of Nottingham, England*
M.D Steven and G.Foody

Update on 2010 Cropland Statistical Mapping Efforts
Rick Mueller, *USDA/National Agricultural Statistics Service*

Crop Identification Based on Crop Phenological Information
Claire Boryan, *USDA/National Agricultural Statistics Service*
Liping Di

MILWAUKEE

Discovery World — Milwaukee's largest museum dedicated to science, situated along the lake front. Experience the high-tech, hands-on exhibits, salt water and freshwater aquariums, as well as touch tanks and digital theaters. A double-helix staircase wraps around the 40-foot kinetic sculpture of a human genome. A wonderful day for kids and adults can be had at Discovery World. The museum is located one mile east for the Convention Center just south of the Art Museum on the shore of Lake Michigan. Just a short cab ride away.

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Assessing the Accuracies of Spatial Data

Moderator: Ron Schonegg, *Continental Mapping Consultants*
Room: 203 D

Ground Control 101
Brant Howard, *Compass Data Inc.*
Steven Hamilton

Locomotion Analysis and Estimation of Data Quality using Inertial Sensors for the Purpose of Vision-aided Inertial Navigation
Boris Skopljak, *The Ohio State University*
Alper Yilmaz and Rongxing Li

The Relative Geolocation Accuracy of WV02: On-orbit Calibration and Long Term Stability
Byron Smiley, *DigitalGlobe*

A Spatial Analysis of Rural Entrepreneurial Success
Steven Steinberg, *Humboldt State University*
Jason Barnes and Sheila Lakshmi Steinberg

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Advanced Remote Sensing Techniques and Analysis II

Moderator: Meghan MacLean, *University of New Hampshire*
Room: 202 D

Texture Region Extraction from Multispectral and Hyperspectral Images by Classifying Local Spectral Histograms
Jiangye Yuan, *The Ohio State University*
DeLiang Wang, Jung-Kuan Liu, Lin Yan, and Rongxing Li

Can Soil Respiration be Estimated using Remote Sensing?
Randolph H. Wynne, *Virginia Polytechnic Institute and State University*
Valquiria Quirino, John R. Seiler, and Valerie A.Thomas,

WorldView-2 Image Exploitation using ERDAS eATE and IMAGINE Objective
Brian Kloer, *ERDAS, Inc.*

Object-based Delineation of Urban Neighborhoods of Accra, Ghana from QuickBird Imagery
Douglas Stow, *San Diego State University*
Christopher Lippitt, Sory Toure, Lloyd Coulter, and John Weeks

-28-

Remote Sensing Applications for Environmental Monitoring

Moderator: Colin Brooks, *Michigan Tech Research Institute*
Room: 202 B

Detecting Pine Fertilization Response from a Synthetic Landsat VI Chronosequence
Christine Blinn, *Virginia Tech*
Randolph Wynne, Thomas Fox, and Robert Sypert

Modeling Sediment Deposition for Predicting Marsh Habitat Development
Tyler Ketron, *DEVELOP*
Amber Kuss, Tyler Ketron, Alex Remar, and Vivek Choksi

Mapping and Monitoring the Extent of Cladophora Algae in the Great Lakes using Multi-resolution, Multi-temporal Satellite Imagery
Colin Brooks, *Michigan Tech Research Institute*
Robert Shuchman, Michael Sayers, Martin Auer, Guy Meadows, and Aaron Dayton

Seagrass Health Modeling and Prediction with NASA Science Data
Harold Robinson, *University of Mississippi*
Greg Easson, Marc Slattery, Daniel Anderson, Robert DeCurtins, Slawomir Blonski, and Lauren Underwood

-29-

Innovative Methods of Geospatial Data Processing

Moderator: Barry Haack, *George Mason University*
Room: 202 A

The Modeling of Fire Regime Condition Class for Eastern Alaska
John Koltun, *Geographic Resource Solutions*

Remote Sensing-spatial Sciences for the Hindu Kush-Karakorum-Himalaya Mountain Complex Decision Support Toolbox
Barry Haack, *George Mason University*

Examining Spatial-temporal Effects of Urban Environmental Variables on the Dissemination of West Nile Virus: A Case Study of Los Angeles, California, USA
Hua Liu, *Old Dominion University*
Qihao Weng

Healthscapes: A New Web Platform for Global Environmental Health Research
Nicholas Preston, *University of Wisconsin – Madison*

-30-

Analysis of Lidar Waveforms

Moderator: James Young, *Aero-Metric, Inc.*
Room: 201 B

Classifying Compressed Lidar Waveform Data
Charles Toth, *The Ohio State University*
Dorota Brzezinska

Creating a More Accurate Pseudo-waveform: Integration of Spatially Coincident Airborne and Terrestrial Lidar Data
Ryan Sheridan, *Texas A&M*
Sorin Popescu, Demetrios Gatziolis, and Zhao Kaiguang

A Novel Decomposition Method Based on Evolution Algorithm for LVIS Waveform Data
Wei Zhuang, *SUNY ESF*
Giorgos Mountrakis

Combined Segmentation of Lidar Point Cloud and Registered Images
Xiangyun Hu, *Wuhan University*, China
Junfeng Zhu and Lizhi Ye

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Poster Presentation III

3:30 PM to 5:00 PM
Moderator: Mary Balogh, *U.S. Fish & WIldlife Service*
Room: 203 A

NEW for 2011 - Oral Poster Presentation Sessions! In addition to the technical paper presentations, on Tuesday, May 3rd, Poster Presenters will also be discussing their information. Take this opportunity to hear directly from the Poster Presenters in a classroom environment. Hear about the research, development and hard work that each person has done in order to present this year. Poster Presentations are designed to showcase a variety of remote sensing and geospatial applications from around the world. Posters will also be on display from Tuesday, May 3rd at 8:00 AM until Thursday, May 5th at 11:00 AM. Don't miss this wonderful opportunity.

Analysis of Temperatures Distribution of Forest Type Class using Landsat Imagery
Joon Kyu Park, *Seoil University*, South Korea
Hee CheonYun

On-orbit Geolocation Accuracy Performance of the GeoEye-1 High Resolution Imaging Satellite
David Mulawa, *GeoEye*
Aaron Cole

Object-based Classification of an Urban Area through a Combination of Aerial Image and Airborne Lidar Data
Yongminu Kim, *Seoul National University*
Youkyung Han, Younggi Byun, Jaewan Choi, Dongyeob Han, and Yongil Kim

Object-based Analysis and Change Detection of the Major Wetland Cover Types During the Low Water Period at Poyang Lake, PRC
Iryna Dronova, *University of California, Berkeley*
Peng Gong and Lin Wang

Land Cover Mapping in the Lower Columbia River Estuary
Tyler Bax, *The Sanborn Map Company*
Andrew Brenner and Russ Congalton

An Effective Realtime Updating of Road Facility DB using Digital Camera with a Built-in Bluetooth and DGPS
Joon Kyu Park, *Seoil University*, South Korea
Hee CheonYun and Min Gyu Kim

Analysis of Terminus and Elevation Changes for Six Glaciers in Northern Labrador, Canada using ASTER Imagery
Jeffrey VanLooy, *University of North Dakota*

Remote Sensing Assessment of Land Cover Change in the Mesilla Valley, New Mexico, 1985-2009
Kristen Hestir, *New Mexico State University*

Object-oriented Segmentation and Classification of High Resolution Imagery Evaluating Fire-carrying Fuel Variables of Pinyon-Juniper Woodlands in the Great Basin
April Hulet, *Brigham Young University*
Bruce Roundy, Steve Petersen, and Ryan Jensen

Wildfires in the Great Smoky Mountains National Park, 1980 - 2008
Jonnathan B. Owens, *AMEC Earth and Environmental*

Tornadoes: A Comprehensive Study
Ming Hung, *Missouri State University*

Using GIS to Model the Energetic Costs of Crossing Steep Slopes for Capuchinin Monkeys
Allison Howard Eury, *University of Georgia*

Exhibitors' Welcome Reception

5:30 PM to 7:00 PM, Exhibit Hall 301 C
Silver Sponsor — Northrup Grumman.Corp.

NORTHROP GRUMMAN

A wonderful occasion to visit with both national and international suppliers and an Annual ASPRS Conference tradition is the Exhibitors' Welcome Reception. Mingle with the Conference Exhibitors, our hosts for the evening, in a relaxed environment and take some time to form lasting professional relationships.

Light hors d'oeuvres and beverages will be served while you come together with old and new friends. Admission to this event is included with all conference registrations.

CONFIDENTIAL

Espionage for a Great Cause

7:00 PM

Safe House Nightclub, 779 North Front Street, Milwaukee

Following the Exhibitor's Reception on Tuesday May 3rd, join the Western Great Lakes Region at the Safe House Nightclub. A short six block walk from the Frontier Airlines Center, the Safe House is a spy-themed venue filled with secret walls, doors, passages, illusions, intrigue and adventure. Aside from the entertaining and amusing setting, there will be instructional blackjack for prizes and a raffle with all proceeds to go toward the **Western Great Lakes Region Student Fund**. Hope you can join us for a fun-filled evening of espionage for a great cause! For more information on the Safe House, visit www.safe-house.com.

Have Some Time to Get Away?

Take a short taxi ride to the American Geographical Society Map Library (AGS) located at the University of Wisconsin-Milwaukee. The AGS is home to one of the largest map collections in the world and presently consists of well over one million items; including maps, atlases, books, journals, pamphlets, photographs, slides, Landsat images, and digital spatial data. The scope of its collection is worldwide.

The AGS is located at 2311 East Hartford Avenue, on the third floor, east wing of the Golda Meir Library Building on the University of Wisconsin-Milwaukee campus. At approximately four miles from the Hyatt Regency Milwaukee, a short 15 minute taxi ride would put you at the front steps to this incredible archive.

The Library is open to the public Monday - Friday, 8:00 am to 4:30 pm, www4.uwm.edu/libraries/AGSL/.

The American Geographical Society Map Library is a fantastic resource and a must see for Imaging and Geospatial Professionals!

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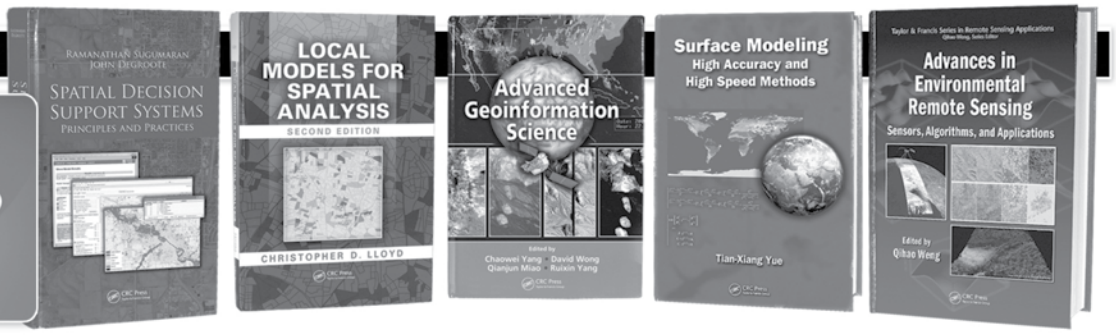

plus...

Introducing Two New Series from CRC Press

Dispatches from the Intersection of GIS and Society

GIS in Action

This series covers the disciplinary intersections that happen when GIS is used to solve or manage real issues in society. We are looking for authors to contribute volumes to this series. Please send proposals to series editor Professor Allan Brimicombe, Center for Geo-Information Studies, University of East London, UK. a.j.brimicombe@uel.ac.uk

Define Climate Change for Spaceship Earth

Earth Observation of Global Changes

This series documents essential climate change variables as defined by the Global Climate Observing System (GCOS) program as well as other variables of planetary impact. If you are interested in publishing in this area, please send proposals to series editor Professor Emilio Chuvieco, University of Alcala, Spain. Emilio.chuvieco@uah.es

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Time	Event	Room	Attending
7:00 AM to 5:00 PM	Registration Desk Open	Mezzanine Level Atrium	
7:00 AM to 8:00 AM	Sustaining Members Council Meeting & Breakfast	201 D	
8:00 AM to 9:00 AM	President's Address/General Session	Ballroom 104 D	
9:00 AM to 5:00 PM	Exhibit Hall Opens	Exhibit Hall 301 C	
9:00 AM to 5:00 PM	ASPRS Board of Trustees Meeting	101 C	
9:15 AM to 10:45 AM	GEO League Challenge Presentations	203 D	
9:15 AM to 10:45 AM	Technical Sessions — 32 to 40	varies, see description	
11:00 AM to 12:00 Noon	Technical Sessions — 41 to 47	varies, see description	
11:00 AM to 12:00 Noon	Commercial Sessions	varies, see description	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Geographic Information Systems Division (GISD)	201 D	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Remote Sensing Applications Division (RSAD)	203 A	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Primary Data Acquisition Division (PDAD)	203 D	
12:00 Noon to 1:30 PM	Memorial Address	Ballroom 104 D	
1:30 PM to 3:00 PM	Technical Sessions — 48 to 57	varies, see description	
3:30 PM to 5:00 PM	Technical Sessions — 58 to 67	varies, see description	
6:00 PM to 9:30 PM	Social Event — Milwaukee Public Museum	Offsite	

Registration Desk Open
7:00 AM to 5:00 PM
Mezzanine Level Atrium, near the Hyatt Regency Hotel Skywalk

Sustaining Members Council Meeting & Breakfast
7:00 AM to 8:00 AM, Room: 201 D

President's Address/General Session
8:00 AM to 9:00 AM, Ballroom 104 D

President's Address

While a student at the University of Wisconsin, Green Bay, I took a photointerpretation class and was hooked on mapping ever since. I am especially honored to return to Wisconsin for the upcoming ASPRS Annual Meeting to accept the office of President of the Society. As part of my address, I intend to draw on my work experience as well as the ASPRS Strategic Plan to acknowledge and discuss the critical role imaging and geospatial information has in supporting the Society's vision to sustain and enhance the global quality of life. Further, I will discuss the overall value of membership in the Society and recap our current recruitment methodologies. I will challenge each of you to help recruit new members as they bring new ideas, helping our Society stay relevant today and for years to come.

Gary Florence's geospatial experience spans both the national and international sectors. He received a Bachelor of Science degree from the University of Wisconsin, Green Bay and a Master of Science degree from the International Institute for Geo-information Science and Earth Observation (ITC), the Netherlands. He began his working career after graduating from the ITC in 1979.

Sponsored by the European Development Bank, Florence worked on the Country-wide Animal and Range Assessment Project in Botswana where he applied various remote sensing techniques and extensive ground truth field verification to conduct a detailed rangeland inventory and carrying capacity of the Kalahari. Later, working as a Remote Sensing consultant for the Food and Agriculture Organization of the United Nations, Florence again combined various remote sensing techniques and field work to conduct a land cover inventory of Baluchistan, Pakistan. He then worked in the United States managing a variety of mapping projects for both the public and private sectors. This experience included serving as a Coastal Zone Analyst for Louisiana DNR and later as Director of the Resource Data Department for the Southwest Florida Water Management District.

His private sector experience includes serving as Project Manager on a wide variety of mapping projects for Mid States Engineering, Chicago Aerial Surveys, Geonex and Greenhorn & O'Mara, Inc., (G&O). During his tenure with G&O he served five years as the Project Manager for the National Wetlands Inventory (NWI) Program sponsored by the U.S. Fish and Wildlife Service. In 2004, Florence joined Photo Science to manage their office in St. Petersburg, Florida.

Gary Florence

Awards Presentations

Fellow Award
Francis H. Moffitt Memorial Scholarship
Paul R. Wolf Memorial Scholarship
BAE Systems Award
Conference Management Awards

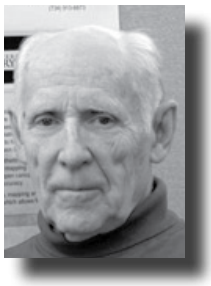
Mark Shortis – ISPRS 2012 Congress

ASPRS Geospatial History: The Three Wise Men Panel

To better understand the Geospatial Revolution, we need to understand where our profession has been and where it is going. Our Past President, Dr. Carolyn Merry will moderate an ASPRS Who's Who list of esteemed experts who led the start of the revolution over 50 years ago - Dr. Charles Olson, Jr., University of Michigan; Ron Ondrejka, ITEK; Terry Keating, Aero-Metric. Each of these gentleman led academic, commercial, and defense related remote sensing systems research and development programs utilizing aerial and satellite sensor systems, thermal sensors, radar imaging systems and digital photogrammetric systems.

When one steps back a moment and reflects on how far we have come, these 'revolutionaries' created the remote sensing and mapping systems that gave our industry, government, and military the leading edge geospatial technologies and intelligence to grow our and protect our societies. This is a once-in-a-lifetime session you do not want to miss.

ASPRS Past President, Carolyn J. Merry is Professor and Chair of the Department of Civil and Environmental Engineering and Geodetic Science at The Ohio State University (OSU). She also serves as the Director of the Center for Mapping at OSU. She was a co-Principal Investigator for the National Consortium on Remote Sensing in Transportation – NCRST – that was funded by the U.S. Department of Transportation. She also is involved with the follow-on consortium CRESTA – Center for the Remote Sensing of Traffic Activities – with researchers from OSU, University of Arizona and Michigan Tech Research Institute. Other current and past projects include mapping temperatures and surface turbidity patterns from AVHRR, MODIS and SeaWiFS satellite data; using satellite imagery to evaluate and map a tractor train traverse route from McMurdo Station to the South Pole, Antarctica; and, using Landsat-7 data for engineering applications as part of the OhioView Consortium. During a sabbatical to the NASA Goddard Space Flight Center in 1977-78, she worked on educational outreach for the Landsat-7 satellite. Previous to OSU, she was a Research Physical Scientist at the U.S. Army Cold Regions Research and Engineering Laboratory, in Hanover, New Hampshire, where she worked on various applications of remote sensing in hydrology.



Charles Olson, Jr., has been an ASP/ASPRS member for 54 years and has watched the organization evolve. He has had more than 30 years of military remote sensing experience, and 40 years teaching at the university level in his overlapping careers. He served as the ASPRS Reporter to Commission VII of the ISP from 1968 to 1976, chaired the Biology Panel of the National Academy of Sciences Commitee on Remote Sensing Programs in Earth Resource Surveys from 1972 to 1977, served as the ASPRS National Director from the Eastern Great Lakes Region from 2002-2008, is the instigator of the EGLR Oral History Project in which he has interviewed more than fifty ASPRS members, and has been elected a Fellow and an Honorary Member of ASPRS.

Ron Ondrejka's career has been at the leading edge of advanced aerospace mapping and remote sensing systems for about 50 years. His roles have included Itek Project Photogrammetrist for three classified space-imaging systems beginning with CORONA and Program Development Manager for three NASA cameras including Apollo, Skylab and Shuttle LFC.

After 25 years with Itek, Ron was a founding Director of the GEONEX Corp. and was appointed to special academic advisory committees at M.I.T. and the Boston University Center for Remote Sensing. During the 1990s, Ron was the airborne-sensing systems advisor for the ONDCP/USDA "War-on-Drugs" related to enforcement on Federal wilderness lands.

Terrence Keating serves as Aero-Metric's CTO and as a Senior Vice President at Aero-Metric's Sheboygan Office. He had previously managed Z/I Imaging and had owned Kork Systems developing digital cameras and photogrammetric software. Terry is a Registered Land Surveyor, Professional Engineer and Certified Photogrammetrist. He is a past National President of ASPRS.

Exhibit Hall Open
9:00 AM to 5:00 PM, Exhibit Hall 301 C

ASPRS Board of Trustees Meeting
9:00 AM to 5:00 PM, Room: 101 C

Technical Sessions
9:15 AM to 10:45 AM

GEO League Challenge Presentations
Sponsored by the ASPRS Student Advisory Council
Room: 203 D

This is the first year for the GeoLeague Challenge, sponsored by the ASPRS Student Advisory Council. The six student groups participating in this year's Challenge will give their presentations during this session. The presentations will be judged and prizes awarded at the Memorial Address.

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NGA Special Session IIIA - Sparsity and Compressive Sensing
Moderator: Dr. John Greer, *NGA*
Room: 202 C

Target Detection in Hyperspectral Imagery Using Joint Sparsity
Nasser M. Nasrabadi, *ARL*
Yi Chen and Trac D. Tran

Sparse Deterministic Representation of Hyperspectral Data
Wojciech Czaja, *University of Maryland*
John J. Benedetto

Compressive Lidar Conceptual Model and Simulation Results
Darryl Sale, *Georgia Tech*
Christopher Rozell, Justin Romberg, and Aaron Lanterman

Bayesian SAR Imaging
Duc Vu, *University of Florida*
Xing Tan, Ming Xue, and Jian Li

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PDAD Special Session 2 — Digital Imagery Quality Assurance
Moderator: Mike Benson, *U S. Geological Survey*
Room: 201 B

Aerial imaging is in a period of rapid growth and change with new technologies, new customers, and new missions requirements. Digital airborne sensors have matured over the last few years and have been gaining acceptance by the mapping community. This is evidenced by: 1) the enhancement of current remote sensing systems by the manufacturers; 2) the manufacturers introducing new sensors into the marketplace that address the needs of a particular sector of the user market not previously addressed; 3) and the amount of data being collected. In many cases, the collection system may have methods that are designed to help the data collectors and current owners of the data may be able to obtain enough information to use the data. However, the quality and long term usefulness of the acquired data in comparison to other data types may be an issue.

This session will have four panels with short presentations and discussions. All information will be made available on the PDAD web site.

Digital Imagery Quality Assurance and Quality Control
Greg Stensaas, *U S. Geological Survey*

Mapping Accuracy Standards
Robert Ryan, *I2R Corp.*

Quality Assessment Process and Tools
Chuck O'Hara, *SIS, Inc.*

System Calibration and Stability
Qassim Abdullah, *Fugro EarthData Inc.*

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Forestry Applications using Lidar
Moderator: Michael Hodgson, *University of South Carolina*
Room: 202 A

Mapping Urban Tree Cover: Object-oriented Image Analysis of QuickBird and Lidar Data
Donald Kilberg, *University of Minnesota*
Molly Martin and Marvin Bauer

Simulated Lidar Waveforms for the Analysis of Light Propagation through a Tree Canopy
Angela Kim, *Naval Postgraduate School*
Richard C. Olsen

Lidar-based Characterization of Small Gullies under Forest Canopy
Michael Hodgson, *University of South Carolina*Kirsten Hunt

Estimating Stand Density in Pine Plantations using Lidar-derived Data
Alicia Peduzzi, *Virginia Tech*
Randolph H. Wynne and Thomas R. Fox

-35-

Remote Sensing Classification Algorithms and Approaches

Moderator: Eugene Levin, *Michigan Tech University*
Room: 202 D

Applying Nonlinear Data Transformation and SVM to Classify Remote Sensed Images: Experiments from Habitat Mapping Along the Detroit River
Anbing Zhang, *Eastern Michigan University*
Eugene Jaworski, Yichun Xie, William Welsh, and Zongyao Sha

Northwest Gap Analysis Project Land Cover Mapping: Methods and Results
Anne Davidson, *National Gap Analysis Program*
Jocelyn Aycrigg, Emilie Grossman, Jimmy Kagan, Steven Lennartz, Stacy McDonough, Tom Miewald, Janet Ohmann, Adam Radel, Todd Sajwaj, and Claudine Tobalske

Object-oriented Change Detection with Discriminate Function
Brian Kloer, *ERDAS, Inc.*

Blending Topography Normalization and Unmixing Analysis to Improve Forest Patch Discrimination in Atlantic Forest, in Brazil
Sergio Bernardes, *University of Georgia-Center for Remote Sensing and Mapping Science*
Andrea Presotto, Allison Howard Eury, Marguerite Madden, Dorothy M. Fragaszy, Thomas Jordan, Patricia Izar, and Yuri Tavares-Rocha

-36-

Classification and Positional Errors and Accuracies

Moderator: Frank Taylor, *Continental Mapping Consultants, Inc*
Room: 203 B

Error Propagation Based Uncertainty Analyses of Shoreline Extraction
Ding Li, *The Ohio State University*
Jung-kuan Liu and Rongxing Li

Assessing the Strength of Temporal Dependence in Classification Errors in Time-series Imagery Under Varying Resolutions
Amy Burnicki, *University of Wisconsin – Madison*

On Chance-corrected Measures for Accuracy Assessment in Remote Sensing Image Classification
Shiguo Jiang, *The Ohio State University*
Desheng Liu

Mapping Urban Tree Canopy in Virginia Localities
Jennifer McKee, *Department of Forest Resources and Environmental Conservation*

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Special Session – Sensor Modeling & Metadata Development for UAS Platforms

Moderator: Robert D. Thomas, *Integrity Applications Inc.*
Sponsored by the ASPRS Defense and Intelligence Subcommittee
Room: 203 C

This is the first of three sessions that will focus on the development and integration of key photogrammetric-based technologies and their application in supporting improved geospatial capabilities. The sessions will provide interested parties with the insight and improved technical understanding that photogrammetry provides in support to today's UAS operations. Speakers will address advances in sensor technologies, up-stream and down-stream processing, as well as new and improved analytical processes that incorporates rigorous photogrammetry as a means to improving the underlying geospatial accuracy of the UAS imagery.

This session is focused on sensor modeling and metadata development for UAS platforms.

SENSRB – A New NITF TRE for EO Imagery
W. Mark Wonnacott, *U.S. Navy*

Advantages of Direct Geopositioning via Rigorous Sensor Modeling Techniques
Aaron Braun, *Integrity Applications Incorporated (IAI)*

Simplifying Photogrammetric Models for Efficient UAV Image Registration: OBC Case Study
David W. Kreighbaum, *National Geospatial-Intelligence Agency (NGA)*

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Special Session — Natural/Human Responses of Global Climate Change III

Moderator: Changshan Wu, *University of Wisconsin-Milwaukee*
Room: 202 B

Long-term Change Analysis of Urban Impervious Surface
Changshan Wu, *University of Wisconsin-Milwaukee*

Vegetation Phenology Response to Climate Change in Northern Hemisphere from 1982 to 2006
Zhongchang Sun, *Chinese Academy of Sciences*, China
Lingling Liu and Liangyun Liu

Land Use/Land Cover Change and its Hydrological Impact from 1984 to 2010 in the Little River Watershed, Tennessee
Chunhao Zhu, *University of Tennessee*
Yingkui Li and Zewen Liu

Effect of LULC Change on Runoff in Urbanization Area
Zhongchang Sun, *Chinese Academy of Sciences*, China
Huodong Guo, Xinwu Li, Qingni Huang, and Yixing Ding

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Special Session — AmericaView

Moderator: Sam Batzli, *University of Wisconsin-Madison*
Room: 201 A

The AmericaView Consortium is comprised of university-led, state-based consortia working together to build a nationwide network of state and local geospatial data users. Now in its 10th year, AmericaView has expanded to 37 states. The Consortium is actively working with USGS and universities across the country to expand participation in the AV Program to all 50 states and territories. This session showcases recent work by consortium members in the areas of education, technology, and StateView networking.

WyomingView Applied Remote Sensing Research Activities in the Era of No-cost Landsat Data
Ramesh Sivanpillai, *University of Wyoming/WyGISC*

AmericaView Imagery Access Initiatives and Cooperation
Sam Batzli, University of Wisconsin-Madison
Tom Heinrichs, Larry Biehl, Tyler Erickson, and PR Blackwell

AmericaView and Emergency Management
Peter Sforza, *Virginia Polytechnic Institute and State University*
Tom Heinrichs, Rick Lawrence, Kevin Dobbs, and Sam Batzli

AmericaView's Education Mission
Rick Landenberger, *West Virginia University*
Tom Mueller, John (Jay) Morgan, Kevin Czajkowski, and Rebecca Dodge

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Hazard Assessment

Moderator: Jim Lacy, *Wisconsin State Cartographer's Office*
Room:

Automatic Earthquake Damage Mapping using Multiple Very High Spatial Resolution Acquisitions
Chris Padwick, *DigitalGlobe*
G. Marchisio and F. Pacifici

Assessing the Effects of Geospatial Features on Bird Strike Occurrences at Selected Airports in the U.S.
Frederick Wilson, *Morgan State University*
Judy Jackson-Pringle

Multi-Year Cultural Change Analysis Serving FEMA Mapping Prioritzation Efficiences
Rick Sacbibit, *FEMA/FIA, Risk Analysis Division*

New Mapping Tool and Techniques for Visualizing Sea Level Rise and Coastal Flooding Impacts
John McCombs, *NOAA Coastal Services Center*
Doug Marcy, William Brooks, Kyle Draganov, Brian Hadley, Nate Herold, Matt Pendleton, Sean Ryan, Keil Schmid, Mike Sutherland, and Kirk Waters

Beverage Break

10:45 AM to 11:00 AM, Exhibit Hall 301 C
Sponsored by Aero-Metric, Inc.

aerometric
Geospatial Solutions

Technical Session

11:00 AM to 12:00 Noon

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NGA Special Session IIIB — Compressive Sensing Session 2

Moderator: Dr. Chris Flake, *NGA*
Room: 202 C

A Fast Nonlinear Dimensionality Reduction Method for Hyperspectral Images
Lin Yan, *Ohio State*

Automatic Detection and Extraction of Geospatial Features from Lidar Data
Suya You, *University of Southern California*

Hierarchical Progressive Aerial Lidar Compression
Ye Duan, *University of Missouri*
Xiaoling Li, Wenjun Zeng, and Hongkai Zhao

Dictionary Learning and Compressive Sensing for Noisy and Incomplete Hyperspectral Images
Lawrence Carin, *Duke University*
Zhengming Xing, Mingyuan Zhou, Alexey Castrodad, and Guillermo Sapiro

MILWAUKEE

Milwaukee boasts a wide range of historical and architectural landmarks, including the magnificent Captain Frederick Pabst Mansion, home of one of the city's influential beer barons; the St. Joan of Arc Chapel, originally built during the 15th century in Lyon, France; the Charles Allis Art Museum, a stunning English Tudor mansion and former home of the first president of Allis-Chalmers Company; Villa Terrace, an Italian Renaissance-style villa with a sweeping view of Lake Michigan and breathtaking lakefront gardens; Milwaukee's City Hall, a landmark of Flemish Renaissance design built in 1895; and Basilica of St. Josaphat's, an architectural masterpiece and the first Polish basilica in North America.

Commercial Sessions

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New Photogrammetric Products

Moderator: Dor Yalon, *Icaros, Inc*.
Room: 202 A

Automatic Tie-point Extraction using Advanced Approaches
Ziv Shragai, *Icaros, Inc.*

The Need for a Flexible Sensor — Evaluation of the Icaros IDM600
Arik Nir, *Icaros, Inc.*

Photogrammetric Solutions of Non-standard Photogrammetric Blocks
Dor Yalon, *Icaros, Inc.*

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Vexcel UltraCam Investigations

Moderator: Alexander Wiechert, *Vexcel Imaging GmbH, a Microsoft company*
Room: 201 B

UltraCam: The New Super-large Format Digital Aerial Camera
Alexander Wiechert, *Vexcel Imaging GmbH, a Microsoft company*
Michael Gruber

Results from UltraCam Monolithic Stitching
Michael Gruber, *Microsoft Corp.*
Richard Ladstaedter

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Full-motion 3D Imaging

Moderator: Eric Coppock, *Ball Aerospace Technologies Corp*
Room: 201 A

Real-time, Creation and Dissemination of Digital Elevation Mapping Products using Total Sight™ Flash Lidar
Eric Coppock, *Ball Aerospace Technologies Corp*
Roy Nelson

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New at ERDAS

Moderator: Joe Mostowy, *ERDAS*
Room: 202 B

What's New in LPS 2011
Joe Mostowy, *ERDAS*

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ArcGIS Innovations

Moderator: Peter Becker, *ESRI*
Room: 202 D

ArcGIS as a System for Management, Dissemination, Visualization and Analysis of Geospatial Information
Peter Becker, *ESRI*

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Advances at LizardTech

Room: 202 E
Moderator: Jon Skiffington, *LizardTech*

Advances in the LizardTech MrSID Technology
Jon Skiffington, *LizardTech*

ASPRS Committee and Board of Directors Meetings

Geographic Information Systems Division (GISD)
11:00 AM to 12:00 Noon, Room: 201 D

Remote Sensing Applications Division (RSAD)
11:00 AM to 12:00 Noon, Room: 203 A

Primary Data Acquisition Division (PDAD)
11:00 AM to 12:00 Noon, Room: 203 D

Memorial Address

12:00 Noon to 1:30 PM, Ballroom 104 D

Honoree

Paul Richard Wolf was born in Mazomanie, Wisconsin in 1934. He graduated from Mazomanie High School and served in the U.S. Army in Japan. Later, he attended the University of Wisconsin-Platteville and UW-Madison, graduating with a degree in Civil Engineering in 1960. Wolf began his career as a highway engineer for the Wisconsin Department of Transportation, then joined UW-Madison as an instructor in 1963, and completed his MS and PhD degrees in the area of surveying and analytical photogrammetry. In 1967, he joined the Civil Engineering faculty at the University of California-Berkeley. In 1970, he returned to continue his teaching and research career at his *alma mater*. Wolf was known as an extremely gifted teacher and mentor, and enjoyed a wonderful relationship with his students. He helped to educate hundreds. Virtually all of his approximately 50 graduate students now hold distinguished positions in education, government, and business throughout the world. He had graduate students from at least eight different countries on four continents.

Wolf's global impact on education in the broad fields of surveying, mapping, and photogrammetry was also accomplished through his authorship of three well-known textbooks on these subjects:

> ***Elements of Photogrammetry*** – translated into several foreign languages, now co-authored with Bon Dewitt, one of Wolf's graduate students, now on the faculty at the University of Florida.
>
> ***Elementary Surveying*** – distributed in Australia and Southeast Asia, now co-authored with Charles Ghilani, another of Wolf's graduate students, now on the faculty at Penn State University.
>
> ***Adjustment Computations*** – also co-authored with Charles Ghilani.

From 1979 until his retirement in 1993, Professor Wolf led the Surveying, Photogrammetry, and Remote Sensing Program within Civil and Environmental Engineering at UW-Madison. Perhaps his greatest legacy is the stream of students coming out of this program who went on to become educators around the world. Graduates of the program have populated the faculties of at least 12 universities in the United States and at least eight other universities around the world. This accomplishment was recognized by his peers, when in 1993, Wolf was presented with a special award from the North American Surveying and Mapping Teachers' Conference, recognizing the excellence of the program at UW-Madison and its long line of graduates who had gone on to become educators themselves. There is now a second generation of Wolf's students, that is, students of his students who have, in turn, gone on to become educators.

Professor Wolf received numerous other awards from scientific and professional organizations. Among the most noteworthy are the Talbert Abrams National Award from ASP; the Earle J. Fennell Award from ACSM; an Honorary Award for Educational Contributions from the Wisconsin Society of Land Surveyors; the Surveying and Mapping Award from ASCE; and five Presidential Citations from ASPRS, spanning 17 years from 1972 through1988.

Wolf was a fellow member of ASPRS and ACSM and a life member of ASCE. In addition, he was an active member of the International Society for Photogrammetry and Remote Sensing (attending all ISPRS international Congresses from 1972 until 2000). He was Charter President of the Wisconsin Chapter of ASP and served as National Director from the Western Great Lakes Region for six years. He was the ASPRS representative to Commission VI of ISPRS from 1972 to 1980. He was Chair of ASP's Nomenclature Committee and author of Chapter 19 of the Fourth Edition of the *Manual of Photogrammetry*.

In retirement, Professor Wolf continued his writings, with new editions of all three of his textbooks. He also devoted time to consulting work and became known nationwide as an expert in forensic photogrammetry.

Soon after Wolf passed away in March, 2002 at the age of 67, ASPRS established the Paul R. Wolf Scholarship, granted annually to an outstanding student committed to educating others in photogrammetry and the mapping sciences.

Presenter

Alan P. Vonderohe is Professor Emeritus in the Department of Civil and Environmental Engineering at the University of Wisconsin – Madison. He is a native of Illinois, having received his undergraduate and graduate degrees, with specialty in photogrammetry and geodetic science, from the University of Illinois at Urbana – Champaign. Vonderohe worked as a surveyor beginning in 1965 and served as an officer in the NOAA Corps from 1970 to 1973. While completing his PhD thesis in 1978, he applied for an open faculty position in the Surveying, Photogrammetry, and Remote Sensing Program at the University of Wisconsin – Madison. Paul Wolf was Chair of the search committee and, thus, began a long professional and personal relationship between them. Vonderohe already knew Wolf as a scholar and educator, having learned from *Elements of Photogrammetry* as a student.

Under Wolf's mentorship at UW-Madison, Vonderohe expanded his horizons to include GIS, remote sensing, and the broader umbrella of geospatial information science and engineering. He became involved in adaption of GIS and other spatial technologies to transportation problems, leading to active work with the Transportation Research Board. In his 27+ years at UW-Madison, he taught more than 30 different courses and had 30 graduate students. Since his retirement in 2006, Vonderohe has been a consultant on projects ranging from automated machine guidance for highway construction to strategic planning for adoption of spatial technologies in large government organizations.

Vonderohe has been active with ASPRS, having served as President of the Western Great Lakes Region and having received a Presidential Citation for Meritorious Service. He has presented a number of workshops and papers at ASPRS annual meetings and is serving on the technical program committee for the 2011 annual meeting. He also received the Earle J. Fennell Award from ACSM for outstanding contributions to education.

Awards Presentations

Presidential Citations
Region Awards
- **Region of the Year**
- **Region Newsletter of the Year**
- **Region Website of the Year**

GeoLeague Challenge Awards

Technical Sessions
1:30 PM to 3:00 PM

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NGA Special Session IIIC - Compressive Sensing

Moderator: Ed Bosch, *NGA*
Room: 202 C

Roundtable Discussions on Compressive Sensing Issues

Applications and Challenges of Compressive Sensing in Imaging and Spectroscopy
Kevin Kelly, *Rice University*

Compressing Lidar Waveform Data: Surface Classification and Peak Detection
Charles Toth, *Ohio State*
Dorota Grejner-Brzezinska, S. Laky, and P. Zaletnyik

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PDAD Special Session 3 - Lidar Quality Assurance and Interoperability

Moderators: Lewis Graham, *GeoCue,* and Karl Heidemann, *U. S. Geological Survey*
Room: 201 B

Seven panel members selected from Industry and government.

Lidar "calibration" refers to the process of boresight corrections, adjustment to surveyed control, and the removal of various system-specific systematic errors within the point cloud data and is performed by the data producer. This contrasts with lidar "instrument calibration" which is performed by the instrument manufacturer at the factory. Lidar calibration is accomplished through a wide range of techniques and varies widely across different data vendors. At present, there are no standard, consistent, industry-wide methods for assessing and reporting how successful the calibration process was on any given project. Moreover, the current standard practice of measuring and reporting the accuracy of a "lidar collection" is based on assessment of the derived output DEM, rather than on the source lidar point cloud data itself. While the hope of data users is that vendors would not process point data that is of questionable accuracy into DEMs, the industry has no standard means or practices to assure this is the case. The panel will address these issues.

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Integrated Spatial Sensors and Technologies II

Moderator.Bill Tredinnick, *Wisconsin DOT*
Room: 202 B

Semantics for Complex Features from Images
Dalia Varanka, *U.S. Geological Survey*
E. Lynn Usery

Optimal Ranges to Evaluate Sub-pixel Classifications for Landscape Metrics
Amy Frazier, *University at Buffalo*
Le Wang

Analyzing the Impacts and Trends of Historical Copper Mining Stamp Sands in Michigan's Keweenaw Peninsula using the US Army Corps of Engineers' CHARTS Lidar and Multispectral Coastal Mapping System
Colin Brooks, *Michigan Tech Research Institute*
Robert Shuchman, Bruce Sabol, W. Charles Kerfoot, Sarah Green, Michael Sayers, Nathaniel Jessee, K. Arthur Endsley, and Jamey Anderson

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GIS Modeling for Resource Management

Moderator: Steven Steinberg, *Humboldt State University*
Room: 202 E

An Agent Based Modeling Approach for Representing Capuchin (Cebus spp.) Behavior in Brazil
Sergio Bernardes, *University of Georgia*
Allison Howard Eury, Andrea Presotto, Marguerite Madden, Dorothy M. Fragaszy, Thomas Jordan, Patricia Izar, and Yuri Tavares-Rocha

Modeling Riparian Zones Utilizing DEMs, Flood Height Data, Digital Soil Data and National Wetland Inventory Via GIS
Sinan Abood, *Michigan Technological University*
Ann Maclean and Lacy Mason

Comparison and Evaluation of Medium to Low Resolution Satellite Imagery for Regional Lake Water Quality Assessment
Leif Olmanson, *University of Minnesota*
Marvin Bauer and Patrick Brezonik

Inventory of Vegetation Spectral Properties in the South Bay Salt Ponds: A Database for Enhancing Decision Support and Restoration Mapping
Wei-Chen Hsu, *DEVELOP*
Ann Elkins, Rachael Marzion, Krysti Sukita, and Eve Minkin

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Using Multiple Data Sources

Moderator: Jarlath O'Neil-Dunne, *University of Vermont*
Room: 203 D

Acquisition of Airborne Lidar and Orthoimagery for National Parks, Forests and Parkways in the Southern Appalachian Mountains
Thomas Jordan, *Center for Remote Sensing and Mapping Science (CRMS)*
Marguerite Madden, J.B. Sharma, and Sudhanshu Panda

Incorporating Contextual Information into Object-based Image Analysis Workflows
Jarlath O'Neil-Dunne, *University of Vermont*
Sean MacFaden, Keith Pelletier, and Anna Royar

Building Shadow Extraction in High Resolution Satellite Stereo Imagery using Aerial Lidar Data as an Aid
Gang Qiao, *Tongji University*, China
Weian Wang, Xiaoli Fu, Bin Cao, and Jinglei Zhang

The Identification and Resolution of Spectral Confusion — A Case Study Based on Land Cover Mapping of Wrangell-St. Elias National Park and Preserve, AK
Kenneth Stumpf, *Geographic Resource Solutions*

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Advancements in Image Matching, Feature Extraction, and 3D Analysis

Moderator: Ji Sang Park, *Electronics & Telecommunications Research Institute*
Room: 203 B

Detecting Occlusions in Façade Interpretation from Vertical Aerial Images
Philipp Meixner, *Graz University of Technology*, Austria
Franz Leberl

Comparative Analysis of Human and Automated Correspondence for Photogrammetric and Non-photogrammetric Image Registration
Peter Doucette, *Integrity-Apps*
Edward Mikhail and Hank Theiss

Exploration on Multi-View Oblique Imagery for Robust Building Detection
Jing Xiao, *ITC*, Netherlands
Markus Gerke and George Vosselman

A Fast 3D Spatial Analysis Technique using Graphic Process Units
Ji Sang Park, *Electronics & Telecommunications Research Institute*
Jong Min Lee, Seung Yeob Lee, and Sung Woong Shin

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Special Session — The History of the Future

Moderator: Mike Flynn, *MJ Harden*
Room: 203 C

The ASPRS Films Committee will highlight the activities that have been in progress for the past several years. They will discuss the connections with the Geospatial Revolution and Oral History project and how those programs are different yet overlapping, and they will use this session to exhibit the various committee activities including completed films, interviews, future films, archives, archive website and the virtual memorial.

Personal Observations of ASP and ISP through the Lens of the Oral History Project
Chuck Olson, *Michigan Tech Research Institute*

The History of the Geospatial Revolution and ASPRS Films Project
Karen Schuckman, *Penn State University*

The Video Production Process
Jim Campbell, *Virginia Tech*

ASPRS History Website and Archive — Demonstration of the Website with Thoughts on the Reasons for Collecting Data and uses of the Archive Material – Introduction of the ASPRS Memorial Wall and Future Film Projects
Alan Voss, *TVA* (retired)

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Special Session — Red Edge and WORLDVIEW-2 Remote Sensing

Moderator: Chris Padwick, *DigitalGlobe*
Sponsored by the ASPRS Remote Sensing Applications Division
Room: 202 D

This session will include a general discussion of the capabilities and applications of sensors with bands located in the so called red edge portion of the electromagnetic spectrum, including new sensors such as WORLDVIEW-2. The session will also include other aspects of WORLDVIEW-2 data analysis and application.

Red Edge Remote Sensing
Joseph Knight, *University of Minnesota*

Image Classification with Derived Angular Reflectance and Height Map Data from WORLDVIEW-2 Multiangle Acquisition Sequence
Nathan Longbotham, *DigitalGlobe*
Chris Padwick, C. Bleiler, C. Chaapel, and F. Pacifici

Coastal Applications of WORLDVIEW-2 High Resolution Multi-spectral Imagery
Giovanni Marchisio, *DigitalGlobe*
Chris Padwick and Fabio Pacifici

Evidence of Improved Vegetation Discrimination and Urban Mapping using WORLDVIEW-2 High Resolution Multi-spectral Imagery
Giovanni Marchisio, *DigitalGlobe*
Fabio Pacifici and Chris Padwick

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Special Session: Assessment of the Business Requirements and Benefits of Enhanced National Elevation Data

Moderators: Gregory I. Snyder, *U.S. Geological Survey* and David Maune, *Dewberr*y
Room: 201 A

The U.S. Geological Survey and other members of the National Digital Elevation Program are sponsoring the first-ever national assessment to document Business Use requirements and benefits for enhanced elevation data at a national scale. Enhanced elevation data refers to precise three-dimensional measurements of the terrain, built-up features, vegetation structure and submerged near-shore topography. The goal of the assessment is to identify program implementation alternatives, including the costs and benefits of meeting priority Federal, State and other national needs. The assessment seeks to quantify answers to key questions: 1) is it more cost effective for the Government to manage these activities within the context of a national program, 2) are there additional national or agency benefits derived from such a strategy, and 3) what does the optimized program look like? The information will be used as a planning basis for evolving current elevation programs to better meet national needs.

This presentation by the co-authors will summarize the status to date of this assessment which is expected to be completed in a final report in late summer, 2011.

MILWAUKEE

Potawatomi Bingo Casino is Wisconsin's largest tourist destination offering the best bingo, slots and Las Vegas-style table games. You can also enjoy world-class dining and live national entertainment all under one very large roof. Minutes from downtown and a free shuttle from the Hyatt Regency Milwaukee makes this destination a great evening out.

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Remote Sensing and GIS Research for Forestry Applications

Moderator: Jonathan Chipman, *Dartmouth College*
Room: 202 A

Discrimination of Pine and Fir Dominant Forest Types across Complex Terrain
Raechel Bianchetti, *Pennsylvania State University*
Karen Humes, Michael Jennings, and Christopher Williams

Analyzing Emerald Ash Borer Infestations using Hyperspectral Tools
Laura Calandra, *SUNY ESF*
Lindi Quackenbush, Jungho Im, and Steven Stehman

Improving Forest Growth Estimates using a Bayesian Network Approach
Yaseen Mustafa, *ITC*, Netherlands
A. Stein and V. Tolpekin

Estimating Tree Canopy Density using Landsat and Ancillary Spatial Data in Reclaimed Coal Mines of Southwestern Virginia
Susmita Sen, *Virginia Tech*
Randolph H. Wynne, Carl E. Zipper, and John W. Coulston

Beverage Break

3:00 PM to 3:30 PM, Exhibit Hall 301 C
Sponsored by Aero-Metric, Inc.

aerometric Geospatial Solutions

Technical Sessions

3:30 PM to 5:00 PM

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NGA Special Session IV — Tradecraft for Remote Sensing and Data Exploitation

Moderator: Jim Kindig, *NGA*
Room: 202 C

Teaching Activity-Based GEOINT – Tradecraft
Todd S. Bacastow, *Penn State*
Dennis Bellafiore and Peter Forster

Advancing GEOINT Through Tradecraft
Gregg Clark, *NGA*

Panel Discussion with Representatives of Industry, Academia, and NGA on Evolving Tradecraft, Identifying Competencies of the Future Geospatial Workforce, and Certification.

Moderator: Mr. Gregg Clark, *NGA*

Panelists:
Max Baber, *USGIF*
UCGIS
ASPRS
NGA

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Software and Algorithms

Moderator: Evan Brooks, *Virginia Polytechnic Institute*
Room: 203 D

Fitting the Multitemporal Curve: A Fourier Series Approach to the Missing Data Problem in Remote Sensing Analysis
Evan Brooks, *Virginia Polytechnic Institute*
Valerie A. Thomas and Randolph H. Wynne

libLAS: Open Source LAS Programming
Howard Butler, *Hobu, Inc.*

Multiple-sensor Data Fusion Combining Visible and Thermal Spectrums
Dor Yolan, *Icaros, Inc.*

Automatic Change Detection Baes on Spatial Chaotic Model
Hossein Aghababaee, *University of Tehran*, Iran
J. Amini and Yu-Chang Tzeng

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Integrated Spatial Technologies

Moderator: Thomas Tiner, *Michael Baker Jr.*
Room: 202 B

Transportation Data Collection and Distribution
Thomas Tiner, *Michael Baker Jr.*

Field Ground Truthing Data Collector: A Mobile Toolkit for Image Analysis and Processing
Xiaoliang Meng, *Eastern Michigan University*
Yichun Xie and Andy Henry

INTEROP Network to Support Geospatial Data Semantic Interoperability
Nancy Wiegand, *University of Wisconsin - Madison*

Economic and Societal Impacts of Geographic Information in the Geoeconomy
Bob Ryerson, *Kim Geomatics Corporation*
S. Aronoffa

MILWAUKEE

We can not talk about Milwaukee without taking about the Brewpubs! Beer halls and taverns are abundant in the city to this day. The historic Milwaukee Brewery, located in “Miller Valley”, is the oldest still-functioning major brewery in the United States. The Miller Brewing Factory tour is a fun and free way to celebrate a large part of Milwaukee’s history.

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Advanced Mapping Applications

Moderator: Pete Jenkins, *Minnesota Department of Transportation*
Room: 202 D

Case Study of Beam Deformation Monitoring Using Conventional Close Range Photogrammetry
Ivan Detchev, *University of Calgary*, Canada
Ayman Habib and Mamdouh El-Badry

Photogrammetry Point Clouds Applied to Electrical Transmission Lines Vegetation Detection
Tony St-Pierre, *Xeos Imaging*
Zhijun Wang and Aurelien Boulben

Review of Recent Advances in Tide-coordinated Shoreline Study and Generation
Anuchit Sukcharoenpong, *The Ohio State University*
Rongxing Li, Christopher E. Parrish, and Jung-Kuan Liu

Lobster Buoy Counting using Photogrammetry
Claire Kiedrowski, *KAPPA Mapping, Inc.*

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Special Session — Geopositioning from UAS Platforms

Moderator: Pat Woodruff, *Airborne Data Sensors*
Sponsored by the ASPRS Defense and Intelligence Subcommittee
Room: 201 B

This is the second of three sessions that will focus on the development and integration of key photogrammetric-based technologies and their application in supporting improved geospatial capabilities. This session is focused specifically on geopositioning from UAS platforms.

Geopositioning from Next-Gen Lidar Systems
Richard Cannata, *Harris Corporation*

Image Registration Issues for Airborne Sensors
Edward Mikhail, *Purdue University*

A Snapshot of Today's Technical Challenges with Automated Registration of UAS Imagery to Reference Sources
John Marshall, *Integrity Applications Incorporated*

Exploitation of UAV and Lidar Data
Joseph Spann, *BAE*

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Special Session: Large-scale Mapping: Alaska Statewide Mapping Refresh – Overview and Current Status

Moderator: Thomas Heinrichs, *University of Alaska Fairbanks*
Room: 203 C

Alaska currently has the oldest and least accurate maps of any state in the United States. There is no statewide digital orthoimage layer for the state other than Landsat data. The current National Elevation Database (NED) for Alaska is at coarse resolution (2-arcsecond postings) and has significant accuracy limitations. The Alaska Statewide Digital Mapping Initiative, a multi-agency partnership, is addressing these shortcomings through two projects: the creation of a new statewide orthomosaic imagery base layer and the collection of data for an improved accuracy DEM. This session will highlight the structure and status of this extremely challenging mapping project.

Historic and Current Status of Alaska Orthoimagery and Elevation Mapping and Statewide Mapping Overview
Thomas Heinrichs, *University of Alaska Fairbanks*

Statewide Orthoimagery Collection Overview
Tony Follet, *Aero-Metric*

Source Imagery from SPOT 5 satellite
Drew Hopwood, *Spot Image*

Orthoimagery Processing
John Knowleton, *Fugro Earthdata*

Statewide DEM Collection Overview
Dave Maune, *Dewberry*

Fugro GeoSAR Airborne Dual-Band IfSAR
Bert Kampes, *Fugro Earthdata*

STAR IfSAR Collection
Lorraine Tighe, *Intermap*

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Special Session: Academic Publishing

Moderators: Sinan Abood, *Michigan Technological University* and Anna Patterson
Sponsored by the ASPRS Student Advisory Council
Room: 201 A

This session will provide graduate students and young professionals an introduction to the peer review publication process. Details will be presented on the proper organization, preparation and submission of a manuscript. This session will also provide insight on how to choose an appropriate journal, draft a letter to the editor, and address reviewer comments. Students will learn what to expect during all steps of the publication process.

Panelists:
Russell G. Congalton, Editor-in-Chief, *PE&RS*
Jie Shan, Assistant Editor, *PE&RS*
Ann MacLean, Professor, *Michigan Technical University*

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Advancements in Visualization and Simulation Technologies

Moderator: Tim Kennedy, *Wisconsin State Cartographer's Office*
Room: 203 E

Spatiotemporal Visualization for the Spread of Influenza A(H1N1) Pandemic
Rifaat Abdalla, *Defense Research and Development Canada*, Canada

Creation and Testing of Synthetic Aerial Framing Camera Imagery via Computer Graphics
Paul Pope, *Los Alamos National Laboratory*

The Multidimensional Viewshed: A Visualization Technique for Landscape Planning
Brent Chamberlain, *University of British Columbia*, Canada
Mike Meitner

Evaluating Error Sensitivity in Photogrammetry with 3D Optical Simulation Software
Yue Dong, *University of North Carolina at Charlotte*
Thomas Hutchens, Angela Davies, Brigid Mullany, and Edward Morse

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Lidar Research and Applications

Moderator: Dave Hart, *Continental Mapping Consultants*
Room: 202 A

Accuracy and Error Assessment of Terrestrial, Mobile and Airborne Lidar
James Van Rens, *Riegl USA*
Ananda Fowler, Josh France, and Vladimir Kadatskiy

Quality Assurance and Potential Applications of a High Density Lidar Data Set for the City of New York
Sean Ahearn, *Hunter College - The City University of New York*

Application of Ground-based Lidar for Gully Investigation in Agricultural Landscapes
Henrique Momm, *U.S. Department of Agriculture*
Ronald Bingner and Robert Wells

Building Type Classification using Spatial Attributes Derived from Lidar Remote Sensing Data
Zhenyu Lu, *SUNY ESF*
Jungho Im and Michael Hodgson

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Land Cover Assessment I

Moderator: Laura Calandra, *SUNY ESF*
Room: 203 B

Monitoring Seasonal Snow Cover Variability on Historical Timescales using Landsat Remote Sensing
Christopher Crawford, *University of Minnesota*
Steve Manson and Marvin Bauer

Hurricane Induced Land/Water Change Detection for Chandeleur Islands using Landsat 5 TM
Vandana Varshini Raghunathan, *Louisiana State University*
Nan Walker

Land Cover Variability Across Spatial and Temporal Scales: Implications for Wild Ungulate Populations in Tanzania
Jonathan Chipman, *Dartmouth College*
Tom Morrison and Doug Bolger

Lidar-based Mapping of Serpentine Soils, Lassen and Plumas National Forests
Eric Miller, *Humboldt State University*
Mahesh Rao

Social Event — Milwaukee Public Museum

6:00 PM to 9:30 PM

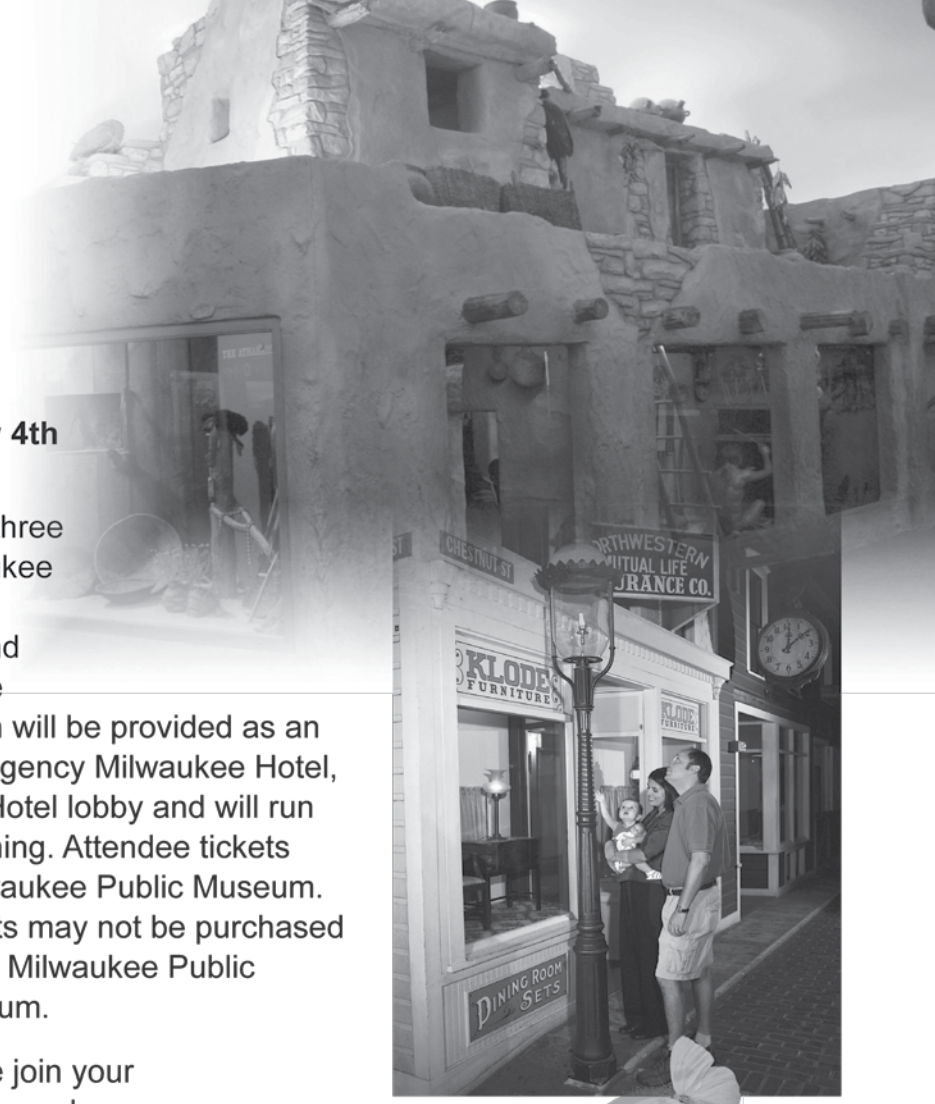
See page 71 for more information.

Student & Young Professionals

Courtesy of the ASPRS Student Advisory Committee (SAC)

The plan is to go to the ASPRS-organized Social Event and take the opportunity to visit the Milwaukee Public Museum. After the visit to the museum what better way to end our final night out at the conference in the "beer capital of the world" than visiting one of the local microbreweries? **Water Street Brewery** offers a variety of good food and great beer choices for everyone. If we decide on a change of scenery, we can walk over to **Bar Louie** across the street or the **Harp Irish Pub**, less then a minute away.

Join Us!



6:00 pm to 9:30 pm on Wednesday, May 4th
Milwaukee Public Museum

The Milwaukee Public Museum is a short three block walk from the Hyatt Regency Milwaukee Hotel and one block from the Frontier Airlines Center. Walking maps can be found at the Conference Registration Desk in the Frontier Airlines Center. Bus transportation will be provided as an alternative. Buses will load at the Hyatt Regency Milwaukee Hotel, Third Street Entrance, at 5:45 PM off the Hotel lobby and will run on a continuous basis throughout the evening. Attendee tickets will be required at the entrance to the Milwaukee Public Museum. Tickets may not be purchased at the Milwaukee Public Museum.

Come join your friends and colleagues for an evening of networking, laughter, and fascinating exhibits around every corner. Take a trip around the world in one evening and enjoy food and refreshments throughout the experience.

The evening at the Milwaukee Public Museum is included in the registration for those paying the Full, Presenter/ Moderator and Spouse/ Guest Registration fee. All others, including children, wishing to attend this event MUST purchase tickets in advanced at the ASPRS Registration Desk in the Frontier Airlines Center no later than 10 am on Tuesday, May 3rd. Tickets will not be sold onsite at the Milwaukee Public Museum. Adult tickets for this event are $85 and tickets for children 13 years of age and under are $35. Children over 13 years of age must have an adult ticket.

Join us for exclusive access to one of the largest museums in the United States for human and natural history. Visit the Streets of Old Milwaukee and European Villages to ancient Mediterranean civilizations and dinosaur replicas - even a Live Butterfly Garden. The Milwaukee Public Museum provides a dynamic and stimulating environment for all who visit.

4th International Conference

HealthGIS2011

5-6 August 2011, New Delhi, India

Managing Health Geospatially

Themes

Health GIS Database,

Healthcare Planning and Management,

New Emerging Diseases- Spatial causes

Waterborne Diseases, Vector-borne Diseases,

Telemedicine, Healthcare Technology,

Information Technology for better Healthcare.

Deadlines

Abstract 30 April

Full Paper: 30 May

Contact for participation:

Organizing Secretary

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Time	Event	Room	Attending
7:00 AM to 11:00 AM	Registration Desk Open	Mezzanine Level Atrium	
8:00 AM to 5:00 PM	ASPRS Board of Directors Meeting	201 A	
8:00 AM to 11:00 AM	Exhibit Hall Opens	Exhibit Hall 301 C	
9:00 AM to 10:30 AM	Technical Sessions — 68 to 77	varies, see description	
11:00 AM to 12:30 PM	Technical Sessions — 78 to 68	varies, see description	

Registration Desk Open
7:00 AM to 11:00 AM
Mezzanine Level Atrium, near the Hyatt Regency Hotel Skywalk

ASPRS Board of Directors Meeting
8:00 AM to 5:00 PM, Room: 201 A

Exhibit Hall Open — Breakfast with Exhibitors
8:00 AM to 11:00 AM, Exhibit Hall 301 C

A special continental breakfast, open to all conference attendees, is being held in the Exhibit Hall. Before the Technical Sessions begin, take some time to leisurely view the exhibits and continue discussions with the exhibitors. Be sure to include this event on your calendar!

Technical Sessions
9:00 AM to 10:30 AM

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PDAD Special Session 4 — Modernization Program for the North American Reference Frame
Moderator: Qassim Abdullah, *Fugro EarthData, Inc.*
Room: 201 B

The North American Datum of 1983 (NAD 83) witnessed over the past few decades major transformation in order to satisfy users need in terms of accuracy and reliability. Such transformation evolved in multi-phase modernization program that left users anxious about tools and procedures that they needed to implement in order to catch up with such changes. Today, users of NAD83 have to deal with different versions of the datum such as NAD83/86, NAD83/HARN, NAD83/CORS(96), and the latest adjustment of NAD83/NSRS2007. The subsequent versions added confusion and discrepancies in the product delivered over the years. The North American Vertical Datum of 1988 (NAVD88) went through similar evolution each time a new geoid model is published. The panel addresses users concerns and shed the light on the latest efforts lead by the National Geodetic Survey (NGS) to modernize the datums to coincide with the more reliable and globally maintained, the International Terrestrial Reference System (ITRS) realized by a set of reference points coordinates denoted by the International Terrestrial Reference Frame (ITRF).

Panelists:
David Doyle, *National Geodetic Survey*
Qassim Abdullah, *Fugro EarthData Inc.*
Larry Hothem, *U.S. Geological Survey*

-69-

Use of SAR, MIS Spectrometer, and Line Scanners
Moderator: Frank Taylor, *Continental Mapping Consultants, Inc.*
Room: 202 A

NASA SIERRA Microspectrometer Instrument Suite Preliminary Results
Gabirel Ladd, *Enegis, LLC*
Geoffery Bland and Matthew Fladeland

Detection and Monitoring of Invasive Phragmites in the Coastal Great Lakes using ALOS PALSAR
Richard Powell, *Michigan Tech Research Institute*
Laura Bourgeau-Chavez and Colin Brooks

Quantification of Turbulence for Airborne Line-scanner Images
Stephan Gehrke, *North West Geomatics*
Robert Uebbing

Using SAR to Characterize the Winter State of Ponds and Lakes in Arctic Alaska
Donald Atwood, *Geophysical Institute*
Jess Grunblatt

-70-

Oil Spill and Flood Disasters
Moderator: Arron Lee, *The Sidwell Company*
Room: 203 D

USGS Emergency Operations (EO) Support for the Gulf of Mexico Oil Spill Response
Rynn Lamb, *U.S. Geological Survey/EROS*
Brenda K. Jones

Lessons Learned in Emergency Remote Sensing and BP Response During Deepwater Horizon
Eatay Shechter, *Icaros, Inc.*

Oil Spill Detection by Satellite Image using Sequential Detection of Change
Ehab Etellisi, *University of Colorado Denver*

Mapping Pakistan 2010 Floods using Remote Sensing Data
Jie Shan, *Purdue University*
Ejaz Hussain, Ural Serkan, and Malik Abrar

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Remote Sensing Applications

Moderator: Karen Gehri, *Wisconsin Department of Transportation*
Room: 202 B

Unmanned Aircraft Systems (UAS) for Vegetation Mapping: Very High Resolution Multispectral Imagery and Terrain Extraction
Andrea Laliberte, *USDA ARS Jornada Experimental Range*
Albert Rango

Improving Small-area Housing Unit and Population Estimation using Remote Sensing and GIS
Chengbin Deng, *University of Wisconsin - Madison*
Changshan Wu

Near Real-time Change Detection for Border Monitoring
Lloyd Coulter, *San Diego State University*
Douglas Stow

Assessing Relationships Between Lidar-derived Vegetation Structure and Butterfly Density to Improve Butterfly Habitat MappingDistribution
Anna Hess, *Michigan Technologica*l
Michael J. Falkowski, Christopher Webster, and Amy Pocewicz

-72-

Special Session — U.S. Geospatial Workforce Needs Come Into Focus

Moderator: David DiBiase, *Pennsylvania State University*
Room: 202 C

This special session is for employers, educators, and current and future practitioners interested in efforts to define what expert geospatial professionals need to know and be able to do. The session will bring together up-to-the-minute reports on:

- The UCGIS GIScience Knowledge Web, including a planned 2nd edition of the *GIS&T Body of Knowledge*;
- The U.S. Department of Labor's Geospatial Technology Competency Model and new geospatial occupations; and
- The GeoTech Center's DACUM analyses of GIS and remote sensing occupations.

The session will conclude with discussion about how these efforts might influence ASPRS' and GISCI's professional certification programs, as well as geospatial curricula in higher education.

Panelists:
David DiBiase, *Pennsylvania State University*
John Johnson, *GeoTech Center*
Brandon Plewe, *Brigham Young University*

-73-

Special Session — Career Planning & Professional Development for Graduate Students

Sponsored by the ASPRS Student Advisory Council
Moderator: Sinan Abood, *Michigan Technological University* and Anna Patterson
Room: 203 C

This session addresses opportunities for undergraduate and graduate students leading up to and following graduation. Topics to be covered include: Working with your Academic Advisor, Continuing Your Education or Entering the Job Market, What You Can Really Do With Your Degree, among others.

Panelists:
Stewart Walker, *BAE Systems*
Marguerite Madden, *University of Georgia*
Mark Stanton, *Pixxures Inc.*

-74-

Land Cover Assessment II

Moderator: Cindy McCallum, *Wisconsin Department of Transportation*
Room: 202 D

Simulating the Future Impacts of Urban Land Use/Land Cover Change on Surface Water Quality within the Chicago Metropolitan Statistical Area, Illinois
Cyril Wilson, *Indiana State University*
Qihao Weng

Spatial and Temporal Dynamics of Inner Mongolian Grasslands from MODIS NDVI Time Series
Li Zhang, *Chinese Academy of Sciences*, China
Linlin Lu and Huadong Guo

Mosaics of Change: Forest Cover Change and Institutional Variability in Mountainous Southwest China
Jamon Van Den Hoek, *University of Wisconsin-Madison*

Reading Between the Lines: Land Cover Change in Three Rapidly Expanding Cities in Western China using Landsat Dense Time Stacks and a Data Mining Approach
Annemarie Schneider, *University of Wisconsin-Madison*

-75-

Image Registration

Moderator: Ahmed Elaksher, *St. Cloud State University*
Room: 203 B

Object-based Classification of an Urban Area Through a Combination of Aerial Image and Airborne Lidar Data
Youkyung Han, *Seoul National University*, Korea
Yongmin Kim, Younggi Byun, Jaewan Choi, Dongyeob Han, and Yongil Kim

Symmetric Image Ratio as a New Similarity Metric for Image Registration
Zhengwei Yang, *USDA National Agricultural Statistics Service*

Potential of Using Automatically Extracted Straight Lines in Rectifying High Resolution Satellite Images
Ahmed Elaksher, *St. Cloud State University*

Dynamic Models in Support of Kalman Filter Based Registration of Video Imagery
John Dolloff, *Integrity Applications Incorproated*

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Object-based Classification

Moderator: Imdad Rizvi, *Indian Institute of Technology Bombay*, India
Room: 203 A

Combination of Object-based and Pixel-based Image Analysis for Classification of VHR Imagery Over Urban Areas
Bahram Salehi, *University of New Brunswick*, Canada
Yun Zhang and Ming Zhong

An Enhanced Wetlands Classification using Object-oriented Classification Methodology: An Example from British Columbia, Canada
Chad Delany, *Ducks Unlimited, Inc.*
Dan Fehringer, Frederic Reid, Kevin Smith, Ruth Spell, Clarissa Theriault, Al Richard, and Eric Butterworth

Accuracy Enhancement of Object-based Image Classification using Relaxation Labeling Process for High Resolution Satellite Images
Imdad Rizvi, *Indian Institute of Technology Bombay*, India
Buddhiraju Krishna Mohan and Eeti Laxmi Narayana

Consequences of the Hughes Phenomenon on Some Classification Techniques
Maria Alonso, *Alcala University*, Spain
Jose Malpica

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Advancements in Sensor Calibration and Modeling

Moderator: Xutong Niu, *Troy University*
Room: 202 E

Assessment of Mapping Capability of a Commercial 3D Camera
Xutong Niu, *Troy University*

Analytical Methods to Assess the Geometric Fidelity of a Sensor Model
Henry Theiss, *National Geospatial-Intelligence Agency*
Scott Lee

Pre-analysis of Camera Calibration Effectiveness
Henry Theiss, *National Geospatial-Intelligence Agency*
Gene Rose and Chris O'Neill

Triangulation of Spaceborne Three-line Array Imagery with Different Sensor Models
YongJun Zhang, *Wuhan University*, China
MaoTeng Zheng

Beverage Break

10:30 AM to 11:00 AM, Exhibit Hall 301 C

Technical Sessions

11:00 AM to 12:30 PM

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Remote Sensing Applications for Wetland Mapping

Moderator: Jason Vande Hey, *Continental Mapping Consultants, Inc.*
Room: 202 A

Data Integration of Fully Polarimetric Synthetic Aperture Radar (SAR), Optical Imagery and Topographic Data for Wetland Mapping
Jennifer Corcoran, *University of Minnesota*

Prototype Application of NASA Missions to Identify Patterns of Wetland Vegetation Development within the South San Francisco Bay Salt Ponds
Wei-Chen Hsu, *DEVELOP*
Michelle Newcomer and Erin Justice

Interpreting Wetlands and Deepwater Habitats from Aerial Imagery
Robert Goodwin, *Remote Sensing & GIS Research and Outreach Services*

Using Lidar and High Resolution Imagery for Object-oriented Wetland Mapping in Minnesota
Lian Rampi, *University of Minnesota*
Joseph Knight

-79-

Special Session: Preparing Competitive Scholarship and Grant Proposals

Sponsored by the ASPRS Student Advisory Council
Moderators: Sinan Abood, *Michigan Technological University* and Anna Patterson
Room: 201 B

This session will provide graduate students with relevant information on organizing and preparing a successful grant or scholarship proposal. Topics covered will include finding prospective grants, developing a general proposal, securing letters of reference and the formal application process. A panel of experts will provide advice and insight from their professional grant writing experiences.

Panelists:
Jesse Winch, *ASPRS*

-80-

Remote Sensing for Land Cover Mapping

Moderator: Jose Malpica, *Alcala University*, Spain
Room: 203 A

Visualization of Layered Sensor Data on Motion Imagery
Dennis Ward, *Army Research Laboratory*
Dennis DuBois

Some Techniques for Anomaly Detection in Hyperspectral Imageries
Jose Malpica, *Alcala University*, Spain
Maria Alonso

A Comparative Study of City Environment in Tianjin Area, China and the Greater Toronto Area, Canada Based on Multi-factors of the Urban Ecosystem
Qingni Huang, *Chinese Academy of Sciences*, China
Huadong Guo, Ying Zhang, Xinwu Li, Zhongchang Sun, Yixing Ding, and Nathan Moore

Evaporation Estimation with Landsat Thematic Mapper 5 in Lower Colorado River Basin
Xiaofang Wei, *Central State University*
Subramania I. Sritharan, John Osterberg, Christopher Neale, Keith Farrow, and John Davenport

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Extraterrestrial Spatial Sensors and Applications

Moderator: Ben Redding, *Continental Mapping Consultants, Inc.*
Room: 202 E

OSU OrbiterMapper and 3D Topographic Mapping using Lunar Reconnaissance Orbiter Narrow-angle Camera Stereo Imagery
Wei Wang, *The Ohio State University*
Rongxing Li, Shaojun He, Juwon Hwangbo, Yunhang Chen, Pingbo Tang, Xuelian Meng, Yunjae Choung, Jordan Lawer, Archinal Brent, Robinson Mark, and The LRO Science Team

ExoMars Rover PanCam: Pre-launch Modeling and Quantifying Uncertainty in Localization and Topographic Mapping
Rongxing Li, *The Ohio State University*
Ding Li, Xuelian Meng, Onur Karahayit, Andrew Coates, Jan-Peter Muller, Andrew Griffiths, Gerhard Paar, and Jurgen Oberst

Integrated Spatial Data Processing and Navigation Information Delivery for Lunar Astronaut Situational Awareness
Rongxing Li, *The Ohio State University*
Shaojun He, Boris Skopljak, Xuelian Meng, Alper Yilmaz, Jinwei Jiang, Marty Banks, and Charles Oman

Photogrammetry and the Mapping of the Space Shuttle
Mike Kitaif, *Cardinal Systems*

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Remote Sensing of Disaster Sites

Moderator: Donglie Liu, *Institute of Geodesy and Photogrammetry,* Switzerland
Room: 203 B

AHAP: Transitioning Alaska's Legacy Data into the GIS Age
Kerri Crowder, *University of Alaska-Fairbanks*

Resolution Requirements for Post-disaster Imagery: A Cognitive Evaluation
Sarah Battersby, *University of South Carolina*
Michael E. Hodgson and Jiayu Wang

Cloud Based Map Data, Hosting, and Tools Changing Geospatial
Mike Tully, *Aerial Services, Inc./SpatialCloud*

Ground-based SAR for Disaster Prevention: A Case Study in Slope Monitoring
Donglie Liu, *Institute of Geodesy and Photogrammetry*, Switzerland
Bjorn Riedel and Wolfgang Niemeier

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Web Based Applications and Accuracy Analysis

Moderator: Jim Lacy, *Wisconsin State Cartographer's Office*
Room: 202 D

Wetland Classification Image Gallery
Catherine Lockwood, *CNL World*
Nathan Handley

Multi-scale Visualization of Water Stress/Scarcity Assessment
Bandana Kar, *University of Southern Mississippi*
Shama Perveen

The Design and Implementation of an Accuracy Assessment to Test Two Different Maps of the Same Area based on the Lassen Volcanic National Park Comparative Mapping Project
Kenneth Stumpf, *Geographic Resource Solutions*

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Lidar Applications for Forestry II

Moderator: Pete Jenkins, *Minnesota Department of Transportation*
Room: 203 C

Deriving Canopy Fuel Parameters using *In-situ* and Lidar Data
Nian-Wei (Tony) Ku, *Texas A&M University*
Muge Mutlu and Sorin C. Popescu

Towards Scale-invariant Aboveground Biomass Estimation in Savanna Ecosystems using Small-footprint Waveform Lidar
David Kelbe, *Rochester Institute of Technology*
Jan van Aardt, Barend Erasmus, Renaud Mathieu, Konrad Wessels, and Greg Asner

Integration of Airborne Lidar and Multispectral Image Data for LAI Estimation
Neal Pilger, *Queen's University*, Canada
Paul Treitz and Benoit St-Onge

Assessing Forest Biomass for use as Biofuel using Airborne Lidar
Colin Gleason, *SUNY College of Environmental Science and Forestry*
Jungho Im

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Special Session — Photogrammetry and Next-Generation UAS Platforms

Sponsored by the ASPRS Defense and Intelligence Subcommittee
Moderator: Todd E. Johanesen, Senior Scientist, *National Geospatial-Intelligence Agency*
Room: 202 C

This is the third of three sessions that will focus on the development and integration of key photogrammetric-based technologies and their application in supporting improved geospatial capabilities. This session will be a panel discussion led by the National Geospatial-Intelligence Agency with representation from academia, U.S. Government organizations to include the Services, DoD and DHS, as well as industry experts in the field of UAS.

Panelists:
Todd E. Johanesen, Senior Scientist, *National Geospatial-Intelligence Agency*
Michael Perry, Vice President, *General Atomics (Photonics)*
William Casey, Senior Scientist, *Raytheon*
Col. Sean Cook, *U.S. Air Force, Intelligence Directorate*
Robert Thomas, Vice President, *Analytical Services, Integrity Applications Inc.*

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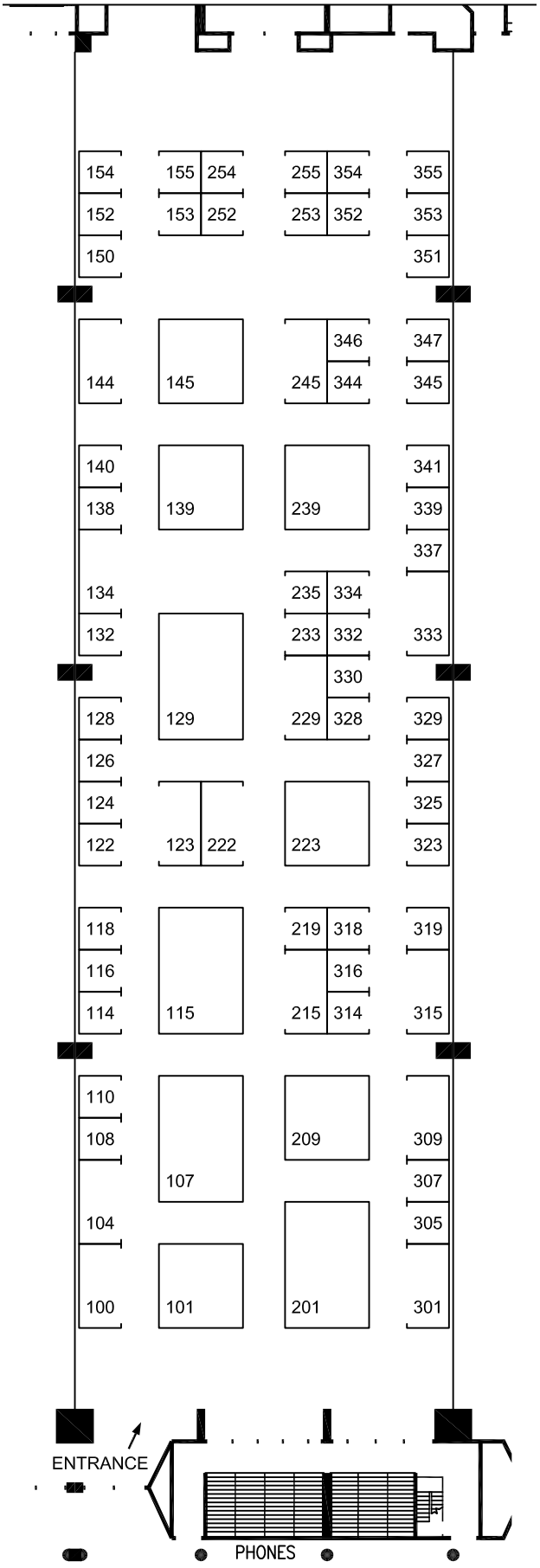
Remote Sensing and GIS Applications

Moderator: Candice Kasprzak, *Continental Mapping Consultants, Inc.*
Room: 202 B

Transfer of Satellite Rainfall Uncertainty from Gauged to Ungauged Regions at Regional and Seasonal Timescales
Ling Tang, *Tennessee Tech University*

Faisal HossainLidar Assist in Providing Future Security and Development in the Land of Ten Thousand Lakes
James Young, *Aero-Metric, Inc.*
Rob Merry

Atmospheric Correction of Landsat Thermal Infrared Data: A Calculator Based on North American Regional Reanalysis (NARR) Data
Dennis McCarville



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ASPRS staff will be on hand to answer questions about membership, certification, and the awards and scholarship program. Ask about our upcoming conference in Milwaukee. Don't forget to pick-up your complimentary copy of *PE&RS* and enter our drawing for free copy of our two newest books.

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Anchorage, AK 99507
907-522-3681 / 800-770-3681; Fax: 907-522-3688; www.datem.com

With over 20 years' experience, DAT/EM Systems International is a leader in the development of software for digital mapping and photogrammetric applications. DAT/EM Systems specializes in 3D stereo-viewing and precise feature data collection software. SUMMIT Evolution softcopy system is the flagship product supported by the time-tested CAPTURE interfaces for AutoCAD, MicroStation and ArcGIS. DAT/EM Systems takes pride in a reputation for delivering top-quality software systems based upon direct user input and superior customer support.

DiMAC sprl **Booth 223**
Charleroi Airport, South Terminal
Rue des Fusilles, Building S13
6041 Gosselies, Belgium
+32 71 57 25 30; Fax: +32 71 57 25 31; www.dimac.eu

DMC International Imaging Ltd., Tycho House **Booth 132**
20 Stephenson Road, Surrey Research Park
Guildford, Surrey GU2 7YE Great Britan
+44 (0)1483 804299; Fax: +44 (0) 1483 803804; www.dmcii.com

DMCii is a UK company providing satellite imagery and derived products. DMCii provides access to a unique set of image products including the Disaster Monitoring Constellation of satellites, enabling the rapid revisit to any site once per day. 650 km swath multispectral imagery is collected at 22m and 32m. We also supply 4, 5.6 and 2.8m resolutions. Other products and services include derived products including land use maps, change detection imagery and mosaiced imagery for customised projects. New satellites available in 2011 include 2.5 pan and 5m multispectral and additional 32m & 22m multispectral sensors.

Dynamic Aviation, Inc. **Booth 235**
1402 Airport Road
P.O. Box 7
Bridgewater, VA 22812
540-828-6070; Fax: 540-515-9614; www.dynamicaviation.com

Partnering with Dynamic Aviation allows you to allocate your capital resources to cutting-edge sensor technologies rather than aviation. Dynamic Aviation specializes in providing turboprop aircraft and aviation infrastructure to organizations with exacting data needs, but lacking sufficient aviation resources. Our aircraft fleet can easily accommodate most sensor payloads, allowing virtually unlimited data acquisition opportunities. We provide the aerial platform and experienced flight crew; you provide the sensors and the operators. Dynamic Aviation is ready when you are.

Earth Eye **Booth 138**
3680 Avalon Park Blvd. East, Suite 200
Orlando, FL 32828
407-382-6760; Fax: 407-382-5420; www.eartheye.com

Earth Eye provides accurate and usable LiDAR and imagery data from a single, rigidly coupled modular platform, consisting of Lidar, Aerial Photography, Mobile Video, Hyperspectral camera systems, GIS and Internet Mapping, Web and Database Application Development. Our core business is centered on collecting comprehensive Lidar and Orthophotography and the development of software (EarthView) that can be used to view, analyze and manipulate this data.

ERDAS **Booth 239**
5051 Peachtree Corners Circle, Suite 100
Norcross, GA 30092 USA
770-776-3400; Fax: 770-776-3500; www.erdas.com

ERDAS and Intergraph leverage joint strengths to offer a complete portfolio of geospatial solutions. ERDAS' enterprise remote sensing and photogrammetry solutions help organizations harness the information of the changing earth for greater advantage. Intergraph solutions help businesses and governments organize data and infuse the world with intelligence, making processes and infrastructures better, safer and smarter.

ERDAS and Intergraph are subsidiaries of Hexagon AB, a leading global provider of prevision measurement technology.

Esri **Booth 201**
380 New York St.
Redlands, CA 92373
909-793-2853; Fax: 909-793-5953; www.esri.com/remotesensing

Esri's geographic information system (GIS) software gives you the power to think and plan geographically. It helps you collect, manage, analyze and visualize geographic information, including imagery and other remotely sensed data. GIS enables you to see relationships and trends in your data not visible in a chart. You can then solve problems and make better decisions because you are looking at your data in a way that is quickly understood and easily shared.

GeoCue Corporation **Booth 329**
9668 Madison Blvd, Suite 202
Madison, AL 35758
256-461-8289; Fax: 256-461-8249; www.geocue.com

GeoCue Corporation is a software development and consulting services company specializing in geospatial production management solutions. We will be demonstrating our GeoCue product family of integrated solutions at our booth as well as during our annual User Group Meeting on Monday, May 2nd from 1:00-5:00 PM. These products provide an integrated end-to-end processing framework that, when combined with industry leading production tools, significantly reduces production time from data acquisition to finished product.

GeoDigital International **Booth 335**
175 Longwood Load South 400A, Hamilton, ON, L8P 0A1
905-667-7204; Fax: 905-667-7203; www.geodigital.com

Airborne 1 Corporation
300 N. Sepulveda Blvd., Suite 1060, El Segundo, CA 90245
310.414.7400; Fax: 310.414.7409; www.airborne1.com

GeoDigital International's new generation of digital airborne and terrestrial data collection systems and advanced software solutions, represent the very pinnacle of technology and expertise in this field. Their personnel are highly experienced in airborne imagery, Lidar technology, analysis, and software solutions having been involved in the original development of many of the core industry technologies.

Geographic Resource Solutions **Booth 305**
1125 16th Street, Suite 213
Arcata, CA 95521
707 822 8005; Fax: 707 822 2864; http://www.grsgis.com

GRS is an industry leader in GIS and Remote Sensing services and consulting. GRS is internationally known for our innovative techniques that enable us to perform highly detailed and accurate classifications of land-cover, fire-fuels, vegetation, and habitat in projects ranging from hundreds to millions of acres. GRS has developed state-of-the-art algorithms and processes for image classification, fire-hazard modeling, data-entry, and GIS data validation. GRS also provides customized training, system design, and data conversion services supporting all major GIS applications. GRS is presenting a Field Data Collection (Ground-truth) Workshop at the 2011 ASPRS Conference in Milwaukee.

***GIM International Magazine* (Geomares Publishing)** **Booth 339**
Geomares Publishing
P.O. Box 112, 8530 AC Lemmer
The Netherlands
+31 (0) 514 56 18 54; Fax: +31 (0) 514 56 38 98
www.gim-international.com

GIM International, the global magazine for geomatics, is published 12 times a year. The working scope of GIM International is worldwide and focuses on reporting the latest news and communicating new developments and applications in geomatics.

GIS Café **Booth 353**
496 Salmar Ave.
Campbell, CA 95008
408-850-9202; Fax: 408-351-8830; www.giscafe.com

GISCafe is a portal offering GIS and geospatial professionals complete GIS product catalog listings, technical papers, GIS news, CEO interviews, multimedia presentations, priority press releases, event postings, job placements and more. Each GISWeekly Review delivers to its readers news concerning the latest developments in the GIS industry, in a readable newsletter format with feature stories and news bytes. GISCafe receives more than 100,000 unique visitors and its daily newsletter has more than 40,000 subscribers. Subscribe to the daily newsletter at the GISCafe.com.

Global Geospatial Technologies, LLC **Booth 344**
14311 Gate Dancer Lane
Boyds, MD 20841
301-5152575; Fax: 301-5150489; www.ggt-us.com

Global Geospatial Technologies, LLC (GGT) is a R&D and mapping company in geospatial industry fields. GGT's main development and product is its 3DRealWorld. 3DRealWorld is a leading application platform for building and rendering of 3D city models. Such 3D city models are 100 percent real, measurable models built for real uses or applications. 3DRealWorld can work alone or in Internet/intranet environment, and it also can work with or within existing GIS systems, such as Arc/GIS. GGT provides services for building 3D city models and other mapping needs.

HAS Images, Inc **Booth 219**
136 North Saint Clair St
Dayton, OH 45402
937-222-3856; Fax: 937-222-2443; www.hasimages.com

HAS Images, Inc. is an aerial photo processing laboratory, that produces a complete range of conventional and digital products from aerial films. Our digital services include image scanning with geometric precision using a LH Systems DSW 700 and Vexcel VX 4000 image scanners, rectification, mosaicing, and hard-copy output to 48" x 96" using the Cymbolic Sciences Light Jet 5000 RS large format digital printer. In addition to the products and services we provide, we also are the exclusive Authorized Kodak Reseller of Aerial Products.

Stop by booth #219 to find out about the new Kodak Color Negative film 2460 and other Kodak Aerial films.

Icaros, Inc. **Booth 134**
10301 Strathmore Hall Street
Bethesda, MD 20852
571-212-7721

Icaros delivers advanced geospatial 'Mapping on Demand' solutions with unprecedented speed and affordability. The Icaros proprietary photogrammetric processing system reduces processing time by orders of magnitude and delivers consistently superior results. The Icaros aerial system is designed to enable unprecedented flexibility, quality and accuracy. The systems "portable" design enables installation and integration on nearly any small aircraft that can be in the air collecting images in less than 2 hours anywhere in the world.

ITRES **Booth 128**
#110, 3553 - 31st Street N.W.
Calgary, Alberta, Canada, T2L 2K7
403- 250-9944; Fax: 403-250-9916; www.itres.com

ITRES (1979) is an airborne hyperspectral remote sensing imager manufacturer and worldwide mapping survey provider.

Our performance-designed custom hyperspectral imagers are lidar-ready and feature unmatched precision, focus, and resolution. VNIR, SWIR, MWIR, & thermal IR spectral regions covered for infrastructure and environmental applications. Also offered: multiple sensor operation, remote control.

Wide-array thermal TABI-1800. Halve survey costs with a mapping swath twice as wide as the closest competitor.

ITT Visual Information Solutions **Booth 209**
4990 Pearl E. Circle
Boulder, CO 80301
303-786-9900; Fax: 303-786-9909; www.ittvis.com

Visit ITT Booth 209 to learn more about ENVI, the image processing software trusted by image scientists for years to extract important and timely information from all types of geospatial imagery. You're invited to attend our user group meeting or watch live in-booth presentations to learn how ENVI will streamline your image processing and analysis workflow by delivering you seamless ArcGIS® integration and automation of essential image processing tasks. Learn more about ENVI at www.ittvis.com/ENVI.

iXSea Inc **Booth 108**
179 Sidney Street
Cambridge, MA 02139
+1-781-937-8800; Fax: +1-781-937-8806; www.ixsea.com

iXSea, experts in IMU and FOG technology, provides turnkey INS/GPS solutions for the airborne and land-based survey industries and meets their growing demand for accurate position, orientation and georeferencing data. At ASPRS, iXSea presents AIRINS, an INS for high and low altitude missions and all types of sensors.

KLT Associates, Inc. **Booth 301**
100 Corporate Place
Peabody, MA 01960
+1-978-536-9100; Fax: +1-978-536-9110; www.kltassoc.com

ATLAS was written specifically to handle solutions for all aspects of Geo-spatial data

ATLAS provides a fully integrated system for collecting, editing, and retrieving geographic information, SOFTCOPY STEREO data collection, Terrain tools: handling, Lidar, TINs, DEMs. ORTHO rectification and MOSAIC of frame cameras, digital imagery, including cameras, airborne line sensors and spaceborne imagery. AERIAL TRIANGULATION provides solutions for even the most difficult mapping project, in an interactive environment. KLT's development using advanced processing tools increases throughput of AT, Lidar and ORTHO production on today workstations.

KMI Media Group **Booth 339**
Geospatial Intelligence Forum Magazine
15800 Crabbs Branch Way, Suite 300
Rockville, MD 20855-2604
301-670-5700; Fax: 301-670-5701
www.geospatial-intelligence-forum.com

Leica Geosystems and Z/I Imaging **Booth 139**
Airborne Sensor Solutions from Hexagon Geosystems
5051 Peachtree Corners Circle, Suite 250
Norcross, GA 30092
303-799-9453; Fax: 303-799-4809; www.leica-geosystems.us

Hexagon Geosystems' newly formed Geospatial Solutions Division is bringing together Leica Geosystems' Airborne Sensors and Intergraph's Z/I Imaging solutions. Sensors from Leica Geosystems and Z/I Imaging are fully integrated in a suite of end-to-end workflow solutions. These include flight planning, GNSS/IMU processing as well as the most comprehensive post-processing tools for the delivery of map products and 3D models in the fastest time possible. Hexagon Geosystems' combined airborne sensor portfolio of Leica Geosystems and Z/I sensors offers complete solutions for almost all airborne mapping applications plus all business models and continues to give each sensor owner the highest and most consistent return on investment.

LizardTech **Booth 307**
1008 Western Ave. Ste. 200
Seattle, WA 98104
206.652.5211; Fax: 206.652.0880; www.lizardtech.com

Since 1992, LizardTech® has delivered state-of-the-art software products for managing and distributing massive, high-resolution geospatial data such as aerial and satellite imagery and Lidar data. LizardTech pioneered the MrSID® technology, a powerful wavelet-based image encoder, viewer, and file format. LizardTech has offices in Seattle, Denver, London and Tokyo and is a division of Celartem Technology Inc., (JASDAQ: 4330). For more information about LizardTech, visit www.lizardtech.com.

MDA Information Systems, Inc. **Booth 328**
(formerly MDA Federal Inc.)
6011 Executive Boulevard, Suite 400
Rockville, Maryland 20852
240-833-8200; Fax: 240-833-8201
www.MDAInformationSystems.com

MDA Information Systems, Inc., of Rockville, Maryland, is the leading provider of integrated GIS and remote sensing solutions to federal, state and local agencies, international organizations, and private companies. Established in 1969, MDA Federal Inc. specializes in all-source satellite image processing (orthorectification, multi-resolution merging, mosaicking, digital printing), GIS applications, feature extraction, landcover mapping, change detection, weather forecasting, crop monitoring, geological interpretation, hyperspectral applications, and the continuous monitoring of the Earth's resources.

Microsoft Corporation **Booth 107**
1690 38th Street
Boulder, CO 80301
303-546-1301; Fax: 425-936-7329; www.iFlyUltraCam.com

Microsoft Corporation and its subsidiary, Vexcel Imaging, offer state-of-the-art photogrammetric products based on the latest and most-advanced technological developments. Our successful line of aerial surveying offerings includes award-winning UltraCam digital aerial mapping systems and UltraMap photogrammetric workflow software for managing and processing UltraCam imagery. To see our newest technology that will again revolutionize the aerial surveying industry, join us in our User Group meeting and visit us on the show floor.

MosaicMill Ltd **Booth 314**
Kultarikontie 1
01300 Vantaa, Finland
+358 40 5965322; www.mosaicmill.com

MosaicMill develops EnsoMOSAIC digital aerial imaging and image processing system. EnsoMOSAIC is a set of tools to carry out aerial imaging projects, from flight planning through photogrammetric processing to stereoscopic data extraction. EnsoMOSAIC software is especially suited for processing of large image sets collected with small and medium format cameras on-board of UAVs or conventional aircraft.

MosaicMill's main products are:

- EnsoMOSAIC and EnsoMOSAIC UAV- aerial triangulation, ortho-mosaicking
- EnsoMOSAIC 3D – 3D data extraction
- NavCam - aircraft navigation and camera control

NASA **Booth 145**
300 East Street
Washington, DC 20546
301-614-5560; Fax: 301-614-6530; www.nasa.gov

NASA Earth System Earth Science conducts and sponsors research, collects new observations from space, develops technologies and extends science and technology education to learners of all ages. Working closely with our global partners we enhance economic security in many tangible ways. NASA research seeks to answer fundamental science questions about the changes we see in climate, weather, and natural hazards, and deliver sound science that helps decision-makers make informed decisions.

National Geospatial-Intelligence Agency (NGA) **Booth 104**
4600 Sangamore Road, Mail Stop: D-143
Bethesda, Maryland 20816-5003
301-227-2439; Fax: 301-227-0117; www.nga.mil

NGA is a major combat support agency of the Department of Defense and an integral member of the Intelligence Community. NGA provides timely, relevant, and accurate geospatial intelligence (a combination of imagery, imagery intelligence, and geospatial information) to the military warfighter and our nation's civilian senior policy and decision makers. NGA's geospatial intelligence provides the knowledge foundation our customers need for planning, decision, and action.

New Tech Services, Inc. **Booth 140**
P.O. Box 16301
Sugar Land, TX 77496-6301
1-281-573-8029; www.nts-info.com and www.TopoFlight.com

New Tech Services, Inc. markets Pre-Owned Mapping Equipment and modified Planes. NTS sells a 3d Flight Planning tool. Download a demo. Version 8 is available now. The "Navigator" is a Flight Management System to navigate the Aircraft and trigger the Camera at pre-defined positions.

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NOAA, National Geodetic Survey, Remote Sensing Division **Booth 114**
1315 East West Highway, SSMC3
Silver Spring, MD 20910
301-713-2663; Fax: 301-713-2183

The mission of NOAA's National Geodetic Survey is to define, maintain and provide access to the National Spatial Reference System to meet our nation's economic, social, and environmental needs. NGS provides the framework for all positioning activities in the Nation. The foundational elements - latitude, longitude, elevation and shoreline information - contribute to informed decision making and impact a wide range of important activities including mapping and charting, flood risk determination, transportation, land use and ecosystem management.

Northeastern University's College of Professional Studies **Booth 316**
50 NI, 360 Huntington Avenue
Boston, MA 02115
877-668-7727; www.northeastern.edu/cps

Northeastern University's College of Professional Studies has three innovative graduate programs that offer the hands-on training, knowledge, and skills necessary for a career in geospatial technology and remote sensing.

Programs include:

- Master of Professional Studies in GIT
- Graduate Certificate in GIS
- Graduate Certificate in Remote Sensing

These programs feature 7 entry points per year and a flexible online format, allowing students to maintain work and life commitments while attending school.

NovAtel Inc. **Booth 110**
1120 68th Avenue NE
Calgary AB Canada T2E-805
1-800-NovAtell; Fax: 403-295-4501; www.novatel.com

Long-time supplier of GNSS technology for airborne and ground mobile mapping applications. NovAtel receivers, antennas and SPAN™ GNSS/INS products offer a wide range of functionality. SPAN technology easily integrates with existing camera and flight management systems. While GrafNav is industry's preferred GNSS data processing software, Inertial Explorer® extends this functionality with tightly coupled GNSS/INS. Combined with NovAtel receivers, GrafNav and Inertial Explorer offer a powerful, flexible workflow for airborne operators.

Optech Incorporated **Booth 223**
300 Interchange Way
Vaughan, ON Canada, L4K 5Z8
905-660-0808; Fax: 905-660-0829; www.optech.ca

Optech is the world leader in the development, manufacture and support of advanced lidar and imaging-based survey instruments. With operations and staff worldwide, Optech offers both standalone and fully integrated lidar and camera solutions in airborne terrestrial mapping, airborne laser bathymetry, mobile mapping, mine cavity monitoring, and industrial process control, as well as space-proven sensors. Optech has refined lidar and camera technology to empower surveyors with fast, accurate and cost-effective solutions.

Overwatch **Booth 315**
21660 Ridgetop Circle, Suite 110
Sterling, VA 20166
703-437-7651; Fax: 703-437-0039; www.overwatch.com

Overwatch, an operating unit of Textron Systems, is a market leader in multi-source and geospatial intelligence solutions. Our next generation solutions empower users with superior situational understanding, improved information sharing and speed of command decision support. Overwatch solutions present a complete operational picture to first responders, investigators and warfighters, accelerating situational understanding and time-to-decision.

PCI Geomatics USA **Booth 100**
4848 Tramway Ridge, NE. Suite 222
Albuquerque, New Mexico 87111
888-343-0003; Fax: 888-629-4445; www.pcigeomatics.us

PCI Geomatics is a world leading developer of software and systems for geo-imaging solutions. PCI Geomatics provides products and solutions that help organizations turn geospatial imagery into useful information, through our high performance, automated and scalable image processing software. Since 1982, we have delivered innovative solutions for the environmental, DSI, agricultural and satellite data processing markets that use aerial and satellite optical imagery, as well as synthetic aperture radar (SAR) imagery.

Planar Systems **Booth 337**
1195 NW Compton Drive
Beaverton, OR 97006
503-748-1108; Fax: 503-748-5987; www.planar.com

Point of Beginning (*POB*) Magazine **Booth 339**
2401 W. Big Beaver Road, Suite 700
Troy, MI 48084
248-244-6400; Fax: 248-362-5103; www.pobonline.com

Since 1975, Point of Beginning, also known as POB, has been serving the surveying and mapping profession as an informative national publication and more recently via electronic media, including eNewletters, a comprehensive website, www.POBonline.com, and the industry's favorite message board, www.RPLS.com. As our mission states, we are dedicated to helping the geomatics professional succeed through our coverage of new applications and evolving technologies, practical solutions to surveying and mapping problems, and business, legal and educational issues.

Professional Surveyor Magazine **Booth 325**
(Flatdog Media, Inc.)
20 W. 3rd Street
Frederick, MD 21701
301-682-6101; Fax: 301-682-6105; www.profsrv.com

Professional Surveyor Magazine is North America's leading source of information on emerging technologies and business strategy for geospatial professionals, including land and hydrographic surveyors, photogrammetrists, and GIS professionals. Published with it are the annual supplements Aerial Mapping and Surveyor's Red Pages, the e-newsletter Pangaea, and PSM en Español.

QCoherent Software **Booth 327**
1880 Office Club Pointe
Colorado Springs, CO 80920
719-386-6900; Fax: 719-272-8051; www.qcoherent.com

QCoherent is an innovative provider of high-capacity lidar software. Our extensive knowledge of lidar and geospatial software has been applied to LP360 (ArcGIS and Standalone) and LP Viewer desktop solutions and lidar Server for point cloud visualization and distribution via the web. With unparalleled performance in point cloud processing, classification, extraction, and operating environment options, QCoherent is the provider of choice for lidar software. Free evaluation and information is available at www.QCoherent.com.

RapidEye **Booth 150**
1001 19th St. North, Suite 1200; #19
Arlington, VA 22209
571-384-7922; Toll Free 800-940-3617; Fax: 571-384-7959
www.rapideyeusa.com

RapidEye is a provider of quality high-resolution satellite imagery and solutions derived from its imagery. With a constellation of five EO satellites, RapidEye images over 4 Million km² every day, and has amassed over 1.5 Billion km² in its archive in just two years. With an unprecedented combination of wide area repetitive coverage and five meter pixel sized multi-spectral imagery, RapidEye is a natural choice for many industries and government agencies.

Riegl USA **Booth 123**
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Orlando, Florida 32819
407-248-9927; Fax: 407-248-2636; www.rieglusa.com

The key factor to our success is the full service experience Riegl USA offers to our customers, from your initial purchase, integration of the system, training and support, Riegl stands out as an industry leader.

Riegl USA is recognized as the performance leader in airborne powerline mapping, civil infrastructure, mobile mapping, hydrographic, mining, and terrestrial based industries.

Our instruments are well known for their ruggedness and reliability under demanding environmental conditions.

School of Remote Sensing, Wuhan University **Booth 330**

SimActive Inc. **Booth 323**
465 St-Jean Suite 510
Montreal (Quebec),H2Y 2R6, Canada
514-288-2666; Fax: 514-288-6665; www.simactive.com

SimActive is the developer of Correlator3D™ software, a patented end-to-end photogrammetry solution for the generation of high-quality geospatial data from satellite and aerial imagery. Correlator3D™ produces precise digital surface models (DSM), digital terrain models (DTM) and orthomosaics. Powered by GPU technology, Correlator3D™ accelerates project completion timeframe. SimActive has been selling Correlator3D™ to leading mapping firms and government organizations around the world, offering cutting-edge photogrammetry software backed by exceptional customer support.

Spectral Evolution **Booth 334**
90 Sutton Street, Unit 4
North Andover, MA 01845 USA
978-687-1833; Fax: 978-945-032; www.spectralevolution.com

Spectral Evolution Lab and Portable Remote Sensing Spectrometers and Spectroradiometers are used worldwide for many field assignments due to their reliable, robust, rugged yet lightweight design and user-friendly features including: All photodiode arrays (InGaAs and Si) for low noise & reliable battery operated performance; Fast, full spectrum measurements with no moving gratings; Integral dark shutter for convenient scans. Field portable units include wireless Bluetooth modules for remote sensing applications.

Suzhou Wuda Institute of **Booth 332**
Image Info Engineering Co Ltd.
+86-512-69215118; Fax: +86-512-66030144

The Sidwell Company **Booth 341**
675 Sidwell Court
St. Charles, Illinois 60174-3492
630-549-1049; Fax: 630-549-1111; www.sidwellco.com

The Sidwell Company is a national geospatial data solution provider of photogrammetric services, including: image acquisition; digital orthophotography; and topographic, planimetric, and orthophoto mapping. Sidwell also provides comprehensive GIS and cadastral mapping services, including: GIS planning, design, and implementation; data conversion; cadastral database development; and website development and hosting. Sidwell is the Midwest Distributor for Ashtech® Professional GPS Solutions and an Esri® Gold Business Partner.

Topcon Positioning Systems, Inc. **Booth 129**
7400 National Drive
Livermore, CA 94551
925-245-8300; information-tps@topcon.com
www.topconpositioning.com

Topcon Positioning Systems, Inc. (TPS) designs and manufactures precise positioning products and solutions for the global mapping and GIS, surveying, civil engineering, construction, agriculture, asset management and mobile control markets.

Topcon has focused on developing an array of integrated positioning and automation technologies to meet constantly changing demands including the revolutionary IP-S2 Mobile Mapping System and the GLS-1500 laser scanner, a robust scanner that captures data at 30,000 points per second.

Track'Air B.V. **Booth 346**
Zutphenstraat 55
7575 EJ Oldenzaal, The Netherlands
+31-541-229-030; Fax: +31-541-229-033; www.trackair.com

Lead'Air, Inc.
4009 5th Street, Suite 102
Kissimmee, FL 34741
407-343-7571; Fax: 407-343-7572

Track'Air B.V. and Lead'Air, Inc. develop and distribute affordable, effective tools to the worldwide aerial survey community. Aerial Flight Management Systems (FMS) are the main products of these companies. Our FMS can be operated with a large variety of aerial survey equipment. To date, over 750 organizations are operating our FMS worldwide. Our latest FMS, the NanoTrack, is setting new standards for performance and affordability.

Trimble **Booth 115**
10355 Westmoor Dr.
Westminster, CO 80021
720-587-4905; Fax: 720-887-6101
http://www.trimble.com/geospatial

Using mobile mapping, photogrammetry, and laser scanning to complement Trimble's Integrated Surveying, Spatial Imaging, Site Positioning, and Mapping & GIS solutions, our focus is on integrating these technologies into end-to-end solutions that effectively tackle real-world challenges faced by service providers as well as infrastructure managers. Our solutions streamline the collection and maintenance of high accuracy as-built models for aerial and land mobile mapping, transportation, and utilities and energy transmission & distribution industries.

U.S. Geological Survey (USGS) **Booth 309**
USGS - Land Remote Sensing
Strategic Communications Manager
12201 Sunrise Valley Drive
Reston, Virginia 20192
703-648-4462; Fax: 703-648-5939; www.usgs.gov

The USGS Land Remote Sensing (LRS) Program and the Earth Research and Observation Science Center (EROS) located in Sioux Falls, South Dakota serves as is the Nation's portal to the largest archive of remotely sensed land data in the world. Working with NASA, NOAA, commercial satellite companies, State and local governments, and international programs, the LRS Program collects, maintains, and distributes millions of images acquired from satellite and aircraft sensors. From such images scientists and land managers, both public and private, derive information about natural resources, hazards, and long-term changes to the landscape. Through advancements in data archive and processing technology and through the operation and maintenance of satellites such as Landsats 5 and 7, the LRS Program provides continuous access to worldwide land images that can be used in mankind's effort to sustain the ever-changing Earth."

Urban Robotics, Inc. **Booth 233**
33 NW First Avenue, Suite 200
Portland, OR 97209
503-224-9239; Fax: 503.210.1910; www.urbanrobots.com

Urban Robotics delivers cutting edge software and hardware solutions for 3D intelligence, surveillance and reconnaissance (ISR) applications. We specialize in rapid turnaround of large data collects, transforming 2D imagery into 3D via dense extraction algorithms. Additional products include aerial 3D sensors and high performance aerial and ground computer clusters. With products and people deployed around the world, Urban Robotics has a proven track record of supporting various federal agencies, military forces and private corporations.

VisionMap LTD. **Booth 153**
7 Menachem Begin Rd.
Ramat-Gan 52681, Israel
+972-3-6091042; Fax: +972-3-6091043; www.visionmap.com

VisionMap is a leading provider of digital aerial survey and mapping systems. The A3 system is an end-to-end solution comprised of a large format digital camera and an automatic ground processing system. A3 supports coverage of extremely large scale areas in a short time, providing accurate, high resolution imagery in RGB& NIR bands. A3 system automatically and rapidly processes aerial triangulation, DSM, Orthophoto mosaic and stereo models. VisionMap systems have been successfully deployed worldwide.

Visual Intelligence **Booth 252**
510 Bering Drive, Suite 310
Houston, Texas 77057
713-917-8300; Fax: 713-974-9328; www.visualintell.com

Founded in 1997, Visual Intelligence ("VI") is an industry leader in the design, development and sales of digital airborne imaging sensors. VI has patented, developed and operated three generations of Intelligence, surveillance, reconnaissance (ISR) and mapping imaging sensors. VI introduces the Iris One™ digital aerial imaging camera system, and with that, makes available the fastest, lightest, most reliable and most economical medium-to-large format digital aerial imaging sensor in the industry.

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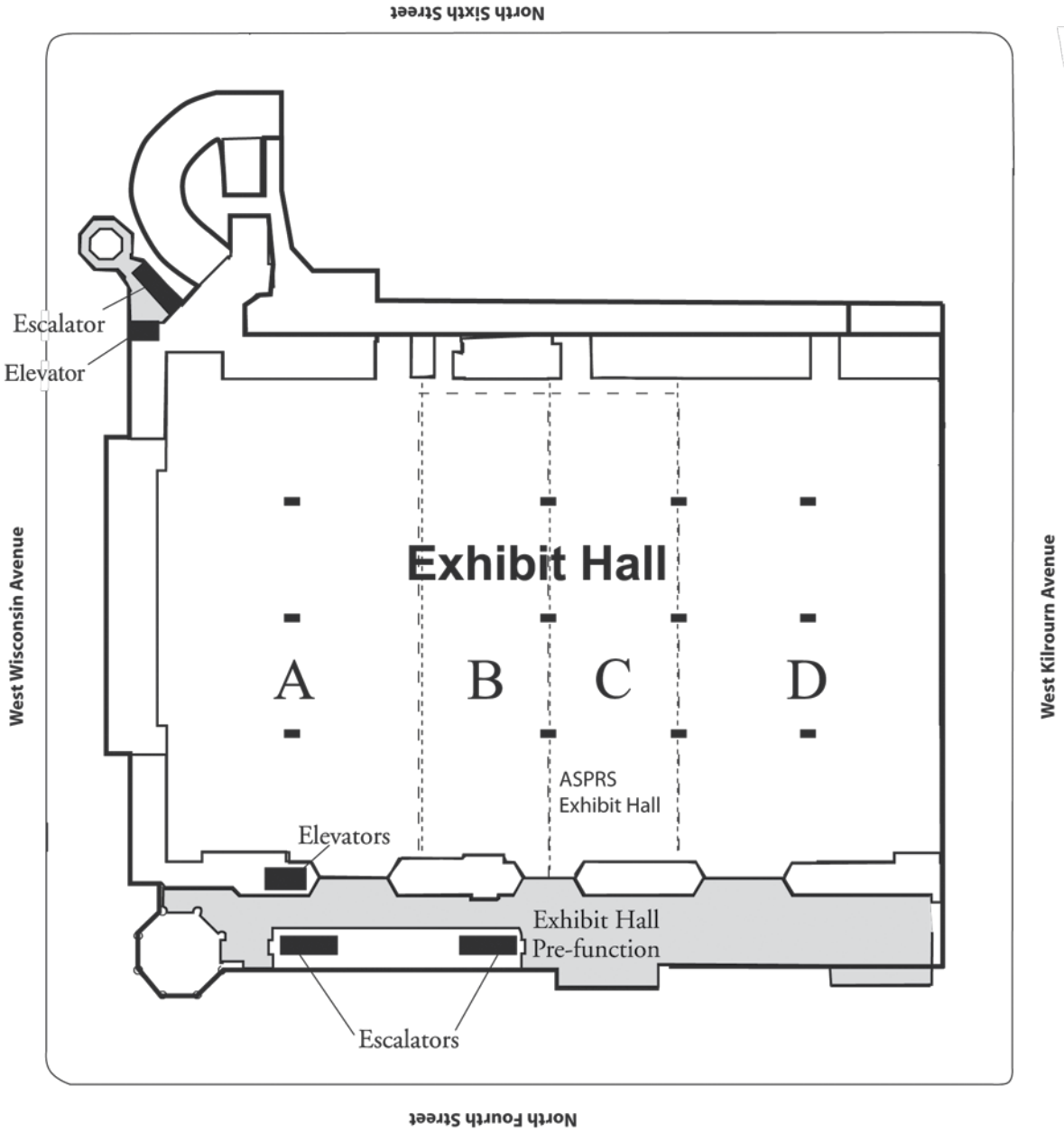

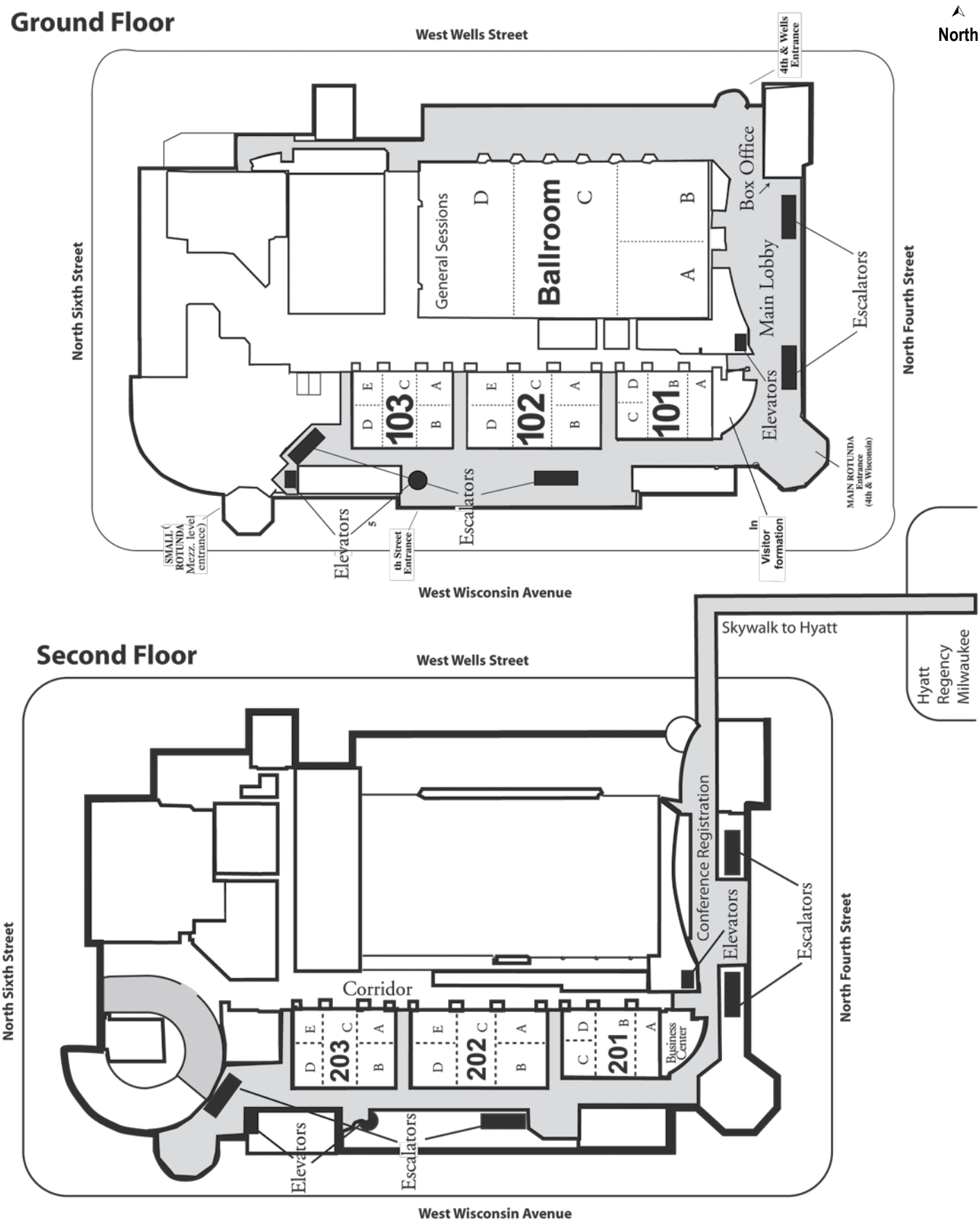
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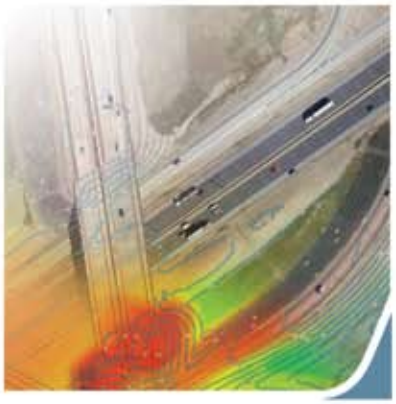

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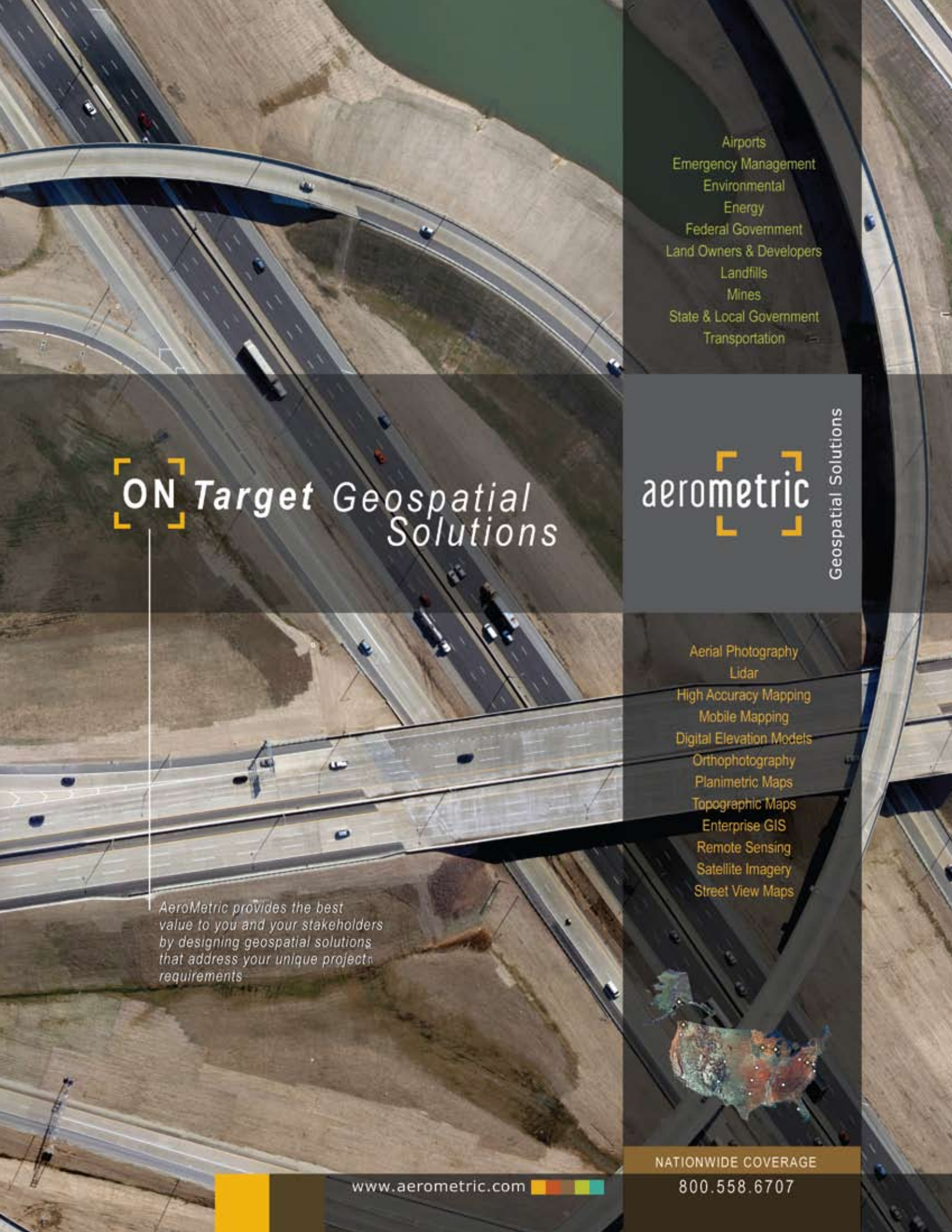

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