

CaGIS/ASPRS 2013 Specialty Conference

IMAGING AND MAPPING FOR DISASTER MANAGEMENT: *FROM THE INDIVIDUAL TO THE GLOBAL COMMUNITY*

San Antonio, Texas, October 27-30, 2013 ★ Crowne Plaza San Antonio Riverwalk

PRELIMINARY PROGRAM



Tornado



Terrorism



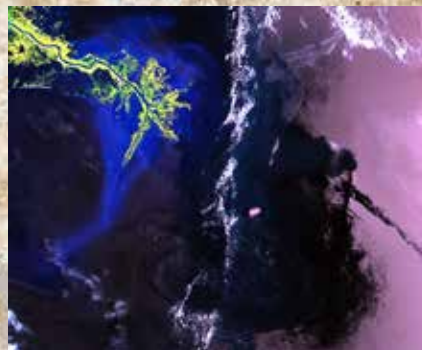
Wild Fires



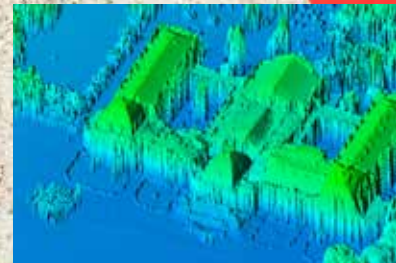
Flooding



Hurricanes



Man Made Disasters – Oil Spill



Earthquakes



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COMPLIMENTARY PUBLIC WIFI

The CaGIS/ASPRS 2013 Specialty Conference is pleased to provide wireless internet for most conference attendees in the meeting areas and the general session room. The complimentary wireless internet will be limited speed and is for general usage. Please respect your fellow attendees and do not download large files, stream video content or engage in malicious activities. Each attendee will be provided access information within their onsite registration packet.

All users of the free public WiFi will be held to the Terms and Conditions of using this free service. The Terms and Conditions can be found online at the conference web site.

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ASPRS 2014 Annual Conference
& co-located JACIE Workshop

March 23–28, 2014 Louisville, Kentucky USA

www.asprs.org/Conferences/Louisville-2014/



Welcome from the Conference Chairs

CaGIS and ASPRS would like to invite you to San Antonio for our joint conference on Imaging and Mapping for Disaster Management. As we write this letter, wildfires are again occurring in Colorado. Major recent events such as the tornado in Moore, Oklahoma and Hurricane Sandy's visit to New England are changing the manner in which we use geospatial information in disasters. As mapping, GIS, and remote sensing professionals, we understand the key role that accurate, current geospatial information plays in preventing, preparing for, and responding to emergencies on all scales. The combined expertise of CaGIS and ASPRS members is critical in supporting disaster management because it is not enough to collect outstanding data, we must be prepared to quickly and efficiently exploit it in order to enable critical decisions. Most importantly, we must understand the information needs of the decision makers and coordinate geospatial data collections to meet those needs.

To that end, we have assembled an excellent technical program including plenary session speakers Rear Admiral Joseph Nimmich, Federal Emergency Management Agency; Dr. Bhudhu Bhaduri, Oak Ridge National Laboratory; and Mr. Josh Campbell, U.S. Department of State. We also have special sessions planned on the Hurricane Sandy response and post-event data collection and processing; crowdsourcing as part of disaster response; and unmanned aerial systems.

We have adjusted the technical program so that it makes the best possible use of conference participants' time. ASPRS workshops will be offered on Sunday afternoon and Monday, prior to the start of the conference. Then, we will concentrate both technical sessions and exhibit hall hours over two days – Tuesday (October 29) and Wednesday (October 30). We also plan to have three presentations for many of the 90-minute technical sessions, allowing more time for each presenter and for discussion. Exhibit hall hours will be maximized so everyone will have ample opportunity to visit the exhibit booths.

And last, but, certainly not least, we will have the Exhibitor's Reception on Tuesday night followed by an opportunity for late-night dancing near the Riverwalk – including lessons from at least one of the Technical Program Chairs and an ASPRS Past President!

We are looking forward to seeing all of you in San Antonio for some very important work and an opportunity to have some fun deep in the heart of Texas!



Kari Craun

Kari Craun
CaGIS Technical Program Co-Chair



Michael S. Hodgson

Michael Hodgson
ASPRS Technical Program Co-Chair

Students & Young Professionals



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

The Student Advisory Council Meeting
Monday, October 28, 5:30 PM to 6:30 PM

Employer "Meet and Greet"
Tuesday, October 29, 11:00 AM to 12 NOON

Get together with the other Students and Associate members of ASPRS attending this year's conference and learn what the SAC has been working on. Stay for the meet and greet and make some connections with potential Employers attending this year.

The SAC members would love to meet all students attending the conference and hear any ideas you may have to make your conference experience enjoyable.

The meet and greet is designed to connect members looking to apply for jobs in the digital mapping industry with 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.

Young Professionals Council (YPC)
Tuesday, October 29, 3:00 PM to 4:00 PM

The mission of the ASPRS Young Professionals Council (YPC) is to enhance a member's professional development through mentoring, networking and certification. We are designed to serve the needs of the Associate Members under the age of 35.

The YPC welcomes anyone who is interested in serving on the council or would like to hear about their progress thus far to attend the meeting.

Other Social Activities

Your SAC Networking Councilor will arrange relaxed social gatherings after each of the day's conference activities. These events will allow you to get to know more of the students and young professional members of ASPRS. Attendees are welcome to join in on the fun as well.



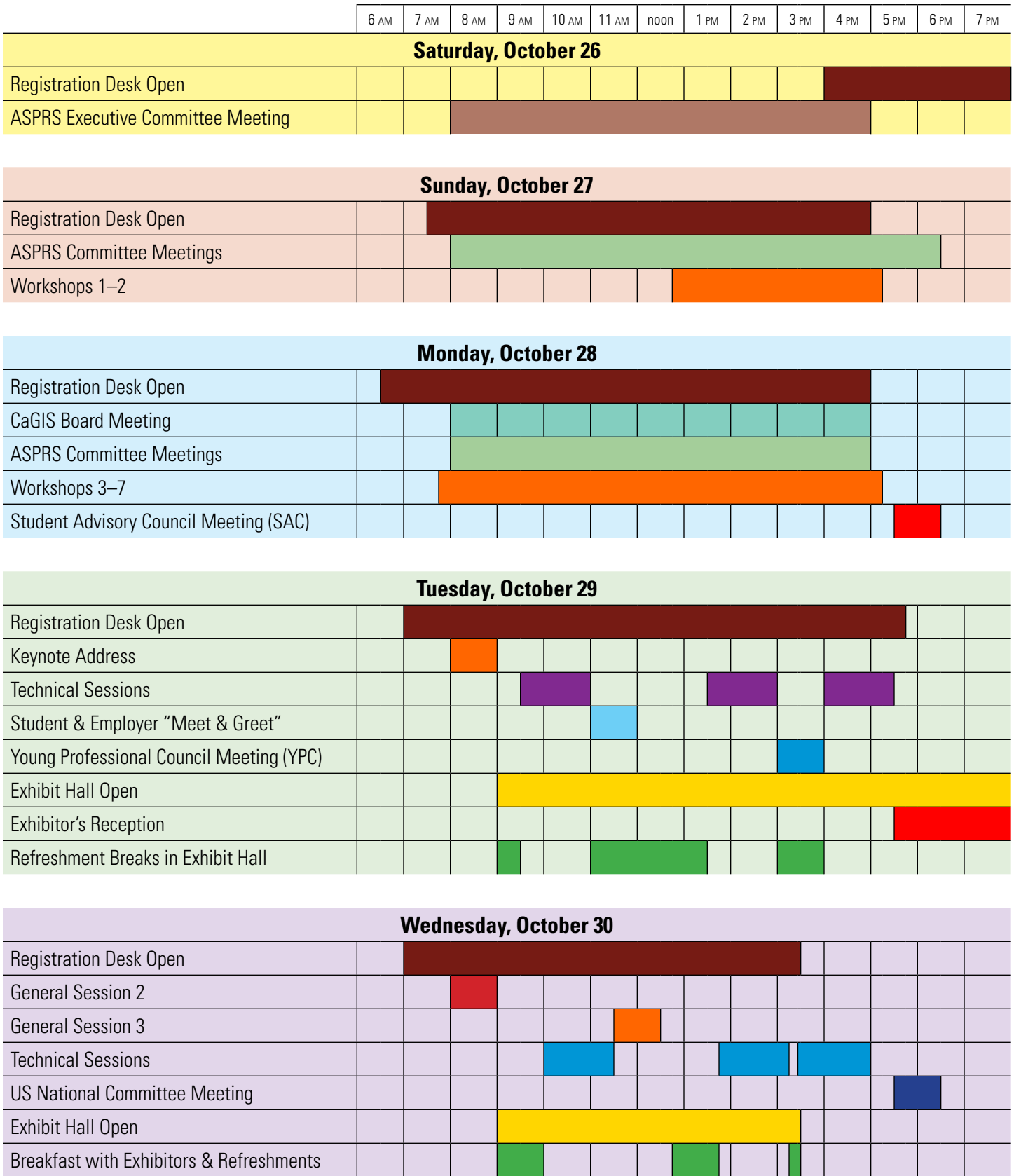
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www.lidarnews.com

CONFERENCE-AT-A-GLANCE



This chart is a general representation of when things will occur at the conference; however, please consult the rest of the program for more complete information about dates and times of specific sessions and activities. Also, this chart could possibly change between the Preliminary and the Final Program publication.

SAN ANTONIO

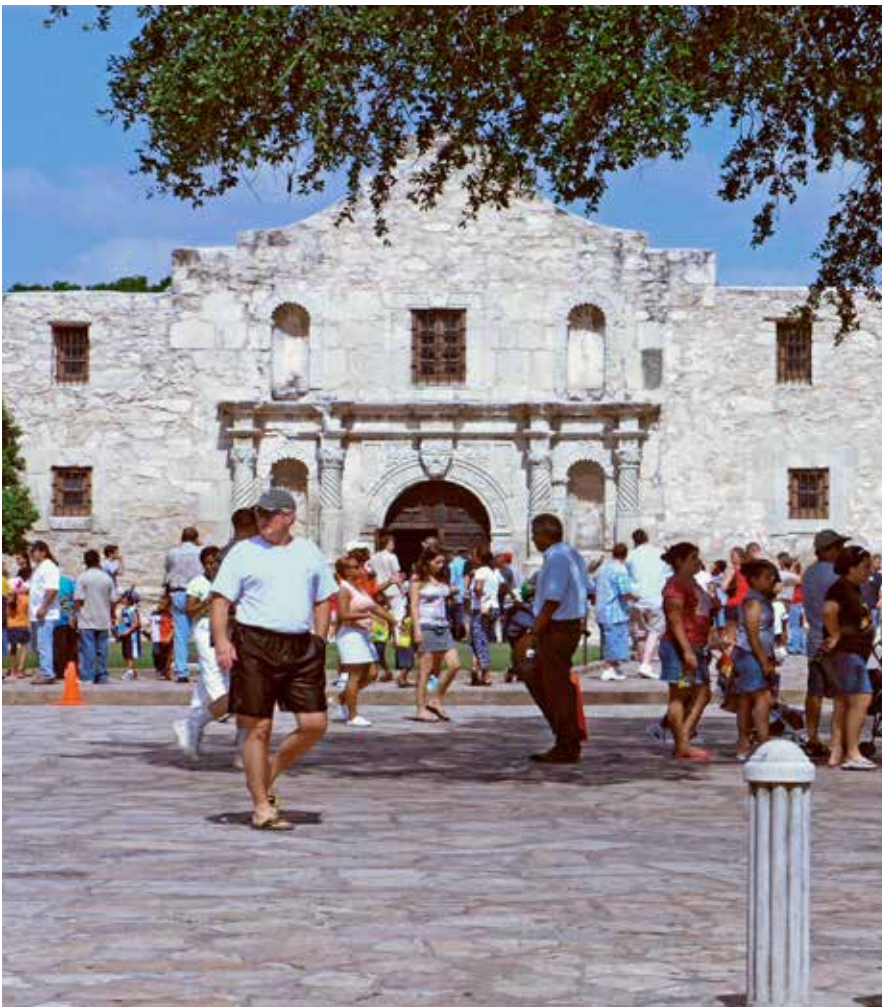
DEEP.
IN THE
HEART.

It's Beyond Conventional!

From the stones of the Alamo to the meandering paths of the River Walk, San Antonio takes you on a journey through a land as grand as its reputation. Walk the lines drawn for independence when you visit the Alamo—one of five Spanish colonial missions. Stroll the cobblestone sidewalks of the River Walk to uncover an outdoor theatre with flamenco dancers and mariachis, nationally acclaimed museums, luxury riverside hotels and sidewalk cafes that offer everything from authentic Tex-Mex to worldly cuisines.

Be sure to explore the rolling terrain of San Antonio's Hill Country, a lush oasis offering resorts complete with top-notch golf courses, spas and waterparks. Just down the road you'll find SeaWorld San Antonio, the world's largest marine life adventure park and family entertainment showplace; and Six Flags Fiesta Texas with thrilling rides and shows fun for every age.

Here, diversity is a way of life; from the colors of the culture to a broad range of attractions. So come, find for yourself that San Antonio is more than a convention destination.



FREQUENTLY ASKED QUESTIONS

How do I register for the conference?

Please register on-line or by using the registration form in this Program on page 21. The form may be duplicated as needed. Complete the form (type, print clearly, or attach a business card). Your name badge will reflect this information. Payment in U.S. Dollars will be accepted by Visa, MasterCard, Discover, American Express, checks made payable to ASPRS 2013 Specialty Conference, and signed government purchase orders or training orders. Registrations received without payment will not be processed. Please do not mail your registration form after you have registered by fax or online.

Online: www.asprs.org/Conferences/San-Antonio-2013
(Visa, MasterCard, Discover, or American Express)

Mail To: ASPRS 2013 Specialty Conference Registration
5410 Grosvenor Lane, Suite 210
Bethesda, MD 20814
Phone: 301-493-0290 x109
(All Forms of Payment)

Fax To: CaGIS/ ASPRS 2013 Specialty Conference Registration
301-493-0208 (fax)
(Visa, MasterCard, Discover, American Express/purchase orders only)

Will I receive confirmation of my registration?

Your registration will be confirmed by e-mail. A registration is not considered complete until all registration fees are received by the Meeting Registrar. Please notify the Meeting Registrar at 301-493-0290 x109 if you have not received your confirmation within two weeks of submitting your registration, or if you have any questions. Your registration packet will be available at the CaGIS/ ASPRS 2013 Specialty Conference Registration Desk, in the Crowne Plaza San Antonio-Riverwalk Hotel, during the registration hours noted on page 6 of this program.

What is the cancellation/refund policy?

To qualify for a full refund, a written cancellation must be received by the CaGIS/ ASPRS 2013 Specialty Conference Meeting Registrar by September 27, 2013. For cancellations received by October 17, 2013, a 50 percent refund will apply. No refunds will be made after October 17, 2013. This policy applies to all fees paid for the conference. All refunds are subject to a \$50.00 processing fee and will be issued one month after the conference concludes.

Cancellations for medical emergencies after October 17, 2013, will be considered on an individual basis and will require a physician's signed letter.

What is the location of the Conference?

All Conference activities will be held in the
Crowne Plaza San Antonio-Riverwalk Hotel
111 E Pecan Street
San Antonio, Texas 78205 USA

What is the Presenter and Moderator's Registration Policy?

All Presenters and Moderators are **REQUIRED TO PRE-REGISTER** at the appropriate registration rate. Presenters registered at the Full Registration Rate who attend the conference and fulfill all requirements as directed by the Conference Coordinator including submitting the required Presenters' Rebate Form immediately after their session(s) will be eligible for the appropriate rebate. This rebate will be issued within 30 business days after the conference. **There are no rebates for Moderators who do not present a paper, Presenter Daily, Moderator Daily or Student registrants.**

When must Technical Paper and Poster Presenters register?

For a paper/poster presenter's name and paper title to appear in the final conference program, their registration must be received within 60 days of their receiving notification of the paper/poster acceptance but not later than August 23, 2013.

As a student, presenting either a Technical Paper or Poster, what registration fee do I pay?

All students attending the conference, whether they are presenting a paper or poster or not, are eligible for the appropriate student registration fee.

I am a part-time student at an accredited institution. Do I qualify for student registration fee?

Anyone who is currently enrolled as a full or part-time student at an accredited college or university may register at the student registration rates if they have not previously held an ASPRS membership in another category, e.g., someone who previously held full membership then returned to college cannot now register as a student. As a non-member student, you register online or use the paper form. ALL students are required to fax a copy of their student identification to qualify for the student registration fee.

Must I pre-register for the conference?

Pre-registration is preferred; however, on-site registration is available. On-site Registration will be located in the Crowne Plaza San Antonio-Riverwalk Hotel. A deep discount is available to everyone registering at least 30 days prior to the conference start date.

Are Daily Registrations permitted for all categories?

Yes. Daily registrations may be done in advance or on-site. However, a deep discount is available to those who register at least 30 days prior to the conference start date.

May I bring a Guest to the conference?

Yes, we welcome adult guests. This is a professional conference and *children under age 13 are not permitted to attend any sessions or visit the Exhibit Hall*. A separate registration fee has been set for all guests. (Please see Registration Form on page 21 of this program). This fee includes the admission to the Exhibit Hall and the Exhibitors' Reception. Admission to the general and technical sessions is not included with this registration. If guests wish to attend any of these sessions, they must register at the appropriate rate.

I am not a US citizen and am coming from outside the United States, how do I get a Letter of Invitation to obtain a visa?

You must first register for the conference following the procedures outlined above and pay the appropriate registration fee. Within the online registration form you will have an option to request a Letter of Invitation. If you prefer, you may submit a written request for a Letter of Invitation to:

Sokhan Hing
Membership Manager
ASPRS

5410 Grosvenor Lane, Bethesda, Maryland 20814 USA
sokhanh@asprs.org

How do I get into the Exhibit Hall if I am not registered for the conference?

You may visit the Conference Registration Desk in the Crowne Plaza San Antonio-Riverwalk Hotel to purchase an exhibit hall only registration. Everyone entering the Exhibit Hall must have a name badge, including children 13 years of age and older. *Children under 13 years of age are not permitted in the Exhibit Hall at any time due to insurance and safety regulations.*

Are Workshops included with the registration fees?

No. Workshops require individual registration and a separate fee in addition to the general conference registration fees. Availability is based on space. We do not reserve spaces without full payment in advance and there is no waiting list. Workshop registrations must be received by September 27, 2013. ASPRS reserves the right to cancel any workshop if the minimum number of registrations is not received by September 27, 2013. On-site registration will be available for confirmed workshops with available space. Register early as many workshops will sell out.

FREQUENTLY ASKED QUESTIONS (CONTINUED)

As a Technical Paper or Poster Presenter, whose presentation has been accepted, when do I submit my work to be included in the proceedings?

You will need to register for the conference using the methods described above and submit your complete paper or poster (not an abstract) as directed in the e-mail instructions you received previously no later than September 16, 2013.

Does ASPRS provide laptops during Technical Sessions?

No, ASPRS does **not** provide laptops or desktop computers for Presenters during Technical Sessions. *All Presenters must provide their own laptop computer.*

What does ASPRS provide in each Technical Session room?

Each technical session room will be equipped with an LCD projector and screen. A microphone will be provided when necessary. *ASPRS does **NOT** provide full internet access, laser pointers, or laptop computers for the technical sessions.*

Do Presenters have a Preparation Room?

Yes. A room will be available on a first come basis from 8:00 am to 5:00 pm, October 29th and 30th. This room will be equipped with an LCD projector and screen. All presenters must bring their own laptops for their presentations. The location of this room will be announced in the Final Program that will be included with the on-site registration materials. We encourage all presenters to review their materials prior to their presentation.

What are Technical Paper Presenters expected to do when they arrive?

All Technical Paper Presenters should check in at the Conference Registration Desk to pick-up their registration packets **and initial the Master Final Program next to their name including either a hotel room number or cell phone number.** A Master Final Program will be posted at the Conference Registration Desk so the session moderators can check if each presenter has arrived and can contact them if necessary.

What are Poster Presenters expected to do?

The Conference provides to each Poster Presenter one side of a fabric covered poster board that measures eight feet wide by four feet high, and push pins. Poster set-up begins at 7:30 am on Tuesday, October 29th and at this time poster presenters may affix their work to any available poster board. All posters must be removed by 3:30 pm on Wednesday, October 30th. All poster packaging must be removed from the poster area once posters are hung. ASPRS is not responsible for posters that are not removed. Poster Presenters must also check in at the Conference Registration Desk to pick-up their registration packets and **initial the Master Final Program next to their name including either a hotel room number or cell phone number.**

May I volunteer to assist with the Conference activities?

Yes, if you are a student at an accredited college or university, you are welcome to apply for service as a conference volunteer. Please see full details at the Conference web page under the Presenter & Volunteer tab.

Is Disability Assistance Available?

If you have special needs, please contact ASPRS Headquarters at 301-493-0290 ext. 106. A written statement will be required outlining your particular needs. Please submit all requests for assistance by October 1, 2013, so that appropriate arrangements can be made.

Why do I need a badge?

Your badge is verification of your paid registration and must be visible for admission to all sessions and the Exhibit Hall.

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.

Will it be possible to post resumes and job openings?

Yes, posting boards will be provided for 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 Conference Proceedings?

All registrants, except for those registered as Spouse/Guest, will receive access to the online proceedings area of the conference website. Access for additional people can be ordered with the Conference Registration Form or purchased on-site for \$20.

What are the Conference Registration Desk Hours?

| | |
|-----------------------|--------------------|
| Saturday, October 26 | 4:00 PM to 7:00 PM |
| Sunday, October 27 | 7:30 AM to 5:00 PM |
| Monday, October 28 | 6:30 AM to 5:00 PM |
| Tuesday, October 29 | 7:00 AM to 5:45 PM |
| Wednesday, October 30 | 7:00 AM to 3:30 PM |

Conference Registration materials are available only during the above hours.

What are the Exhibit Hall Hours?

Tuesday, October 29
9:00 AM to 7:30 PM

Exhibitors' Reception
5:30 PM to 7:30 PM

Wednesday, October 30
9:00 AM to 3:30 PM

Breakfast with Exhibitors & Prize Drawing
9:00 AM to 10:00 AM

(Please note: Children under the age of 13 are not allowed in the Exhibit Hall.)

UPCOMING ASPRS CONFERENCES

MARCH 2014

ASPRS 2014 Annual Conference & co-located JACIE Workshop

Galt House Hotel
Louisville, Kentucky
March 23–28, 2014

NOVEMBER 2014

Pecora 19 & ISPRS Commission I Symposium

Renaissance Denver Hotel
Denver, Colorado
November 17–20, 2014

MAY 2015

ASPRS 2015 Annual Conference

Tampa Bay Marriott Waterside Hotel
Tampa, Florida
May 4–8, 2015

FALL 2015

TBD

APRIL 2016

ASPRS 2016 Annual Conference

Grand Sierra Hotel
Reno, Nevada
April 18-22, 2016

For more information, visit

www.asprs.org/ASPRS-Conferences



ASPRS COMMITTEE MEETINGS

Anyone interested in the work of an ASPRS Division or Committee is welcome to attend these meetings. There is no registration required for attendance at the Division and Committee meetings. Your participation is encouraged and welcome.

Saturday, October 26

ASPRS Executive Committee
8:00 am to 5:00 pm

Sunday, October 27

Division Directors & Committee Chairs
(Joint meeting – will focus on the activities of each entity as they relate to the Strategic Plan of ASPRS.)
8:00 am to 9:00 am

Remote Sensing Applications Division (RSAD)
9:00 am to 10:00 am

ASPRS Standards Committee
9:00 am to 10:00 am

Journal Policy & Publications Committee (Joint Meeting)
10:00 am until 11:00 am

Lidar
Mobile Mapping Subcommittee
10:00 am to 11:00 am

Convention Policy & Planning Committee (CPPC)
11:00 am to 12 Noon

CaGIS Meeting
1:00 pm to 5:00 pm

Photogrammetric Applications Division (PAD)
1:00 pm to 2:00 pm

ASPRS Education & Professional Development Committee
2:00 pm to 3:00 pm

Lidar Division
2:00 pm to 3:00 pm

Remote Sensing Applications Division (RSAD)
Climate Change Subcommittee
3:00 pm to 4:00 pm

Professional Practice Division (PPD)
3:00 pm to 4:00 pm

Primary Data Acquisition Division (PDAD)
4:00 pm to 5:00 pm

Division Directors
5:00 pm to 6:00 pm

Volunteer Orientation
5:30 pm to 6:30 pm

Monday, October 28

ASPRS Board of Directors
8:00 am to 5:00 pm

CaGIS Board of Directors
8:00 am to 5:00 pm

Student Advisory Council (SAC)
5:30 pm to 6:30 pm

Tuesday, October 29

Young Professional Council (YPC)
3:00 pm to 4:00 pm

Wednesday, October 30

U.S. National Committee Meeting
5:30 pm to 6:30 pm

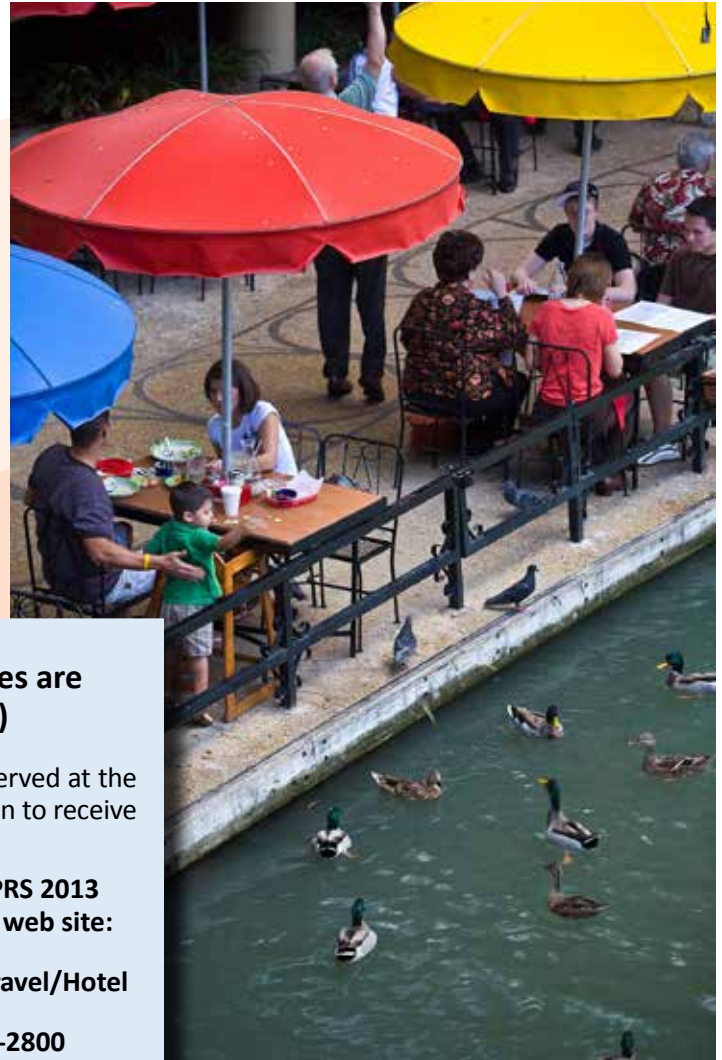
HOTEL & TRAVEL INFORMATION

Crowne Plaza San Antonio Riverwalk Hotel
111 E Pecan Street
San Antonio, Texas USA
1-888-623-2800

The Crowne Plaza, San Antonio Riverwalk Hotel, a four diamond AAA-rated hotel, has again been chosen as the site of the 2013 ASPRS/CaGIS Conference. This property affords us the opportunity of holding our conference in a facility with all of the exhibits and meeting rooms under one roof.

Located on the Riverwalk at Soledad Plaza and within walking distance of the Alamo and Hemistair Plaza, the Crowne Plaza, San Antonio Riverwalk Hotel is a perfect mix of business and pleasure. With a River Taxi stop adjacent to the hotel, you will easily be able to make your way around the city.

The Crowne Plaza Riverwalk Hotel is a full service hotel featuring the 111 Grille serving breakfast, lunch and dinner; the 111 Bar – an intimate lobby lounge; and Pecan Street Pub – a lively sports bar with large screen TVs.



CaGIS/ ASPRS 2013 Specialty Conference Rates are \$149 single/double occupancy (plus tax)

A limited number of government rate rooms have been reserved at the prevailing rate. Proof of eligibility may be required at check-in to receive these rates.

Reservations may be made directly into the CaGIS/ASPRS 2013 Specialty Conference room block through the following web site:

www.asprs.org/Conferences/San-Antonio-2013/Hotel-Travel/Hotel

Reservations are also available by calling 1-888-623-2800

To obtain CaGIS/ASPRS 2013 Specialty Conference rates, please identify yourself as attending the conference.

Early reservations are strongly advised since we have a very limited number of rooms available at the conference rate. **Reservations must be made by September 20, 2013** to take advantage of the specially negotiated room rate.

THANK YOU!

By staying at the Crowne Plaza San Antonio Riverwalk Hotel, ASPRS is able to contain our registration fees, making this conference affordable to everyone. Thank you for choosing the Crowne Plaza San Antonio Riverwalk Hotel.

CaGIS/ASPRS regrets that children under 13 years of age are not permitted at any time in the Exhibit Hall or any sessions due to safety and insurance regulations.

For more details on the Crowne Plaza San Antonio Riverwalk Hotel and travel information, please visit the symposium web site at www.asprs.org/Conferences/San-Antonio-2013.



NETWORKING

Exhibitors' Reception

Tuesday, October 29th, 5:30 PM to 7:30 PM

Take this wonderful opportunity to visit with the fantastic suppliers exhibiting at the CaGIS/ASPRS 2013 Specialty Conference. A Conference tradition, the Exhibitors' Reception is a perfect time to mingle with fellow attendees and thank the Conference Exhibitors, our hosts for the evening. The evening is sure to provide a relaxed environment with light hors d'oeuvres and beverages and a time to come together with old and new friends.

Admission to this event is included with most registrations. Please note, due to insurance regulations children under the age of 13 are not permitted in the exhibit hall at any time. Anyone over the age of 13 will require a registration to enter the exhibit hall.

Refreshment Breaks

Tuesday October 29th

9:00 AM – 9:30 AM
11:00 AM – 1:30 PM
3:00 PM – 4:00 PM

Wednesday October 30th

12:30 PM – 1:45 PM
3:15 PM – 3:30 PM

Each day of the conference refreshment breaks will be served in the exhibit hall. Take a break from technical sessions to network, visit the amazing exhibitors and grab a cup of coffee or soda.

Admission to these events is included with most registrations.

Breakfast with Exhibitors

Wednesday, October 30th, 9:00 AM to 10:00 AM

This is a perfect time to wrap up business and grab a bite to eat before heading to the final day of the conference. A lite continental breakfast and coffee will be served in the exhibit hall following the general session.

Admission to this event is included with most registrations.



JOIN THE CONVERSATION

Follow the CaGIS/ASPRS 2013 Specialty Conference on Facebook and Twitter, check-in on Foursquare and download the ASPRS and Conference combined Smartphone App!

Stay connected with conference information before, during and after the meeting.



@ASPRS.org
@CartographyGIS



#ASPRS13S



Check-in and leave a tip
for fellow attendees

Download the **FREE** ASPRS app in
the iTunes store or Google Play!



WORKSHOP FEES

Workshop fees are not included in the cost of the conference registration

FULL DAY (WS #3)

| | EARLY BIRD (Until 8/23) | ADVANCED (8/24 – 10/01) | REGULAR (10/02 – 10/30) |
|-------------------|----------------------------|----------------------------|----------------------------|
| Member | \$235 | \$235 | \$260 |
| Non-Member | \$335 | \$335 | \$360 |
| Student | \$125 | \$125 | \$140 |

HALF DAY (WS #1, 2, 4, 5, 6, 7)

| | EARLY BIRD (Until 8/23) | ADVANCED (8/24 – 10/01) | REGULAR (10/02 – 10/30) |
|------------------|----------------------------|----------------------------|----------------------------|
| Member | \$180 | \$180 | \$200 |
| NonMember | \$280 | \$280 | \$300 |
| Student | \$90 | \$90 | \$100 |

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.

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.

Workshop #1

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.*

Sunday, October 27th, 12:45 pm to 5:15 pm, CEU 0.4

INTERMEDIATE WORKSHOP

In general, people are 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.

- I. Introduction to Lidar Waveform Data
 - A. What is lidar waveform data?
 - B. Short history on the evolution of waveform data
 - C. The characterization of waveform data
- II. Acquiring Lidar Waveform Data
 - A. Large footprint systems
 - B. Small footprint pulsed lidar systems
- III. Real-time Processing of Lidar Waveform Data
 - A. Return and intensity signal detection (advantage/disadvantage of waveform vs. discrete returns)
 - B. Compression of lidar waveform data
 - C. Storing lidar waveform data
- IV. Post-processing of Lidar Waveform Data
 - A. General analysis of waveform data; typical waveforms
 - B. Already existing applications using lidar waveform data
 - C. Emerging applications, including land-cover (object) classification, better error characterization, etc.
- V. Summary and Future Trends
 - A. Existing systems
 - B. Outlook on market developments

Workshop #2

Mapping the Coast: From Shoreline to Inundation, and Everything in Between

Matthew Pendleton, *GISP, IM Systems Group Inc. at The NOAA Coastal Services Center*

Sunday, October 27th, 12:45 pm to 5:15 pm, CEU 0.4

INTRODUCTORY WORKSHOP

The purpose of this workshop is to provide an introduction to coastal inundation mapping using a GIS. There will be a combination of lectures and interactive demonstrations so that attendees gain a better understanding of the processes involved in mapping the coastal environment. The workshop will have minimal lecture and focus on a handful of live mapping demonstrations that are at the core of many of the NOAA Coastal Services Center's products, tools, and services.

The live demonstrations will include 1) downloading lidar data, post-processing it for coastal mapping uses, and making high-quality digital elevation models; 2) integrating vertical datums and creating tidal surfaces using the National Geodetic Survey's VDatum tool; 3) mapping sea level rise and uncertainty; and 4) mapping coastal flood advisory areas and calculating flood fre-

quency. A brief introductory presentation will provide an overview of many of the Center's products and services that utilize the same spatial tools and technical methods. Questions and answers to technical topics will be incorporated into the demos to provide immediate feedback and discussion for participants.

Workshop #3

Introduction to Unmanned Aerial System (UAS) Operations

Kevin Gambold, *Unmanned Experts LLC*
Ed Freeborn, *Unmanned Experts LLC*

Monday, October 28th, 7:45 am to 5:15 pm, CEU 0.8

INTERMEDIATE WORKSHOP

The airborne remote sensing, survey and mapping community are showing increasing interest in Unmanned Aerial System (UAS), and new adopters and technology for metric-quality data production are being reported daily. As UAS become operational the 'How and Why' of UAS operations need to be considered as well as the 'What.' The "Introduction to UAS Operations" full-day workshop is designed to address this need with practical discussion and a focus on metric-quality UAS surveying and mapping.

The workshop is broken down into 4 sections:

Introduction to UAS Concepts

- Overview; UAS Terminology and Classification; UAS Roles and Mission Sets
- Concept of Operations; Launch Recovery Systems; Communications

Case Studies

- Metric-quality Applications and Systems Survey
- Small UAS (SUAS) Photogrammetry, a Disruptive Technology

Business Model

- Business Plan
- Operational Model
- Other Considerations

Wrap-up

- Future Technology
- Art of the Possible

This course assumes that attendees have an intermediate to advanced understanding of airborne operations, and a basic understanding of photogrammetric and remote sensing principles or their equivalents in military intelligence, surveillance, and reconnaissance (ISR) fundamentals.

Workshop #4

Looking Above the Terrain: Lidar for Vegetation Assessment

Sorin Popescu, *Texas A&M University*

Monday, October 28th, 7:45 am to 12:15 pm, CEU 0.4

INTERMEDIATE WORKSHOP

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 characterizing forest vegetation three-dimensional structure and deriving forest biophysical parameters.

More specific objectives are to: (1) review basic laser ranging concepts and lidar data structure; (2) introduce types of lidar sensors for forest vegetation assessment, including discrete-return, waveform encoding, and photon counting systems, on terrestrial, airborne, and satellite platforms; (3) describe the LAS lidar data format; (4) introduce participants to software resources for processing lidar data and characterizing vegetation structure; (5) review algorithms for deriving information on terrain elevation and canopy height models; (6) present choices of lidar data processing, such as point-cloud statistics, waveform processing, and interpolated surface-based methods to derive information on vegetation structure at various scales, from individual tree, plot, footprint, and stand level to regional and global scales; and (7) discuss examples of various lidar remote sensing applications for characterizing vegetation parameters, including biomass assessment in various ecosystems, such as forests, brush, and marches, leaf area index, canopy cover, and forest fuels mapping.

Workshop #5

QA/QC Processes and Concepts

Qassim Abdullah, *Woolpert*
Tom Asbeck, *Atkins*

Monday, October 28th, 12:45 pm to 5:15 pm, CEU 0.4

INTRODUCTORY WORKSHOP

What is Quality?

- Quality Assurance
- Quality Control
- Quality Review

Practical Statistics

- Random Errors
- Normal Distribution
- RMSE
- Standard Deviation

How Good Is Your Data?

- Problem Identification
- Flowcharts
- Check Sheets
- Brainstorming

Problem Identification

- Cause and Effect
- Histograms
- Scatter Diagrams
- Control Chart (UCL and LCL)

Quality Assurance

- Definition
- Plan to insure quality

Quality Control

- Definition
- Automated
- Manual

Continual Process Improvement

- Evaluate
- Plan
- Implement
- Check
- Evaluate

Human Factors

- 85-15 Rule
- Luck

Workshop #6

Online Mapping with the Google Maps API

Prof. Michael Peterson, *Chair, International Cartographic Association Commission on Maps and the Internet and University of Nebraska at Omaha*

Monday, October 28th, 7:45 am to 12:15 pm, CEU 0.4

INTRODUCTORY WORKSHOP

Introduced in 2005, Google Maps has transformed the online mapping experience. No longer dependent on a simple and slow server/client relationship, Google Maps uses a more interactive, tile-based system with AJAX to present an online map that allows simplified panning and zooming. In 2006, the Google Maps Application Programmer Interface was introduced that facilitated the creation of Map Mashups – the mapping of data from online sites. Map Mashups have had a major impact in how spatial information is communicated. This workshop examines online mapping APIs from Google, Bing and Yahoo. Specific examples are presented using the Google Maps API that involves the mapping of point, line, and area data. Both in-code and GeoRSS data will be mapped. All examples use an HTML/JavaScript interface to the Google Maps API. Some familiarity with HTML and basic programming concepts - objects, arrays, loops - is expected.

After a short overview, the workshop will be conducted in a hands-on fashion. Participants will connect to the Internet using their own laptops and download a zip file with all of the course materials. A Windows program will be installed to edit the HTML/JavaScript code. Participants will need to have the access privilege on their own laptop to install programs. Most of the workshop will involve understanding how various Google Maps API routines are called and how they are used to make customized maps. Participants will be given a complete hand-out and all necessary coding examples.

Workshop #7

NHD Introduction and NHD Point Event Creation and Application Utilizing StreamStats

Pete Steeves, *GIS Specialist, USGS Massachusetts Water Science Center*

Monday, October 28th, 12:45 pm to 5:15 pm, CEU 0.4

INTRODUCTORY WORKSHOP

The National Hydrography Dataset (NHD) serves as a framework for geospatial data representing the surface water of the United States. The features that make up the NHD have a basic set of attributes that describe these features and at the same time these features may have additional information linked to them describing other characteristics relating to hydrology, water quality, biology, regulations, and a host of other data. Is this linked information which contributes greatly to the power of the NHD to serve not just as spatial data, but also as an information system, and further as a base for analysis and knowledge.

This workshop introduces the NHD framework and how to use the HEM Tool to create events on the NHD. This can be performed on a case by case basis or by importing user databases. Attendees will also learn how to import these user-created events into StreamStats for analysis, including searches up and down the hydrography network, drainage area estimates, batch delineation of watersheds and more. New and improved tools will also demonstrate how to perform a variety of event searches on both the high resolution (1:24K) NHD data and the NHDPlus (medium resolution) data. The NHDPlus functionality will include linkages to a suite of EPA point-event datasets.

WORKSHOP LEVELS

Introductory 2, 5, 6, 7

Intermediate 1, 3, 4

8:00 AM – 9:00 AM**General Session 1 – Keynote**

Our invited speaker is **Rear Admiral Joseph Nimmich**, Associate Administrator for the Office of Response and Recovery, Federal Emergency Management Agency. The topic of his presentation will be “The Role of Mapping and Remote Sensing in Federal Response and Recovery”.

9:30 AM – 11:00 AM

Geospatial Information Collection, Distribution and Management - Airborne Sensors: Innovative Techniques for Acquisition and Processing to Support Disaster Management

Moderator: Chris Lippitt, *University of New Mexico*, United States

Low Light Imaging using Absolutely Calibrated Large Format Digital Aerial Framing Cameras

Robert Ryan, *Innovative Imaging and Research*, United States

Mary Pagnutti and Kara Holekamp

Repeat Station Airborne Imaging for Rapid Disaster Assessment and Situational Awareness

Lloyd (Pete) Coulter, *San Diego State University*, United States

Douglas Stow, Christopher Lippitt, Grant Fraley, and Richard McCreight

Coastal Flooding and Marsh Resource Monitoring With Radar and Optical Satellite Sensor Data

Amina Rangoonwala, *Five Rivers Services LLC*, United States

Elijah Ramsey III

Geospatial Information Analysis Modeling – Feature Extraction and Analysis to Support Pre- and Post-Event Planning and Response

Moderator: Devin White, *Oak Ridge National Laboratory*, United States

Landcover Supervised Classification for Emergency Preparedness

Jay Morrow, *Harris Corporation*, United States

Mark Rahmes, Morris Akbari, George Lemieux

Extracting Infrastructure Information from Images to Support Human Interpretation

Rachel Bianchetti, *The Pennsylvania State University*, United States

Automatic Landslide Feature Extraction From Airborne Lidar

Omar Mora, *The Ohio State University*, United States

Jung-Kuan Liu, Charles Toth, and Dorota Grejner-Brzezinska

Visualization and Communication - Base Geospatial Information to Support Disaster Management

Moderator: Melissa Wagner, *Arizona State University*, United States

Enhancing National Emergency Response through a National Address Database

Kaile Bower, *U.S. Census Bureau*, United States

Ensuring Geospatial Preparedness: A Proposed User Fee for National Data?

Alan M. Mikuni, *Towill, Inc.*, United States

Spatial Data Integration Using Ontological System

Otakar Cerba, *University of West Bohemia*, Czech Republic

Proper Care and Feeding of Metadata

Ryan Elizabeth Bowe, *Photo Science, Inc.*, United States

Special Session

UAS Session 1

Moderator: Ed Freeborn, *Unmanned Experts LLC*, United States

Integration of UAS into the National Airspace System
Dave Morton, *FAA UAS Integration Office*, United States

Experience Using UAS Sensors Post Hurricane
Gabriel Ladd, *American Aerospace Advisors*, United States
David Yoel

The Rise of the Machines
Mike Tully, *Aerial Services, Inc. (ASI)*, United States
Joshua McNary

1:30 PM – 3:00 PM

Geospatial Information Collection, Distribution and Management – Commercial Imagery Assets for Disaster Management and Response

Moderator: Ramesh Sivanpillai, *University of Wyoming*, United States

Using Astrium GEO-Information Services EO Satellite Constellation for Disaster Response
Drew Hopwood, *Astrium GEO-Information Services*, United States

Perspectives on Multi-Modal Imaging for Emergent Response with specific reference to Isaac, Granbury TX and Moore OK
Pierre le Roux, *ASPRS PDAD/Aerometric*, United States

Mobile-Cloud Crowdsourcing-enabled Image Understanding and GIS Fusion for Rapid Post-disaster Response
ZhiQiang Chen, *University of Missouri-Kansas City*, United States
Jianfei Chen, Ashlee Warnke, and Maria Medrano

Access to DigitalGlobe Imagery Through the FirstLook Crisis Event Services
Jack Hild, *DigitalGlobe*, United States

Geospatial Information Analysis Modeling – Forest Fire Risk Modeling

Moderator: Thomas Cova, *University of Utah*, United States

Forest Fire Analysis and Modeling using NASA Earth Observing System in Coahuila, Mexico
Rohini S. Swaminathan, *NASA DEVELOP*, United States

Pedro Juan Rodriguez Rivera, Carlos Cardenas, Christian Gonzalez, Laura Helena, Hector Hernandez, Daniel Martinez, and Ryan Quinn

Fire Risk Assessment in the USA Using RiskPro Web-based Application
Mary Lorraine Tighe, *Intermap*, United States
Stephen Griffiths, Michael Wollersheim, and Qiaoping Zhang

Forest Fire Hazard Mapping Using Remotely Sensed Data and Geographic Information System (Case Study: The GOLESTAN Province, Northern Iran)
Mehran Sattari, *University of Isfahan*, Iran

Ahmad Rajabi, Mehran Sattari, Behnam Tahmasebi Boldaji, Amin Abbasi Habashi, and Omid Dana

Visualization and Communication

Moderator: Raechel Bianchetti, *The Pennsylvania State University*, United States

Examining Geographic Visualization as a Technique for Individual Risk Assessment
William Bass, *Houston-Galveston Area Council*, United States
Denise Blanchard

Using 3D Geovisualization Approaches to Communicate and Visualize Hurricane Emergency Response
Olympia Koziatek, *Simon Fraser University*, Canada
Nick Benoy, Alex Chen, and Chris D. Lonergan

Integrating Service Learning and GEOBIA Research: High Resolution Mapping of Urban and Rural Landscapes in Georgia
Jitendra Sharma, *University of North Georgia*, United States

Special Session**Hurricane Sandy**

Moderator: Alan Mikuni, *Towill, Inc.*, United States

Evaluating the Impact of Hurricane Sandy through the Lens of Ian McHarg's Design by Nature

Melissa Wagner, *Arizona State University*, United States

Elizabeth Wentz, Nabil Kamel

Risk Assessment and Modeling Storm Damage: Hurricane Sandy as a Case Study in Disaster Management

Yan Yan, *Graduate School of Geography, Clark University*, United States

Hayley Solak

Quantifying Direct Effects of Hurricane Sandy on an Urban Tree Ecosystem and Proposal for Future Preparedness

Faith Justus, *Montclair State University*

4:00 PM – 5:30 PM**Geospatial Information Collection, Distribution and Management - 3-D Modeling and Terrestrial Lidar**

Moderator: Charles Toth, *The Ohio State University*, United States

Sensor Fusion: Combining Capabilities for Recovery

William Meyer, *RIEGL USA*, United States

Joshua France

The Efficacy of Terrestrial Laser Scanning in Retrieving Tree Level Forest Inventory Variables and Studying Tree Level Growth

Shruthi Srinivasan, *Spatial Science Laboratory*, United States

Sorin Popescu, Ryan Sheridan, and Nian-Wei Ku

3D Laser Scanning Insights on Impacts of Earthquakes and Tsunamis

Michael Olsen, *Oregon State University*, United States

Geospatial Information Analysis Modeling – GIS-based Models to Enable Disaster Management

Moderator: Thomas Morelli, *Sea Land & Air Technologies & Systems, Inc.*, United States

Identifying Likely Post-Disaster Travel Routes Through Urban Landscapes Using Lidar and Massively Parallelized Least Cost Analysis

Devin White, *Oak Ridge National Laboratory*, United States

Modeling Protective-Action Triggers in Wildfires

Thomas Cova, *University of Utah*, United States

Phil Dennison, Frank Drews

Simulations of Dam Failure Events and Associated Emergency Response Planning

Haluk Cetin, *Murray State University*, United States

Tom Mueller

Management of Disasters – Data Management/Data Dissemination

Moderator: Robert Ryan, *Innovative Imaging and Research*, United States

A Preliminary Review of Time-Sensitive Remote Sensing Methods

Chris Lippitt, *University of New Mexico*, United States

Using IDEAS (Intelligent Data Exploration and Analytics System) for Visual Solutions of Geospatial Challenges Associated with Disaster Prediction and Response

Charles Samuels, *The SI Organization, Inc.*, United States

John Kelley and Shawana Johnson

Cohesive GIS Experiences Across the Screen and Paper

Steve Kashishian, *CaerusGeo*, United States

4:00 PM – 5:30 PM

Poster Lightening Session Talks

Morphological Operators Based Approach for Building Extraction in Hazardous Areas Using Close Range Airborne Imagery

Chandana Dinesh Parape, *Environmental Informatics, Japan*

Chinthaka Pemachandra and Masayuki Tamura

Automated Urban Building Damage Detection Using Fast Fourier Transform From Pre- and Post-Event High Resolution Airborne Stereo Imagery in Case Of Natural Hazards

Chandana Dinesh Parape, *Environmental Informatics, Japan*

Masayuki Tamura and Chinthaka Pemachandra

Design of an Online Course for Interpretation and Assessment of Images before and After Events

Ming-Chih Hung, *Northwest Missouri State University, United States*

Yi-Hwa Wu

Land Use Change Analysis Using GIS, Remote Sensing and Landscape Metrics (Case Study: Kermanshah City, Iran)

Mohammad Maleky, *Ilam University, Iran*

Social Media and Geospatial Information

Terra Wright-DeLoatch, *Fayetteville State University, United States*

Revisiting Tournachon – How Balloon Aerial Photography has Been Moved out of History and into the GIS Classroom

Gustavo Zastrow, *Northern Virginia Community College, United States*

Michael Krimmer and Jason Brown

A Fused Disturbance Model for Disaster Assessment and Planning

Braden Owsley, *University of Oklahoma, United States*

Kirsten de Beurs and Jason Julian

The Effect of Urban Environments on Severe Weather

Duncan Fetner, *The University of Oklahoma, United States*

Kirsten de Beurs and Robert D. Fetner

Salsa Night

8:00 PM – 11:00 PM
Tuesday, October 29

Hosted by
Karen Schuckman and Michael E. Hodgson

Come join us for an evening of learning and fun!

Includes 45 minutes of basic salsa dance lessons with professional instruction followed by dancing at a local venue.



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8:00 AM – 9:00 AM

General Session 2 Towards a Geospatial Knowledge Discovery Framework for Disaster Management

Budhendra Bhaduri, *Corporate Research Fellow, Oak Ridge National Laboratory, United States*

The progressive cyber and data infrastructures have enabled the development of novel decision support frameworks for the disaster preparedness and response community of practice. This presentation will describe ongoing development of a computationally intensive and efficient geospatial modeling and analysis framework that allows near real time processing and integration of remotely sensed data, derivation and delivery of useful data derivatives, and spatio-temporal modeling and simulations using capability computing. Drawing from our experience in supporting national and international disaster management efforts for recent natural disasters, the practical limitations of traditional disaster decision support structure and criticality of geospatial computing will also be highlighted.



Dr. Budhendra Bhaduri is a Corporate Research Fellow (ORNL) and leads the Geographic Information Science and Technology (GIST) group at Oak Ridge National Laboratory. He is a founding member of the U.S. Department of Energy's Geospatial Sciences Steering Committee. His research interests and experience include novel implementation of geospatial science and technology in sustainable development research, including population dynamics, urbanization and watershed impacts, energy resource assessment, and disaster management.

He is a principal member of the LandScan global population modeling programs at ORNL. He received the 2010 Homeland Security award for emergency preparedness and response from Christopher Columbus Fellowship Foundation. In 2009, he was appointed to the Mapping Science Committee of the National Academy of Sciences/National Research Council. He is also serving on the Geographic Information Science and Applications and on a Strategic Highway Research Program, Expert Task Group of the Transportation Research Board (TRB) of the National Academies. Dr. Bhaduri is actively involved with academic institutions for scientific collaborations and student engagement for research in geospatial science. He is a recipient of the Department of Energy's Outstanding Mentor Award for his dedicated service to the department for developing future workforce for the nation.

10:00 AM – 11:30 AM

Geospatial Information Collection, Distribution and Management – International Charter

Moderator: Kari Craun, *U.S. Geological Survey, United States*

Emergency Response and the International Charter Space and Major Disasters

Brenda Jones, *U.S. Geological Survey, United States*

Rynn Lamb

Collecting and Distributing Remotely Sensed Data to Monitor and Map the 2011 US Midwestern Floods.

Ramesh Sivanpillai, *University of Wyoming, United States*

Brenda Jones and Rynn Lamb

AmericaView – Disaster Prep, Response and Support

Brent Yantis, *AmericaView, United States*

Special Session

Emerging Geospatial Research Frontiers in Emergency Management

Sponsored by the ASPRS Student Advisory Council

Moderator: Raechel Bianchetti, *The Pennsylvania State University, United States*

Panelists:

Dr. Peter Coulter, *San Diego State University, United States*

Dr. Tim Frazier, *University of Idaho, United States*

Dr. Chris Lippit, *University of New Mexico, United States*

Dr. Karen Schuckman, *The Pennsylvania State University, United States*

Michael Hodgson, *University of South Carolina, United States*

Hazard Risk Mapping and Modeling

Moderator: Mary Lorraine Tighe, *Intermap, United States*

Spatial Analysis of Hurricane Tracks Using Distance Surfaces

Victor Mesev, *Florida State University, United States*

Kelsey Scheitlin

Fine-Scale Vulnerability Assessment of Rainfall Flooding and Storm Surge Hazard for Single-Family Housing in a Coastal Community - A Case Study of Clearwater, Florida

Yin-Hsuen Chen, *University of Florida, United States*

Timothy Fik and Joann Mossa

Multivariate GIS Analysis of Landslide Vulnerability for Western Oregon

Rubini Santha Mahalingam, *Oregon State University, United States*

Mahyar Sharifi-Mood and J. Michael Olsen

Special Session

Crowd-sourcing: Formalizing Geospatial Crowdsourcing in the Crisis Mapping Community

Moderator: Dapeng Li, *Department of Geography, University of Utah, United States*

Formalizing Geospatial Crowdsourcing in the Crisis Mapping Community

Sophia Liu, *U.S. Geological Survey, United States*

Understanding the Geoweb in Authoritarian Contexts

Cameran Ashraf, *UCLA, United States*

Mapping Emergency Information in CAR: The Role of Media as Information Hub

Anahi Ayala Iacucci, *Internews, United States*

Using Geotagged Tweets to Explore Geographic Disparities of Twitter Users: a Case Study of New Jersey State, U.S.

Dapeng Li, *Department of Geography, University of Utah, United States*

Thomas Cova

11:30 AM – 12:30 PM

General Session 3

Leveraging the Geographic Dimension for Analyzing Humanitarian Emergencies: Open Source, Imagery, Crowdsourcing, Mobile, and Semantic Web

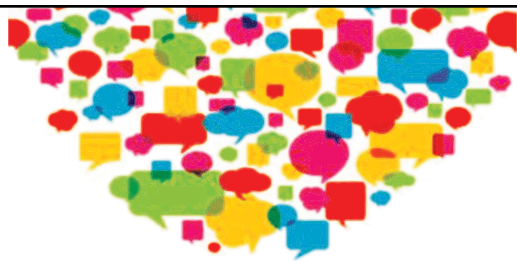
Joshua S. Campbell, *Geographer and GIS Architect, U.S. Department of State, United States*

Geographic data, analysis, and visualization are key tools used by the U.S. Department of State's Humanitarian Information Unit (HIU) in the analysis of humanitarian emergencies. This presentation discusses the HIU's strategy to build a modern geographic computing infrastructure and new workflows to support this analysis. Specific topics include the construction of the CyberGIS and the Syria Viewer; a new crowdsourced mapping methodology called "Imagery to the Crowd" and its results in Uganda and Nepal; a new mobile data collection and distributed geospatial data sharing toolkit called GeoGit; and, the use of semantic web technology for data harvesting and integration. Taken together, these technologies form an end-to-end solution for collecting, integrating, analyzing, visualizing, and disseminating geographic data and analysis. The entire system is built from free and open source software, making the acquisition cost very low, and it is interoperable with other software through support of open standards. In building this system, the HIU is increasing the efficiency of its analysis, and increasing the availability of geographic data for humanitarian disaster planning and response by making these tools accessible to the broader humanitarian community.



Joshua Campbell is a Geographer and GIS Architect at the Humanitarian Information Unit (HIU), a division of the Bureau of Intelligence and Research's Office of the Geographer and Global Issues, U.S. Department of State. He is the architect of the HIU's geospatial cyberinfrastructure, referred to as the 'CyberGIS', and has built humanitarian-focused mapping applications related to the Syrian refugee crisis, the Horn of Africa famine, and the U.S. response to the AIDS epidemic. Technologically, the

CyberGIS is built completely from free and open software, and has components for automating application production, advanced data management, web processing functions, spatial data sharing, and mobile data collection, all designed for use in humanitarian applications. He also helped pioneer the Imagery to the Crowd (IttC) initiative, a process that utilizes the CyberGIS to publish USG-purchased commercial satellite imagery, in the form of on-line web map services, to the volunteer OpenStreetMap (OSM) community. Using these image services, volunteers contribute effort into mapping tasks that directly support the prioritized provision of humanitarian assistance. Campbell is currently completing his PhD in Geography from the University of Kansas, where he also holds a Bachelors in Anthropology and a Master's in Geography.



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1:45 PM – 3:15 PM

Special Session**The Federal Role in Response and Recovery Support to Catastrophic Disasters***Speakers will participate remotely***Moderator: Bruce Davis, Department of Homeland Security, United States****Panelists:**Chris Vaughan, *Department of Homeland Security, United States*John Desmaris, *CAP, United States*Ron Eguchi, *ImageCAT, United States*Louis Halbert, *National Geospatial-Intelligence Agency, United States***Visualization and Communication – Results of the Student Map Competition – Presentations**

student map competition presentations

Responding to disaster events requires a quick response on the part of public officials in order to protect the public. Maps are one means of communication that public officials use to warn citizens of potential danger. This student challenge focuses on the use of data from Hurricane Ike, a category 4 hurricane that took place in September 2008, affecting the city of Galveston, Texas. Success is judged by the map or visualization product, a written document detailing the methods used to arrive at the map product, and an oral presentation.

Geospatial Information Analysis Modeling – Lidar and Elevation Data Processing to Support Disaster Management**Moderator: Michael Olsen, Oregon State University, United States****The Impact of Algorithm, Relief, and Resolution on Drainage Network Extraction From Digital Terrain**Boleslo Romero, *University of California, Santa Barbara, United States*

Keith Clarke

Applying 2D Compression Methods to Lidar Waveform CubesCharles Toth, *The Ohio State University, United States*

Greg Jozkow and Michelle Quirk

The Impact of Incidence Angle on Lidar WaveformCharles Toth, *The Ohio State University, United States*

Zoltan Koppanyi, Sandor Laky, John Anderson, and Ricky Massaro

Disaster Planning and Communication – Transportation and Supply Chain Network Analysis Post-Event**Moderator: Victor Mesev, Florida State University, United States****Integrating Complexity into Data-Driven Multi-Hazard Supply Chain Network Strategies**Suzanna Long, *Missouri University of Science and Technology, United States*

T. Shoberg, V. Ramachandran, S. Corns, and H. Carlo

Tsunami Warning System Helped Reduce the Loss of Life In TōhokuM. Lorraine Tighe, *Intermap, United States*

Ivan Maddox

Dynamic Vehicle Routing Problem for Emergency Response SystemE. Pourrahmani, *University of Tehran, Iran*

M.R. Delavar and M.A. Mostafavi

3:30 PM – 5:00 PM

Special Session

DHS IDIQ Contract Experience/Lessons Learned

Chris Barnard, Department of Homeland Security, will provide an overview of DHS' new IDIQ rapid acquisition contract. This will be followed by presentations from each of the firms under contract discussing issues such as: meeting the event-specific rapid response needs of DHS, the major challenges in rapid response acquisition, and what particular technologies/methods might be deployed to support rapid data acquisition and the associated issues related to data management in this type of event.

Overview of Scope and Contract Background

Chris Barnard, *Department of Homeland Security*, United States

Mapping the Path to Recovery

Mark Safran, *BAE Systems*, United States

Discussion of Their Perspectives as Contractors

Representatives from Aerometric, Photoscience, Dewberry

Time will be reserved for a Q&A and panel discussion on this contract and associated challenges from both a government, as well as a private sector perspective.

Geospatial Information Analysis Modeling - Data Fusion to Support Disaster Response and Recovery

Moderator: Jitendra Sharma, *University of North Georgia*, United States

Fusion of Remotely Sensed Data for Human Grave Detection

Katie Corcoran, *University of Tennessee*, United States

Devin White

Performance Analysis on Image Fusion Methods

Volkan Yilmaz, *Karadeniz Technical University*, Turkey

Oguz Gungor

Geographic Information Retrieval Based on the Use of Fuzzy Spatial Relations and SVM Using Social Media Imagery for Geolocation Awareness

Georgios Panteras, *George Mason University*, United States

Disaster Management - Effective Planning and Communication

Moderator: Kaile Bower, *U.S. Census Bureau*, United States

Development of Geospatially Enabled Geographic Response Plans for Oil Spill Response in the Western Basin of Lake Erie

David Dean, *Michigan Tech Research Institute*, United States

C. Brooks and K. Arthur Endsley

Maritime Migration of Disaster-Displaced International Refugees: Contingency Planning and Response Supported by Remote Sensing Applications Implemented Through Comprehensive Engagement Strategy

Thomas Morelli, *Sea Land & Air Technologies & Systems, Inc.*, United States

Bradley Niesen

Communicating School Emergency Plans with the Community Using Resilient Communication

Jennifer Burrell, *Kent State University*, United States

Special Session

UAS Session 2

Sponsored by the ASPRS Primary Data Acquisition Division (PDAD)

Moderator: Pierre le Roux, *ASPRS PDAD/Aerometric*, United States

Event Response Using Unmanned Aerial Vehicles

Bret Vandervoort, *GIS Services*, United States

Bill Timmins and Jeff Cooper

UAV-Based Oblique Imagery Supporting Building Damage Assessment

Stephanie Walter, *Institute for Geoinformatics, University of Muenster*, Germany

Holger Fritze and Torsten Prinz

Applications of UAV-capable Systems for Post-disaster Damage Assessment of Transportation Infrastructure

David Dean, *Michigan Tech Research Institute*, United States

Colin Brooks, R. Dobson, C. Roussi, T. Colling, and C. Singh

Woolpert's Unmanned Airborne System for Today's Mapping Needs: The Metric Approach

Qassim Abdullah, *Woolpert*, United States

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|--|--------------------------------------|----------------------------------|-----------------------------------|--|--------------------------------------|----------------------------------|-----------------------------------|
| | Early Bird (Ends August 23, 2013) | Advance (Ends Sept. 27, 2013) | Regular (After Sept. 28, 2013) | | Early Bird (Ends August 23, 2013) | Advance (Ends Sept. 27, 2013) | Regular (After Sept. 28, 2013) |
| <input type="checkbox"/> Full Registration | \$460 | \$575 | \$625 | <input type="checkbox"/> Full Registration | \$575 | \$690 | \$740 |
| <input type="checkbox"/> Daily | \$275 | \$325 | \$365 | <input type="checkbox"/> Daily | \$325 | \$375 | \$470 |
| <input type="checkbox"/> Speaker Full* | \$460 | \$575 | \$625 | <input type="checkbox"/> Speaker Full* | \$575 | \$690 | \$740 |
| <input type="checkbox"/> Speaker Daily | \$275 | \$325 | \$365 | <input type="checkbox"/> Speaker Daily | \$325 | \$375 | \$470 |
| <input type="checkbox"/> Student Full | \$105 | \$125 | \$155 | <input type="checkbox"/> Student Full | \$125 | \$130 | \$185 |
| <input type="checkbox"/> Student Daily | \$65 | \$70 | \$80 | <input type="checkbox"/> Student Daily | \$70 | \$80 | \$80 |

*Speaker Rebate Applies - Presenters who present a technical paper(s) and/or poster(s) at the conference will receive a rebate reflecting the difference between the Full Registration Rate and the appropriate Full Presenter Registration Rate (\$115 rebate for Members; \$95 rebate for Non-Members). Rebates are issued only to eligible presenters who complete the Speaker Rebate Form and submit it by the deadline stated on the form. Speaker Rebate Forms are only available onsite. No rebates will be issued to any presenter who cancels their registration. There are no rebates paid to those registering at the Exhibitor, Student or Speaker Daily rates. Moderators do not qualify for a rebate unless they presented a technical paper or poster in addition to their moderator duties.

Miscellaneous

Spouse/Guest \$80 (Please enter spouse/guest name above)

EXHIBIT HALL ONLY – Only Available ON-SITE

(This registration type is for entrance to the Exhibit Hall ONLY and does NOT include entrance to any of the Technical Sessions or General Sessions.)

Daily – Tuesday/Wednesday \$70 Two Day Pass \$80

Please note, due to insurance and safety regulations, children under the age of 13 are not permitted in the exhibit hall at any time.

Please see the chart below for a breakdown of the items included with your registration type.

| | Full Member/Non-member | Presenter Full Member/Non-member | Student Member/Non-member | Spouse/Guest | Daily |
|--|---------------------------|-------------------------------------|------------------------------|--------------|-------|
| General & Technical Sessions | * | * | * | | * |
| Exhibit Hall | * | * | * | * | * |
| Exhibitors' Reception, Tuesday Evening | * | * | * | * | * |
| Conference Proceedings | * | * | * | | * |

\$ _____
Subtotal

Workshops

| # | Title | Type | Time | Date | CEU | Member | | Non-Member | | Student** | |
|----------------------------|---|-------|--------|-------|-----|------------------------|----------------------|------------------------|----------------------|------------------------|----------------------|
| | | | | | | Advanced Until 9/27 | Onsite 9/28-10/28 | Advanced Until 9/27 | Onsite 9/28-10/28 | Advanced Until 9/27 | Onsite 9/28-10/28 |
| <input type="checkbox"/> 1 | LiDAR Waveform: The Potential and Benefits for Topographic Mapping | Inter | H/D PM | 10/27 | 0.4 | \$180 | \$200 | \$280 | \$300 | \$90 | \$100 |
| <input type="checkbox"/> 2 | Mapping the Coast: From Shoreline to Inundation, and Everything in Between | Intro | H/D PM | 10/27 | 0.4 | \$180 | \$200 | \$280 | \$300 | \$90 | \$100 |
| <input type="checkbox"/> 3 | Unmanned Aerial System (UAS) Fundamentals | Inter | FULL | 10/28 | 0.8 | \$235 | \$260 | \$335 | \$360 | \$125 | \$140 |
| <input type="checkbox"/> 4 | Looking Above the Terrain: Lidar for Vegetation Assessment | Inter | H/D AM | 10/28 | 0.4 | \$180 | \$200 | \$280 | \$300 | \$90 | \$100 |
| <input type="checkbox"/> 5 | QA/QC Processes and Concepts | Intro | H/D PM | 10/28 | 0.4 | \$180 | \$200 | \$280 | \$300 | \$90 | \$100 |
| <input type="checkbox"/> 6 | Online Mapping with the Google Maps API | Intro | H/D AM | 10/28 | 0.4 | \$180 | \$200 | \$280 | \$300 | \$90 | \$100 |
| <input type="checkbox"/> 7 | NHD Introduction and NHD Point Event Creation and Application Utilizing StreamStats | Intro | H/D PM | 10/28 | 0.4 | \$180 | \$200 | \$280 | \$300 | \$90 | \$100 |

**Students must provide a valid student ID when they register. Students will be allowed to attend workshops at the reduced price on a space available basis. All student registrations for workshops that are received before September 27, 2013, will be held until that date. If there are spaces available at that time the student will be notified that their registration has been accepted. If a student workshop registration is not accepted, their workshop fee will be refunded in full.

NOTE: Individual workshops are subject to cancellation if the minimum number of required registrations are not received by September 27, 2013. Workshops are limited to a maximum of 40 attendees per workshop. Popular workshops sell out early and we do NOT keep a waiting list.

FULL = Full Day Workshop
Inter = Intermediate

H/D AM = Half Day Morning Workshop
Adv = Advance

H/D PM = Half Day Afternoon Workshop
Intro = Introductory

Additional Proceedings

Each Full, Student, and Daily registrant will receive access to the online conference proceedings as part of their registration.

On-line Access to Proceedings quantity _____ @ \$20 each

Method of Payment (Full payment must accompany this form.)

Check (make payable to CaGIS/ASPRS 2013 Specialty Conference, print attendee name on check) Visa MasterCard Discover American Express

Name on Credit Card

Billing address of Credit Card Holder

Contact phone and email address for Credit Card Holder if other than registrant.

Credit Card Account Number

Expires (Month/Year)

Cardholder Signature

Date

Purchase Order # _____ (government and university only)

Payments must be made in U.S. dollars drawn on a U.S. bank or appropriate credit card.

\$ _____ \$ _____

Make checks payable to CaGIS/ASPRS 2013 Specialty Conference and print attendee name on check.

Subtotal from front of form Total amount enclosed

ASPRS is offering a special **New Member Promotion** to non-member attendees at the CaGIS/ASPRS 2013 Specialty Conference. Your Conference registration at the Non-Member rate entitles you to a complimentary 1-year ASPRS membership. This offer applies only to those who have not been a member of ASPRS within the past three (3) years.

We are also offering a **New Student Member Promotion** to student non-members. Your CaGIS/ASPRS 2013 Specialty Conference registration at the Student Non-Member rate entitles you to a complimentary 1-year ASPRS Student membership. This offer applies only to those who are currently enrolled as a full or part-time student at an accredited college or university and who have not previously held an ASPRS membership in another category or have not been a member of ASPRS within the past three (3) years.

Once your paid conference registration has been confirmed, we will provide you with a membership application and instructions for completing and returning it, if you choose to accept the complimentary membership. Students must provide proof of current status with their application.

To qualify for a full conference registration refund, a written cancellation must be received by the CaGIS/ASPRS 2013 Specialty Conference Meeting Registrar at registrar@asprs.org by close of business on **September 27, 2013**. For cancellations received by close of business **October 18, 2013**, a 50 percent refund will apply. **No refunds will be made after October 18, 2013**. This policy applies to all fees paid for the conference. All refunds are subject to a \$50.00 processing fee and will be issued one month after the conference concludes.

Cancellations for medical emergencies after the above deadline will be considered on an individual basis and will require a physician's signed letter.

In the unlikely event ASPRS finds it necessary to cancel this entire conference, 100 percent of the registration fees paid will be refunded. ASPRS assumes no liability for any penalty fees on transportation tickets, deposits for hotel accommodations or any other fees, charges, penalties, or other incidental costs that a registrant might incur as a consequence of this conference being canceled.

Please direct all registration related questions to the CaGIS/ASPRS 2013 Specialty Conference Meeting Registrar at registrar@asprs.org.



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October 27–30, 2013

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PRELIMINARY PROGRAM