

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](http://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](http://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 360° 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 multi-spectral, 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 Ultra-Cam 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.

## 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 **Taylor's**, 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