

## Workshops

### Workshop 1

#### Professional Airborne Digital Mapping Systems – An Overview

Dave Fuhr, *Airborne Data Systems*

Brian Huberty, *U.S. Fish & Wildlife Service*

8:00 am to 5:00 pm, CEU .8

Room 12

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

### Workshop 3

#### Advanced Topics in Orthophoto Production

Frank L. Scarpace, Emeritus Professor, *University of Wisconsin-Madison*

Matt Steven, *AeroSys Consulting*

8:00 am to 5:00 pm, CEU .8

Room 8

**ADVANCED Workshop:** In order to maximize the benefits of this course, participants should have previous experience with creating orthophotos from aerial or satellite imagery.

This course concentrates on two critical aspects of orthophoto production – automatic generation of pass/tie points and the production of orthophoto mosaics. Aerotriangulation will be reviewed and the principles used for automatic matching of conjugate points will be discussed. Many aspects of creating and correcting orthophoto mosaics will be highlighted. Example data sets will be provided for participants to gain experience in automated aerial triangulation and creating orthophoto mosaics during the afternoon.

Workshop Participants are asked to bring their own laptop computer to the workshop. Any laptop running Windows 2000 or XP is acceptable. Minimum of memory of 256Megs, at least 2 Gigs of free space on hard disk.

### Workshop 4

#### Telegeoinformatics: An Introduction to Mobile Mapping

Robert Burtch, *Ferris State University*

8:00 am to 12:00 noon, CEU .4

Room 10

**INTRODUCTORY Workshop:** The purpose of this workshop is to introduce the participants to the principles of mobile mapping and mobile computing.

Location-based services are growing in importance and the concept of telegeoinformatics will be defined and the components and applications will be described. The first part of the workshop will describe mobile mapping systems, configurations, and processing. This will involve the integration of data collection tools such as GPS, inertial measurement, digital cameras, laser scanners, and other spatial data collection devices. The workshop will not discuss the theory of these particular systems but will stress the interrelationships. Some basic introduction of the technology will be presented. The advantages and disadvantages will be talked about as well as limitations to the technology. The second part of the workshop will discuss mobile computing systems. The technology will be presented to show the participant how specific hardware systems can be used in the field. Tradeoffs in the computing systems will be discussed. Wireless technologies will be introduced and explained. Finally, the workshop will show the advantages of placing computing assets in the field and how an organization can exploit these technologies in updating and maintaining their data resources.

### Workshop 5

#### Putting It All Together: Integrating Imagery to Derive Information for Decision-making

Russell G. Congalton, *University of New Hampshire*

Andrew Brenner, *Sanborn*

1:00 pm to 5:00 pm, CEU .4

Room 10

**INTRODUCTORY Workshop:** This workshop is designed for the user who has some remote sensing and spatial data analysis experience but wishes to gain a broader understanding of what is currently available and how to determine which imagery to use for her/his specific needs.

There is an ever-increasing plethora of remotely sensed imagery available for use in spatial data analysis. New satellites with increasing spatial and/or spectral resolution are becoming commonplace. Airborne sensors and digital cameras offer many great opportunities. Advances in lidar and radar make these instruments viable tools today. Choices and confusion abound. This workshop is designed for those who wish to learn more about and appreciate the usefulness of this myriad of remotely sensed systems. It is for those who want to “put it all together” and see which systems or combination of systems provides the answer for their problems. The workshop begins with a presentation of the basic properties of all these remote sensing systems. Once the basics are well understood, several important factors must be considered when integrating the imagery to derive information. These factors include geometric registration, image mosaicing, radiometric correction, and quality control/accuracy assessment. Case studies and application examples will be used to demonstrate the utility (pros and cons) of each image type and to highlight situations where great synergy exists between multiple image sources. Every participant will leave this workshop with a greater appreciation of how to match their spatial analysis needs to the current wealth of remotely sensed imagery.

### Continuing Education Units (CEUs) for Workshop Attendees

ASPRS, in conjunction with the University of Maryland, College Park, is pleased to offer ASPRS 2007 Annual Conference workshop attendees the opportunity to earn Continuing Education Credits (CEUs). All attendees are eligible for CEUs if they attend any of the workshops, register on site for CEUs, and pay the processing fee of \$25. For each workshop attended, one CEU for every 10 hours of eligible sessions attended is awarded to CEU registrants. (Full day workshops are eight (8) hours and receive 0.8 CEUs. Half day workshops are four (4) hours and receive 0.4 CEUs). Registration forms will be distributed during the workshops. Forms and payment are accepted on site only at the Conference Registration Desk.

CEU participants will receive a certificate of completion awarded by the University of Maryland, College Park, approximately one month after the conference. If certificate is not received within 60 days after the conference, please contact ASPRS.

Please note: CEU's are awarded to Workshop attendees only. Technical Sessions, General Sessions, Poster Sessions, or any other scheduled special event at this conference are not eligible for CEUs.

Workshop registration fees are NOT included in the full Conference registration fee. Workshops require separate registration and payment for each workshop. Availability is based on space. Workshops are limited to a maximum of 40 attendees.

## Workshop 6

### Making SAR Accessible

Don Atwood, *Alaska Satellite Facility*

Rudiger Gens, *Alaska Satellite Facility*

8:00 am to 12:00 noon, CEU .4

Room 11

**INTRODUCTORY Workshop:** This half-day workshop will introduce Remote Sensing professionals to Synthetic Aperture Radar (SAR). At the conclusion of the course, the student will understand the fundamentals of SAR as well as how SAR data is acquired, processed, and used in a wide variety of scientific applications.

Historically, SAR data has been used by a small group of experts, with specialized knowledge and processing tools. However, as more commercial sensors become available, there is an increasing demand to use SAR as a complementary data source for remote sensing and GIS applications. This workshop will enable the student to process SAR data into terrain-corrected, geocoded images that can be combined with other kinds of sensor data. The fundamental concepts introduced will be reinforced through practical demonstrations and exercises. Lastly, the students will learn how data can be acquired in support of their own research projects.

## Workshop 8

### Digital Terrain Models – Algorithms and Mathematical Procedures

Yaron A. Felus, *Ferris State University*

8:00 am to 12:00 noon, CEU .4

Room 13

**INTERMEDIATE Workshop:** In order to maximize the benefits of this workshop, participants should have an understanding of fundamental GIS principles. Moreover, basic knowledge of math, statistics and geometry is strongly suggested.

The primary objective of this workshop is to present algorithms and techniques to create, analyze, and utilize Digital Terrain Models (DTM). Basic spatial data structures such as Delaunay triangulation, Voronoi diagram, and Quadtrees will be described. Mathematical procedures for interpolation such as linear, trend estimation, inverse distance and kriging, will be studied using numerical examples. Finally, advanced methods for DTM visualization, analysis and integration such as contouring, 3D scene creation, drainage network, viewshed and watershed delineation, and co-kriging will be presented.

## Workshop 9

### Thermal Remote Sensing

Charles Olson, Professor Emeritus, *University of Michigan*

1:00 pm to 5:00 pm, CEU .4

Room 13

**INTRODUCTORY Workshop:** This workshop is for anyone involved in or considering the use of thermal sensors for crop, forest or land-use monitoring, geo-botanical prospecting and/or modeling of thermal energy upwelling from terrestrial features.

The goal of this workshop is to provide an examination of factors affecting thermal signals upwelling from terrain features. Effects of these factors on applications of thermal data in agriculture, forestry, geology, water/wetland management, and wildlife management will be presented and discussed.

## ASPRS Committee Meetings

### Committee Chairs

9:00 am to 10:00 am

Room 1

### Division Directors

9:00 am to 10:00 am

Room 2

### Awards Committee

10:00 am to 12 noon

Room 1

### Electronic Communications Committee

10:00 am to 12 noon

Room 2

### New Board Orientation

10:00 am to 12 noon

Greco Boardroom

### Evaluation for Certification Committee

1:00 pm to 3:00 pm

Room 1

### Region Officers

1:00 pm to 3:00 pm

Room 2

### Education and Professional Development Committee

1:00 pm to 3:00 pm

Room 9

### Convention Policy and Planning Committee

3:00 pm to 5:00 pm

Room 1

### Professional Practice Division (PPD)

3:00 pm to 5:00 pm

Room 9