Wavelengths
Columbia River Region

http://www.asprs.org/ColumbiaRiver

Volume 2007:4 — December 2007

President's Letter
By Steve Duncan

As the year wraps up I'll fight the urge to reflect on past accomplishments (or failures) and forecasts in favor of focusing on addressing some of the goals discussed by our regional Board during my tenure. We have a large geographical area with members from Klamath Falls and Brookings to Vancouver and Northeastern Oregon with virtually all of the attention and involvement focused in the Willamette Valley. We have discussed ways in which to expand our geographical areas of interest and attention. However, due to a finite involved membership and the energy required to organize the Portland Convention, these ideas have been shelved until after the convention. This is not to imply a lack of interest from the general membership. Your Board is very aware of its responsibility to serve the entire region while being affected by a passive relationship between it and our members; particularly in the outlying areas.

So, how can we move towards a more inclusive and proactive involvement between the Board and our more remote members? If the membership from those areas is interested in drawing from the Region's resources and willing to participate, they have every right and the Board every obligation to move in that direction. We have accomplished a lot this year. We were well represented at the Tampa convention where we carried off the 2006 Region of the Year Award. We presented an outstanding Tech Exchange and nearly sold out our Workshop on LiDAR for Forestry Applications. There is a talented core of volunteers aggressively taking on the task of organizing the Portland ASPRS National Convention (see p. 10). Our Student Chapters at U of O, OSU and PSU continue to flourish with motivated students and dedicated faculty advisors. The Board will continue to process ideas regarding the expansion of resources and services to our more remote geographical areas, and, while we are at it, members more centrally located. You can find the elected Board members at the end of this newsletter. Feel free to contact any of us with ideas, questions and concerns. Our next event open to the general membership will be the Annual Regional Banquet and Meeting yet to be scheduled (some time before the end of Feb.). I invite you to join us and express your ideas regarding our organization and ways in which it can better serve members near and far.

Richard Duncan of GeoEngineers presenting at the CRR/PSR Joint Technical Exchange on September 21 (see pp. 6-8).

National Director's Report

by Chris Aldridge

Seasons Greetings Columbia River Region members! As we come to the close of another year, I want to express my sincere hope that you have had a healthy and prosperous year, and that 2008 is as good as or better than 2007. I also want to express my thanks for your continued support to our region and your trust in me as the representative from the region to national.

The fourth quarter in the CRR seems to have been unusually quiet. I can only surmise that this is the calm before the storm. Our region hosts the 2008 annual meeting in April/ May of 2008 and the heavy lifting is just getting started. The program committee has been working very hard recently, with the greatest effort coming from the Technical Program Committee of Nancy Tubbs, Geoffrey Duh, and Michael Wing. I had the opportunity to review some of the paper submissions and I am pretty excited about what is shaping up to be a very good tech program.

Eric Sack from Bonneville Power Administration/Ciber presenting at the CRR/ PSR Joint Technical Exchange.

I urge all of our members to get involved in this effort in whatever way you can.

The Society held the Fall meeting in Ottawa, Ontario during the week of October 28 to November 2. This was a joint meeting with the Canadian Aeronautic and Space Institute and the Canadian Remote Sensing Society. The conference theme of "Our Common Borders" was not enough to generate the kind of attendance we would like to have seen. I don't have the specific attendance numbers. I do know that they were low, particularly from the U.S. Side of the border. I can only guess that this was due primarily to the difficulties of cross border traveling and the need for a passport. I regret that I cannot expound on the technical sessions. I was hampered by schedule and could only attend for the days of the ASPRS Committee meetings and the Board Meeting. The proceedings for the meeting are available on the ASPRS website.

The Board of Directors met on Monday, October 29 following the Executive Committee meeting on Sunday October 28. The Society continues to be financially very sound with assets nearing 3 million. The Board approved a budget for 2008, once again showing a deficit. Please don't take this as in indication that things aren't going well. These are strategic decisions to ensure that we support publications in progress. The most notable being the Manual of GIS, which we hope will be released for the 2008 Annual Meeting. The ASPRS Foundation continues to do a tremendous job of managing all of the annual awards. Three of our awards are now fully endowed and a surplus is being generated adequate to increase each of those awards. Headquarters continues to thrive in a sound building, with good equipment and good morale. HQ sits on a valuable property that could become a financial windfall for the Society, if real estate ventures in the D.C. area continue to expand as they have in the last few years.

The external affairs of our society continue to be directed heavily towards providing guidance for federal policy and other nationally important issues. We are heavily involved in advising the government regarding the Earth Imagery Continuity Mission, or simply keeping satellites in operation that will provide remote sensing information for a seemingly endless list of applications and users. A recent press release, published in this newsletter, indicates that Lockheed-Martin has won the contract for the launch of a space borne

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platform for the LandSAT Continuity Mission.

As always, membership was a heavily discussed topic. The decision to direct our efforts towards student members is beginning to pay off. The Board approved six student chapter charters, mostly in the south and southwest. The Puget Sound Region will have a student chapter ready to go by the end of the year.

In closing, we remain a financially healthy society that is viewed as a valuable resource by our government, academia, and the private sector. Our membership continues to hold more or less steady, but it would be great to see the curve start to climb. I believe that it is the responsibility of each of us to advance the society wherever possible. This can take place in your office, at a meeting, or at a local conference of geospatial professionals. Take the time to talk to a member of our profession and let them know what we can offer them. Our student chapters area a great example of what can be accomplished by a small group of motivated people.

Happy Holidays,
Chris Aldridge

Report on Nov. 16 LiDAR Workshop

By Steve Lennartz

This year's ASPRS Columbia River Region Workshop had Sorin Popescu of Texas A&M join us to present his full day workshop, "Looking Above the Terrain Model: LiDAR for Vegetation Assessment". Nine members and twenty non-members gathered at the World Forestry Center in Portland on November 16th for an intermediate level workshop introducing participants to LiDAR processing techniques and applications for deriving information on forest resources and canopy parameters. Participants engaged in discussions relevant to their specific applications of LiDAR, had a chance to network with other geospatial professionals, and enjoyed full access to the World Forestry Center's exhibit hall. Thank you for braving the pouring rain to make it to the workshop!

Columbia River Region Elections

The CRR is currently holding elections for Vice President and National Director. An e-mail ballot was sent to all CRR members on December 12. We have one candidate for Vice President, Erik Strandhagen. We also have one candidate for National Director, Chris Aldridge. Our bylaws require us to hold an election whether we have multiple candidates or not. Write-in candidates are allowed for both positions. Ballots must be received by January 10 in order to be counted. Contact Jim Meacham (jmeacham@uoregon.edu or 541-346-5788) if you did not receive a ballot or have any other questions.

Jan. 1, 2008 is Deadline to Apply for OSBEELS Prior Practice Photogrammetry License:

Applications to OSBEELS for the Oregon Registered Professional Photogrammetrist license by Prior Practice must be postmarked by January 1, 2008. After that date all new applicants will need to pass both the Fundamentals of Surveying exam and a written Professional Photogrammetry exam. The Prior Practice license requires photogrammetry experience and references but no exam or education. (Note: The list of OSBEELS newly licensed photogrammetrists was not available for this newsletter).

A view of the audience at the CRR/PSR Joint Technical Exchange at the Vancouver Water Resource Center, Vancouver, WA.

Jackie Ouelette of WSDOT presenting on Terrestrial LidAR at the Technical Exchange.

Report from Portland State University Student Chapter

by Jamie Ludwig, President

The Portland State University ASPRS student chapter just wrapped up a successful 2007 Fall quarter thanks to Molly Vogt and Kathy Majidi who gave a fantastic presentation on "The Shady Side of GIS: Planning Stream Revegetation in Gresham to Enhance Water Quality." A thanks is also given to Steph Gaspers for her informative presentation on Thematic Mapping for Middle-School Students.

The student chapter is looking forward to our winter quarter field trip to Bergman Photographic Services this coming January. Student members of ASPRS who are interested in going should contact Jamie Ludwig (jamieludwig@hotmail.com) to reserve their place, since space is limited.

Upcoming guest presenters this winter quarter include Carol Hall, Principle GIS Specialist, Metro; Roger Crystal, former ASPRS CRR President; and Cy Smith, statewide GIS Coordinator, Department of Administrative Services.

Anyone is welcome to attend our colloquia. For colloquia schedule, topics, and presentation times, visit the ASPRS PSU Chapter's website at: http://www.psuasprs.groups.pdx.edu/calendar/calendar.html.

Report from University of Oregon Student Chapter

By Megan Lawrence, President

The student chapter of ASPRS at the University of Oregon has been involved in a number of exciting activities this fall. To begin with we would like to welcome our newest members Justyna Goworowska and Lee Pera. Their excellence in cartography is a compliment to our group and we are pleased to have them.

To celebrate GIS week and GIS Day, which fell on November 14th this year, the University of Oregon had a number of activities and our student chapter of the ASPRS sponsored the first annual GIS Day map-mashup contest. A map-mashup takes two disparate sources of data (say, Google Maps and the routes of your favorite hikes) and combines them into a new, more interactive web experience. So what a DJ mashup does with two of your favorite songs (combines elements of both songs to create a new piece of music), map mashups do with two of your favorite web-based maps.

This year's student winner was Zack Ham and his very impressive mashup displays of his favorite bike rides. His site allows you, the user, to put in your favorite bike rides as well as display information about new rides you might want to take. This site is a definite must see and can be found at: ridewithgps.com. Our faculty winner was Dan Gavin and his mashup showed the locations of his field work. His site included pictures, publications and data associated with each field work location. Gavin's site is a great way for other researchers and students to understand the geographic significance of his research and can be found at: geography.uoregon.edu/gavin/sitemap.html.

Our student chapter also sponsored a session of Pecha Kucha (peh-chak-cha) presentations. These are fast-paced presentations that use 20 images with 20 seconds per images and 6 minutes and 40 seconds of presentation time. This year's theme was Asia and there were a number of fascinating talks.

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The UO student chapter of ASPRS is also pleased to announce that we will soon be accepting applications for research funding awards. The deadline is January 15th and it will fund student research in the areas of cartography and remote sensing here at the University of Oregon.

Report from Oregon State University Student Chapter

by Michelle Kinzel, President

The Student Officers met over the summer and put their heads together to come up with a new vision for the club, focusing on career building activities and supporting students in becoming future professional ASPRS members. We have had two guest speakers at our monthly meetings, both graduate students in the Geosciences Department and ASPRS members, share their work and future aspirations with their fellow students. Kyle Hogrefe spoke to his peers in October about his work with IKONOS imagery and the ground breaking work he is doing with mapping out bathymetry in shallow water environments. His work with the Deep Sea Floor, Coastal and Mapping Laboratories at Oregon State University focuses on using multibeam bathymetry data in conjunction with satellite images to create useful GIS systems in near shore environments, mainly in American Samoa. Robert Peckyno shared his GIS talents and the findings of his internship last summer with JPL-NASA in the November meeting, and awed his colleagues with images and maps of Mars.

The student officers requested permission to offer grants for current ASPRS Student Members, and are proud to be hosting a 'Call for Proposals'. Winners will receive chapter support and recognition at the Columbia River Region Dinner in the Spring. The proposals must support the student's goals related to a career in photogrammetry, remote sensing or GIS and have a direct benefit to the local community.

On November 30, the ASPRS Columbia River Region Board of Directors held their Board Meeting on the OSU Campus, and it was attended by all of the Student Leaders. Michelle Kinzel (President), Sam Thomas (Vice President), Karen Breitlow (Treasurer), Rob Denner (Communications Officer) and Richard Hughes (Officer in Training) showed their support for the club by attending the meeting, observing and interacting with the members

The club is busy preparing for the ASPRS Meeting in Portland next April, and we hope to have a good student membership turnout for this event.

Steve Lennartz of Sanborn Map Co. presenting at the CRR/PSR Joint Technical Exchange.

Welcome New CRR Members!

The members listed below have either joined or rejoined the CRR since September 2007.

Ms. Mahsa Eshghi	Vancouver
Ms. Christina Friedle	Portland
Ms. Elaina A. Hyde	Eagle Creek
Mr. Chad Long	Forest Grove
Mr. Dirk Pflugmacher	Corvallis
Dr. David K. Walters	Eugene
Mr. Chris Wright	Beaverton
Mr. Rob Bong	Portland
Ms. Justyna Gorowoska	Eugene
Mr. Kyle Hogrefe	Corvallis
Ms. Meredith Payne	Corvallis

Report on the Technical Exchange

By Steve Lennartz

The 11th Annual Columbia River & Puget Sound Regions Joint Technical Exchange on September 21st was met with great success at the Vancouver Water Resources Education Center. Thirty-seven registrants gathered to listen and discuss sixteen presentations ranging in topics from LiDAR applications to Mapping Affairs in Liberia. Business owners, government representatives, academics, and students were in attendance representing a diverse cross section of our discipline. This was another great example of adjacent ASPRS regions working together to facilitate professional discussion of all things geospatial. Thank all of you for pitching in to make this a great event! Following are presentation titles and abstracts (where available).

"Columbia River Avian Predation Project 1996-2007", Eric Stone III

The Columbia River Avian Predation Project is a joint program between the USGS, Oregon Fish & Wildlife, Washington Fish & Wildlife, USACE, BPA, NOAA, the Columbia River Inter-tribal Fish Commission and Oregon State University. This study investigates predation by piscivorous waterbirds on juvenile salmonids from throughout the Columbia River Basin. During 2006, study objectives in the Columbia River estuary, work funded by the Bonneville Power Administration, were to (1) monitor and evaluate previous management initiatives to reduce Caspian tern predation on juvenile salmonids (smolts); (2) measure the impact of double-crested cormorant predation on smolt survival, and assess potential management options to reduce cormorant predation; and (3) monitor large colonies of other piscivorous waterbirds in the estuary (i.e., glaucous-winged/western gulls) to determine the potential impacts on smolt survival. BPA is in its eleventh year of photogrammetrically counting the avian populations of islands throughout the Columbia River Region.

"ArcGIS and ArcPad Applications for Cultural Resource Investigations", Rafael Gutierrez

Cultural resource investigations regularly employ GPS technology to record locations of sites, isolates, and other point, line, and polygon features. The objective of this effort is to design a geodatabase for the deployment of data, forms, and protocols for use with Trimble GeoXT and ESRI ArcPad software. This presentation demonstrates the development of a geodatabase used to mobilize cultural resource investigators for recording location and attributes of historic (and prehistoric) artifacts and features. The management, protocols, design, data transfer, and final symbolization are discussed.

"Using LiDAR Data in Conjunction with Terrestrial Images to Extract Buildings and Vegetation", Justin C. Houk

"ArcGIS/Mapping-Grade GPS/Aerial Photography Integration", Eric Sack

"Application of LiDAR for Tank Farm Spill Modeling", Richard Duncan

DOT regulations require Integrity Managers to complete Spill Impact Analyses for fuel tank farm storage facilities. Thousands of tank farms across the nation contain thousands of liquids storage tanks and millions of gallons of fuel products. A rapid, accurate, method of spill analysis is presented as a preferred alternative to traditional approaches.

Conventionally, semi-circular, earthen tank berms are constructed around storage tanks to act as containment barriers in the event of mechanical failure and inadvertent product release. Normally, these containment structures are designed to contain 110 – 120% of tank volume. Additional, secondary containment areas are usually constructed to catch over-flow from the primary containment

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or to capture any release from a pipeline, valve, or pump elsewhere within the facility. Flying the facility with a high density LiDAR survey allows for the creation of three-dimensional models of the ground surface and storage facilities, as well as the accurate determination of containment volumes and hence their adequacy. "What-if" scenarios become simple and accurate spill pathways are mapped for accurate predictions of potential spill impacts on nearby HCAs. LiDAR is ideal also for the facility planning and design phase. Site selection, dike placement and secondary containment capacities can be optimized.

"LiDAR Research in PNW-FIA", Demetrios Gatziolis
The Forest Service (FS) Forest Inventory and Analysis (FIA) program conducts a national, comprehensive survey of forest resources across all land ownership classes. Passive remote sensing technologies have been long used to facilitate key inventory procedures, including field plot stratification, mapping of selected inventory attributes, small area estimation, etc. In the Pacific Northwest (PNW) region, FIA is evaluating the ability of Light Detection and Ranging (LiDAR) to further assist forest inventory efforts. Results from a handful of LiDAR data acquisitions indicate that the substantial variability and complexity in forest structure, the often extreme topography, and the large spatial extent of the forest in the region require investments in the development of new or refinement of existing data analysis techniques as well as potential modification of LiDAR data acquisition protocols. Upcoming acquisitions will help evaluate the robustness, efficiency, and accuracy of analysis techniques and data acquisition specifications and timing.

"Tales of Two Technologies: A Geologist's Perspective on Airborne LiDAR and Terrestrial Photogrammetry as Practical Surface Modeling Tools", William C. Haneberg
Airborne LiDAR and close range terrestrial photogrammetry are well suited to different problems in the practice of environmental and engineering geology. Airborne LiDAR is an effective tool for mapping potentially active faults, landslides, channel migration zones, and other landforms indicative of geologic hazards, especially beneath dense forest cover. Its geologic utility can be leveraged through practices such as the use of high-order interpolation algorithms and instead of linear interpolation to create geologically optimal DEMs; creation of derivative maps depicting attributes such as slope angle, plan and profile curvature, residual topography, and topographic roughness; use of LiDAR based DEMs for empirical and process-based modeling; and the collection of QA/QC data in representative terrain. The best strategy is to have the vendor work closely with an experienced geologist to ensure the best possible results. Although terrestrial LiDAR can be used to model rock faces such as highway cuts or surface mine benches, close range digital photogrammetry is often a more effective tool. Advantages over laser scanning for rock slope work include lower cost, the ability to fully integrate a digital photograph (conveying important geologic information) with the 3-D surface, and the geologic discontinuity mapping capabilities offered by existing commercial software.

"Mapping affairs in Liberia", Paul Mabry

"WSDOT Geographic Services Photogrammetry: Ground Based Laser Scanning", Jackie Ouelette

"Tree species identification using LIDAR intensity data and structure measurements", Sooyoung Kim
Coordinate data from airborne laser scanners can be used to detect individual trees and characterize forest biophysical attributes. The intensity data recorded for each laser point is related to the spectral reflectance of the target material and thus may be useful for differentiating materials and

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ultimately tree species. The aim of this study is to test if LIDAR intensity data and crown structure metrics can be used to differentiate tree species. Leaf-off and leaf-on LIDAR data were obtained in the Washington Park Arboretum. Field work was conducted to measure tree attributes for seven conifers and eight broadleaf species. LIDAR points from individual trees were identified using the field-measured tree location. Points from adjacent trees were excluded. We found that intensity values for different tree species varied depending on foliage characteristics, presence or absence of foliage, and the position of the LIDAR return within the tree crown. Stepwise clustering analyses were conducted using partitioning around medoids along with principal component analyses. The resulting clusters represented groups of species. Identifying species using LIDAR combining intensity data and structure metrics can contribute to a variety of ecosystem management applications, including riparian buffer management, wildfire management, and habitat monitoring.

"Capturing crown formation from LIDAR through implicit surface reconstruction", Akira Kato
Tree crown structure information is critical for forestry and ecological applications. Due to shaded and shadow pixels, identification of tree crown information from traditional remotely sensed data is difficult. In order to capture crown shape, we take a computer graphics approach and wrap the LIDAR discrete points to measure the tree parameters. The wrapping surface is fitted and draped over the discrete points using Radial Basis Functions (RBFs) and calculus divergence theorem is applied to compute the crown volume from a wrapped tree. We applied this method to trees at Washington Park Arboretum in Seattle, WA, for which two different point densities of LIDAR data (from 1 pts up to 20 pts per square meter) have been collected. The tree species in the Arboretum are common for the Pacific Northwest region. The results show R2 value of 0.87 for crown volume between field validation and wrapping approach for randomly collected individual mixed species stands. Crown volume derived from this wrapping approach does not require any explicit equations to represent the crown formation for each species. Most significant errors of crown volume from wrapping surface come from unclear segmentation of LIDAR points.

Akira Kato, graduate student at University of Washington

"Oregon LiDAR Consortium", Nancy Tubbs

"Mapping Ecological Systems for the Northwest ReGAP Project", Steve Lennartz
Currently, the USGS GAP program is developing vegetation maps for the Northwest United States. Sanborn has worked with USGS-GAP and the Washington and Montana Natural Heritage Programs to develop methods for mapping Ecological Systems using LandSAT imagery, field plots, ecological data, and existing vegetation maps. GAP is using NatureServe's Ecological Systems classification as the national standard. Ecological Systems represent units of ecological similarity, based on floristics and ecological processes, which are designed to be readily mappable with remote imagery. This presentation will summarize lessons learned in mapping Ecological Systems across both forested and grass/sage-steppe landscapes. Topics that will be discussed are: fuzzy vs. deterministic accuracy assessment, challenges in mapping particular systems, the role of field work and field data requirements, the role of input from ecologists, and temporal factors in delineating natural ecological systems.

National News:
Lockheed Wins LDCM Launch Contract

NASA selected Littleton, Colo.-based Lockheed Martin Commercial Launch Services to launch the LandSAT Data Continuity Mission (LDCM), which seeks to continue multispectral satellite imagery work begun in 1972 with LandSAT 1 and will pick up where LandSAT 7 leaves off.

LDCM is scheduled for launch around July 2011, and it will detect and characterize changes on the global land surface at a scale where natural and manmade causes of change can be detected and differentiated. NASA researchers expect to use LDCM data products to study, understand and predict the consequences of land-surface changes.

The award to Lockheed follows an announcement earlier in 2007 in which NASA selected Boulder, Colo.-based Ball Aerospace and Technologies Corp. to develop a key instrument for the program. Ball will develop an "operational land-imager" instrument that will capture images in the visible and near-infrared spectra. NASA awarded the business to Ball under a cost-plus-award-fee contract that could total almost $128 million.

The Lockheed launch contract—a firm, fixed-price task—carries a value of $124 million, including launch services for an Atlas V model 401 rocket; payload processing; launch-vehicle integration; and the necessary tracking, data and telemetry support. The spacecraft is scheduled to be placed into a 428-mile-high polar sun-synchronous orbit, lifting off from Vandenberg Air Force Base in California.

NASA's Goddard Space Flight Center in Greenbelt, Md., procures and manages the acquisition of the LDCM in partnership with the U.S. Geological Survey (USGS). NASA will turn over management of the LDCM satellite to USGS after launch and on-orbit checkout.

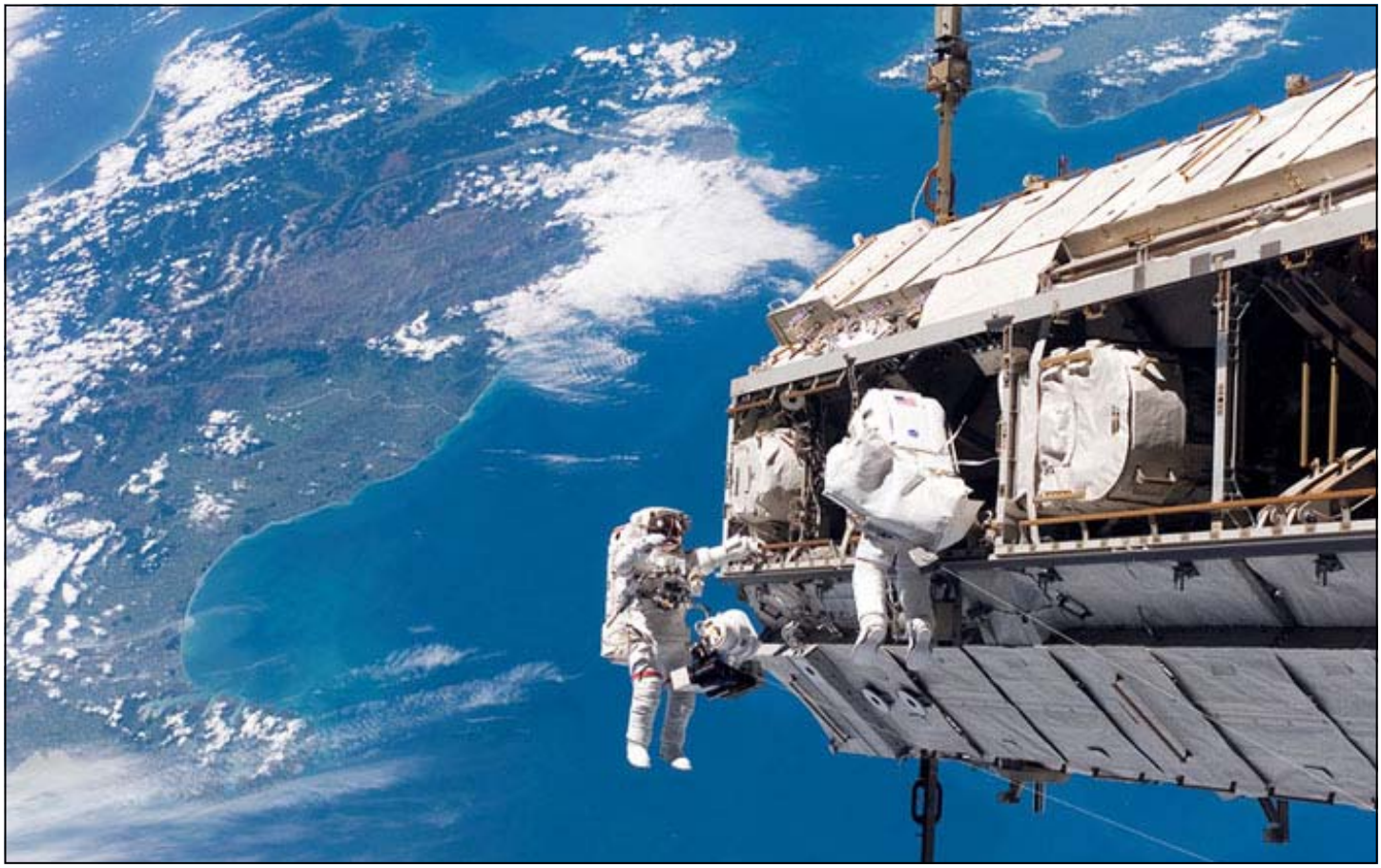


Photo taken by an astronaut on NASA'a latest shuttle. (http://www.texasjim.com/NASApix/NASA%20pix.htm)

Calendar

By Jackie Olson

January 11
Geological Society of the Oregon Country Friday Night Meetings
Dr. Vicki McConnell, Oregon State Geologist, Department of Geology and Mineral Industries (DOGAMI), will speak on the geology of the Baker County region. 8 PM
http://www.gsoc.org/frisched.html

January 24-26
47th Annual CSU, Fresno Geomatics Engineering Conference
Clovis, CA
http://www.csufresno.edu/geomatics/conference/index.htm

February 8
Geological Society of the Oregon Country Friday Night Meetings
Dr. Christina Hulbe, Portland State University Geology Professor, will speak about her recent trip to Antarctica. 8 PM
http://www.gsoc.org/frisched.html

Feb. 25-28
12th Annual Integrating GIS & CAMA Conference for Professionals in Property Assessment, Tax Administration, Mapping and Information Technology
New Orleans, LA
http://www.urisa.org/gis_cama

March 13
Workshop: GPS and GIS Applications in Natural Resources
College of Forestry, Oregon State University
Dr. Michael Wing, Forest Engineering Department, OSU
http://www.cof.orst.edu/cof/fe/research/gis/workshop/brochure/GIS_GPS_20072008_Brochure.pdf
http://www.cof.orst.edu/cof/fe/research/gis/wingm.htm

March 4-9
2008 ACSM/LSAW Conference "The Inland Empire Strikes Back"
Spokane Convention Center
Spokane, WA
http://www.acsm.net/conference.html

March 9-12 GITA's Geospatial Infrastructure Solutions Conference 31
Seattle, Washington
http://www.gita.org/events/annual/31/index.asp

March 9-12 GITA's Geospatial Dimensions of Emergency Response
Seattle, Washington
http://gita.org/events/annual/31/ers.asp

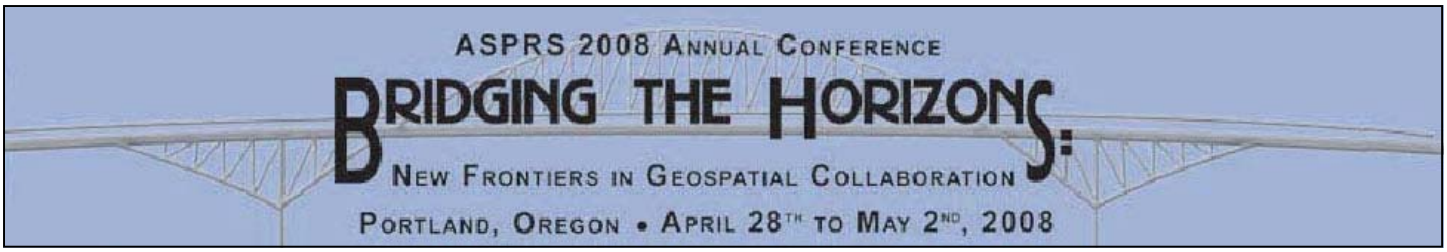
March 27-28
Workshop: Introduction to ArcGIS
College of Forestry, Oregon State University
Dr. Michael Wing, Forest Engineering Department, OSU
http://www.cof.orst.edu/cof/fe/research/gis/workshop/ArcGIS_Intro.htm
http://www.cof.orst.edu/cof/fe/research/gis/wingm.htm

April 5-8
Spatial Analysis for Business 2008 Conference
University of Redlands School of Business organized by UR, the Small Business Administration, and ESRI
Redlands, CA
http://www.spatialconference.org/

April 7-10
URISA/NENA Addressing Conference
Portland, OR
http://www.urisa.org/conferences_workshops

April 15-19 2008
Annual Meeting of the Association of American Geographers
Boston, Massachusetts
http://www.aag.org/annualmeetings/2008/index.htm

...And don't forget...



http://www.asprs.org/portland08/index.html

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