GIS in Action 2010

FINAL PROGRAM
Of the Eighteenth Annual GIS in Action Meeting

April 14 & 15
Smith Center, Portland State University
Portland, OR
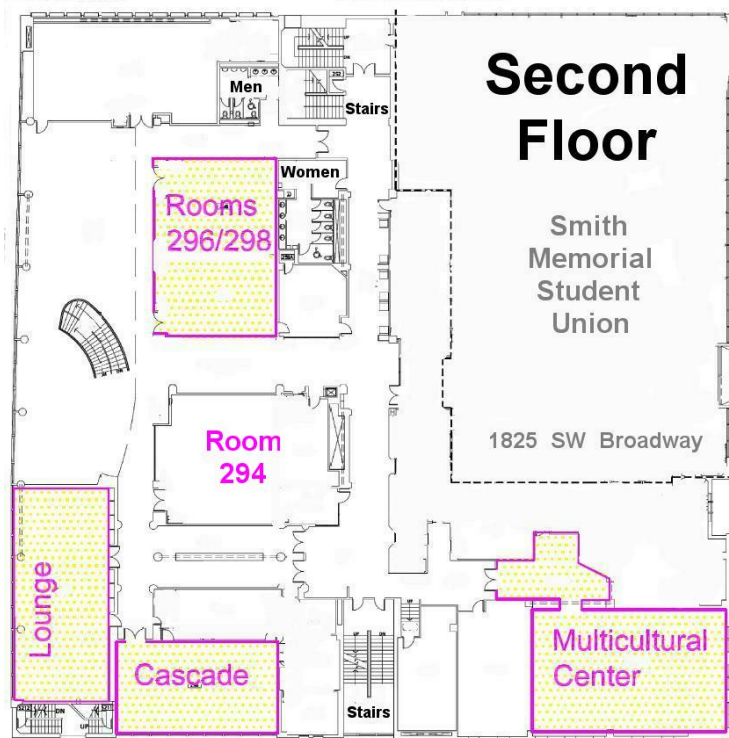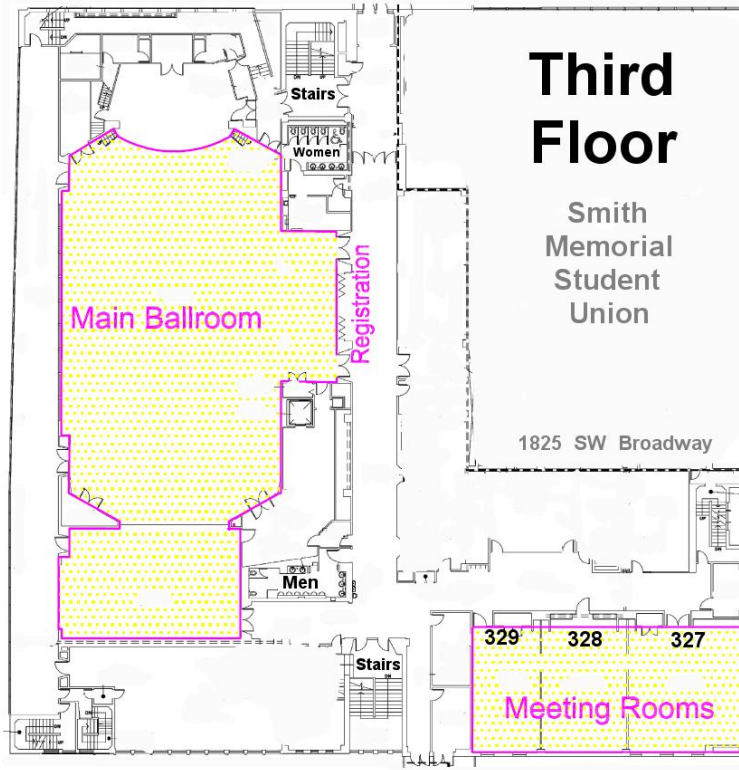
Conference at a Glance

Wednesday, April 14

	Room 328	Browsing Lounge	Room 294	Cascade Room
DAY 1	**TRACK A** Sessions	**TRACK B** Sessions	**TRACK C** Sessions	**TRACK D** Workshops
7:30-8:30 AM	**REGISTRATION**			
8:30-10:00 AM	**Welcome** Wim Wiewel, President of Portland State University			
	Opening Session Ken Murphy, Director of Oregon Emergency Management			
10:30-12:00 PM	**Map Automation**	**Surveying** Low Distortion Projections	**Convergence**	**Geomobile** ArcPad 8
12:00-1:30 PM	**LUNCH** Ballroom			
1:30-3:00 PM	**Tri-MET AVL**	**GIS and Toxic Response**	**NASA World Wind**	**GeoServer & OpenLayers** Free your maps, free your data
3:30-5:00 PM	**New RLIS**	**ICAN & Bump Mapping**	**Convergence** (panel)	Publish Open Data with Open Source Tools in 10 min
5:00-7:00 PM	**VENDOR EXHIBIT AND SOCIAL**			

Thursday, April 15

	Room 328	Browsing Lounge	Multi-Cultural Center	Cascade	Room 298
DAY 2	**TRACK A** Sessions	**TRACK B** Sessions	**TRACK C** Sessions	**TRACK D** Workshops	**TRACK E** Workshops
8:30-10:00 AM	**Open Source Web Mapping**	**3-D Modeling**	**Aerial Imagery**	**Health in GIS**	**Arcpy .mapping**
10:30-12:00 PM	**Open Data Initiative**	**Managerial GIS**	**LiDAR**	**Surveying** PLSS and GIS	**Arcpy .mapping**
12:00-1:30 PM	**LUNCH** Ballroom				
1:30-3:00 PM	**Open Source GIS Desktop Smackdown**	**Ecology and GIS**	**FLEX Apps for ArcGIS Server**	**GeoMobile** Digital Photos	**Arcpy .mapping**
3:30-5:00 PM	**Closing Session** James Fee, WeoGeo				

Smith Center

Third Floor

Smith Memorial Student Union

Stairs

Women

Main Ballroom

Registration

Men

Stairs

1825 SW Broadway

| 329 | 328 | 327 |

Meeting Rooms

Second Floor

Smith Memorial Student Union

Men

Stairs

Women

Rooms 296/298

Room 294

1825 SW Broadway

Lounge

Cascade

Stairs

Multicultural Center

Welcome to GIS in Action: 2010

This is the Eighteenth annual conference hosted by the Columbia Region of the American Society of Photogrammetry and Remote Sensing (ASPRS), the Oregon-Southwest Washington Chapter of the Urban and Regional Information Systems Association (URISA) and Portland State University (PSU). Each year, ASPRS and URISA collaborate to hold this informational conference on current issues in the Geospatial Information Community. This year Portland State University is joining with us to make this one of the best conferences yet. Join us for what will be another successful opportunity to meet colleagues in the geospatial industries and organizations, to learn about emerging topics and recent advances in GIS applications and to discuss our problems and solutions together.

This event features a one-fee, two day format, packed with information presented in concurrently running workshops and sessions on both days. There will be four tracks each day consisting of panel discussions debating hot topics, traditional sessions with 2-3 presentations per session and technical workshops providing in-depth discussion of issues and training in applications most relevant to the geospatial community.

On-site registration opens at 7:30AM on Wednesday April 14th and will remain open through 11:00AM on Thursday April 15th. The conference opens at 8:30AM on Wednesday with an opening address by Ken Murphy, Director of Oregon Emergency Management on the topic of GIS-You Want What? and will be followed by concurrent sessions and workshops . The Annual Vendor Social will be held Wednesday night from 5:00PM to 7:00PM. The conference will continue on Thursday beginning at 8:30AM with concurrent sessions and workshops followed by a closing address by James Fee of GeoWeo on the topic of Engaging the Community through Data Sharing.

Conference Highlights:

- As an urban planning scholar and former spatial analyst, **PSU President** Wim Wiewel will welcome the conference.

- The **Exhibit Hall** will open on Wednesday at 8:00AM and remain open until Thursday at 2:00PM. The hall will feature as many as 20 vendors in GIS related technology and services. This is an opportunity to see and discuss the latest advances in the industry.

- **NASA** Ames Research Center will present a case study on a local application of their award winning World Wind Open Source Software.

- **ArcPython** hands on training using ArcGIS 10 (sign-up is required along with attendance at Map Automation Session)

- The **Vendor Social** will be held on Wednesday evening from 5:00PM to 7:00PM in the Exhibit Hall. Join your peers in a more relaxed atmosphere with music, food and beverages. Music will be provided by the Cleveland Jazz Combo `http://clevelandband.pps.k12.or.us/`. *You will also find two free drink tickets in your registration packet.*

- The **Poster Session** will be held during the Vender Social. *Ballots for the People's Choice are included in your registration packet.* Please take it to the Exhibit Hall and vote.

GISP and Professional Development Hour Credits:

Selected technical sessions allow 9 to 12 hours to apply toward professional development renewal requirements for PLS, PE, PRP.

Attendance at this conference also provides education points for GISP training requirements as follows:

	Credits Earned Each Day
Renewal of GISP Credential:	1

PLANNING COMMITTEE

Conference Co- Chair, Keith Massie	Program Chair, Greg Newkirk
Conference Co-Chair, Doug Smith	PSU Coordinator, David Percy
Finance, Steven Lenhartz	Vendor Coordinator, Marcus Glass
Poster Session, Vivek Shandas	Publicity & Website, Amy Esnard
Volunteer Coordinator, Brian Block	Audio Visual Coordinator, Peter Alward

SPONSORING ORGANIZATIONS

Oregon/SW Washington URISA Chapter

The Chapter seeks to advance knowledge in the design, operation, and dissemination of urban and regional information systems. It provides a forum for a variety of issues related to information systems serving its members, related professionals, decision-makers and the public. Members live and work in Oregon and Southwest Washington.

The Chapter seeks to accomplish objectives in the following areas:

❖ Education
❖ Professional Development
❖ Coordination, Networking and Information Clearinghouse
❖ Policy Advocacy

Anyone having a serious interest in GIS and urban information systems is encouraged to join. You can be placed on the membership list by visiting www.orurisa.org

Columbia River Region of ASPRS

The American Society for Photogrammetry and Remote Sensing (ASPRS) is a scientific association serving over 7,000 professional members around the world. The ASPRS mission is to advance knowledge and improve understanding of mapping sciences to promote the responsible applications of photogrammetry, remote sensing, geographic information systems (GIS), and supporting technologies.

The Columbia River Region of ASPRS provides a local interface for members to receive information concerning national and regional events and maintain recognition as mapping science practitioners. The Region's programs are effectively utilized by members to acquire necessary information, develop relationships, and maintain their knowledge base. The annual GIS in Action conference, co-sponsored with the Oregon Chapter of URISA, is an important component of the Columbia River Region's educational and communication goals.

Portland State University

School of the Environment
College of Urban and Public Affairs

Portland State University is a center of opportunity for nearly 25,000 undergraduate and graduate students. Located in Portland, Oregon, one of the nation's most livable cities, the University's innovative approach to education combines academic rigor in the classroom with field-based experiences through internships and classroom projects with community partners. The University's 49-acre downtown campus exhibits Portland State's commitment to sustainability with green buildings, while many of the 124 bachelor's, master's and doctoral degrees incorporate sustainability into the curriculum. PSU's motto, "Let Knowledge Serve the City," inspires the teaching and research of an accomplished faculty whose work and students span the globe.

Our vision is to be an internationally recognized urban university known for excellence in student learning, innovative research, and community engagement that contributes to the economic vitality, environmental sustainability, and quality of life in the Portland region and beyond.

The mission of Portland State University is to enhance the intellectual, social, cultural and economic qualities of urban life by providing access throughout the life span to a quality liberal education for undergraduates and an appropriate array of professional and graduate programs especially relevant to metropolitan areas. The University conducts research and community service that support a high quality educational environment and reflect issues important to the region. It actively promotes the development of a network of educational institutions to serve the community.

Hotel & Parking

Hotel accommodations can be made at two nearby facilities. University Place offers two double beds or one single king bed for $89/night. Mention that you are coming for a conference affiliated with Portland State University. The hotel is located south and east of the conference location at 301 SW Lincoln ST. You can reach the hotel at 503-221-0140 or at http://cegs.pdx.edu/stay/upl. Hotel Madera is located north of the conference location at 515 SW Clay ST. You can reach the hotel at 877-484-1084 of at http://www.hotelmodera.com.

More information about parking at PSU can be found on the following at http://transportation.pdx.edu/visitors/parking. Parking rates start at $3/hour. The Parking One structure is the closest location to the conference facility. Other parking can be found on campus, on street or at nearby parking lots.

Travel

The Smith Center is at the corner of Harrison and Broadway (see map below). The closest Light Rail Stop is the PSU Urban Center. Additional information about public transportation to the conference can be found at http://www.trimet.org/maps/citycenter.htm. Or, the following link can be used to plan your trip: http://ride.trimet.org/?by=8:30%20am&date=4/14/2010&to=PSU. Also, **Amtrak** is providing discounts to individuals traveling to the conference from out of town. When calling Amtrak, refer to Fare Code Number "X96Z-973" which is valid for travel between April 10 and April 18. This is 10% off the lowest available fare to Portland. Amtrak can en contacted at 1-800-872-7245.

Meals

Box lunches are provided both days with registration. A continental breakfast is offered each morning. Also, light refreshments are provided at the Vendor Social on Wednesday.

WEDNESDAY APRIL 14, 2010

7:30 AM   **Conference Registration Opens: Lobby**

8:30 – 10:00 AM   **OPENING SESSION**   **BALLROOM**

Ken Murphy, Director of Oregon Emergency Management

"GIS – You Want What?"

Currently the Director of Oregon Emergency Management (OEM), Kenneth D. Murphy has been with OEM since July 1999. Early assignments at OEM involved functioning as the Administrative Operations Manager and the Deputy Director for the agency. These initial positions were integral to the overall organizational structure and management of administrative, operational processes and systems for the agency. Mr. Murphy has dealt with legislative issues, human resource management, public information and media liaison, as well as managing the development and implementation of projects to support and enhance the statewide emergency services system infrastructure. Mr. Murphy has been the Director of Oregon Emergency Management since April 1, 2003, and was also appointed Director of Oregon's Office of Homeland Security on June 1, 2005.

In 1980, Mr. Murphy left retail furniture business to pursue a full-time career with the United States Army as an active duty Guard/Reserve officer assigned to the Oregon National Guard. Over a period of nineteen years, Mr. Murphy held numerous positions on Company, Battalion, Brigade, Corps and Army staffs. Mr. Murphy's final two assignments included: Chief of the U.S. Army's European Crisis Action Team stationed in Heidelberg, Germany, which had the responsibility to react, manage, coordinate and control emergency situations for 83 European countries; and Director of Military Support to Civilian Authorities for the Oregon National Guard, responsible for the Oregon Guard's coordination and response procedures to state and national emergencies. Mr. Murphy retired from active military service in April 1999 as a Lieutenant Colonel with twenty-nine years of service.

Mr. Murphy currently serves on the Governor's Homeland Security Council and Governor's Statewide Interoperability Executive Council for Oregon. Additionally, he serves as a member of the Board of Director's for the Western States Seismic Safety Policy Council, member of the Board of Director's for the Oregon Regional Maritime Security Coalition, FEMA Region Ten Regional Advisory Council; FEMA Headquarters National Advisory Council and is a past President of the National Emergency Management Association for the United States.

10:00   **EXHIBIT HALL OPENS**

PARTICIPATING VENDORS:

i-TEN Associates	**King County GIS Center**
www.i10assoc.com	www.kingcounty.gov/operations/GIS
Lattitude Geographics Group	**Resource Supply, LLC**
www.latitudegeo.com	www.resourcesupplyllc.com
GeoNorth	**Continental Mapping Consultants**
www.geonorth.com	www.continentalmapping.com
ESRI	**The PPI Group**
www.esri.com	www.theppigroup.com
Surdex Corporation	**Oregon Institute of Technology**

www.surdex.com   www.oit.edu

MJ Harden, a GeoEye Company   **Electronic Data Solutions**
www2.mjharden.com   www.electdata.com

L-3 STRATIS   **Pictometry International**
www.L3Stratis.com   www.pictometry.com

GeoMobile Innovations
www.geomobileinnovations.com

TRACK A	Map Automation	Room 328
10:30 – 12:00	Moderator: Bob Pool	

i) **Automated Map Production in Clark County**
   Bob Pool, GIS Manager, Clark County

   Clark County has an extensive portfolio of GIS products that can be ordered online through an automated map production system. This system is used to automatically take orders, track production, and print thousands of map request each year. The automated mapping application is one of the last bastions of AML in our GIS. Clark County has been working with ESRI to migrate this system to the new Python based mapping module available in ArcGIS version 10.

   This presentation will look at Clark County's existing automated mapping system and its migration to Python at ArcGIS 10.

ii) **Introduction to Python Scripting for Map Automation in ArcGIS 10**
   Jeff Barrette & Michael Grossman, ESRI

   Description: ArcGIS 10 introduces the ability to automate mapping tasks through a new Python mapping module. This session will provide an overview of the arcpy.mapping module and will demonstrate how it can be used to process map documents, map layers, data frames, and layouts in batch. Attendees will also be introduced to the best resources and fastest ways to start writing their own mapping scripts in ArcGIS 10. This 45 minute introduction will also serve as a prerequisite for those interested in the hands-on workshops the following day.

   Intended audience: GIS professionals that are looking for an easier way to develop automated tasks without necessarily having to learn the complexities of ArcObjects and sophisticated development environments as well as those that are interested in understanding how Python development fits within the overall ArcGIS scripting/customization framework.

   Prerequisites: None

TRACK B	Surveying Using Low Distortion Projections	Browsing Lounge
10:30 – 12:00	Moderator: Emmor Nile	

i) **Low Distortion Projections – Development of a new Oregon Coordinate Reference System**
Ron Singh, PLS – Oregon Department of Transportation Chief of Surveys/Geometrics Manager

Ron Singh is the Chief of Surveys and Geometronics Manager for the Oregon Department of Transportation. He directs the agency's surveying program which includes surveys for Project Development; Construction; Monumentation; Photogrammetry; Geodetic Control; and Right-of-Way Engineering. Ron has been with the Department for 33 years.

The Oregon State Plane Coordinate System was developed in the 1930s and for decades has served the surveying and engineering community well. However, the need for higher accuracy, inclusion of geodetic surveying in our everyday work, combination of terrestrial total station and GPS positioning, and blending of survey/engineering and GIS data has created the need to develop an improved coordinate system. During 2009, a multi-disciplinary Technical Development Team was formed to create this modern system which has been named the Oregon Coordinate Reference System.

The Technical Development Team has designed four preliminary projection zones, conducted field testing, and is poised to design similar zones for other locations within Oregon.

This topic will review the concept of Low Distortion Projections and provide a status report of activities in the development of the new Oregon Coordinate Reference System.

TRACK C	Convergence of Remote Sensing Information	Room 294
10:30 – 12:00	Moderator: Brandt Melick	

i) **Airborne LiDAR Data Acquisition for Water Resource Applications: Planning for Success**
Matt Boyd, Principal, Watershed Sciences

Airborne LiDAR has increasingly become the tool of choice for providing an invaluable data backdrop to support engineering designs and analyses for water resource applications. The base LiDAR-derived product of a high-resolution, high-accuracy digital terrain models allows for a number of engineering assessments ranging from flood hazard mapping to the impact of dam removal on channel morphology. These data serve as a springboard to inform additional analysis related to other terrain features of interest such as vegetation and infrastructure. Watershed Sciences, Inc., has collected and processed millions of acres of high resolution airborne LiDAR data for Pacific Northwest clients such as the Army Corp of Engineers and the Oregon LiDAR Consortium. This presentation will focus on data acquisition considerations including resolution, accuracy, planning, and integration with other spatially explicit data and will include examples from projects in the region.

ii) **Current Events in Water Resource Engineering Application of LiDAR**
Jacob McDonald, USACE

The Portland District Corps of Engineers is using LiDAR data in various ways to solve engineering problems related to water resources. Approaches to and issues encountered with several current projects with a heavy dependence on

LiDAR will be outlined. Expected topics will include flood damage assessment along the Columbia River, sediment transport analysis in the Toutle River and embankment dam deformation monitoring. Future potential projects utilizing specialized LiDAR acquisition such as very high density airborne LiDAR for mapping coastal jetties and airborne LiDAR bathymetry to support hydraulic modeling of riverine systems will be discussed. This presentation will also include an update on the current status of the National Coastal Mapping Program efforts in the Northwest.

TRACK D	**Developing and deploying custom Mobile GIS solutions with ArcPad 8**	
10:30 – 12:00	Instructor: Craig Greenwald	**Cascade Room**

ESRI's ArcPad enables field-based personnel to capture, analyze, and display geographic information using handheld and mobile devices. Sensors such as GPS and laser rangefinders provide accurate location and distance measurements that integrate seamlessly with field observations. However, no two field tasks are exactly the same and a "one size fits all" approach doesn't work well for everyone. In this workshop, participants will learn how to use ArcPad Studio, along with other industry standard tools and techniques, to customize ArcPad to deliver a streamlined user experience with focused tools for field data acquisition and maintenance. ArcPad Studio is included with every license in the new ArcPad 8.0 release, so customization is now open to all ArcPad users. Whether you're capturing conifers, inspecting icebergs, or updating utilities, you'll see how to adapt ArcPad to YOUR workflow by creating custom tools, forms, and scripts.

Craig Greenwald, GeoMobile Innovations Inc. (Corvallis, OR) specializes in providing our clients with Mobile GIS, GPS and field data collection technology solutions, including hardware, software and consulting/training. GeoMobile Innovations' Technical Director, Craig Greenwald, has worked in the Mobile GIS arena for over 10 years including 7 years with ESRI on the ArcPad development team which he continues to support.

12:00 – 1:30	**LUNCH**	**BALLROOM**

12:15 – 1:15	**Oregon/SW Washington URISA Chapter Meeting**	**Room 328**

TRACK A	**TriMET Automated Vehicle Location End-to-End**	**Room 328**
1:30 – 3:00	Moderator: Rex Fisher	

i) **On Vehicle GPS & Transit Tracker**
Jon Lutterman, TriMET

Jon Lutterman is the Project Manager for Intelligent Transportation System (ITS) Vehicle Technologies at TriMet. In 20-plus years at the agency he has been responsible for the Automatic Passenger Counting (APC) system, the Transit Signal Priority (TSP) system, and the integration of all in-vehicle ITS systems. He is also an integral part of the team that designed and operates TriMet's automatic vehicle location (AVL) system.

This presentation will explore GPS and the implementation of GPS/AVL/APC technologies on TriMet vehicles. GPS is a widely-used technology today but its history and technical details remain less well known. The history of the development of GPS technology will be described as well as its integration into TriMet's AVL/APC system. On-board vehicle system hardware and functions will be detailed along with data collection processes. Current system capabilities and limitations will be described, and a look ahead to emerging technologies will

also be provided.

ii) Interactive System Map & Real Time Vehicle Displays
Nathan Banks & Frank Purcell

Nathan Banks is a GIS Data Analyst for TriMet. His work at TriMet involves geographic analysis and the interpretation and presentation of quantitative and spatial data. Mr. Banks has nearly a decade of experience in GIS and public transit planning in both the public and private sectors.

Frank Purcell has been a Software Engineer at TriMet for the past five years. He works primarily on customer facing applications, and is the developer of TriMet's interactive system map http://ride.trimet.org and accompanying trip planner web service API. Frank is currently working on the OpenTripPlanner (OTP) http://opentripplanner.org, an open source project that aims to make multi-modal trip planning software available to everyone.

This presentation will provide an overview of TriMet's open source mapping platform and its integration with AVL/APC data. Key components will be described and the modular, customizable nature of the system will be emphasized. Access to AVL/APC data is critical for TriMet operations and planning. The map allows this data to be easily displayed and a number of examples will be shown.

iii) Post Service Data Analysis
Dave Crout

David Crout has been an Operations Analyst at TriMet for the past ten years. Current projects include analysis of automatic vehicle location (AVL) data and support for the Automatic Stop Announcement system, the Transit Signal Priority system, and Real-Time Customer Information.

This presentation will provide an overview of how TriMet's AVL data is processed, analyzed, and used. TriMet analysts produce many reports based on AVL data intended for audiences both internal and external to the agency. A number of examples will be presented detailing select performance measures and passenger activity data. Selected TriMet-developed applications that allow staff to directly query operations performance data will also be described.

TRACK B	Incident Response and Rapid Assessment	Browsing Lounge
1:30 – 3:00	Moderator: Kelly Neumeier	

i) This is not a Drill: The Making of the Oregon Incident Response Information System (OR-IRIS)
Erin Smith, Nadia Jones, David Banis and Steven Jett

The Center for Spatial Analysis and Research (CSAR) at Portland State University has created an interactive incident response mapping tool for the Oregon Department of Environmental Quality (DEQ), funded by the Oregon State Fire Marshal's Office, and in partnership with the Oregon Public Health Division. The Oregon Incident Response Information System (OR-IRIS) is a self-contained, pre-packaged tool designed to provide inexperienced GIS users with critical spatial information to facilitate situational awareness in the event of a hazardous material release.

Primarily using readily available datasets, OR-IRIS includes 11 thematic groups with 85 layers, NOAA Navigation charts, topographic maps, and aerial imagery. Datasets are arranged into thematic groups consisting of the physical

and natural surroundings of an incident, as well as jurisdictions and contact information for other agencies or stake-holders. The thematic groups are easy to navigate, providing users with the most critical information first. OR-IRIS has been published in ArcReader format in order to be completely self-contained, easily distributable, and inexpensive.

This presentation will be given in three parts: First, DEQ will discuss the process of identifying the problem--characterizing the goals to be achieved, recognizing technical limitations within the agency, and selecting the platform and delivery mechanism for the tool. Second, PSU-CSAR will discuss the challenges of assembling the tool for DEQ, including data layer acquisition and manipulation, symbolizing and labeling of the large variety of data layers, and packaging the tool for efficient delivery to end users. Finally, DEQ will step back in to give a demonstration of the tool, outline upcoming improvements, and discuss the state of emergency response mapping within Oregon today.

Erin L. Smith graduated from Portland State University with a Bachelors of Science in Geography and minor in Geographic Information Systems in August, 2009. She benefited from an opportunity to work with PSU's Center for Spatial Analysis and Research on several projects including the Oregon Incident Response Information System. She is currently a GIS Technician with Kapala IT in Portland, OR, and is working on a contract to create Master Title Plats for the Bureau of Land Management.

Nadia Jones achieved her Geographic Information Systems Certificate with Portland State University in June, 2009; and has gone on to become a master's student in the Geography Department at PSU. Her masters thesis focuses on geomorphology and soils. In addition to her studies, she holds the Vice-President's position of the PSU student chapter of American Society for Photogrammetry and Remote Sensing.

David Banis manages the Center for Spatial Analysis and Research (CSAR) in the Geography Department at Portland State University. CSAR supports students, researchers and organizations in the greater Portland area for projects involving GIS, cartography, and remote sensing. His teaching focuses on GIS, cartography, and other map-related topics. David received his MS in geography from Portland State University in 2004, and has been teaching there since 2005.

Steven Jett is GIS Coordinator for the Oregon Department of Environmental Quality's Cleanup and Emergency Response Programs. He graduated from University of Oregon in 1998 with a Master's in Geography and worked at EPA's Western Ecology Division Laboratory in Corvallis for 10 years before starting with DEQ in 2008. Aside from emergency response GIS projects at DEQ, Steven manages database and mapping projects for dozens of environmental cleanup sites throughout the state.

ii) **Rapid Assessment of Values-at-Risk during Wildland Fire**
   Kevin Hyde, Landscape Hydrologist, Collins Consulting

Accurate and rapid identification of values-at-risk is a key component of wildland fire decision support. Since 2005 the US Forest Service and other federal agencies have used GIS to combine modeled fire spread and spatial inventories of critical resources including building locations, utility infrastructure, and water resources information. These Rapid Assessments of Values-at-Risk (RAVAR) result in maps and summary reports which are used by fire management teams for decision support. This presentation summarizes the RAVAR process and products, explains how county parcel data are used to approximate structure locations, and offers ideas for similar applications in

other areas of emergency management and response.

Kevin Hyde is employed by Collins Consulting working under contract as a Landscape Hydrologist for the US Forest Service, Rocky Mountain Research Station, Missoula, MT. He is the technical developer of the RAVAR – Rapid Assessment of Values-at-Risk module of the Wildland Fire Decision Support System – WFDSS. The WFDSS development team received the 2008 USFS Chief's Award for Excellence in Science and Technology. His research interests include post-fire erosion processes and developing methods to predict primary fire effects and probable secondary effects of fire on water resources.

| TRACK C | World Wind | Room 294 |
| 1:30 – 3:00 | NASA | |

Introduction
Brandt Melick, City of Springfield

What can NASA's World Wind do for you?
Tom Gaskins, Technical Lead, World Wind, NASA Ames Research Center
Randy Kim, Data Manager, World Wind, NASA Ames Research Center

What is World Wind? What is the vision behind this product? What is the story behind its evolution from Earth II to product worthy of the prestigious NASA Software of the Year award? How can a geospatial Open Source solution developed by NASA Ames Research Center be used by local governments in the Pacific Northwest?

Please join Tom Gaskins and Randy Kim to learn the history behind this powerful product, understand the suit of tools it includes, inventory the functionality it provides and gain knowledge of the growing community behind its development and ever broadening user base. The intent of this presentation is to address practical application at the local level, address benefits to small organizations and inform interested parties on how to become active participants the World Wind community.

Breaking down a local use case based on the City of Springfield Oregon, Tom and Randy aim to inform the audience on how this product meets local needs. Behind the smoke and mirrors – what can World Wind really do for you and the broader Pacific Northwest GIS community?

(Please be sure to join Tom and Randy along with the panel of distinguished guest, in the Convergence panel discussion immediately following this presentation.)

| TRACK D | GeoServer & OpenLayers | Cascade Room |
| 1:30 – 3:00 | OpenGeo | |

GeoServer and OpenLayers – Free your maps, free your data
Mike Pumphrey, OpenGeo Division of The Open Planning Project (TOPP)

GeoServer is more than just a map server--it's a gateway to making any geographical dataset available on the web. Discover the power, ease of use and freedom that GeoServer offers. See how GeoServer, along with OpenLayers, a free and open source web map client, can complement or replace both ESRI's ArcGIS Server and Google Maps.

This presentation will review the fundamentals of GeoServer, introduce you to the developers, load and serve data onto the web, show how the software empowers users and developers alike, and summarize the professional support

options that are available.

<table>
<tr><td>TRACK A</td><td>The New RLIS</td><td>Room 328</td></tr>
<tr><td>3:30 – 5:00</td><td colspan="2">Moderator: Paul Cooey, GIS Program Manager, Metro Data Resource Center</td></tr>
</table>

i) What is New with RLIS
Minott Kerr, Senior GIS Specialist, Metro Data Resource Center
Justin Houk, Senior GIS Specialist, Metro Data Resource Center
Zac Christensen, Senior GIS Specialist , Metro Data Resource Center

This presentation and general discussion revolves around new and improved datasets now available in RLIS. Datasets discussed will include the multifamily housing database, the master address file, building footprints, new hydrographic data, regional trails database and a demonstration of new ways to access RLIS data.

ii) RLIS Connectivity Project
Alan Holstead, GIS Program Supervisor, Metro Data Resource Center
Steve Erickson, Principal GIS Specialist, Metro Data Resource Center
Zac Christensen, Senior GIS Specialist, Metro Data Resource Center

Over the past year GIS staff within Metro's Data Resource Center (DRC) has been rethinking and retooling the way in which the Regional Land Information System (RLIS) dataset is maintained and distributed. At the foundation of this process has been the migration of maintenance processes and data storage into a new enterprise data model utilizing SDE. With a more centralized model in place, the DRC moved on to design and build the architecture necessary to develop and deploy web services using ArcGIS Server. The next phase of the project will involve distributing RLIS data in a more "real-time" manner via a combination of web services, downloadable datasets, and direct SDE connections with RLIS data partners throughout the region.

Included in the presentation will be discussions on the SDE migration, general system architecture, and a demonstration of new RLIS data discovery site for accessing web services and downloading RLIS data.

<table>
<tr><td>TRACK B</td><td>Maps, Viewers and More</td><td>Browsing Lounge</td></tr>
<tr><td>3:30 – 5:00</td><td colspan="2">Moderator: Jon McDowell</td></tr>
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i) Connecting the Dots: Linking web atlases via the International Costal Atlas Network
Tanya Haddad, Oregon Coastal Management Program

The Oregon Coastal Management Program is participating in the International Coastal Atlas Network (ICAN), a group of 30+ organizations from 14 nations, dedicated to seeking interoperability approaches in support of coastal zone management and the translation of coastal science to coastal decision-making.

One aspect of this participation is involvement in a technical prototype that demonstrates the linking of coastal web atlases. The prototype achieves semantic interoperability between individual atlas projects via services harmonization and ontology mediation. Standard OGC services such as Web Map Services (WMS) and Catalogue Service for the Web (CSW) are used to deliver maps and metadata, while differences in local vocabularies are translated using linkages between local and global ontologies.

This project can be presented either as a talk or as a poster. We can discuss the overall ICAN project and prototype technical approach, as well as local

Pacific Northwest participation by both the Oregon and Washington coastal atlases.

Tanya Haddad works for the Oregon Coastal Management Program on a variety of GIS and web projects using both ESRI and open-source tools. She has been involved with the ICAN project as a member of its technical team since 2007.

ii) **USGS National Map Viewer and US Topo**
Tom Carlson, USGS Geospatial Liaison for Washington
Scott Van Hoff, USGS Geospatial Liaison for Idaho

This presentation will provide an update on two efforts by the USGS. The first is the new National Map viewer which is an improved viewing platform, base map data, and an integrated data download service. It offers interoperable services with popular viewers such as Google Earth and Bing! Maps use WMS, KML, or ArcGIS. The second effort is the new US Topo maps scheduled to be published in Oregon and Washington in 2011. US Topo is the next generation of digital topographic maps from the U.S. Geological Survey. Arranged in the traditional 7.5-minute quadrangle format, digital US Topo maps are designed to look and feel like the traditional paper topographic maps for which the USGS is so well known. At the same time, US Topo maps provide modern technical advantages that support wider and faster public distribution and enable basic, on-screen geographic analysis for all users. The historic topographic quadrangle scanning efforts will also be discussed which is an integral part of the US Topo publication process.

Tom Carlson is the Geospatial Liaison for Washington State and part of the Western Region Geography, National Spatial Data Infrastructure (NSDI) Partnership Office in the Western Region of the U.S. Geological Survey. In this capacity, he is responsible for geospatial coordination with State, Federal, local, tribal and other partners and other USGS disciplines in the Region. A broadly trained Geographer, Tom received his Ph.D. in Geography from the University of California, Davis in 2003, and both his Masters of Science and Bachelors of Science in Geography from Portland State University in 1997 and 1995, respectively. Tom's professional background includes over 10 years of teaching college level Geography, GIS, and remote sensing at the University of Washington, The University of California, Davis, Montana State University, and Sacramento City College. As a major part of his academic background, he has been a leading participant in the development and implementation of GIS Certificate Programs at two colleges.

Scott Van Hoff is the Geospatial Liaison for the State of Idaho and is part of the Western Region Geography, National Spatial Data Infrastructure (NSDI) Partnership Office in the Western Region of the U.S. Geological Survey. In this capacity, he is responsible for geospatial coordination with State, Federal, local, tribal and other partners as well as other USGS disciplines in the Region. Scott received his Bachelors of Science in Geology from Washington State University in 1993. Scott also completed 2 years of graduate study in Hydrology at Idaho State University. His professional background includes over 10 years with Idaho Department of Water Resources where he worked in Flood Hazard management and mapping, Underground injection Control, Well construction and water rights.

iii) Bump Mapping
Jeff Nighbert, Bureau of Land Management

"Bump mapping" is a term used in 3d raster graphics, which refers to perturbating an object's surface with textures and patterns. These perturbations or "bumps" add tremendous realism to the object and to the visualization by synthetically emulating the fine organic textures and modulated light and shadows found in nature. This same technique can be applied in a GIS setting to add realism and interest to a cartographic presentation. Detail attracts a reader's attention when looking at maps of landscapes. "Bump mapping" as a technique is clearly in the realm of "cartographic realism." The cartographic realism movement is predicated on the idea that you can incite greater geographic understanding in the mind of a map reader if you express landscape more "realistically." In the cartographic realism genre, landscapes features are shown as an image backdrop and are characterized using iconic symbols similar to what the viewer might see if he/she was looking at the real thing, but in a straight-down aerial context, say from an airplane. For example, a conifer forest might be symbolized as a series of sharp bumps colored dark green, crops might be symbolized as raised rows colored yellow and tan, cliffs might indicate abrupt jagged cubes colored dark brown and gray, and so on. The point being that with increased realism, at least in the mind of the map reader, complex landscapes can more easily interpreted and understood when they are symbolized with images that bring forward a memory of the object being shown. That being said, its easy to realize the importance of bump mapping as a tool in developing the proper characterization for a multitude of landscape classes that might be shown on a map.

One of the most effective ways to communicate the lay of the land is through a beautiful "painted" relief map. When the geography of an area is presented in this fashion, map users can gain a deeper understanding of the makeup of a region at a single glance. Beautiful "colorized" relief maps are also more interesting and thought provoking than traditional maps and are a necessity for presenting the complex situations that arise when providing maps used for Natural Resources and Land Management projects and research. However, there has been reluctance to require or ask for relief maps because of the perception that they are difficult or expensive to produce. Even today, the methods for creation of colorized relief backdrops for maps is not readily apparent in many "out of the box" geographic information systems (GIS), even ArcInfo!

This presentation discussed how beautiful and interesting painted relief maps are created at the Bureau of Land Management offices in Washington and Oregon using a variety of Arc Macro Language (AML) programs. These programs have made colorized terrain maps cheap, quick and easy to create. The images below are the slides from the 1999 user conference presentation. A detailed paper on Creating Beautiful "Painted Relief" Using Arc/Info may be accessed on the World-Wide-Web at www.or.blm.gov/gis. You may also contact the author for advice and copies of new programs by email: jnighber@or.blm.gov.

Shaded or painted relief backdrops add tremendous visual interest and value to cartographic products. The addition of relief backdrops to maps has proven an effective technique for portraying realistic landscapes and geographical situations and it is widely practiced in cartography today. However, the beautifully smoothed and colored shaded relief surfaces commonly seen as backdrops on many maps often do not reveal the true character of the ground being shown. By enhancing painted or shaded relief with textures and materials, more realistic information can be displayed and therefore provides map users a

better sense of the geographical situation present in the map. The information required to develop these geographic textures and materials can be derived from a number of widely available digital sources, including digital aerial photography, satellite imagery and other GIS thematic data. Incorporation of this additional information is desirable and possible while still maintaining visual balance and readability. This presentation will discuss the concepts and philosophy behind the use of geographic textures and materials. It will also provide a step-by-step application example showing how landscape based textures and materials can be applied to cartographic backdrops using ArcGIS to create a dramatic, interesting and informational cartographic presentation.

Jeffery S. Nighbert has been a geographer with the Bureau of Land Management for over 30 years and is currently the Senior Technical Specialist for Geographic Information Systems (GIS) at the Oregon State Office, located in Portland, Oregon. He has extensive experience in GIS and holds a M.A. in Geography from University of New Mexico.

TRACK C	**Convergence of Remote Sensing Information – Panel**	**Room 294**
3:30 – 5:00	Moderators: Brandt Melick & Doug Smith	

Panel Members
Matt Boyd, Principal, Watershed Sciences
Jacob McDonald, USACE
Tom Gaskins, Technical Lead, NASA World Wind
Randy Kim, Data Manager, NASA World Wind
Tyler Mitchell, Executive Director of OSGEO

This session will address some of the questions facing the convergence of technology. These include: How are technologies converging and how does this result in added value? What are the hurdles to overcome? What are a few preferred methods for dealing with large quantities of remote sensing data? Please address hardware, software, communication protocols and your secret techniques in the response. How can consortia share resources to achieve efficiency gains? Please include examples of healthy partnerships and describe key success factors. Who are the real users of LiDAR data and how is this expanding our user base? Where are these data being underutilized? What next steps should we consider to best leverage these electronic assets?

As we move forward, what measures should be applied to assure that the outcomes of our endeavors benefit and empower future generations? How can we best leverage public resource to best serve public interests?

TRACK D	**GeoServer & OpenLayers Hands-On**	**Cascade Room**
3:30 – 5:00	OpenGeo	

Publish Open Data with Open Source Tools in 10 min
Mike Pumphrey, OpenGeo Division of The Open Planning Project (TOPP)

Learn how easy it is to use GeoServer and OpenLayers to publish free open data from City of Portland (available at civicapps.org).   We'll start from nothing, first installing all the software needed, then explore a few open datasets from the City of Portland, and within minutes you'll see how easy it is to get your data published on the web. We'll publish data into a website using OpenLayers, a free and open source web map client, as well as on to Google Earth. So bring your laptop for hands-on experience, share your laptop, or watch and learn.

5:00 – 7:00 PM	**VENDOR HOSTED SOCIAL**	**BALLROOM**

7:30 AM   **Conference Registration Opens: Lobby**

8:30 – 10:00 AM   **CONCURRENT TRACKS**

TRACK A   **Local Government Open Data Consortium**
8:30 – 10:00   Moderator: Dean Anderson

    i) **Local Government Open Source Web Mapping Consortium: Implementing Best Practices**
Dean Anderson, Polk County
Eli Adams, Lincoln County

This session will discuss how we implemented a collaborative development environment to address common goals and collective need for a web based GIS mapping system. This session will discuss how the group first defined needs using business and functional use cases prior to software evaluation, selection and implementation. Open Source tools were selected as the implementation environment because they best met our goals and needs. The current development environment will be demonstrated and discussed.

    ii) **Crisis Mapping in Haiti**
Rafael Gutierrez, GIS Manager SWCA Consultants

This discussion describes the base mapping effort using OpenStreetMap for the CrisisCamp Haiti earthquake response in Portland, OR on January 23, 2010. The talk covers the overall experience of new and experienced users, the collaborative effort, the tools used, and the ongoing mapping. On January 12, 2010, a 7.0 earthquake struck Port-au-Prince, Haiti. While the response by relief organizations was swift, there was little known about Haiti's infrastructure given that it was one of the poorest nations in the world. Many people saw this as an opportunity to contribute their collective skills from abroad through the CrisisCamps which were borne out of the Government 2.0 Camp, a small band of idealists and innovators gathered to discuss the idea of a creating a common community through a mash-up of citizen volunteers, crisis response organizations, international humanitarian relief agencies, non-profits and the private sector. One of the projects that evolved from CrisisCamp was the Haiti Base Mapping project in which GIS professionals, image analysts, neogeographers, and novice mappers utilized OpenStreetMap to map undocumented areas of Haiti. The response was overwhelming and it was estimated that more than a year's worth of man-hours had been put into this effort within weeks of the disaster.

TRACK B   **3-D GIS**
8:30 – 10:00   Moderator: Kevin Martin

    i) **3D Geologic Modeling for the Umatilla Basin Aquifer Storage and Recovery Project**
Erik Strandhagen, Scientist/GIS Specialist, Integral Consulting

Integral developed a 3-dimensional geologic and groundwater model to support a large-scale agricultural Aquifer Storage and Recovery (ASR) Feasibility Study. Integral used EVS-Pro and ArcGIS software to create the volumetric subsurface model, employing spatial data that included well borehole logs and well

groundwater elevations from the Feasibility Study. The model domain covered an area of approximately 20 square miles and included five complex geologic layers to a depth of 250 feet. The geologic block model of the project basin correlated with the Feasibility Study's preexisting 2-dimensional cross-sectional diagrams. Groundwater elevations were interpolated to model the existing groundwater aquifer's potentiometric surface. Integral developed an innovative quantitative technique to animate the conceptual response of the existing potentiometric surface to the aquifer recharge process. The model was also used to calculate the volume of existing groundwater per unit change in the potentiometric surface (i.e., 10 feet of hydraulic head) within the ASR basin. Several animations of the geology and ASR process were developed by Integral and used in meetings with a variety of stakeholders. The resulting model and groundwater volume estimates provided an effective planning and collaboration tool that showed the Feasibility Study results in an intuitive animation for technical and nontechnical audiences.

Erik Strandhagen is a certified geographic information system (GIS) professional with more than 9 years of professional experience conducting GIS data analysis and management. He manages numerous GIS projects and specializes in 3-dimensional advanced gridding analysis for groundwater and geologic subsurface site models. The subsurface models have been peer reviewed by EPA and vetted by other regulatory agencies. His skills include GIS systems design, spatial analysis, computer programming, data management, remote sensing image interpretation, hydrologic modeling, geostatistics, cartographic design, data visualization, and 3-dimensional modeling. In his professional career, he has experience producing GIS data and analysis for National Science Foundation Grant Research, Oregon Department of Transportation, and Lane County, Oregon.

ii) **Maintenance, Physical Asset Management, and 3D Modeling Using GIS in Parks and Recreation (How to do GIS on the cheap!)**
Ben Grieger, GIS Developer for Willamalane Park and Recreation District

Geographic Information Systems (GIS) provide three major benefits to Park and Recreation operations: (1) The geodatabase provides the framework of features and assets on which a work order management system operates (such as CityWorks). This can be used to automate and optimize maintenance activities. (2) The geodatabase is the core of a comprehensive asset information system. This is a valuable internal knowledge management tool storing all important data in an easily accessible, up-to date system, and it is also a vehicle for creating user maps for event planning and project planning as well as visualizations of proposed park modifications. 2D and 3D models of properties can be created for orientation an visualization. (3) The GIS makes the creation of user maps for the public a fast and inexpensive process. The geodatabse combined with the internet not only provides up to date reference information and user maps for the public, but also sets the stage to import user information from the public such as notifications of maintenance needs, graffiti, geocache locations, etc. An example public interface site currently under development at Willamalane using Free and Open Source Software (based on the Roadflaw model) will be demonstrated.

Ben is a semi-retired former HR and Risk Manger who holds a Master's Degree in Industrial and Organizational Psychology from the University of Houston-Clear Lake and a certificate in GIS from Lane Community College. Ben works part-time developing Geographic Information Systems, creating web sites, and teaching at Lane Community College.

i) **What Happened to My Pixel? Foundations of Aerial Imaging Projects**
Doug Smith, David Smith and Associates

We thought we had our pixels all in a row. But now that we are all familiar with what's involved in a film based aerial mapping project, a lot of the rules have changed. This session will be a discussion of some of the key factors to consider in planning for a successful aerial imaging project, primarily considering newer technologies such as digital cameras and LiDAR. The emphasis will be on key project design parameters that affect accuracy, resolution and suitability for intended applications and how these may differ from past film based aerial mapping approaches.   This discussion is targeted to GIS users and project coordinators and is focused on the "big picture" issues and planning considerations for new technologies, not on specific technical or flight planning considerations. Participants are encouraged to engage in the discussion and share recent experiences.

Doug Smith is a consulting photogrammetrist and Vice President of David C. Smith and Associates, Inc., a photogrammetric mapping firm located in Portland Oregon. Doug is a registered professional engineer, professional photogrammetrist and certified photogrammetrist with fifteen years of experience in photogrammetric mapping, including several projects in recent years involving digital cameras and photogrammetric review of LiDAR data.

ii) **Georeferencing Large-Scale Aerial Photographs of a Great Lakes Coastal Wetland: A Modified Photogrammetric Method**
Joel Grapentine

The geocontrol template method was developed to georeference multiple, overlapping large-scale analog aerial photographs without reliance upon conventionally obtained horizontal ground control. As part of a long-term wetland habitat restoration project, the method was tested on aerial photographs collected at a Lake Erie coastal wetland complex in the U.S. Fish and Wildlife Service Ottawa National Wildlife Refuge. As in most coastal wetlands, annually identifiable ground-control features required to georeference photo-interpreted data are difficult to find. The geocontrol template method is an inexpensive and low-tech approach to address this challenge. The method relies on the following four components: (a) an uncontrolled aerial photo mosaic of the study area, (b) global positioning system (GPS) derived horizontal coordinates of each photo's principal point, (c) a geocontrol template created by the transfer of fiducial markings and calculated principal points to clear acetate from individual photographs arranged in a mosaic, which represents a one-time transcription of all known block ground control provided by the aircraft's GPS, and (d) the root-mean-square-error testing of the system to ensure an acceptable level of planimetric accuracy. Once created for a study area, the geocontrol template can be registered in geographic information system (GIS) software to allow features on multiple images to be digitized without requiring the registration of each individual image. The geocontrol template enables precise georeferencing of single images within larger blocks of photographs using a repeatable and consistent method.

Joel Grapentine has a Masters degree in GIS from Eastern Michigan University and several years of natural-resources based GIS and remote sensing experience. Since relocating to the Pacific Northwest, he has worked at the NRCS West Remote Sensing Lab and consulted at the Wild Salmon Center. *Georeferencing Large-Scale Aerial Photographs of a Great Lakes Coastal Wetland: A Modified Photogrammetric Method* has recently been published in

the Society of Wetland Scientists' *Wetlands* journal.

iii) **Orthoimagery Status in the State of Oregon: Lessons in Efficiency**
Randy Sounheim, GIS Coordinator, Oregon Dept. of State Lands
Cy Smith, Oregon Geographic Information Officer

Digital Orthoimagery datasets are the essential foundation for most geospatial systems in government agencies throughout the state of Oregon. In partnership with Federal and local government agencies, the State first began acquiring statewide, black and white orthoimagery datasets in 1994 and 2000 at 1-meter resolution. In 2005, the State and partners acquired color orthoimagery datasets (1-meter and ½-meter resolution) in cooperation with the USDA Farm Service Agency National Agriculture Imagery Program (NAIP). In 2009, the state once again cost shared with the NAIP program to acquire both color and infrared orthoimagery datasets (1- meter and ½- meter).

Statewide orthoimagery datasets would not be available to government agencies today without the strategic commitment of a partnership to develop an efficient method for acquisition and distribution. This presentation will briefly discuss the lessons learned by the partnership in acquiring and distributing statewide orthoimagery, and will demonstrate the capabilities of the state Imagery Explorer web portal.

Randall Sounhein is the GIS Coordinator at the Oregon Dept. of State Lands and is the Chairman of the State of Oregon, Orthoimagery Framework Implementation Team.   He has a Bachelor in Geology from Central Washington University and a Masters in Environmental Science from Washington State University. He has approximately 20 years of GIS experience; 7 years for the State of Idaho and just under 13 years with the State of Oregon.

Cy Smith is the Oregon Geographic Information Officer and member of the Oregon Geographic Information Council. He manages the Geospatial Enterprise Office, part of the Office of the State CIO. He is responsible for statewide coordination of all geographic information activities in state and federal agencies, academic institutions, and regional and local governments.

TRACK D	**Health in GIS**
8:30 – 10:00	Moderator: Justin Houk

i) **Putting Health Equity on the Map in Greater Portland**
Meg Merrick, PSU Institute for Metropolitan Studies

For the past several years, environmental and social justice advocates, academics, health care and public health professionals have worked collaboratively to illustrate equity conditions in the six-county Portland-Vancouver metro area. The partners initiated this work in recognition that equity has largely been absent from the smart growth dialogues and that in order to achieve sustainability, equity must be given equal attention and action as the environment and economy – the other two pillars of sustainability.

The partners undertook the work of mapping conditions in the metropolitan area with the purpose of influencing public policy decisions that impact social factors such as living-wage jobs, affordable housing, transportation options, walkable, safe communities and education, all known to promote health. They will discuss how a diverse group of community partners collectively leveraged their tools to successfully build community capacity and influence planning and policy decisions, all with the ultimate goal of creating a thriving, healthy Portland metropolitan area.

ii) **Mapping the built environment**
Dan Rubado, Oregon Environmental Public Health Tracking (EPHT)

Dan will talk about his experience with the Oregon Environmental Public Health Tracking (EPHT) Program using spatial data of urban features from Oregon's metro areas to calculate indicators of the built environment that influence health. These indicators include topics such as air quality, access to healthy food, and neighborhood walkability. Once the indicators are completed, Oregon EPHT will use them for environmental health surveillance. EPHT will identify trends and problem areas and share maps and spatial data with local stakeholders and the public.

Dan Rubado is an epidemiologist with the Oregon Environmental Public Health Tracking Program. He earned a MPH in epidemiology and biostatistics from OHSU in 2007 and also holds a bachelor's degree in biology. After graduate school, he spent two years as a CSTE Applied Epidemiology Fellow working in communicable disease and environmental health assessment at Clark County Public Health in Vancouver, Washington.

iii) **Putting young worker injuries on the map.**
Mandy Green, Oregon Public Health

Mandy will discuss an ongoing project to map and spatially analyze injuries of Oregon workers under age 25. Occupational injuries to adolescents and young adults are a known public health problem. Workers' compensation claims were geocoded and small area and smoothed rates were calculated to assess spatial variation in injuries. The results of this analysis will be used by partners at the Young Worker Coalition to intervene and promote health for youth on the job.

Mandy Green, MPH is an epidemiologist with the Oregon Public Health Division's occupational health program. She coordinates public health surveillance projects for work-related illness and injury and also works on health impact assessments. She has experience with community-based participatory research, environmental public health tracking, and public health geographic information systems (GIS). In occupational health, Mandy has been involved in tracking and crafting prevention strategies for a variety of work-related health conditions, including young worker injuries, burn injuries, pesticide poisonings, musculoskeletal disorders and work-related asthma.

iv) **Public Health Emergency Preparedness Information System (PHEP-IS)**
Carey Palm

Carey Palm will share her experience in creating, distributing and training users of a tool designed to aid in planning for natural and technological hazards in the community. Specifically created for the nontraditional GIS user for the free ArcReader application and made available to all tribal and local health and planning departments, the PHEP-IS (Public Health Emergency Preparedness Information System) identifies hazards, vulnerabilities, and critical facilities enabling all jurisdictions the ability to better prepare, plan, respond and mitigate potential risks in the State of Oregon.

Carey Palm is the Tribal Liaison / Geographic Information Systems (GIS) Specialist for the Oregon Department of Human Services Public Health Division Emergency Preparedness Program. Carey has a B.S. in Analytical Cartography from Ohio State University. She is based in Central Oregon and has worked for the Public Health Emergency Preparedness program since 2006. She spent three years on the southern Oregon Coast as the GIS Analyst for the Coquille

Indian Tribe. Carey's current work includes facilitating the integration and coordination of county, state, federal and tribal public health emergency response plans and procedures, and responding to the cartographic requests of the Public Health Agency Operation Center (AOC).

v) Situation reports using GIS maps
Melissa Powell, MPH

Melissa Powell will discuss the use of GIS maps during the H1N1 influenza pandemic. During the pandemic, the Agency Operations Center produced biweekly Situation Reports, which contained a wealth of information about the emerging pandemic. The county and regional level GIS maps of hospitalization and death rates were one of the most sought after components of the reports, and were an effective means of communicating data from multiple sources to a wide audience.

Melissa Powell, MPH, is an epidemiologist with the Oregon Public Health Division's Preparedness Surveillance and Epidemiology Team. For most of the influenza pandemic, she worked in the Agency Operations Center in the roles of epidemiologist and situation unit lead. Before joining the Oregon Public Health Division in 2008, she worked in clinical research for five years at Oregon Health & Science University.

TRACK E 8:30 – 10:00	Hands-On Workshop: Python Scripting for Map Automation in ArcGIS 10 Instructors: Jeff Barrette and Michael Grossman Room 296

Description: There will be three 1.5 hour hands-on workshops throughout the day, each accommodating up to 20 people. During this time you will have an opportunity to try the new arcpy.mapping module. You will follow along in some demonstrations and will also be given some challenging tasks to solve on your own (or get help with). This will also be a great opportunity learn the finer details of what can be accomplished using the arcpy.mapping scripting environment.

Intended audience: GIS professionals that are responsible for managing map documents, layer files, and automating maps within their organization. This is a great opportunity for those that want to test drive ESRI's scripting environment for map automation and get a good sense for how it works and what it can accomplish.

Prerequisites: *Introduction to Python Scripting for Map Automation in ArcGIS 10 (Wednesday at 10:30 AM)*

TRACK A 10:30 – 12:00	Open Data Initiative Room 328 Moderator: Mitch Vanderperren

Many government agencies are realizing the benefits of making their data free and openly available to the public. Projects like Washington DC's Apps for Democracy and Portland's Open Data Initiative are gaining momentum and leading the way. This presentation will explain why local agencies like City of Portland and TriMet are publishing their data openly; demonstrate how the data is being used in new and innovative ways; and explain how the developers, the customers, and the agencies are benefiting from collaboration.

i) Open Initiatives in the Northwest
Molly Vogt, GIS Manager, Emerging Trends in Technology & Communications Project Lead City of Gresham

Highlights, Initiatives, and New Directions in Government from the OpenGovWest Conference

ii) **TriMet's Open Approach to Technology**
Bibiana McHugh, IT Manager of GIS and LBS, TriMet

Learn how and why TriMet takes an approach to application development, backend architecture, software procurement, and data. Issues such as support, procurement, data license agreements, and the importance of standards will be addressed. TriMet's current open government initiatives will be presented: opentripplanner.org, maps.trimet.org, developer.trimet.org, trimet.org/apps.

iii) **Portland Open Data Initiative**
Mitch Vanderperren, Corporate GIS Solutions Architect, City of Portland

The City of Portland has moved towards opening as much of its data as possible. As a regional data consumer and distributor, the City has had to work through a number of technical and bureaucratic issues to make its data available to the public. Overcoming these issues has been both a technical and political process.

iv) **What Does "Open" Really Mean?**
Mike Pumphrey, OpenGeo Division of The Open Planning Project (TOPP)

OpenGeo is building a sustainable business by developing and supporting open source geospatial software that allows organizations to open and share data. Learn what open source geospatial means for your organization, and see how open source will always be more free than proprietary software, even when proprietary software is offered at no charge.

TRACK B	Managerial GIS	Browsing Lounge
10:30 – 12:00	Moderator: Cy Smith	

i) **GIS Maturity Model**
Greg Babinski

A geographic information system (GIS) has become a common component of city and county governments. All large municipalities and many medium and small sized cities and counties have now established GIS capability.

Just as each municipality is different, municipal GIS operations vary greatly. Partly this variation results from the ongoing development of GIS capability within many city and city and county governments. But how do these agencies know where their GIS development is in relationship to potential capability for similar agencies?

Other agencies consider that their GIS is mature because their implementation project has been completed and they are doing ongoing GIS operations and maintenance. But how do these agencies know if they are lacking basic GIS capability.

Capability maturity models have been used to assess the ability of agencies to develop software successfully. Recently a GIS maturity model was developed to assess state government GIS capability.

This presentation will outline the proposed Municipal GIS Capability Maturity Model first presented during the 2009 URISA Annual Conference. It will include preliminary results from applying the model to city and county GIS operations in

Washington State and compare those results with others from across the US. Future options to refine and institutionalize the model will also be discussed.

This presentation will be of value to managers to self-assess their GIS operation, determine areas for efficiency or effectiveness improvements, assess system risk factors, analyze capability gaps, and prioritize developments required for a mature GIS.

ii) Utility Tracker
Dan Kaler, GIS Coordinator, Clark County

The Clark County GIS Division has developed a GIS application to improve the processing of utility location requests. The goal of this effort was to improve the notification & verification of underground utilities for construction projects within Clark County.

The various stages of our GIS services included the following processes; (a) Import utility ticket information from the notification agency, (b) Auto-generate the geography for the construction project extents, (c) Perform GIS overlay of utilities within the construction extents, (d) Publish ticket overlay results and summary attributes to the Utility Location Tracker browser, and (e) Document / Manage the work flow via the Utility Location Tracker browsing tool.

The purpose of this project was to improve the efficiency of PW Operation's response to utility location requests. The scope and results of this project would interest other municipalities and utility agencies.

iii) Restoring Montana: Facilitating Data Sharing By Collecting Points over the Internet
Jill Roman, GIS Specialist, CDM

New business opportunities and jobs are created when communities restore landscapes, reclaim degraded lands and remediate properties. The Montana Restoration Program, part of the Department of Natural Resources and Conservation (MT DNRC), teamed with CDM to create the Restoration Projects Map to facilitate restoration within the state of Montana. The Restoration Projects Map is a web information portal that tracks state restoration projects from eighteen different state restoration programs housed in eight state agencies in order to demonstrate the economic impact of restoration projects and promote collaboration among restoration partners. Along with the expected web mapping functionality, including the ability to navigate to areas of interest and explore and query information on the restoration projects, the portal allows both MT DRNC and other stakeholders to create and update restoration project information and spatial locations within the context of ArcGIS Server, both on a project-by-project basis and using a bulk upload process. This web application uses a web service and fine-grained ArcObjects to enable spatial editing within SDE over internet, therefore removing the necessity of MT DNRC dedicating staff to the process. The goal of the portal is to enable restoration stakeholders to share information and become more efficient in their efforts.

Jill Roman, GISP - GIS Specialist, CDM. Ms. Roman has over 14 years of information management systems and geographic information systems (GIS) experience. Her experience includes GIS application implementation and development, both for the desktop and the internet, along with data management and development. She has proficiency in application development, database design, application testing and trouble-shooting. Ms. Roman has worked as a GIS Specialist for CDM for the past 10 years.

TRACK C	Lidargrammetry, LiDAR & Oblique Imagery	Multi-Cultural Center
10:30 – 12:00	Moderator: Randy Dana	

i) **Latest Developments in LiDARgrammetry**
Marcus Glass, MJ Harden Co., GeoEye

LiDAR as a tool for Green Energy Site Development – MJ Harden is working with" green energy" companies that are developing sites for geothermal, solar, and wind electricity production.

The MJ Harden company will present on the latest developments in the use of LiDARgrammetry to create new datasets for use in environmental, urban, and hydrological studies.

Marcus Glass started in the mapping industry in 1997 and has worked in providing survey, GIS, photogrammetry, and LiDAR services. He is the Regional Account Manager – West Coast for MJ Harden.

ii) **Mapping Channel Migration and Bank Erosion Using High Resolution LiDAR Elevation Data, Coos County, Oregon**
John English, Oregon Dept. of Geology and Mineral Industries

Channel and bank erosion hazards are devastating processes which are basis for costly losses throughout the northwest United States, and may constitute a greater hazard than overbank flow in some areas (FEMA, 1999). LiDAR (Light Detection and Ranging) as well as serial aerial photography is used to identify channel migration zones in seven populated areas of Coos County, OR. The purpose of this study is to identify specific locations within the flood plain which are highly susceptible to erosion processes indicative of channel migration. Traditional methods of channel migration mapping have used serial aerial photography to map the planar movement of channels. While useful, analysts using aerial photography may miss critical morphology beneath vegetation. LiDAR has been shown to provide consistent resolution of plan form channel geometry, as well as adequate representations of vertical bank forms (Faux et al., 2009). The ability of LiDAR to resolve micro-topography assists researchers in understanding channel movement and bank stability.   Additionally, LiDAR penetrates through vegetation allowing researchers to observe floodplain geometry such as paleo and lateral channels not always observable in aerial photography.   This study measures lateral channel erosion rates through serial aerial photography as well as identifies the historic migration zones and erosion set back using LiDAR. The resulting map products aim to inform the public of the potential hazards and guide future development within the flood plain.

John holds a BS in Geography from Southern Oregon University (2002) and an MS in Geography from the University of Oregon (2008), where he studied remote sensing of fluvial geomorphology along the Sandy River, Oregon.

John joined the Oregon Department of Geology and Mineral Industries (DOGAMI) in 2008 as the LiDAR Database Coordinator for Oregon LiDAR Consortium projects. Prior to his work for DOGAMI, John was the remote sensing technical lead for a private LiDAR and remote sensing company specializing in unexploded ordnance remediation. John has worked extensively with LiDAR and high resolution orthophotography as an operator, processor, and analyst.

John's current work included one dimensional flood modeling, enhanced tsunami DEM creation, channel migration zone delineation, and LiDAR QC/publications.

iii) **Using oblique imagery integrated with GIS to rise to the challenge of today's economics.**
Russ Michel

Due to current economic restraints, leveraging existing technologies while employing cross-departmental utilization of a product or service has become a vital requirement for County Governments. Come see how this technology is being utilized by multiple cities and counties in the Northwest. This 25 minute presentation will combine a brief Power Point presentation with a live software demonstration of oblique imagery working in a web services environment and will provide specific examples of how local governments are using this technology to do their jobs while reducing costs. 3D models created from oblique imagery will also be on display.

Russ Michel has over 25 years as a GIS professional. His geospatial career includes working with ESRI, Autodesk, Trimble Navigation, and Pictometry. His career has been focused primarily on helping state and local government entities be more productive and efficient with technology

TRACK D	**Surveying**	**Cascade Room**
10:30 – 12:00	Presenter: Tim Kent	

This presentation will provide an in-depth look at how the Public Land Survey System (PLSS) was developed in the Pacific Northwest. While it was designed to be a fairly simple process of establishing the townships, ranges, and sections on the ground, there are many facets of why it is not so simple. The management of the PLSS is steeped in law and judicial precedence and cannot be re-established without due care and diligence.

The care and feeding of the PLSS affects many aspects of building and managing a GIS. A review of some examples of why changes were made and how it affected various data bases will be looked at. A brief review of the Geographic Coordinate Date Base (GCDB) will also be covered.

Tim Kent, Surveying Program Coordinator and Instructor at Clark College, Vancouver, WA . Tim retired from the BLM Oregon State Office in September of 2005 after 38 years as a land surveyor with the federal government. He graduated from Oregon Technical Institute with a Bachelors Degree in surveying in 1971 and joined the BLM in their Portland office. Tim is a licensed land surveyor in several western states and is an active member in ACSM/NSPS, PLSO, and LSAW. He is the Area 10 Director for NSPS. He initiated the TwiST (Teaching with Spatial Technology) program for K-12 teachers in Oregon and Washington in 2007.

TRACK E	**Hands-On Workshop: Python Scripting for Map Automation in ArcGIS 10**	
10:30 – 12:00	Instructors: Jeff Barrette and Michael Grossman	**Room 296**

Description: There will be three 1.5 hour hands-on workshops throughout the day, each accommodating up to 20 people. During this time you will have an opportunity to try the new arcpy.mapping module. You will follow along in some demonstrations and will also be given some challenging tasks to solve on your own (or get help with). This will also be a great opportunity learn the finer details of what can be accomplished using the arcpy.mapping scripting environment.

Intended audience: GIS professionals that are responsible for managing map documents, layer files, and automating maps within their organization. This is a great opportunity for those that want to test drive ESRI's scripting environment for map automation and get a good sense for how it works and what it can accomplish.

Prerequisites: *Introduction to Python Scripting for Map Automation in ArcGIS 10 (Wednesday at 10:30 AM)*

12:00 – 1:30	**LUNCH**	**BALLROOM**

12:00 – 1:30	*OR-URISA Board of Directors Meeting*	*Room 328*

TRACK A 1:30 – 300	**Open Source GIS Desktop Smackdown** Moderator: David Percy	**Room 328**

Presenters: Darrell Fuhriman, Tyler Mitchell, David Percy

Open Source GIS software has proven to be reliable, fast, and cartographically pleasing on the WWW, however it has lagged behind commercial systems on the desktop.

In this session we will highlight the capabilities of some of the leading, most feature-rich, desktop applications in the open source ecosystem. These will include, but are not limited to, Quantum GIS, gvSig, ILWIS, and MapWindow.

TRACK B 1:30 – 3:00	**Ecology and GIS** Moderator: Nick Lindekugel	**Browsing Lounge**

i) **Bat Fatality Monitoring**
Rob Friedel

Recent fatality monitoring studies indicate that commercial wind energy facilities may impact bats considerably more than was expected when the facilities were originally constructed. Understanding the distribution of bats on the landscape is challenging as their home ranges may vary based on the distribution of suitable roosting and foraging habitat throughout the landscape. The advanced analysis and modeling capabilities available through ArcGIS with Spatial Analyst allows for estimation of the distribution of roosting and foraging habitat and, with the further modeling capabilities available with the Python geoprocessing tool, potential flight paths as well. The federally endangered Indiana bat (*Myotis sodalis*) was selected for a species of evaluation at a hypothetical proposed wind project in Northern Missouri.

Rob has 11 years of professional experience with a BS in GIS from James Madison University and an MS in Remote Sensing from Oregon State University. Most recently he has been involved as a GIS Analyst and project manager with Tetra Tech EC in Portland in support of wind and solar energy development.

ii) **Grand Canyon National Park Vegetation Mapping**
Steven Lennartz

Grand Canyon National Park--one of the Seven Wonders of the Natural World-- is also one of the most spectacular and ecologically diverse parks in the United States. Together with the portions of the Grand Canyon Parashant National Monument, the area spans some 1.41 million acres of land ranging from less than 1,000 to over 8,000 feet in elevation. Vegetation types vary from sub-alpine spruce-fir forests on the North Rim to warm desert shrublands and warm desert riparian forests along the Colorado River tributaries, and from hanging gardens to ephemeral springs and seeps.

The National Park Service has embarked upon a project to map the composition and distribution of vegetative communities within Grand Canyon

National Park and those areas of the Grand Canyon Parashant National Monument under the control of Lake Mead National Recreation Area. The project is already well underway, with over 2,200 vegetation plot and observation points collected over the last two years.

Kass Green & Associates, teamed with the Sanborn Map Company, has been chosen by the National Park Service to use airborne ADS40 imagery, image segmentation, ancillary data, GIS biophysical modeling, photo interpretation, and field visits to map the vegetation of the project area using a National Vegetation Classification Scheme (NVCS) compliant classification scheme

Mr. Lennartz is a Remote Sensing Analyst for the Sanborn Map Company in Portland, Oregon. In this capacity, he manages projects producing GIS information relating to natural resources, ecology, and forestry sectors. Mr. Lennartz is actively involved in ASPRS, and is an adjunct instructor of GIS and Photogrammetry at Mt Hood Community College. He received an undergraduate degree in Natural Resource Management and Geomatics from Rutgers University, and a Master's degree in Forestry from the University of New Hampshire. He previously worked for the US Forest Service in several regions of the country, and has occupied his current position with the Sanborn Map Company since 2004.

TRACK C	Flex GIS	Multi-Cultural Center
1:30 – 3:00	Moderator: Jarod Bishop	

i) **Configurable FLEX Applications for ArcGIS Server**
   Keelan Homan, GeoNorth
   Traci Rigby, GIS Manager, City of Beaverton
   Mike Jun, GIS Analyst, City of Beaverton

   This presentation explores the process undertaken by the City of Beaverton to develop an interactive web mapping application equipped with built-in configuration tools for City administrator use. Using the Flex API for ArcGIS Server, the City collaborated with Keelan Holman of GeoNorth to develop this unique application which not only provides powerful functionality, but also allows for City staff to easily customize the application internally as needs evolve.

   Attendees of this presentation will learn about the process involved in designing the user interface, discovering the limitations of ESRI's sample Flex viewer, and the method the City chose to use in creating this application from scratch. The presentation will highlight the simple configuration file developed by Mr. Holman. The configuration file reduces the City's dependence on an outside consultant by allowing internal staff to utilize many different map services for display, query, selection and buffer based on user needs.

   Powerful features of this application will also be demonstrated which include selection set management, buffer and measure tools, markup tools, configurable queries, high resolution printing, and map service switching to serve multiple departments through one application.

   One of the primary challenges in this project will also be addressed which relates to the standardization of data used in various map services created by the City.

   Keelan Holman is a Sr. Programmer and Systems Administrator with GeoNorth in Portland, Oregon. He received a BS in Geology from the University of Wisconsin, and has been designing and developing GIS solutions for 6 years. Mr. Holman has worked with numerous local government organizations to

develop web based solutions for ArcGIS Server.

Traci Rigby is the GIS Manager at the City of Beaverton. Beginning with a Civil Engineering degree, she worked in Dallas, TX for several years, returning to Oregon in 1987. She transitioned to GIS in 1990, and has been with Beaverton since 1996. Ms. Rigby is best known for designing and implementing extensive production automations, high standards in map design and cartography, and web application development. The City of Beaverton's 20 web mapping solutions are used extensively by management and staff, providing detailed information to assist in decision making.

Mike Jun is currently working as the GIS Analyst at the City of Beaverton, Oregon. Mr. Jun has implemented numerous GIS technologies to the local government for 10 years since he graduated from the University of Colorado with M.A. in Urban & Regional Planning. He has worked extensively in developing and designing GIS related database, desktop application, data modeling, data analysis, and production automation.

ii) **Using Flex and ArcGIS Server Delivers SAFE System Solutions**
   Dan Brown

Join us as we introduce the City of Salem's Spatial Awareness Framework for Events (SAFE), a common operational picture for city events focused on emergency management. Using ESRI ArcGIS Server, Oracle geodatabase, replication, and the Flex API, Salem has enhanced its situational awareness across all city departments by bridging together emergency operations, fire, police, medical, public works, and community event information into SAFE, delivering up-to-the-minute and accurate data for dynamic and essential decision-making support.

Highlighting our discussion will be a demonstration of SAFE and the project's impact on emergency management in Salem and our region. Learn how Salem set up successful prototypes leading toward choosing a Flex application solution. We will explain our process of using the ESRI's sample flex viewer, the ESRI resource center, and Flex programming to achieve the desired results. We will discuss our method of partnering with existing city workflows and the challenging processes involved in processing and hosting these services. SAFE is a great application demonstrating how to merge separate business services and workflows into one common system that can be broadcast throughout the organization. ArcGIS Server and the Flex API deliver Salem a solid map-centric solution and communication opportunity. Join us.

Danl Brown, GISP is a GIS Programmer/Analyst for the City of Salem, Oregon Information Technology Department. An alumnus of the University of Idaho, he has 15 years experience designing, developing, and implementing GIS solutions for local government.

Dan is also the Chief Operations Officer for Brown Media and Art, LLC, which develops web applications and iPhone products for lifestyle and travel enthusiasts.

TRACK D	Managing Digital Photos in your GIS Field to Office Workflow	
1:30 – 3:00	Instructor: Craig Greenwald	**Cascade Room**

A picture tells a thousand words and field photo capture and linking pictures to GIS data is a hot topic. The technology sprint has brought us amazing tools: high resolution, affordable digital cameras; and GPS-enabled PDAs and smart phones integrated with cameras. ArcPad and ArcGIS Desktop both include some type of support for collecting and viewing photos "linked" to GIS features. However, frustration often sets in when managing hardware connectivity and the disconnected workflow of these photos from field to office and vice-versa. This session will review several different approaches for integrating photos with GIS features between the field and office, including an enterprise solution that effectively manages field photo capture, photo check in and check out utilities, and linking multiple photos to individual features for GIS users in the field and in the office.

About GeoMobile Innovations Inc and your presenter, Craig Greenwald, GeoMobile Innovations Inc. (Corvallis, OR) specializes in providing our clients with Mobile GIS, GPS and field data collection technology solutions, including hardware, software and consulting/training. GeoMobile Innovations' Technical Director, Craig Greenwald, has worked in the Mobile GIS arena for over 10 years including 7 years with ESRI on the ArcPad development team which he continues to support.

TRACK E	Hands-On Workshop: Python Scripting for Map Automation in ArcGIS 10	
1:30 – 3:00	Instructors: Jeff Barrette and Michael Grossman	**Room 296**

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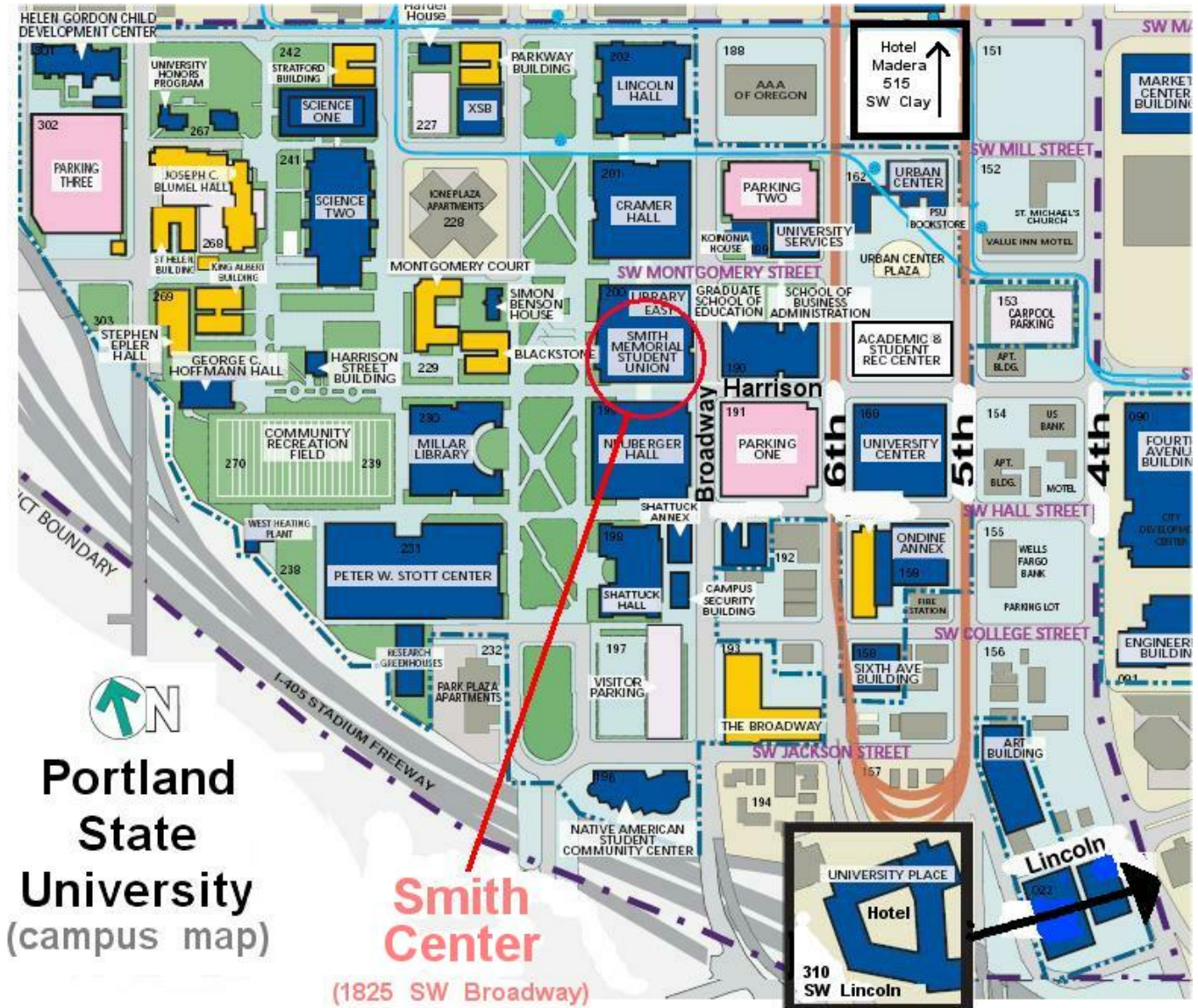
3:30 – 5:00 PM	CLOSING SESSION

James Fee, Chief Evangelist, GeoWeo

"Engaging the Community Through Data Sharing"

Chief Evangelist for WeoGeo (http://www.weogeo.com), **James Fee** is widely regarded as a leader in the field of geospatial and web-based mapping technologies. At WeoGeo, James has been responsible for helping organizations organize, share and monetize their geo-content. He blogs about geospatial technology at http://www.spatiallyadjusted.com/ and has helped develop an online GIS community culminating in Planet Geospatial (http://www.planetgs.com). He is a frequent keynoter at GIS conferences around the world as well as an advisor on many technology panels. He also is a regular columnist for GeoInformatics Magazine.

PSU Campus Map