

2012

AGIC

GEOSPATIAL EDUCATION
& TRAINING SYMPOSIUM

October 10 – 12 | Prescott Resort and Conference Center | Prescott, AZ

AGIC would like to thank the ASU Institute for Social Science Research for designing the program.



AGIC would also like to thank A&E Reprographics for printing and binding the programs.



WELCOME

Welcome to the AGIC 2012 Geospatial Education and Training Symposium.

On behalf of the Arizona Geographic Information Council (AGIC), I would like to welcome you to AGIC's 2012 Geospatial Education and Training Symposium in beautiful Prescott, Arizona. This event is the result of a lot of hard work and collaboration among a highly motivated group of volunteers, participating vendors, and subject matter experts. I would also like to recognize our Conference Committee Chair Steve Whitney, Co-Chair Jami Garrison, and all the volunteers for their exceptional dedication and continued contributions that, with no doubt, will make this year's conference a success.

In 2009, Senate Bill 1318 was passed and changed portions of A.R.S. 37-171 to 37-178. These revisions focused on the development of enterprise GIS and facilitated geospatial data sharing in Arizona. In 2010, AGIC leadership approved new versions of the AGIC Strategic and Business plans. Both plans provided ways to implement provisions of the new statutes by strengthening AGIC as an organization and focusing on the development of an Arizona Geospatial Clearinghouse. AGIC has been working with the State Cartographer's Office and Arizona State University's Institute for Social Science Research (ISSR) to develop GEO, the initial implementation of the Arizona Geospatial Clearinghouse.

This past year, the AGIC Administration and Legal Committee has been developing guidelines to improve

data sharing for the Arizona GIS community. The document, "A Blueprint for Geospatial Data Sharing Policy in Arizona," is currently under review and is intended to provide a guide to best practices for public organizations who are sharing geospatial data. Sharing geospatial data reduces duplication of effort and cost among agencies, is necessary to fulfill public records requests, and promotes good government. This policy and its guidelines are intended for use by Arizona State agencies that create, maintain, and steward geospatial data. It is suggested that State agencies that produce geospatial data adopt a data sharing policy that conforms to the most recent Arizona Statutes as discussed in the document.

In addition, a new AGIC website has been recently released. The website uses a content management system (CMS) to facilitate community updates and easier maintenance. It also features a Volunteered Geographic Information (VGI) interactive map. Please check it out at agic.az.gov. Additionally, a new AGIC data portal is under construction and will be featured as a primary link from the page.

While attending AGIC 2012, I highly encourage you to take the time to visit and thank the vendors. They are instrumental in helping to make this event possible. They also provide much of the application software and technical services that are critical to the success of our industry.

Sincerely,



Brian Brady
AGIC Chairperson

AGIC COUNCIL

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ESRI LEARNING LAB

Take Esri training at your own pace in the hands-on Esri Learning Lab. Each lesson includes a prerecorded presentation and exercises and is roughly 45 minutes in length. Learn to build web applications with the ArcGIS Web Mapping APIs or explore topics such as animation and Python scripting. A wide variety of topics are available for both GIS beginners and veterans.

Esri staff will be on hand to answer your questions. Labs are 90 minutes long and space is limited to 20 registra-

tions. Any spaces unfilled 10 minutes after the start of the session will be given to those on the waiting list on a first-come-first-serve basis.

If you did not register online for one of the 90 minute time slots prior to arriving at the conference, check with Esri staff in the Copper Basin Room for available time slots.

ESRI 10.1 LESSONS

1. Basics of the geodatabase model
2. Creating a map in ArcGIS for Desktop
3. Designing web applications using ArcGIS for Server
4. Editing with ArcGIS for Desktop
5. Geocoding with ArcGIS for Desktop
6. Getting started with Business Analyst Online & Community Analyst
7. Introduction to ArcGIS for Desktop
8. Introduction to ArcGIS for Server
9. Introduction to ArcGIS Network Analyst
10. Introduction to ArcGIS Spatial Analyst
11. Introduction to geometric networks for utilities applications
12. Introduction to geoprocessing using Python
13. Introduction to linear referencing
14. Introduction to versioned editing
15. Sharing data with the Community Maps Program
16. Sharing maps and tools using ArcGIS Online
17. Spatial statistics for public health
18. What's new at version 10.0 and 10.1
19. Working with CAD in ArcGIS for Desktop

WEDNESDAY

TIME	FOYER/BALLROOM	ARIZONA ROOM	COPPER BASIN ROOM	GRANITE MOUNTAIN ROOM	CHINO/PRESCOTT ROOM
8:00AM - 4:00PM	Registration				
10:00AM - 12:00PM	AGIC Chairperson's Welcome and Keynote Address				
12:00PM - 1:30PM	LUNCH AND PRESENTATION				
1:30PM - 3:00PM		ADOT Photolog Program	 Esri Learning Lab	Southwest Regional Map Book	Trials and Tribulations of a GIS Manager
				The Land Use Conflict Identification Strategy (LUCIS)	Wildland Fire GIS
3:00PM - 3:30PM	BREAK, EXHIBITS OPEN				
3:30PM - 5:00PM	Exhibits Open	A Shining Light - LiDAR Examined	 Esri Learning Lab	Surveying and CAD for GIS	Implementing Data Share Policy
		Working with LiDAR in ArcGIS		Enabling Field Mobility with GIS	AZ Geospatial Clearinghouse Update
6:00PM - 8:00PM	NO-HOST NETWORKING SOCIAL				

 hands on
 computer provided

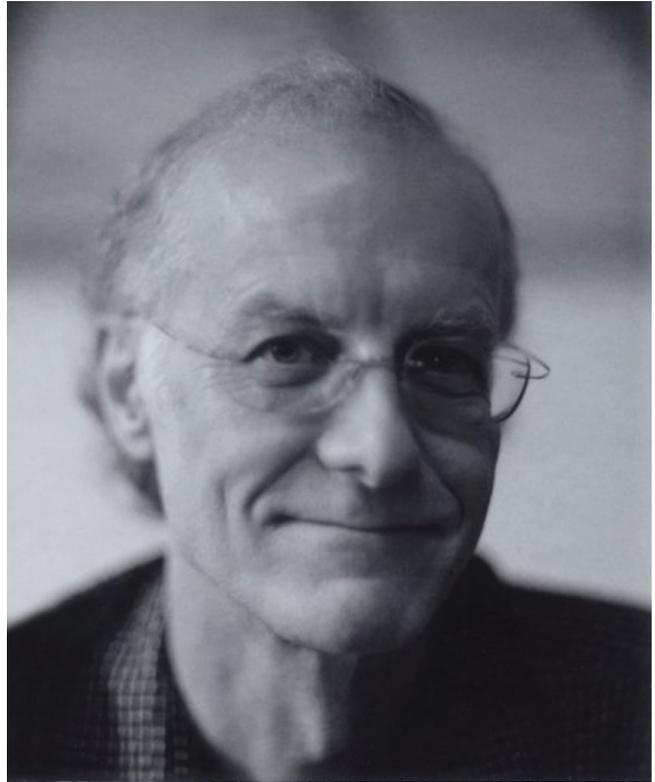
KEYNOTE SPEAKER

Dr. Jeremy Rowe is an Emeritus professor in the School of Computing, Informatics, and Decision Systems Engineering in the Ira A. Fulton School of Engineering at Arizona State University. Jeremy served as Arizona co-ordinator for the Library of Congress American Memory digital library project, and has worked on other digital collections projects including an NSF funded 3D modeling and visualization Digital Library project, Knowledge and Distributed Intelligence. He was the Director of Research Strategic Planning and Policy for Information Technology at Arizona State University, Co-Director of the 3D Modeling and visualization center – the ASU Decision Theater, and was Executive Director of the School of Computing and Informatics.

In addition to his day job, Dr. Jeremy Rowe has collected, researched, and written about 19th and early 20th century photographs for over twenty-five years. He has written *Arizona Photographers 1850-1920: A History and Directory*, *Arizona Real Photo Postcards: A History and Portfolio*, and *Early Maricopa County 1871-1920*, and is completing a history of stereoscopic photography in Arizona. He has also written numerous articles on photographic history including chapters on *Disclosing Historic Photographs* in the *Sage Handbook of Visual Research Methods*. He curated exhibitions with many regional museums, and a permanent exhibit at the Talking Stick Resort in Scottsdale, Arizona.

Jeremy's research interests revolve around historic photographs as primary research documents, and in understanding the contextual and embedded information contained in each image. He has been working on geo-referencing historic images and photographic businesses as part of his efforts to analyze individual and groups of images and better understand the patterns and relationships within collections of images.

Jeremy serves on several boards, including the Daguerreian Society, Art Intersection in Gilbert, Arizona, and INFOCUS (the collaboration between the Phoenix Art Museum and center for Creative Photography). Jeremy is working on photographic research projects in Arizona and New York City and on visiting private and public photographic collections.



Dr. Jeremy Rowe - Emeritus professor in the School of Computing, Informatics, and Decision Systems Engineering in the Ira A. Fulton School of Engineering at Arizona State University.

WEDNESDAY - DETAILS

8:00AM - 4:00PM

REGISTRATION

Foyer

10:00AM - 12:00PM

AGIC CHAIRPERSON'S ADDRESS

Ballroom

Brian Brady, GIS Administrator, Yuma Regional GIS

KEYNOTE ADDRESS: PHOTOGRAPHS ARE IMPORTANT LINKS TO OUR HISTORY

Ballroom

Dr. Jeremy Rowe, Emeritus professor in the School of Computing, Informatics, and Decision Systems Engineering in the Ira A. Fulton School of Engineering at Arizona State University

For more on Dr. Jeremy Rowe, see page 7.

Photographs are important links to our history and to defining our lives and environments. There is literacy of reading and understanding these images. Whether historic or contemporary, each image contains complex layers and meanings. Visual information is the simple first level, however the more we understand who made the image, where it was taken and why it was made, the greater our understanding of its meaning. This presentation will look at historic Arizona photographs and the stories behind the individuals that made them. It will describe the beginnings of use of GIS to help understand the relationships between time and place across collections of historic photographs made by individual photographers, and in an urban location, between photographers and photographic businesses to assist in analyzing and better understanding these images.

12:00PM - 1:30PM

PLATED LUNCH AND PRESENTATION:

NATIONAL GIS ACTIVITIES AND INITIATIVES THAT WILL HAVE AN IMPACT ON ARIZONA

Ballroom

Gene Trobia, State Cartographer's Office

Updates on the Arizona Broadband Mapping Project, ongoing coordination with the Federal, State, local and tribal governments to complete statewide street center-line and address database, the status of implementing the AGIC Clearinghouse (GEO) and continuing efforts to develop Enterprise GIS in Arizona.

1:30PM - 3:00PM

ADOT PHOTOLOG PROGRAM

Arizona Room

Robert Bush, ADOT
Tim O'Connor, ADOT

We will be presenting the ADOT Photolog Program. This will include our hardware, data collection and post processing procedures, as well as some of the uses and benefits of the data. In addition we will talk about other uses for the collection vehicle and its ability to collect additional data. We will have a PowerPoint presentation in addition to an open forum during the show.

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

WEDNESDAY - DETAILS

SOUTHWEST REGIONAL MAP BOOK: PROJECT OVERVIEW AND CARTOGRAPHIC TECHNIQUES

Granite Mountain Room: 1:30 - 2:15

Chris Black, Luke AFB

A large multi-agency project was recently completed to develop a highly detailed map book for Southwest Arizona. This project covered more than 7,000 square miles including the Barry M. Goldwater Range, Cabeza Prieta National Wildlife Refuge, Organ Pipe Cactus National Monument, as well BLM land. This area has thousands of miles of backcountry trails and in recent years, has seen a high occurrence of borderrelated activities and impacts. This project integrated datasets from each the land managers to identify roads, signage, designated wilderness, military bombing range targets, and other relevant information into a detailed map book.

An overview of this project will be provided including some of the challenges and how they were overcome. Also, the presenter will demonstrate some of the cartographic techniques learned that made this project possible in a reasonable time frame. These include Esri's Data Driven Pages and advanced annotation capabilities.

THE LAND USE CONFLICT IDENTIFICATION STRATEGY (LUCIS): A GIS MODEL TO IDENTIFY CONFLICT IN DECISION MAKING

Granite Mountain Room: 2:15 - 3:00

Iris Patten, University of Arizona

The land use conflict identification strategy (LUCIS) is a suitability technique used to analyze multiobjective decisions. The uniqueness of the LUCIS method is the prediction of land use conflict, which is a comparison of preference for each land use category with respect to the other land use categories for each piece of land. LUCIS has been used to determine opportunities for siting renewable energy technologies, developing future regional urban growth strategies, and most recently for identifying future development strategies in a tribal context. This presentation will outline the basic

tenets of LUCIS and discuss the general methodologies behind previous applications of the strategy and how LUCIS facilitates overall decision-making.

TRIALS AND TRIBULATIONS OF A GIS MANAGER

Chino/Prescott Room: 1:30 - 2:15

Michael Gatewood, City of Tempe

For over twenty-five years, the presenter has been working with the same municipal GIS system starting with its initial data conversion from paper maps in 1985, transformations from VAX to UNIX to Windows platforms, permeation through the organization and the responsibilities and hurdles that come from it. This presentation covers issues, best practices and not-so best practices that affect the long term management and maintenance of a municipal GIS system.

WILDLAND FIRE GIS: DAY IN THE LIFE OF A GIS SPECIALIST (A 16 HOUR DAY)

Chino/Prescott Room: 2:15 - 3:00

Aaron Seifert, Guardian Medical Transport

You may know the many map products that are produced by Wildland Fire Incidents from all the social media and newcasts. But how do GIS Specialists assigned to the incident get their information to produce these maps? Where are they working, how do they get maps and information out, and what does the 16 hour day consist of anyway? Some tools used are: FIMT, DNRGPS, disconnected base data sets, large format plotters and more. Common map products will be discussed within the standards of GSTOP. Principles of Incident Command Structure and geospatial standards learned will help with any large emergency or disaster. Recently, a group of Search and Rescue organizations have developed a similar set of specialized tools called MapSAR using the techniques and standards of FIMT.

WEDNESDAY - DETAILS

3:00PM - 3:30PM

BREAK

Foyer – Beverages and light snacks available

Visit the Map Gallery and Vendor Exhibits in the Ballroom and Foyer.

3:30PM - 5:00PM

A SHINING LIGHT - LIDAR EXAMINED

Arizona Room: 3:30 - 4:15

Nikolas Smilovsky, RDO Integrated Controls

This presentation seeks to demonstrate, compare, and educate GIS users on the potential power of LiDAR (Light Detection & Ranging) technologies. Starting at a basic instructional level, this technology will be related to a spatial context and analyzed in a plethora of GIS software applications. Specifically, it will explore the pros and cons of aerial LiDAR, static-terrestrial LiDAR, and 3d Mobile Mapping. To accomplish this goal each technology will be focused on individually and through cost-benefit matrices compared and contrasted between each other. The conclusion of the 40 minute presentation will be an in-depth look into the various applications LiDAR technologies can be used for and leveraged on. This exciting technology comes at a time when most GIS departments are downsizing and heavily competing over bids. Even the slightest cost savings might help you succeed and LiDAR may be the answer you have been looking for.

WORKING WITH LIDAR IN ARCGIS

Arizona Room: 4:15 - 5:00

David Vaillancourt, Esri

The collection and use of Lidar data in GIS is rapidly emerging, and has broad use in geospatial applications. The massive size of Lidar data makes it difficult to manage and work with. During this presentation, we will look at the various ways to manage and share Lidar data in ArcGIS. We will discuss the new LAS dataset for the management of Lidar data, and use 2D and 3D

applications to exploit and view this rich topographic information.

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

SURVEYING AND CAD FOR GIS

Granite Mountain Room: 3:30 - 4:15

Michelle Donahue, MapDog GIS, LLC

Have you ever wondered why data supplied to you by surveyors may not have any spatial references? What about coordinate systems? What are the State of Arizona's requirements for Registered Land Surveyors and how do these requirements play a part in everyday GIS functions? Surveying and the data which accompany that process are a vital part of what GIS professionals do. However, when is it appropriate to consume survey data into a GIS and when is it not? What are the differences between data collection with recreational, mapping and survey grade GPS? Accuracy and precision should be the GIS professional's concern and understanding how surveyors function is vital to maintaining data integrity for any department from simple stand-alone GIS to a full enterprise system..

ENABLING FIELD MOBILITY WITH GIS

Granite Mountain Room: 4:15 - 5:00

Jason Channin, Esri

The proliferation of mobile computing devices such as smart phones and tablets has created many unique opportunities in GIS. Mobile GIS extends the reach of ArcGIS to a broad range of mobile devices including: Tablet PCs, in-vehicle mounted systems, Windows Smartphones, Android, and Apple iOS devices. During this presentation we will explore mobile GIS workflows and solutions used to view, collect, and update geographic information.

WEDNESDAY - DETAILS

IMPLEMENTING DATA SHARE POLICY

Chino/Prescott Room: 3:30 - 4:15

Bo Guo, Gistic Research, Inc
Kathy O'Donnell, Gistic Research, Inc
Scott Andreasen, Parsons Brinckerhoff

Many organizations are reevaluating their data sharing policies as they realize the value of Geographic Information System data increases through widespread circulation and use. As a result there is a need to develop strategies to encourage efficient distribution and implementation for data sharing. This presentation will identify key requirements for implementing a federated GIS data share model, and explore two examples of GIS portals in the US based on this model. We will discuss and demonstrate two freely available data portal applications: Esri's Geoportal Server and GeoNetwork (an open source solution). We will conclude with a comparison of these two platforms by major functional categories.

AZ GEOSPATIAL CLEARINGHOUSE UPDATE

Chino/Prescott Room: 4:15 - 5:00

Gene Trobia, State Cartographer's Office

This session will provide information regarding the development of an Arizona Geospatial Clearinghouse. AGIC is working to develop Enterprise GIS for Arizona. This presentation will focus on efforts to create a state geospatial clearinghouse, development of data sharing guidelines and efforts to increase participation in sharing geospatial resources for Public Safety, NG911 and many other needs in Arizona.

6:00PM - 8:00PM

NO-HOST NETWORKING SOCIAL

Downtown Prescott

Location to be announced at the conference

Please refer to the flyer in your packet or check with the Registration Desk for directions and more information. Cost not included in registration; please pay at the event venue. Transportation not provided.

THURSDAY

TIME	FOYER/BALLROOM	ARIZONA ROOM	COPPER BASIN ROOM	GRANITE MOUNTAIN ROOM	CHINO/PRESCOTT ROOM
7:30AM - 4:00PM	Registration				
7:30AM - 9:00AM	BREAKFAST				
8:30AM - 10:00AM	Exhibits Open		 Esri Learning Lab	Segmentation Analysis using ArcGIS Business Analyst Standard License ----- Esri Maps for Office	Arizona Address and 9-1-1 GIS Workshop Session 1
10:00AM - 10:30AM	BREAK				
10:30AM - 12:00PM	Exhibits Open	 Leveraging Free RDMBS	 Esri Learning Lab	Lightning Talks (see page 14)	Arizona Address and 9-1-1 GIS Workshop Session 2
12:00PM - 1:30PM	LUNCH AND PRESENTATION				
1:30PM - 3:00PM	Exhibits Open	 Capturx Digital Pen Solutions for ArcGIS, Excel and PDF	 Esri Learning Lab	Products & Services of the National Geodetic Survey ----- Overview of Federal Geospatial Programs and Resources	Arizona Address and 9-1-1 GIS Workshop Session 3
3:00PM - 3:30PM	BREAK				
3:30PM - 5:00PM	Exhibits Open	 Bringing GPS Data into your GIS	 Esri Learning Lab	US Topo and the Historical Topographic Map Collection ----- Stewardship of the National Hydrography Dataset (NHD)	Arizona Address and 9-1-1 GIS Workshop Session 4
6:00PM - 8:00PM	EXHIBITOR SOCIAL AND DINER, AWARD PRESENTATIONS, DOOR PRIZE DRAWINGS				

 hands on
 computer provided

THURSDAY - DETAILS

7:30AM - 4:00PM

REGISTRATION

Foyer

7:30AM - 9:00AM

BREAKFAST

Ballroom – Full Breakfast Buffet

8:30AM - 5:00PM

ARIZONA ADDRESS AND 9-1-1 GIS WORKSHOP: ROADMAP TO AN INTEGRATED ARIZONA

Chino/Prescott Room

This is an all day workshop comprised of multiple sessions that focus on why Arizona communities need good address data. Accurate and current addresses are critical for public safety, emergency response and many other functions that governments perform. As Next Generation 9-1-1 is established in Arizona, accurate addresses, integrated with GIS will become more and more critical. This workshop will discuss why addressing is important to state, local and tribal governments, explains what NG 9-1-1 is and why it is important and how the group would like to develop the best possible addresses and 9-1-1 data for Arizona.

Details for each segment of this full day workshop are provided within each time block, beginning with the 8:30am – 10:00am block. While attendance for the full day are encouraged, attendees may attend individual segments as well.

8:30AM - 10:00AM

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

SEGMENTATION ANALYSIS USING ARCGIS BUSINESS ANALYST STANDARD LICENSE

Granite Mountain Room: 8:30 - 9:15

Lucas Murray, Arizona Department of Economic Security

Segmentation analysis is the process of sub-dividing a population into smaller segments based on their similar demographic and socioeconomic characteristics. This process allows common behaviors and traits to be more readily identified and can influence how and where marketing campaigns are conducted to attract more customers.

This presentation will demonstrate how the GIS program was able to use the segmentation data available in the standard license level of ArcGIS Business Analyst to perform a comprehensive segmentation analysis of foster families in Arizona. The results will not only help identify the common traits and behaviors of current foster families (which will help strategize how to attract other people with similar qualities), but will also help employees understand where their recruitment efforts will have the most impact.

ESRI MAPS FOR OFFICE

Granite Mountain Room: 9:15 - 10:00

Jason Channin, Esri

Esri Maps for Office is a new component in Esri's mapping platform that map-enables Excel spreadsheets and allows users to share the maps they create in PowerPoint slides or as online interactive maps. It's designed to be used by any Office user, from novice to advanced.

These tools bring a whole new analytical dimension to Microsoft Office. After downloading this easy-to-install add-in, users can quickly create interactive maps of their Excel data, allowing them to gain new insight and make better, more informed decisions.

THURSDAY - DETAILS

ARIZONA ADDRESS AND 9-1-1 GIS WORKSHOP - SESSION 1: INTRODUCTION AND WHY ADDRESSES MATTER TO COMMUNITIES

Chino/Prescott Room

Gene Trobia, State Cartographer's Office

With every roadmap, a starting point is needed. On the road to an integrated Arizona, the route starts with addressing. While much of Arizona benefits from established addressing in their community, parts of Arizona to include tribal nations, lack the addressing necessary for key community support programs such as enhanced 9-1-1. This session will provide presentations from communities, primarily tribal and tribal/non-tribal partnerships, on their addressing efforts.

10:00AM - 10:30AM

BREAK

Ballroom – Coffee, Iced Tea and Juice available

Visit the Map Gallery and Vendor Exhibits in the Ballroom and Foyer.

10:30AM - 12:00PM

LEVERAGING FREE RDBMS

Arizona Room

Bo Guo, Gistic Research, Inc
Terry Li, Gistic Research, Inc

Storing and managing spatial data in RDBMS has many advantages over file-based approaches. In the early 1990s, Esri introduced SDE to meet the growing demand for RDBMS support. However, the high license costs of RDBMS, such as Oracle or SQL Server, have been one of the factors that have hindered the broader adoption of SDE technology. Fortunately, ArcGIS 9.3 and later releases support two free RDBMS; Microsoft SQL Server Express and PostgreSQL. This workshop will teach how to use ArcGIS for Desktop to manage a geodatabase stored in the two RDBMS, in terms of data loading, data access and data export through

direct connections to spatial databases. Relevant database and GIS concepts will also be introduced or touched upon during the workshop.

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

LIGHTNING TALKS

Granite Mountain Room: Seven 7-10 minute presentations

1) EMERGING TECHNOLOGIES FOR FIELD DATA CAPTURE

Granite Mountain Room: 5 minutes

Brian Brady, GIS Administrator Yuma Regional GIS

The presentation will provide examples of solutions that can eliminate technology boundaries for public workers, planning and code departments, emergency responders, operational managers, and support personnel – many of whom have no GIS training.

2) ELEVATING TRAILS AT THE CITY OF PRESCOTT

Granite Mountain Room: 5 minutes

Steve Gushue, City of Prescott

Using LiDAR based DEMs, a few Esri 3D Analyst Tools, and Adobe Illustrator we have been able to present the elevation data on our city trails to provide graphs and information that exceed the current capabilities of standard Esri tools.

3) ICON DESIGN FOR WEB APPLICATIONS

Granite Mountain Room: 5 minutes

Chris Hoffman, ASU ISSR

This lightning talk is a quick tutorial on effective icon design for Web Applications. We will discuss effective icon design based on color, complexity and context.

THURSDAY - DETAILS

We will look at icons from production applications and discuss their strengths and weaknesses as well as how to design icons for retina displays.

4) MAPPING ARIZONA WETLANDS

Granite Mountain Room: 5 minutes

Leigh Perry, UA ART Group

The Arizona Department of Environmental Quality (ADEQ) requested the assistance of the Advanced Resource Technology (ART) Group in the development of an integrated geospatial database to support the monitoring and protection of wetlands in the state.

5) WE'RE IN FOR STORMY WEATHER! A PARODY IN THE CLOUD.

Granite Mountain Room: 5 minutes

Cat Moody, City of Prescott
Steve Gushue, City of Prescott

As GIS professionals we all know how moving to "The Cloud" will enhance our lives, make us more productive, and potentially help us achieve super hero status in our organizations. Perhaps we should review the weather forecast before launching out on our journey. Will it rain data, or will drought bring on a pestilence of software bugs?

6) AUTO DEPENDENCE IN THE PHOENIX METRO AREA

Granite Mountain Room: 5 minutes

Krishna Anantuni, Parsons Brinckerhoff
Scott Andreasen, Parsons Brinckerhoff

This lightning presentation will describe an analysis of automobile dependency in the Phoenix Metropolitan area by comparing current research with a 1999 study which showed that the Phoenix metropolitan area ranks high in the world for automobile dependence. The results of this study show the impacts of transit tax in the region and other regional implications that can be considered when planning for future growth.

7) LOCATING ADVOCATES FOR VICTIMS OF DOMESTIC VIOLENCE

Granite Mountain Room: 5 minutes

Amanda Stanko, Maricopa Association of Governments

The victim advocacy community was in need of a tool to provide a quick guide for locating services for victims of domestic violence - services ranging from getting an Order of Protection to finding a shelter. This lightning talk will briefly discuss the project needs and the process in developing the tool, then wrap up with a brief demonstration of the interactive web map developed to fulfill this critical need.

ARIZONA ADDRESS AND 9-1-1 GIS WORKSHOP - SESSION 2: ADDRESSING TO ENABLE GIS

Chino/Prescott Room

Gene Trobia, State Cartographer's Office

When the community is identified geographically through addressing, street networks and structure blueprints can be added to your community picture through the use of GIS. In this session, we will hear presentations on current GIS projects in Arizona that bring together multiple communities to create an integrated Arizona.

12:00PM - 1:30PM

PLATED LUNCH AND PRESENTATIONS:

GOLD SPONSOR PRESENTATIONS

STORIES OF PEOPLE, PLACES, AND LAND THAT MAKE UP ARIZONA

Ballroom

Megan Gately, Arizona Historical Society

Stories of people, places, and land make up the history of Arizona. The Arizona Historical Society (AHS) preserves and shares these stories through its objects, maps, archives, and programs. We use these items to

THURSDAY - DETAILS

show how social and natural history rely on each other to provide the backdrop of events and turning points in history. This presentation will highlight stories of Arizona's past through tools, artifacts, images, clothing, maps, and web materials of AHS.

1:30PM - 3:00PM

CAPTURX DIGITAL PEN SOLUTIONS FOR ARCGIS, EXCEL AND PDF

Arizona Room

Bill Timmins, GIS Services

Capturx prints ArcGIS layouts and Excel forms on ordinary paper with a special watermark that enables them to be used with a digital pen. Users can select a feature from the legend and then draw it on the map. When the pen docks with the PC or is sent using the pens Bluetooth capabilities the feature and data classifications automatically sync with the geodatabase.

With Excel users fill out paper forms in any environment without extra equipment or training. The pen creates the written paper record while instantly digitizing and translating the information. Aggregated data tables can be used for analysis within Excel or integrated into other databases or back end applications.

Capturx automatically opens and uploads the data knowing which ArcGIS or Excel file it was created from.

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

PRODUCTS & SERVICES OF THE NATIONAL GEODETIC SURVEY

Granite Mountain Room: 1:30 - 2:15

William Stone, NOAA's National Geodetic Survey

This presentation will provide an overview of NOAA's National Geodetic Survey (NGS) products and services, particularly those that are of interest to the GIS

community. Topics will include the national network of GNSS Continuously Operating Reference Stations (CORS) and the Online Positioning User Service (OPUS) utility; access to horizontal and vertical geodetic control data; the recent publication of a new realization of NAD83 (NAD83(2011) epoch 2010.00) and a new geoid model (GEOID12); and a glimpse at plans for the nation's future positioning infrastructure – new national horizontal and vertical datums to be released in about a decade.

OVERVIEW OF FEDERAL GEOSPATIAL PROGRAMS AND RESOURCES

Granite Mountain Room: 2:15 - 3:00

Terrence Newsome, HIFLD to the Regions

Overviews of the U.S. Department of Homeland Security (U.S. DHS), the National Geospatial Intelligence Agency (NGA), and the Homeland Infrastructure Foundation Level Data (HIFLD) Working Group geospatial resources available to local, state, federal and tribal security partners will be given. Topics covered include geospatial viewers, such as DHS Earth (based on the Google Earth platform) and the OneView application, along with the Homeland Security Infrastructure Program (HSIP) Gold and Freedom datasets. Collaboration efforts by the HIFLD to the Regions (HTTR) team will also be discussed.

ARIZONA ADDRESS AND 9-1-1 GIS WORKSHOP - SESSION 3: ADDRESSING AND GIS FOR NEXT GENERATION 9-1-1

Chino/Prescott Room

Gene Trobia, State Cartographer's Office

One of the primary concerns in Arizona communities is the ability to respond efficiently and effectively to a call for help. This session will provide a description of 9-1-1 in Arizona, the role of addressing, how GIS is utilized in emergency response and how both addressing and GIS will sculpt the future of 9-1-1 in Arizona.

THURSDAY - DETAILS

3:00PM - 3:30PM

BREAK

Foyer – Beverages and light snacks available

Visit the Map Gallery and Vendor Exhibits in the Ballroom and Foyer.

3:30PM - 5:00PM

BRINGING GPS DATA INTO YOUR GIS

Arizona Room

Michele Mattix, GeoMattix

Whether you've already selected a GPS device or are looking at purchasing one, it's important to understand the workflow to get the GPS data into your GIS. In this 90 minute hands-on workshop, you will learn about different GPS equipment, how the equipment dictates your workflow, pros and cons of each workflow from a GIS perspective, and how to incorporate GPS data collection into your organization.

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

US TOPO AND THE HISTORICAL TOPOGRAPHIC MAP COLLECTION

Granite Mountain Room: 3:30 - 4:15

Drew Decker, U.S. Geological Survey

U.S. Geological Survey is releasing a great variety of new and historic digital topographic maps for Arizona and the nation through two new programs. US Topo is the next generation of topographic maps from USGS. For 2012, the maps are much improved and include contours, hydrography, and vegetated land cover. The Historical Topographic Map Collection adds over 5,300 historic maps for Arizona, dating to 1883. The maps were gathered from several sources and scanned at a high resolution. This national project collects and

distributes the entire collection of topo maps created by USGS for the country.

STEWARDSHIP OF THE NATIONAL HYDROGRAPHY DATASET (NHD)

Granite Mountain Room: 4:15 - 5:00

Bill Smith, U.S. Geological Survey

The NHD is a seamless, surface water dataset used for mapping, analysis, reporting, and tracking water related issues. Updates to the NHD take advantage of new imagery, and other sources of information. Because of their familiarity with the local landscape, local users of the NHD are in the best position to provide updates, maintenance and feedback about the NHD. The stewardship process, change management system, tool and processes required to make updates to the NHD are presented.

ARIZONA ADDRESS AND 9-1-1 GIS WORKSHOP - SESSION 4: TALKING CIRCLE AND NEXT STEPS

Chino/Prescott Room

Gene Trobia, State Cartographer's Office

This session will consist of a traditional Talking Circle and group discussion summarizing topics presented and identification of next steps to pursue.

6:00PM - 8:00PM

EXHIBITOR SOCIAL AND DINNER BUFFET

Ballroom

Join us in the Ballroom for dinner sponsored by our Exhibitors. Awards will be presented at the dinner and afterwards we will have the drawing for door prizes. You won't want to miss this as you must be present to win one of the fabulous door prizes that have been donated by our Exhibitors!

FRIDAY

TIME	FOYER/BALLROOM	ARIZONA ROOM	COPPER BASIN ROOM	GRANITE MOUNTAIN ROOM	CHINO/PRESCOTT ROOM
8:00AM - 10:30AM	Registration				
7:30AM - 9:00AM	BREAKFAST				
8:30AM - 10:00AM		 The National Hydrography Dataset (NHD) Applications Workshop 1	 Esri Learning Lab	Open Source Software: Is it Worth the Effort? ----- Web Map Printing: Which Solution is Best for you?	AGIC Website - Calendar, VGI and Data Portal ----- AZ Broadband Mapping Update
10:00AM - 10:30AM	BREAK				
10:30AM - 12:00PM		 The National Hydrography Dataset (NHD) Applications Workshop 2	 Esri Learning Lab	ArcGIS Online for Organizations ----- To Cloud or Not to Cloud	GIS Licensure Panel Discussion
12:00PM - 1:30PM	WRAP UP AND CLOSING REMARKS, BOX LUNCH				

 hands on
 computer provided

FRIDAY - DETAILS

8:00AM - 10:30AM

REGISTRATION

Foyer

7:30AM - 9:00AM

BREAKFAST

Ballroom – Full breakfast buffet

8:30AM - 10:00AM

THE NATIONAL HYDROGRAPHY DATASET (NHD) APPLICATIONS WORKSHOP 1

Arizona Room: continues at 10:30

Bill Smith, U.S. Geological Survey
Drew Decker, U.S. Geological Survey

The U.S. Geological Survey is continuing the effort to transition from a historically based production model to the stewardship model. Strong partnerships with local, State and Federal partners are vital to the success of The National Map (TNM), and more specifically, the National Hydrography Dataset (NHD). The NHD is a seamless, surface water dataset used for mapping, analysis, reporting, and tracking water related issues. As with any real world dataset, changes are constantly occurring. Much of the NHD is derived from sources over 20 – 40 years old. Updating the NHD takes advantage of new imagery, and other sources of information. Because of their familiarity with the local landscape, local users of the NHD are in the best position to provide updates, maintenance and feedback about the NHD. The stewardship process, change management system, tool and processes required to make updates to the NHD are presented.

The NHD has many unique applications which assist decision makers with important hydrography issues. Initially, the NHD should be updated to meet user requirements. The NHD Update Toolbar is an efficient method used to update the NHD and keep all features current. Linear referencing and adding events to the

NHD provide additional capabilities to assist in the decision making process. Events may mark the location of any user defined issue that requires analysis. Currently, the USGS is adding point events to the NHD detailing locations of stream gages, dams, or diversions. But, any user defined event may be added, including but not limited to, fish habitat, impaired waters, impediments to stream flow, etc.

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

OPEN SOURCE SOFTWARE: IS IT WORTH THE EFFORT?

Granite Mountain Room: 8:30 - 9:15

Bo Guo, Gistic Research, Inc
Kathy O'Donnell, Gistic Research, Inc

The presenters will discuss the history of the open source movement, from its beginning to its popularity and relevance in today's technology landscape. They will then offer comparisons of major OSS license schemes and their implications for users and developers. OSS-based GIS applications will be demonstrated with technology stack and architecture explained. The presenters will then compare ArcGIS to open source solutions.

WEB MAP PRINTING: WHICH SOLUTION IS BEST FOR YOU?

Granite Mountain Room: 9:15 - 10:00

Bo Guo, Gistic Research, Inc
Xudong Liu, Gistic Research, Inc

Options for printing or exporting maps from a web page or web application are few and limited. In this presentation, the presenters will share their recent research on several state-of-the-art web map printing solutions and APIs.

Built in browser printing tools which can be leveraged to achieve map layout design and control will be

FRIDAY - DETAILS

demonstrated. Also, Esri's ArcGIS 10.1 printing API offer large format map production with customized, advanced map layouts which deliver regular and high-quality map printing.

AGIC WEBSITE - CALENDAR, VGI AND DATA PORTAL

Chino/Prescott Room: 8:30 - 9:15

Anthony Maslowicz, ASLD
Ayan Mitra, ASU ISSR

ASLD, SCO and ASU ISSR's GIS Services have built a new data portal and web page using the latest technology to replace the old version of the AGIC/ASLD Data Portal. The new website uses a content management system (CMS) and features a VGI or 'crowd-source' application to connect GIS people and resources across the state. The newly created Data Portal provides a viewer, data catalog, user management system and data upload and download capacities. This presentation will relate how GIS professionals can utilize the website to bring a variety of data resources to your own users.

AZ BROADBAND MAPPING UPDATE

Chino/Prescott Room: 9:15 - 10:00

Gene Trobia, State Cartographer's Office

The Arizona Broadband Mapping Project is going on its third year. This session will provide and update of the work being done to map and improve broadband access throughout Arizona, review the AZ Broadband Map website, and discuss how the project is working with the Arizona 911 community to develop 911 mapping capabilities for Arizona in anticipation of NG911.

10:00AM - 10:30AM

BREAK

Ballroom - Coffee, Iced Tea and Juice available

10:30AM - 12:00PM

THE NATIONAL HYDROGRAPHY DATASET (NHD) APPLICATIONS WORKSHOP 2

Arizona Room: continued from 10:00

Bill Smith, U.S. Geological Survey
Drew Decker, U.S. Geological Survey

ESRI LEARNING LAB

Copper Basin Room

See page 5 for details.

ARCGIS ONLINE FOR ORGANIZATIONS

Granite Mountain Room: 10:30 - 11:15

Jason Channin, Esri

ArcGIS Online is a cloud-based, collaborative content management system for maps, applications, data, and other geographic information. Using ArcGIS Online, organizations of all sizes have the ability to manage their geospatial content and publish their maps, applications, data, and hosted services online. During this presentation, we will discuss the role and implementation patterns of ArcGIS Online in an organization, the types of data you can publish, and the web mapping application templates you can use to share your spatial information inside and outside of your organization.

TO CLOUD OR NOT TO CLOUD

Granite Mountain Room: 11:15 - 12:00

Ayan Mitra, ASU ISSR

This presentation will focus on the lessons learned in implementing GIS Applications on the major cloud based service providers, including Amazon EC2, Rackspace, Microsoft Azure and ArcGIS Online. An overview of the process of migrating multi-tier GIS applications to the cloud will be given along with challenges faced.

In depth discussions of a variety of topics including: hardware, software and virtualization environments;

FRIDAY - DETAILS

cost, security, ease of migration, and integration with existing IT infrastructure; performance metrics for running web mapping services and applications, enterprise geodatabases, map caching, scaling applications, and load balancing; pros and cons of pushing to the cloud.

We will also look at automation tools for creating and supplementing traditional in house capacity with Cloud Services, how to use a hybrid approach for cost savings and potential road maps for migrating applications to cloud platforms.

GIS LICENSURE PANEL DISCUSSION

Chino/Prescott Room

Steve Whitney, Pima County Information Technology Department

This panel discussion will explore the idea of licensing GIS and other Geospatial professions within the State of Arizona. The following options for licensure and/or registration will be discussed: developing a licensure option for GIS Professionals; adding GIS as a specialization area of Land Surveying licensure; defining the areas of GIS exclusionary mapping practices; isn't it more about the data, really?

12:00PM - 1:30PM

BOXED LUNCH / WRAP UP AND CLOSING REMARKS

Ballroom

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