

2015 TNGIC Annual Conference



Montgomery Bell State Park
Burns, TN
April 21-23, 2015

2015 TNGIC
Annual GIS Conference
April 21-23, 2015
Burns, TN

guidebook



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Presentation Agenda

	Start Time	Room B	Room C	Room D
Wednesday, April 22	1:00 PM	Landscape of Liberation: Adding African American History Sites to the Tennessee Civil War GIS Application	The Map Creator Project	ArcGIS Interface for Proactive Resource Deployment
	1:30 PM	So you've released a public web mapping application. Now what?	Preparing for the 2020 Census: How Local Governments Can Help	The National Spatial Data Infrastructure (NSDI) gets a barely passing grade of "C"
	2:00 PM	ArcGIS Online as a tool to teach global, regional and local water resource issues to middle and high school teachers and students.	Applying GIS Techniques to Develop a Dataset of Karst Features for Tennessee	Analyzing Conservation Priorities and Risks with the Tennessee State Wildlife Action Plan
Wednesday, April 22	3:00 PM	Making Work Flow & GIS Data Management Easier for a Rural County Utility Company – A Poplar Grove Utility District ArcGIS Online Story	Automated identification of sediment sources and sinks in channel networks	High School Pathways to GIS Careers
	3:30 PM	Mobile Field Service - KCI's Field Data Collection Application	Benefits and Uses of Statewide LiDAR	Inventory of Nashville & Eastern Railroad, Lebanon, TN
Thursday, April 23	8:00	Teamwork Through Interdepartmental Collaboration, Henderson County's Success with County Highway, Lexington Fire, Lexington Utilities and E911	Building Height Extraction using LIDAR Data	Implementing an asset management solution for an EPA Administrative Order on Consent
	8:30	Cross-disciplinary data integration using web-based geodatabase and mapping platform	The value of GIS within local government – Madison County GIS ROI Study	Mobile App for Stormwater Inspections

Conference Agenda at a Glance

Tuesday, April 21, 2015

8:30 am - 5:00 pm	Experience GIS in Tennessee II, Jason Duke and Kurt Snider, TNGIC (pre-registration required)
8:30 am - 12:00 pm	LIDAR Introduction and Creation of Custom Derivative Products, Kayla Barnowsky, GeoCue Group (pre-registration required)
10:45 am	TNGIC Annual Golf Scramble at Grey Stone Golf Course, lunch prior to tee off
1:00 pm - 4:30 pm	Practical LIDAR Applications in GIS, Kayla Barnowsky, GeoCue Group (pre-registration required)
1:00 pm - 4:00 pm	The GISCI Certification Process – Completing the Application, Kim McDonough, TDOT (pre-registration required)
2:00 pm	GeoCache Event at Montgomery Bell State Park hosted by Cliff Hoeffner, Duncan Parnell, Inc. (meet in Lobby)

Wednesday, April 22, 2015

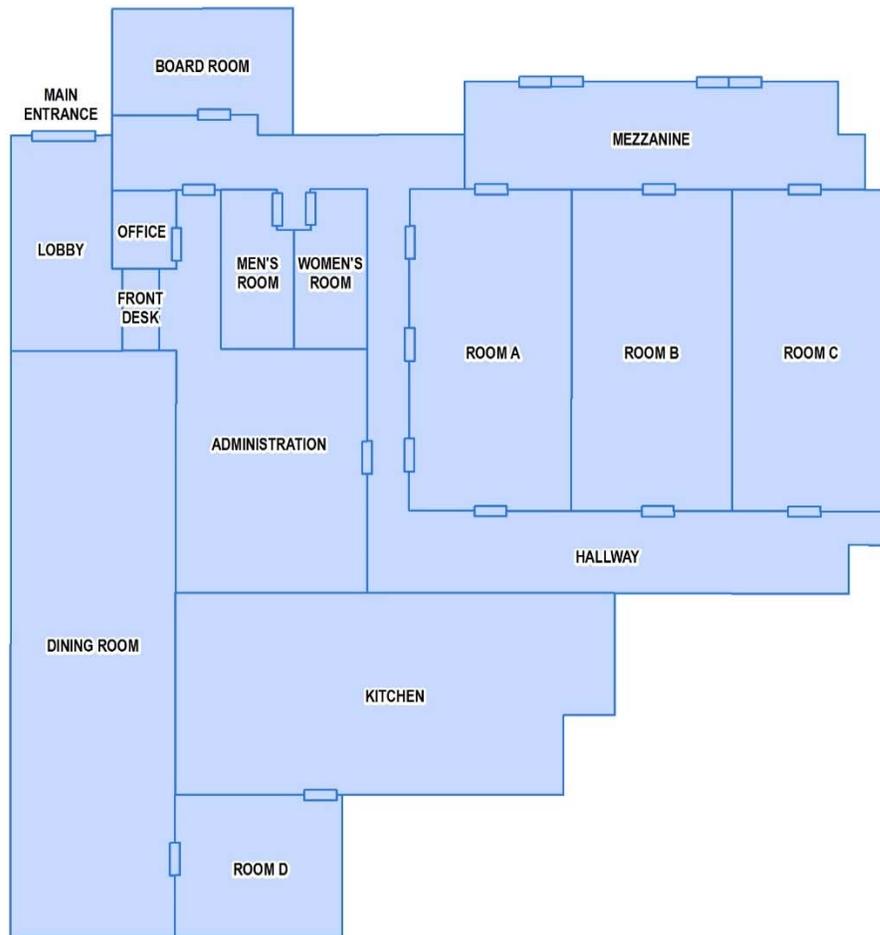
7:00 am - 9:00 am	Breakfast buffet in Restaurant
8:00 am - 12:00 pm	Registration
8:00 am - 4:30 pm	Exhibit Hall Open
9:00 am - 9:30 am	Opening Session & Board Nominees – Jason Duke, TNGIC President
9:30 am - 10:30 am	Keynote Speaker – Kelly Ratchinsky, Palm Beach County, FL; “A Cloud Conversation”
10:30 am - 11:00 am	Break
11:00 am - 11:30 am	Dennis Pedersen, Tennessee OIR GIS Services Director: USGS 3D Elevation Program and Other Statewide Initiatives
11:30 pm - 1:00 pm	Lunch, Upcoming Changes to the GISP Professional Certification – Kim McDonough, TDOT
1:00 pm - 2:30 pm	Presentations/Workshops – <i>Rooms B, C and D See Presentation Agenda</i>
1:00 pm - 2:30 pm	GISP assistance in Board Room
2:30 pm - 3:00 pm	Break
3:30 pm	Deadline: Submit Board Ballots / Map Gallery Viewer’s Choice at TNGIC Booth
3:00 pm - 4:00 pm	Presentations/Workshops – <i>Rooms B, C, and D See Presentation Agenda</i>

5:00 pm - 9:00 pm	Social Event - Swimming Recreation Shelter (In case of bad weather, event will be in Rooms B and C)

Thursday, April 23, 2015

6:00 am - 8:00 am	Breakfast buffet in Restaurant
7:00 am - 3:30 pm	Exhibit Hall Open
8:00 am - 10:00 am	Registration
8:00 am - 9:00 am	Presentations/Workshops – <i>Rooms B, C, and D See Presentation Agenda</i>
9:00 am - 9:30 am	Break / Map Gallery Q & A in Map Gallery
9:30 am - 10:30 am	GIS and Surveying: This Can of Worms May Not be as it First Appears – Kim McDonough and Dixie Brackett, RLS
10:30 am - 11:00 am	TNGIC Business Meeting – Jason Duke, TNGIC President
11:00 am - 11:30 am	Regional Meetings: East Region-Room D Middle Region-Room B/C West Region-Room B/C
11:30 am - 12:30 pm	Lunch, GIS Champion and Map Gallery Awards, Golf and Geocache Winners
12:30 pm - 1:30 pm	Keynote Speaker – David Purkey, TEMA and James Cotter “Man Made Threats in a Natural Threat Environment”
1:30 pm - 2:00 pm	Committee Meetings: Communication – Room C, *walls will be open Conference – Board Room Education – Room B, *walls will be open Professional Development and Training – Room B, *walls will be open Web and Data – Room D
1:30 pm - 3:00 pm	GISP Assistance in Board Room
2:00 pm - 2:30 pm	Break
2:30 pm - 3:30 pm	National Weather Service SkyWarn Spotter Training – James Larosa, NOAA, Room B/C
3:30 pm - 4:00 pm	Closing Session, Giveaways

Montgomery Bell State Park Conference Center



TNGIC would like to thank all of this year's conference sponsors.
Their support is greatly appreciated.

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Keynote on Wednesday by Kelly Ratchinsky, Palm Beach County, FL

“A Cloud Conversation”



Kelly Ratchinsky is currently the Director of Platform Services and the Countywide GIS Coordinator for Palm Beach County. Kelly’s career has taken him from Canada to Qatar in the Middle East, Kansas before finally settling down in South Florida. He has been working for Palm Beach County for the past 16 years. Over the past 28 years, he has implemented GIS technology in various disciplines and industries including: forestry, utilities, federal, state and local government. Kelly has a B.Sc. in Surveying Engineering from the University of Calgary, Canada.

Abstract: Private sector GIS software vendors appear to be moving towards a cloud based business model. Mr. Ratchinsky blends his expertise in both IT and GIS to discuss where the GIS environment may be heading, and how this might affect the Palm Beach County Enterprise GIS.

Keynote on Thursday by David Purkey, Deputy Commissioner of TEMA; Assistant Commissioner for Dept. of Safety and Dept. of Homeland Security and James Cotter, Supervisory Intelligence Officer.



David Purkey is the Deputy Commissioner of TEMA and Assistant Commissioner for TN Dept. of Safety and Dept. of Homeland Security.

James Cotter is a Supervisory Intelligence Officer with TN Dept. of Safety and Dept. of Homeland Security and TN Fusion Center.

Topic: Man Made Threats in a Natural Threat Environment.



Company Overview

Amec Foster Wheeler's Information Management group provides technology solutions that complement our traditional engineering services to streamline processes and create efficiencies.

Services

- **Mobile Apps:** Multi-platform, custom solutions for field data collection and web management portals.
- **3D Visualization:** Site Concepts, Planning
- **Remote Access and Condition Monitoring:** Live streaming video for monitoring and reporting.
- **Database Driven Mapping:** Inundation mapping, Risk Assessments, Decision Support Tools
- **Emergency Response Coordination and Support:** Flood Forecasting, Training and Mitigation
- **Utility Asset Management:** Stormwater User Fee Programs, Pipeline Inventories

Map Gallery

The 2015 TNGIC Annual GIS Conference Map Gallery!

We are excited to announce the Map Gallery for 2015! Our map contest will feature awards for 4 categories:

Best Cartographic Design - Awarded to the map that artistically employs the elements of cartography without compromising use and functionality. Maps will be judged on fundamental cartographic principles including figure ground representations, visual hierarchy, color selection, typography, symbology, overall aesthetic appearance, etc.

Best Analysis - Awarded to the map that is best designed to display the results of spatial data analysis and presents the information in an unbiased way, allowing the viewer to extract their own conclusions, utilizing the map as a tool.

Best Student Project – Awarded to the best overall student project. Submitted maps may be cartographic or analytically focused.

Viewer's Choice – Award chosen by the attendees for the best overall poster.

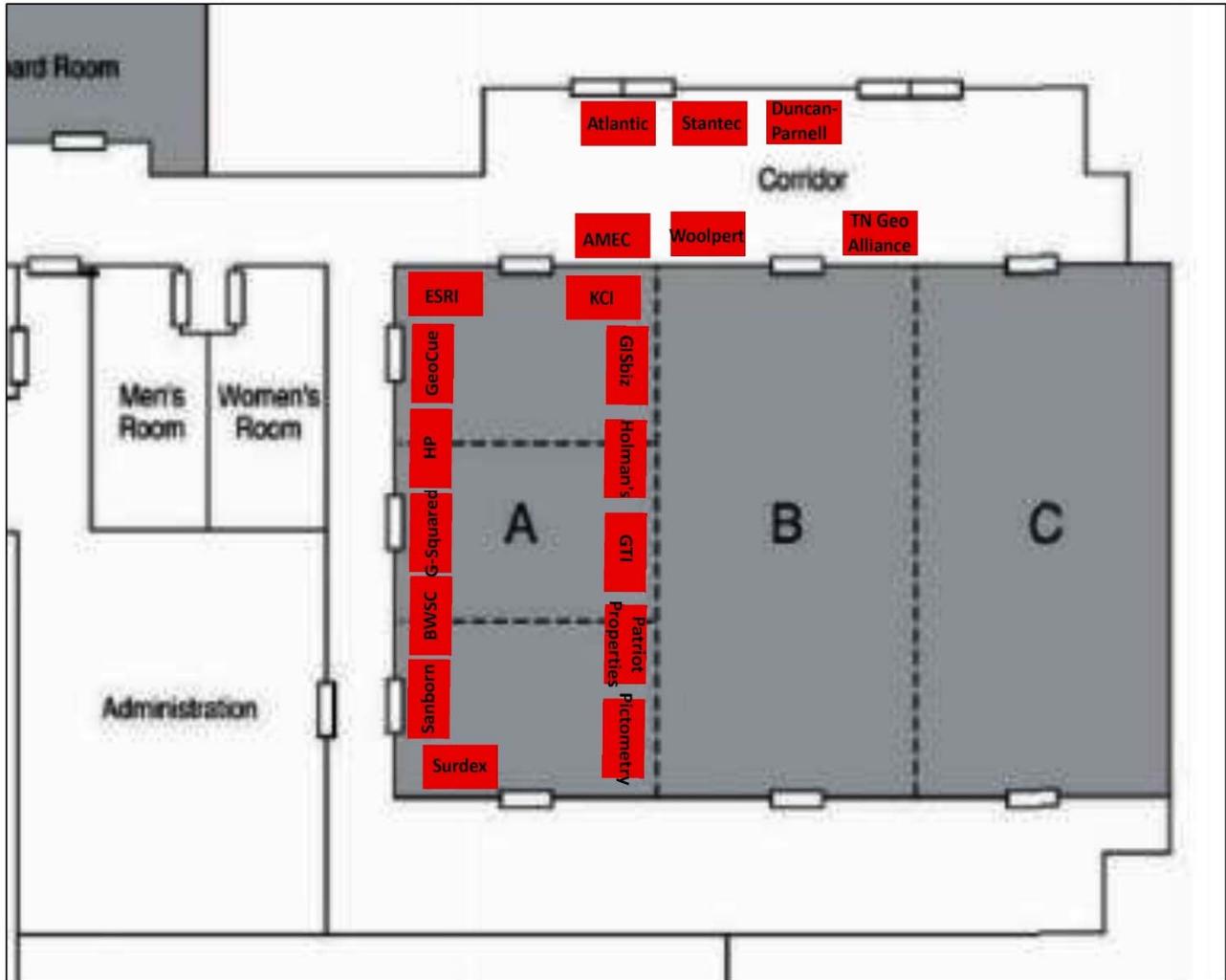
Conference Proceedings

- Maps are to be checked in at the conference registration table.
- Authors will be available in the map gallery at a time designated in the conference agenda to answer questions about their map.
- Award recipients will be announced at the end of the second day of the conference.



GeoCue Group was founded in 2003 by a group of engineers with extensive experience in developing hardware and software solutions for primary remote-sensed data acquisition. Today GeoCue workflow management tools are used by a majority of North American geospatial production shops. In 2009 GeoCue acquired QCoherent Software LLC, the creator of the point cloud exploitation toolset, LP360. Today GeoCue is the largest supplier of kinematic LIDAR processing tools in North America and LP360 is the world's most widely used tool for exploiting point cloud data, from both LIDAR and sUAS systems, in an ArcGIS® environment. For more information visit www.LP360.com

Vendor Booth Layout





Stantec

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The Stantec community unites more than 15,000 employees working in over 250 locations. We collaborate across disciplines and industries to bring buildings, energy and resource, and infrastructure projects to life. Our work—professional consulting in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics—begins at the intersection of community, creativity, and client relationships.

Since 1954, our local strength, knowledge, and relationships, coupled with our world-class expertise, have allowed us to go anywhere to meet our clients' needs in more creative and personalized ways. With a long-term commitment to the people and places we serve, Stantec has the unique ability to connect to projects on a personal level and advance the quality of life in communities across the globe. Stantec trades on the TSX and the NYSE under the symbol STN.

TNGIC Committees

Thursday 1:30-2:00pm

TNGIC Committees will meet to discuss plans for the upcoming year and to organize members who would like to help on a committee. These committees are the back-bone of TNGIC and are responsible for all TNGIC activities including training classes and workshops, the annual conference, maintaining the TNGIC website, and producing the quarterly newsletter.

The **Communication Committee** produces the quarterly newsletter “*TNGIC Today*” and strives to improve the communication throughout TNGIC. **Room C**

The **Conference Planning Committee** organizes, plans, and facilitates the TNGIC Annual GIS Conference. This committee handles all of the details and decisions that are required to make this a successful event for TNGIC members. **Board Room**

The goal of the **Education & Outreach Committee** is to foster educational opportunities and promote awareness of TNGIC throughout the geospatial community. These opportunities include creating training classes and workshops, supporting TNGIC regional meetings, student outreach, and GIS day activities. **Room B**

The goal of the **Professional Development and Training committee** is to help organize and participate in TNGIC’s upcoming GIS classes that are being offered throughout the state. **Room B.**

The goal of the **Web & Data Committee** is to encourage and facilitate data sharing and distribution throughout the geospatial community; and to increase the connectivity of TNGIC members through a web presence and social media. This committee is responsible for creating and distributing information that includes, but not limited to lists of GIS related groups and sites, GIS job postings, and the web site content, promotion and maintenance. **Room D**

If you have ideas for how to make any of these better for the TNGIC members, then join the committee and let your voice and ideas be heard. If you would like more from your TNGIC membership, consider joining one of them to make this a better organization for all of its members. The more we contribute, the better our organization will be for all of its members.



W O O L P E R T

Woolpert is the premier geospatial firm in the U.S. with an unmatched reputation for performance, quality, and service. We offer an integrated suite of geospatial services including photogrammetry, remote sensing, mobile mapping, digital and oblique aerial imagery, aerial and ground-based LiDAR, UAS, surveying, payload integration and testing, and GIS consulting/application development.

2015 TNGIC Booth

Here's a list of the items you need to drop off at the TNGIC booth!

- TNGIC Board of Directors Ballot – deadline is **3:30 pm** on Wednesday!
- Viewer's Choice Map Gallery Ballot – deadline is **3:30 pm** on Wednesday!
- Exhibitor Punch Card for Giveaways – deadline is **3:00 pm** on Thursday!
- Conference Evaluation – deadline is **3:00 pm** on Thursday!

TNGIC Door Prizes

This year's door prizes and booth traffic punch card drawings will offer new and exciting prizes never before seen at TNGIC. They will truly be prizes worthy of GIS superheroes!!!

Thank you to Quantum Spatial for sponsoring the TNGIC Golf Scramble!



2015 TNGIC Board Nominees

The TNGIC Board of Directors is the governing body of TNGIC and is elected by the general membership at the annual conference. Newly elected Board of Directors will serve a term of 3 years. Please vote for **three** of the following nominees and turn in your ballots by **3:30 pm** on Wednesday.

Bill Avant



Bill Avant is the GIS lead for Tennessee State Parks under the Tennessee Department of Environment and Conservation. From 1992 to 1998, he worked as an instructor for the North Carolina Outward Bound School in the Pisgah National Forest and the Everglades National Park.

In 2001, Bill received his Masters of Science degree in Natural Resource Management from North Carolina State University. In collaboration with the United State Forest Service in the Caney Creek Wilderness, his work included sociological and biological studies, trail impact assessment, and plant species identification and preservation.

In October 2002, Bill started working for the State of TN as a Conservation Planner and then as GIS Manager in 2004. He has served on the National Recreation and Parks Associations GIS technical advisory committee and the TNGIC Board. He currently serves on the TN Geographic Names Committee, and has facilitated numerous workshops in GPS and GIS. In 2008 Bill added the responsibility of managing TDEC's Real Property.

Bill has overseen the design of the tngic.org and the tngis.org websites. Bill maintains the TNGIC Twitter and Facebook accounts and works hard to maintain member communications with all electronic media. One of those uses of technology for TNGIC is the Guidebook, an online Conference program guide.

Jason Duke



Jason Duke is the Southeast Region GIS Coordinator (Southeastern 10 States and the Caribbean) for the US Fish & Wildlife Service out of Cookeville, TN. Jason started his GIS career with the US Geological Survey in Nashville (he was raised in Old Hickory) in 1990 using the newly released Arc/INFO 5 on a PRIME minicomputer. He then transferred to the US Fish & Wildlife Service in 1993 and nearly went crazy with ArcView 1 and PC Arc/INFO on Windows 3.1. Jason earned his BS in Information Systems and his MBA in Information Systems from Tennessee Tech. He also graduated from the Southeast School of Banking at Vanderbilt in search of financial education. With the US Fish & Wildlife Service he works on land use change modeling, urbanization analysis, climate change studies, invasive species monitoring, sea level rise modeling and provides general GIS support to approximately 600 GIS users across the southeastern US.

Jason has served as President of TNGIC for 4 non-consecutive terms, has been a member since its inception and attended every annual conference since the first in 1994. From setting up the GIS data server at tngis.org to being the chair of the Tennessee Federal and State GIS Users Group, he has always worked on data sharing projects for all of Tennessee. For the past 19 years, he has served as a faculty member at Tennessee Tech and teaches 3 GIS courses per semester (GIS I, GIS II and GIS Project Design and Management) where he has taught hundreds of college students. Jason teaches many of the Experience GIS in Tennessee classes for TNGIC and given GIS presentations at numerous elementary and high schools. TNGIC has always been Jason's most important activity (outside of his primary job in GIS) and he helps lead the annual West Tennessee GIS Forum and attends all of the 3 Regional Forums possible and MAGIC each year.

Jason and his wife, Tonia, have 3 children and live in Livingston, TN, on a small 20 acre family farm. When not working on spatial issues, Jason is active in his church, loves to fly airplanes of all types, restore old Ford Mustangs, Scuba dive, fish and travel with the family. Jason loves to be an evangelist for GIS and enjoys speaking at GIS Conferences and telling crazy stories from his youth at TNGIC Conferences. Geography has long been a love for him and he has accumulated a collection of historic maps and authored a book, entitled 'Tennessee Coal Mining, Railroading and Logging in Cumberland, Fentress, Overton and Putnam Counties'.

David Light



David S. Light graduated from East Tennessee State University in 1987 with a BS in Engineering Technology. He received his GISP Certification from the GISCI in 2011. Since 1991 he has been employed by Eastman Chemical Company in Kingsport TN, where he is a Principal Technologist and is the leader of the GIS program. Prior to that David was a Production Supervisor at AFG Industries. David also serves as the IT Manager and Real Estate Broker for the family owned business - Earl Light Realty Company.

David was honored to be selected as the TNGIC GIS Champion at the 2014 Annual Conference. He served as TNGIC President in the 2010 Conference Year, Past President in the 2011 Conference year, and as a Board Member from 2009 – 2011. In 2008 he was an appointed, non-voting liaison for the East Tennessee Region. David is founder and current President of the North East Tennessee GIS User's group – NETGIS. He served as Conference Chair for the 2008 Fall East Tennessee Regional TNGIC Conference, held at Meadowview Conference Center in Kingsport, TN and Co-Chair for the 2010 and 2011 East Tennessee Regional TNGIC Conferences.

For the past nine years David has led the GIS program for the Tennessee Eastman Site / Utilities Division and has led the Training and start-up a GIS program at the Texas Eastman Site. David is also leading other efforts to support Eastman's World-Wide GIS Needs. The Eastman GIS Program Team has mapped Thousands of points on Eastman's campus; leveraged CAD Data, developed server based applications, led numerous aerial photography and LiDAR acquisition projects, and continues to develop and explore more exciting applications of GIS technology. The GIS Team includes one data collector, one GIS/CAD Mapping Technician, supplemented with CAD and GIS Support from several Consultants. David fills the roles of GIS Manager/Analyst/Program Lead. David has experience developing and implementing applications using esri's ArcGIS Desktop and ArcGIS Server Software, FLEX-Viewer Applications, and Trimble's GeoXH GPS with ArcPad. He also has experience in

developing vehicles and applications for taking GIS data into field work environments with no network connectivity.

David has lived his entire life within 10 miles of his current hometown of Kingsport TN. He and his wife Janet have been married for 27 years and they have one son, Jason. Jason and his wife Kara live in Jonesborough TN. Some of you may remember Jason performing at a TNGIC Conference in Chattanooga. Janet is currently serving as TNGIC's office Manager and is a very talented and accomplished Pianist and she also teaches Piano Lessons. David and his family love outdoor activities like camping, hunting, riding ATVs, boating, and fishing. He also enjoys GeoCaching and using GPS for recreational activities.

If re-elected to the TNGIC Board, David plans to continue to promote training opportunities for GIS users and help increase TNGIC Membership from the North East Tennessee Area.

Dave McMillen



David McMillen is a soil scientist with USDA-NRCS. His responsibilities are GIS & GPS support and training for 26 counties in Middle Tennessee. Also, he delineates wetlands and teaches hydric soil identification. David started the first digital soil survey in Tennessee and oversaw the digital conversion of all the soil surveys in Tennessee. He was part of a national team that developed budgets and infrastructure to convert all soil surveys in the nation to the data mart concept and Web Soil Survey web app. Along the way, David was elected as county commissioner in Dickson County, TN and worked with 12 entities in the county to create a local public/private partnership to be a part of the state parcel mapping project and lay the foundation for GIS in local government. David also served as the legislative liaison for the Soil Scientists Association of Tennessee and co-authored the "Soil Scientists Licensing Act of 2009". Since becoming active in TNGIC, David has been involved in the Middle Tennessee Forum and state conference planning as well as teaching the "Experience I" class. He and his wife, Vicky, have 3 adult children and 6 grandkids.

Judy Manners



Judy graduated from Western Kentucky University with degrees in agriculture and biology and earned a Master of Science in Biology from Murray State University. She began working with the State of Tennessee in 1999 and gained on-the-job training in GIS at the Tennessee Department of Environment and Conservation and Department of Transportation when ArcView was made available to State employees.

Judy has been a TNGIC member for almost 10 years and is a strong advocate of geospatial visualization and analyses. She has increased the practice of GIS at the Department of Health where her expertise and advice is frequently sought by her peers. In fact, Judy has promoted GIS use by providing mentoring, technical assistance, training, and giving presentations to folks across multiple Divisions of Health and other state departments.

If elected to the Board of Directors, Judy would like to help TNGIC and the Tennessee GIS community stay in the forefront of education and networking with GIS professionals statewide and nationally.

Mary Beth Stephens



Mary Beth Stephens is an Associate Engineer with the Nashville Electric Service. Prior to her role at NES, she spent seven years as a GIS Analyst with the Metropolitan Nashville Planning Commission, where she provided management, Council members and fellow Metro departments with maps and analyses based on parcel data, zoning data, or department-specific data.

Mary Beth has been a member of TNGIC since 2007. She has been active in helping plan the Middle Tennessee GIC Forum for four years, the last two years serving as the vendor coordinator.

Mary Beth holds an Associate Degree in Civil Engineering Technology from Nashville State Tech Community College, and will complete her Master of Science in Geosciences from Middle Tennessee State University in May 2015. She is also a certified GIS Professional (GISP).

As a student herself, she hopes to facilitate communication between her fellow TNGIC members and administrators of GIS educational programs to provide opportunities for furthering GIS knowledge and enhancing career prospects. Mary Beth is also interested in publicizing TNGIC membership to students in these GIS programs.

2015 TNGIC Conference Planning Committee

The Conference Planning Committee is made up of individuals from Federal, State, and local governments and private industries across Tennessee who volunteer their time and effort to make this a successful event. Without the hard work of all these individuals this conference would not have been possible. Please let them know that their work is appreciated and tell them “thank you”.

Sincerely,
Marc Pearson
2015 Annual Conference Chair

Shawn Anderson
Bill Avant
Kevin Bingham
Susan Finger
Lindsey Fox
Katie Franke
Jeanette Jones
David McMillen

Anne Maples-Vaught
Sam Moffat
Indrani Ojha
Teresa Prince
Kurt Snider
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Suzanne White

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G-Squared is a photogrammetric firm established in 1999 by Lindsey Galyen, Jr. and provides production of aerial acquisition, geodetic survey, 3D data capture, topographic mapping, orthophoto production, lidar scanning and processing, and GIS services. G-Squared is located at 20 Ardmore Highway, Fayetteville, Tennessee and provides services for engineering firms, municipal and county governments plus DOT's and Federal agencies. The 5,000 square foot facility houses production personnel and was specifically designed, constructed and equipped to support the massive volume of image processing required in today's mapping environment. G-Squared is also a founding member of TNGIC.



We provide information technology, software development, Geographic Information Systems (GIS) services and consulting for public and private organizations across North America. We have successfully served clients in government, transportation, utility, and software industries since 2003.

As an Oracle Gold partner, ESRI Silver Partner & Microsoft Partner Network member, our solutions are developed using the latest in on premise, hosted and mobile computing technologies. We provide tangible results and visibly improve operations for our clients.



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Hewlett-Packard Company is a world leading technology company offering complete end to end solutions for all GIS applications. HP partners with the leading GIS independent software vendors with certified workstation and print platforms offering optimum flexibility in both price and performance.

HOLMAN'S | USA

PRECISION PERFORMANCE SINCE 1955

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The KCI Geospatial Solutions Practice is a leader in GIS and IT integration, providing enterprise solutions to both the public and private sector.



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Surdex Corporation is a full service photogrammetric mapping firm that supplies accurate and precise geospatial information to a diverse client base. We provide our clients with high quality mapping services to include aerial image acquisition, LiDAR acquisition and processing, digital orthophotography, planimetric and topographic mapping and data hosting.



Established in 1986, the Tennessee Geographic Alliance (TGA) is a university-based, statewide partnership between university professors, state and local education administrators, K-12 teachers, private industry and NGOs. The organization operates out of the Geography Department at the University of Tennessee. The Alliance provides educators with professional development, networking, and teaching materials and promotes public awareness of the importance of geographic skills and fluency.

Presentations - TNGIC 2015

Wednesday Room B

Mike Brewer Nick Lawalin Wednesday B 3:00 pm
Making Work Flow & GIS Data Management Easier for a Rural County Utility Company – A Poplar Grove Utility District ArcGIS Online Story

Abstract

Poplar Grove Utility District had humble beginnings relative to mapping with paper CAD line maps showing utility assets. In 2008, they dove into ArcGIS Desktop and migrated GIS to the field using ArcReader with rugged tough book laptops. Now in 2015, the opportunity has presented itself to merge GIS utility data management and daily workflows into an ArcGIS Online system. The presentation will offer an historic background of GIS for Poplar Grove Utility and how GEO-Job assisted the utility district in creating an ArcGIS Online foundation that supports users across the agency and activities from billing, cut offs, repairs, AVL tracking and data editing.

Ashley Heimberger Wednesday B 3:30 pm
Mobile Field Service - KCI's Field Data Collection Application

Abstract

KCI has developed a Windows 8 tablet-based mobile field service application (MFS). MFS is a scalable, flexible field solution that consists of various task-specific modules and tools. The application features a 3 pronged system architecture, including a Cloud-based storage repository, a tablet-based field inspection tool, and the project management portal. The application provides users an intuitive, organized solution for gathering and sorting field data. The application is being utilized throughout KCI. KCI's Subsurface Utilities and Communications Infrastructure groups moved from paper based reports and emails to real time electronic field data collection. This advancement in technology has improved turn-around time both internally from field inspector to manager, and ultimately externally to our clients. With no need to download, import and sort out site photos, or deliver handwritten paperwork from the field to the office we are collecting data and processing field reports timely and efficiently through our mobile solution.

Presentations - TNGIC 2015

Wednesday Room C

Jennifer Cartwright

Wednesday C 3:00 pm

Automated identification of sediment sources and sinks in channel networks

Abstract

High-resolution digital elevation models (DEMs) derived from Light Detection and Ranging (LiDAR) are newly-available data sources useful for investigating stream-channel geomorphology. Channel networks derived from these DEMs offer much higher resolution than currently available stream maps. The U.S. Geological Survey is working to develop automated tools to identify locations of stream-channel erosion, sediment transport, and deposition, based on channel and landscape characteristics derived from these DEMs. By automating the identification of hotspots of channel erosion (e.g. incised channels and gully heads) and sedimentation (e.g. over-widened shallow channels and valley plugs) this project will provide a valuable set of tools for local and regional efforts related to water quality, channel restoration, infrastructure protection, and storm-water management.

Jeff Lovin

Wednesday C 3:30 pm

Benefits and Uses of Statewide LiDAR

Abstract

In this session, we will go over some of the uses of LiDAR and other geospatial data on a statewide basis and the benefits obtained for large scale Lidar data coverage. We will look forward to the exciting future of remote sensing that includes rapid automated feature extraction techniques that is used in various emerging technologies such as augmented reality and self-driving vehicles.

Presentations - TNGIC 2015

Wednesday Room D

Beth Rowan Ray Tucker Wednesday D 1:00 pm
ArcGIS Interface for Proactive Resource Deployment

Abstract

CRASH – which stands for Crash Reduction Analyzing Statistical History – aims to deliver a suite of tools for Tennessee State Troopers to use in making resource deployment decisions. The program currently provides interactive web-based maps, accessed via the Departmental intranet, for conveying information to the users. The maps are published weekly. Python is utilized to efficiently map the results and overlay supplemental information on each map, with map access provided via ArcGIS Server. Pop-ups display the risk of serious crashes along with locations of historical and recent crashes as well as special events that may affect traffic flow. The visual evaluation of the map contents can be used by department staff to deploy resources in a manner that increases trooper visibility in higher-risk crash areas, increasing public safety on the State's roadways. Efforts are underway to coordinate with other agencies to expand accessibility and application of the tools.

Susan Marlow Wednesday D 1:30 pm
The National Spatial Data Infrastructure (NSDI) gets a barely passing grade of "C"

Abstract

The Coalition of Geospatial Organizations (COGO) recently released the NSDI report card for the seven framework layers. The grades were very low. The report was authored by former Governor Jim Geringer (Chairman), Dr. David Cowen, former chair of the federal government's National Geospatial Advisory Committee, John Moeller, former executive director of the Federal Geographic Data Committee, Dr. John Bossler, retired chief of the Coast and Geodetic Survey at NOAA and former chair of the Center for Mapping at The Ohio State University, Robert Welch, former president of the Wisconsin State Senate and a licensed surveyor, Thomas Rust, a professional engineer, and Susan Carson Lambert, former executive director of the Kentucky Office of Geographic Information. This session will discuss the grade for each of the framework layers, reasons for the grade and the recommendations provided in the report card.

Joey Wisby Wednesday D 2:00 pm
Analyzing Conservation Priorities and Risks with the Tennessee State Wildlife Action Plan

Abstract

Tennessee Wildlife Resources Agency partnered with The Nature Conservancy on the development of the Tennessee State Wildlife Action Plan (TN-SWAP), which was adopted in 2005. To support this planning effort, a GIS- and RDBMS-based system was developed to manage the large amounts of data on Species of Greatest Conservation Need (SGCN), their habitats, and problems affecting these species and habitats. The database calculated and synthesized scoring indexes of species rarity, occurrence viability, habitat preference, and spatial proximity to a habitat type, to allow the spatially explicit identification and prioritization of habitats critical for the conservation of SGCN fauna across Tennessee. Since its initial development, various components of the database have been updated, revised, and expanded to support new functionality. Now, as its 10-year revision nears completion, the data, analyses, and results of this latest iteration of the TN-SWAP will be presented.

Presentations - TNGIC 2015

Wednesday Room D

Steve Gass Thomas Gibney
High School Pathways to GIS Careers

Wednesday D 3:00 pm

Abstract

The Tennessee Department of Education's Division of College & Career Readiness works to prepare students for success after high school through innovative 7-12 programs of study that address the state's workforce needs. Based on feedback from industry and community leaders, the division has made a concerted effort to infuse our programs with GIS content in career clusters such as Agriculture, IT, STEM, and Architecture & Construction. Come hear how you can get involved as a GIS professional to help spread GIS awareness and assist in the implementation of GIS programming throughout our state's schools.

Amanda O'Shea, GISP Jason Reynolds, PE
Inventory of Nashville & Eastern Railroad, Lebanon, TN

Wednesday D 3:30 pm

Abstract

The Nashville & Eastern Railroad Corporation (NERC) is the freight operator for the Nashville & Eastern Railroad Authority (NERA). The subject railroad is a short line railroad that runs from Nashville, TN 110 miles through Mt. Juliet, Lebanon, Watertown, and Cookeville to Monterey. Along the way are several branch lines including Old Hickory, Carthage, and Vine Hill. A second line operated by their sister company the Nashville & Western Railroad that runs from Nashville to Ashland City was also included. KCI was contracted by CSR Engineering to provide survey and GIS services for the rail line.

Presentations - TNGIC 2015

Thursday Room B

Edwin L. Hawkins Jr., Thursday B 8:00 am
Teamwork through Interdepartmental Collaboration, Henderson County's Success with County Highway, Lexington Fire, Lexington Utilities and E911

Abstract

This presentation will discuss the lessons learned (positive and negative) and insights gained from the Interdepartmental collaboration between the Henderson County 911 and the Henderson County Highway, Lexington Fire, and Lexington Utilities to achieve success and documentation of asset inventories such as road signs and fire hydrants. The projects initial scope and how they grew to encompass more technology and other departments. The planned implementation of an open source GIS (QGIS) platform to allow them to use GIS to achieve a more accurate asset datasets and the use of low cost web based data collection site which places the data collection process in the palm of their hands through the use of Android and I phones which was chosen for its small learning curve and collectors familiarity with smart phone technology.

Janey Camp, PhD, PE, Thursday B 8:30 am
Cross-disciplinary data integration using web-based geodatabase and mapping platform

Abstract

Often it is challenging on interdisciplinary projects to bring together different data types from various users (with both GIS and non-GIS expertise) into a common framework for analysis and visualization. A team of researchers at Vanderbilt faced just this problem on a large, multi-disciplinary project focused on Bangladesh. The solution was development of an online platform and geodatabase (along with lots of education and discussion on data formatting and use of GIS) to bring together both social and physical data in a common repository for integrated research. This presentation will cover the challenges faced, approaches, and a demo of the resulting interface.

Presentations - TNGIC 2015

Thursday Room C

Kayla Barnowsky Jake Harvey Thursday C 8:00 am
Building Height Extraction using LIDAR Data

Abstract

In this presentation, we wanted to offer an example of how you can solve a city level GIS problem with LIDAR. The City of Franklin's GIS department was asked by the Franklin Fire Department if they could assist them in querying out all of the buildings within city limits that were 32 feet or 3 stories tall. This information was needed on behalf of the Ladder Companies for a new ISO rating for insurance purposes. Building heights were currently not being maintained, so the city turned to their LIDAR data as a source of elevation. Using LP360, Jake Harvey and GeoCue Group's, Kayla Barnowsky, will show how the city was able to render the height information needed for each structure, so that an address list could be produced for exact locations of each building 32 feet and above.

Brian Bugg Thursday C 8:30 am
The value of GIS within local government – Madison County GIS ROI Study

Abstract

Madison County AL conducted a study to measure the benefits that agencies within the county are realizing from implementing geospatial technology. The purpose of the study was to quantify, in dollars, the cost benefit of current geospatial investments and analyze the qualitative usage of geospatial technology throughout the County government. This presentation will discuss the methodology used to calculate ROI, industry case-studies used to development the study parameters, and the procedures followed to derive an investment ratio for planning future geospatial investments in the County. Developing a baseline ROI ratio has helped the Madison County Commission understand how to best appropriate funding for additional geospatial investments to generate the maximum benefit for the County and its constituents.

Presentations - TNGIC 2015

Thursday Room D

Justin Graham Thursday D 8:00 am
Implementing an asset management solution for an EPA Administrative Order on Consent

Abstract

The purpose of this presentation is to discuss the design and implementation of a comprehensive asset management solution to comply with an EPA wastewater Administrative Orders on Consent. The associated culture, process and technology change within a municipal-owned utility involves in-depth stakeholder education and communication to achieve sustainable adoption. Our lessons learned from a recent project will help other entities visualize potential barriers and impacts as well as conducting a readiness self-assessment when considering or embarking on their own implementation. The takeaway message is that there are many solutions and products that allow you to do “asset management” but our process and lessons learned can apply to any agency and solution. No asset management project is created the same, there are many systems to integrate, many different processes to be included, and many different results required.

Robert Wilson Thursday D 8:30 am
Mobile App for Stormwater Inspections

Abstract

Using paper forms that have to be filled out and sent back in to the office to be signed and then sent back out to the field to be put in a stormwater notebook is a labor intensive and challenging exercise. Regulatory inspections can be missed without being notified for several days. Once an inspection is missed it is too late to do anything about it. Tennessee Valley Authority created an app that is used by all field environmental inspectors to immediately complete required stormwater inspections for their assigned projects. They are then uploaded to a secure storage area where all project personal are notified that the inspection is complete. Field inspectors can also print the inspection document in the field eliminating the need for handwritten reports and time spent each week scanning and sending their reports in to the office. This electronic process has saved time and money in the stormwater inspection process.

Presentations - TNGIC 2015

Room B/C

Kim McDonough
Upcoming changes to the GIS Professional Certification

Wednesday B/C 11:30 am

Abstract

The Board of Directors of the GIS Certification Institute (GISCI) has announced a major change in the requirements for obtaining the GISP certification. Beginning July 1, 2015, all individuals wishing to obtain their GISP will have to take and pass an exam, based upon the Geospatial Technology Competency Model, in addition to the existing experience portfolio requirements. This presentation will explain the changes in the GISP process including requirements, timeline and new fee structures.

Kim McDonough Dixie Brackett
GIS and Surveying: This Can of Worms May Not be as it First Appears

Thursday B/C 9:30 am

Abstract

GIS and Surveying professionals have for too long, kept each other at arm's length. This session will seek to find opportunities where GIS and surveying professionals can complement each other while doing a better job of maintaining a proper boundary of professional practice.

James Larosa
National Weather Service SkyWarn Spotter Training

Thursday B/C 2:30 pm

Abstract

This is the official National Weather Service training class to learn how to recognize and report different types of severe weather, as well as information about safety during severe weather events.

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THANK YOU to the Board Members whose terms are expiring this year for having given TNGIC their time and talent.

Justin Abart

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