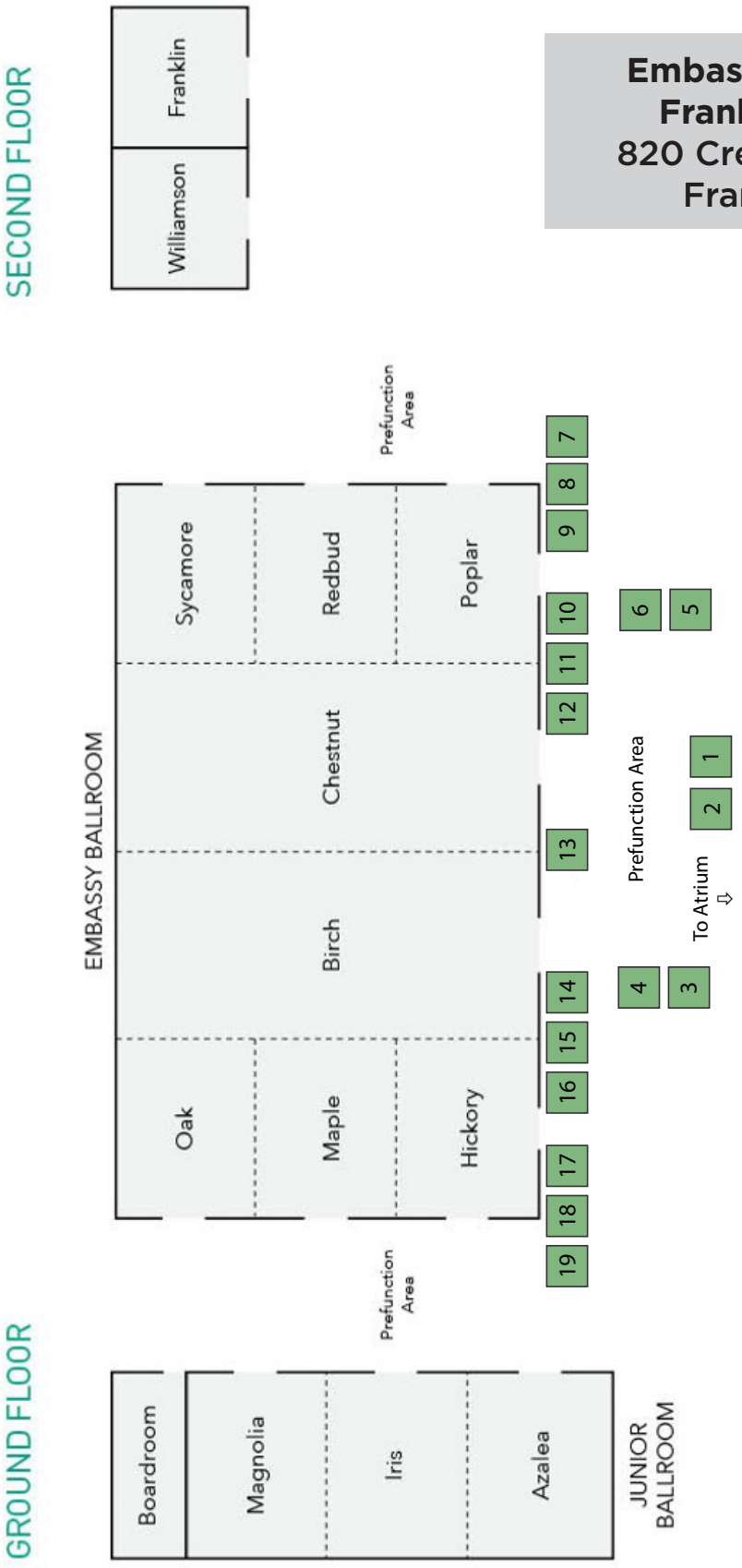

TNGIC
2026 ANNUAL CONFERENCE
April 14 - 16, 2026 | Franklin, TN
www.tngic.org

Embassy Suites by Hilton Floor Plan

Embassy Suites by Hilton
Franklin Cool Springs
820 Crescent Centre Drive
Franklin, TN 37067



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Agenda At-A-Glance

Key: ✸ = Registration Required ✉ = Invitation Only

TUESDAY, APRIL 14TH		
9:00 AM - 1:00 PM	**Training: Introduction to Python** ✸	*Redbud*
9:00 AM - 4:30 PM	**Training: Decoding Part 107: Chart Reading, METARs, Airspace, & the FAA Exam Essentials**	*Poplar*
10:30 AM - 11:00 AM	**Break**	*Sycamore*
10:30 AM - 5:00 PM	**TNGIC Annual Golf Tournament** ✸	*OFFSITE: Franklin Bridge Golf Course*
1:00 PM - 2:00 PM	**Lunch on Your Own** *(See next page for local lunch options)*	
2:00 PM - 4:30 PM	**Training: OpenStreetMap 101 & Map-a-thon** ✸	*Redbud*
3:00 PM - 3:30 PM	**Break**	*Sycamore*
5:00 PM - 9:00 PM	**TNGIC Mappy Hour -** *New Members, First Time Attendees, Regular Members*	*Atrium*
6:00 PM - 8:00 PM	**TNGIC Business Partner Dinner** ✉	*OFFSITE: Conner's Steak & Seafood*
WEDNESDAY, APRIL 15TH		
7:30 AM - 12:00 PM	**Registration**	*Coat Room*
8:00 AM - 5:00 PM	**Business Partner Hall**	*Ballroom Pre-Function*
8:00 AM - 5:00 PM	**Map Gallery**	*Ballroom Pre-Function*
8:45 AM - 10:00 AM	**Opening Session & Keynote**	*Embassy Ballroom*
10:00 AM - 10:30 AM	**Break**	*Ballroom Pre-Function*
10:30 AM - 11:30 AM	**State of Tennessee STS GIS Services Update**	*Embassy Ballroom*
11:30 AM - 12:00 PM	**Central Magnet School GIS**	*Embassy Ballroom*
12:00 PM - 1:30 PM	**Lunch, Awards, Board Nominees & Platinum Business Partner Sponsor Esri Presentation**	*Embassy Ballroom*
1:30 PM - 3:00 PM	**Concurrent Presentations & SIG**	*Various*
3:00 PM - 3:30 PM	**Break**	*Ballroom Pre-Function*
3:30 PM - 5:00 PM	**Concurrent Presentations & SIG**	*Various*
6:00 PM - 9:00 PM	**Social**	*Embassy Ballroom*
THURSDAY, APRIL 16TH		
8:00 AM - 12:00 PM	**Registration**	*Coat Room*
8:00 AM - 3:30 PM	**Business Partner Hall**	*Ballroom Pre-Function*
8:00 AM - 3:30 PM	**Map Gallery**	*Ballroom Pre-Function*
8:45 AM - 10:00 AM	**Opening Session & Keynote**	*Embassy Ballroom*
10:00 AM - 10:30 AM	**Break**	*Ballroom Pre-Function*
10:30 AM - 11:30 AM	**TNGIC Business Meeting**	*Embassy Ballroom*
11:30 AM - 1:30 PM	**Lunch - Platinum Business Partner Sponsor Vexcel Data Presentation, & Business Partner Lightning Rounds**	*Embassy Ballroom*
1:30 PM - 3:00 PM	**Concurrent Presentations & SIG**	*Various*
3:00 PM - 3:30 PM	**Break**	*Ballroom Pre-Function*
3:30 PM - 4:00 PM	**Closing Ceremony**	*Embassy Ballroom*

2026 Conference Committee

Thank you to all who served on the conference committee this year!

Samantha Allen
Shawn Anderson
Emmanuel Bosompem Boadi
Michael Camponovo
Stacy Curry-Johnson
Paul Dudley
Kim Edwin
Preston Ford
Corey Gens
Randal Hale
Chad Howard
Raj Jaiswal
Jeffrey Kirchberg
Jeremy Lee
Archana Maheshwari
Danielle McClanahan

Sam Moffatt
Mohammad Molla
Sabiha Mujkic
Mandy O'Shea
Chris Pape
Michelle Patton
Leslie Pelch
Caroline Petersen
Natalie Robbins
Blake Sartin
Brant Sollis
Emma Stalker
Sarah Sweat
Kevin Thomas
Uduak Umeng
Suzanne White

Keynote Speakers

MAGGIE CAWLEY

Executive Director, OpenStreetMap US

Maggie Cawley serves as the Executive Director for OpenStreetMap US, a nonprofit organization dedicated to advancing the democratization of geospatial data by catalyzing collaborative action around OpenStreetMap between individuals, government agencies, nonprofits, corporations, and academia. She joined OSM US in 2019 after 15 years as a geospatial professional, with a focus on education, urban planning and community engagement. Maggie is passionate about leveraging the power of open data and works to build partnerships and drive initiatives that make mapping more accessible and impactful. She holds a MA in Urban and Regional Planning from Virginia Commonwealth University and a BA in International Studies from the University of Richmond.

Title: OpenStreetMap & the Community Behind the Data/Map

OpenStreetMap is the world's largest crowdsourced geospatial database, powering thousands of applications across corporate, government, nonprofit, and academic sectors. But OpenStreetMap is more than a geospatial database. It has become a platform for empowering communities and supporting data driven decision-making as we face an ever increasing need for geospatial data to understand and respond to complex issues. OpenStreetMap US (OSM US) supports this collaboration by convening government agencies, companies, nonprofits, academic institutions, and volunteers. This talk provides an overview of OSM, and the OSM US community, tech ecosystem, and programs that support the map in the United States.

We'll look at specific technical and social elements of OSM US, with examples like the Trails Stewardship Initiative, a collaboration with private sector companies, nonprofit organizations, local mappers, and government agencies committed to improving the OSM trail data that appears in apps like AllTrails and onX. Learn about the community behind the world's largest crowdsourced geospatial database, and how to get involved yourself!

Keynote Speakers

GREG BRUNNER

Principal Data Scientist and Team Lead, Esri

Mr. Brunner is an experienced scientist, award-winning professor, and principal data scientist at Esri, the global market leader in GIS software, location intelligence, and mapping. In his current role, he serves as the Esri Professional Services AI and Analytics practice lead where he helps guide organizations across the globe with their implementation of AI and advanced analytics. In addition to serving as practice lead, he and his team also work on developing custom AI and computer vision driven spatial analysis tools in support of extracting features from imagery and 3D mesh data.

Title: GeoAI, Assistants, and Agents: How AI is Transforming GIS

Artificial intelligence (AI) is being integrated into GIS in the form of GeoAI models and tools, AI assistants, and AI agents. In this presentation, Greg will define GeoAI, AI assistants, and AI agents. He will explain how these capabilities manifest themselves in ArcGIS with an emphasis on how they will transform common GIS workflows and enhance productivity. Greg will also show examples of how GeoAI, AI assistants, and AI agents are already being used.

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Board Nominees

MARK CROW

GIS/CAD Group Leader, LJA Engineering

Mark Crow has over 20 years of professional land surveying and GIS experience. He works on a wide range of projects including water, wastewater, and stormwater, sanitary sewer rehab, stream restoration, survey and mapping grade GNSS data collection, transportation systems, and GIS mapping for utility districts, federal agencies, and municipalities. Mark is active in the ETSU Surveying and Mapping department and serves as President of the Northeast TN GIS (NETGIS) users group. Mark is a is the group leader for all GIS and CAD work for the Public Works group in the Southeast region for LJA Engineering and leads efforts to develop and maintain standards for the presentation of GIS maps, format of spatial data, and web content.

CAITLYN MILLS

GIS Senior Systems Analyst, Stantec

Caitlyn Mills is a GISP and Senior GIS Analyst with Stantec in Chattanooga. She has a geography degree from UT Knoxville and over 6 years of professional experience. In her work she supports planning, transportation, water resource engineering, and asset management projects. Her technical experience ranges from data assessment, database design, system integration, technical documentation, and data delivery. She primarily works with FEMA and other State Emergency Management offices on the national RiskMAP program.

Caitlyn has been a TNGIC member from the start of her career, attending each yearly conference-including the virtual in 2020. She is Vice Chair of the TNGIC Web and Data Committee, which maintains the TNGIC website and TNGIS data hubs. These websites provide free data and resources to the GIS community in Tennessee.

Caitlyn has lived all over the beautiful state of Tennessee – born in Jackson, raised in Memphis, became a GIS nerd in Knoxville, started her career in Nashville, and recently settled down in Chattanooga. In her free time, she loves to run, roller skate, read (usually fantasy, thriller, or sci-fi!), play cozy video games, and take on the world as a Ranger Elf in her friends' D&D campaign.

Caitlyn's goal as a board member is to focus on the resources and opportunities available through TNGIC to assist students and developing professionals with the transition from the educational environment to the professional GIS world and beyond.

Board Nominees

CHRIS PAPE

Planning Analyst, Washington County TN Government

Chris Pape is the GIS Analyst for Washington County, Tennessee's Zoning Office, where he has worked since 2007. His responsibilities include GIS analysis, land use planning, stormwater management, floodplain administration, and redistricting. He also serves as Assistant Secretary of the Washington County Regional Planning Commission, helping citizens navigate rezoning, variance requests, subdivisions, and other land-use applications.

Chris has been an active member of Tennessee's GIS community for nearly two decades. He has served NETGIS for 18 years, including two years each as Vice-President and Secretary/Treasurer. Within TNGIC, he has held the roles of Secretary, Vice-President, President, and now Immediate Past-President. Chris has also coordinated map galleries and vendors for multiple Eastern Regional Forums and supported vendor coordination for several TNGIC Conferences. During his current Board term, he has contributed to organizational improvements, including championing the development of a financial policy for TNGIC.

A GISP since 2013 and an Eagle Scout, Chris is committed to professional integrity and community service. He lives in Afton with his wife, Arlene, and their three pets—Winston and Tucker, both Collies, and Moose, a Siamese cat. In his free time, he enjoys traveling, hiking, and spending time with family.

KARI SADLEY

Location Intelligence Analyst, State of TN GIS Services

Kari Sadley is a Location Intelligence Specialist with the State of Tennessee Finance and Administration STS-GIS Services group and holds a Masters degree in Geoscience from Middle Tennessee State University. In her role, Kari supports the Imagery, LiDAR, and TREC projects and is always committed to advancing the state's geospatial capabilities and contributing to the success of STS-GIS division.

ANDREW WUNDERLICH

GIS Coordinator, TN Geological Survey (TGS)

Andrew L. Wunderlich, M.S., GISP serves as the GIS Coordinator for the Tennessee Geological Survey (TGS). In this role, he oversees geologic data management and supports the production of TGS geologic maps and publications. He also works with TGS's data preservation and modernization efforts, developing repeatable

Board Nominees

workflows and web-based mapping approaches that make historical geologic collections easier to discover, access, and use.

Andrew has more than 20 years of experience in production cartography, spatial analysis, geodatabase design/data modeling, and application development/automation. He began his career at the University of Tennessee, Knoxville (UTK) Cartographic Services Laboratory, then moved on to National Geographic Maps in Washington, D.C., supporting cartographic production and geodatabase development for their data-driven atlas products. He later worked for 11 years at UTK as the GIS Coordinator and Cartographer for a research group supporting structural geology and tectonics research by providing mapping, publication, and editorial support.

Andrew is a member of the Tennessee State Government GIS Coordination Council (and the Data Sharing subcommittee), the TN Department of Environment and Conservation GIS Program Review team, and the USGS's National Cooperative Geologic Mapping Program Steering Committee. He has active collaborations on data-sharing projects with colleagues in both state and federal agencies. He has also contributed to the work of the Tennessee LiDAR Program, creating a workflow enabling direct LiDAR tile downloads from the State of Tennessee LiDAR Coverage Map—done in partnership with staff from State of Tennessee STS-GIS. As a TNGIC board candidate, he is focused on strengthening data sharing and access and expanding training and professional development opportunities to support a strong, connected GIS community of practice statewide.

TNGIC Board of Directors Voting

Voting closes on Thursday, April 16 at 10:30 AM

Conference Map Gallery

TNGIC hosts an annual Map Gallery Competition for the GIS Community to share their work. It is just another great way to see what TNGIC Members are working on.

What to Expect: Physical maps are to be checked in at the conference registration table. Authors may be required to 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 during Thursday's Closing Ceremony.

We have **five** categories we will be judging for Map Gallery Awards:

1. **Best Cartographic Design:** Awarded to the map that artistically employs the elements of cartography without compromising use and functionality.

2. **Best Analysis:** Awarded to the best overall student map or research poster. Submitted maps may be cartographic or analytically focused.

3. **Best Student Map:** Awarded to the best overall student map or research poster. Submitted maps may be cartographic or analytically focused.

4. **Best Online Map or App:** Awarded to the best Online Map or App (such as a dashboard or story map). Map entries will be judged before the conference. All web maps or apps must be made public (not password protected). Maps will be accessible for conference goers via hyperlinks in the conference app, as well as in the map gallery.

5. **Viewer's Choice:** Award chosen by the attendees for the best overall physical map in the map gallery. Maps entered the day of the conference are eligible for viewer's choice. The map MUST be on display by noon of Wednesday April 15 to be eligible.

Map Gallery Viewer's Choice Voting

Voting closes on Thursday, April 16 at 10:30 AM

Pre-Conference Trainings

Tuesday, April 14 | 9:00 AM - 4:30 PM
All training is in-person

Please note: Lunch will not be provided during the pre-conference training. You are welcome to bring your own snacks and lunch during the pre-conference training or grab lunch somewhere nearby with other attendees!

1. Decoding Part 107: Chart Reading, METARs, Airspace, and the FAA Exam Essentials

Time: 9:00 AM - 12:00 PM and 1:00 PM - 4:30 PM

Location: Poplar

Description: This full-day workshop provides a comprehensive introduction to the FAA Part 107 Remote Pilot certificate, focusing on the concepts and terminology that new test-takers often find most challenging. Participants will learn how to interpret sectional charts, understand airspace classifications, decode METAR and TAF weather reports, read airport diagrams, and navigate key regulatory requirements. While this training will not prepare attendees to pass the exam immediately, it will give them the foundation they need to understand the FAA's language, expectations, and knowledge domains, along with a clear plan for what to study next. The workshop combines guided instruction with hands-on practice using the FAA Airman Knowledge Testing Supplement (FAA-CT-8080-2H), which participants must purchase and bring to class. No prior experience is required. All other materials, including PDFs of the presentation and a large set of sample exam questions—will be provided. The cost is $25, with all proceeds supporting TNGIC student assistantships and scholarships. Please note that this will be a fast-paced, content-heavy day designed to familiarize participants with unfamiliar and sometimes esoteric material. Those who attend should expect to set aside additional time after the conference to fully prepare for the exam.

Instructor: Michael Camponovo, GIST Outreach Coordinator & FAA Part 107 Remote Pilot

Required Materials and Important Notes: To participate fully in the workshop, attendees must bring: FAA-CT-8080-2H Airman Knowledge Testing Supplement, Pen or pencil (bring extras), Highlighters or sticky tabs, A fully charged laptop or tablet (optional), A basic calculator (optional), Reading glasses if applicable.

Important Disclaimer: This workshop is designed as an introduction to FAA Part 107 knowledge areas. While participants will gain hands-on practice with key skills and a solid understanding of exam expectations, this single-day session alone will not fully prepare attendees to pass the Part 107 exam. Additional independent study will be necessary before scheduling the test. No prior aviation or UAV experience is required.

Pre-Conference Training

2. Introduction to Python

Time: 9:00 AM - 1:00 PM

Location: Redbud

Description: The class will be an Intro to Python class focused on absolute beginners in Python. This class will be well suited to anyone uncertain where to begin with Python. The materials covered will be general Python knowledge with a focus on the application of Python in GIS. The goal of this class is to create a great foundation in coding fundamentals allowing participants to grow their skills and confidence in the use of Python. Attendees should bring a laptop or device to participate in this training.

Instructor: Jeff Kirchberg, Solutions Engineer (KCI Technologies) - Jeff Kirchberg is a seasoned professional with extensive experience in GIS implementation, database development, and map production. He has worked with ArcPro, ArcSDE, ArcGIS Server, Field Maps, Survey123, Dashboards, ArcGIS Online, Portal, and GPS Data collection for 13 years. Additionally, he has implemented and administered the Asset Management System (Cartegraph), coded in Python for 12 years, and managed Microsoft SQL Server for six years. He has also configured and implemented Esri Utility Network, managed Electrical Circuit Models and Outage Management Systems, and developed mobile apps. He has extensive experience in asset management systems, Python coding, and the configuration and implementation of Esri Utility Network.

3. OpenStreetMap 101 and Map-a-thon

Time: 2:00 PM - 4:30 PM

Location: Redbud

Description: Have you ever noticed the OpenStreetMap (OSM) logo at the bottom of your basemap and wondered more about how OSM data is created and how you could utilize OSM in your own work? Join us for an introductory workshop for OSM, no experience necessary! The first part of the class will provide an introduction to the OSM platform and outline how to become a contributor to update and add data to the platform. In the second half of the class, we will launch a mapping campaign for a small area surrounding the hotel and map together. Afterwards, we invite attendees to join us at the hotel bar for a Mappy Hour to chat about all things OSM and beyond!

Instructors: Maggie Cawley, Randal Hale, Stacy Curry-Johnson, and Natalie Robbins

Schedule:

- 2:00 PM - 3:00 PM - OSM 101
- 3:15 PM - 3:30 PM - Break
- 3:30 PM - 4:30 PM - Mapping Party
- 4:30 PM - Mappy Hour

Local Lunch Options

The Well Coffeehouse 711 Cool Springs Blvd, Franklin, TN 37067

Distance from Hotel: .0.3 miles (8 minute walk) **Hours of Operation:** Open 6AM- 5PM on Tuesdays
Cuisine: Coffee, sandwiches, bagels, smooties, etc. (vegetarian, vegan, GF options available)
Menu: https://thewellcoffeehouse.toast.site/order/the-well-cool-springs

Cajun Steamer Bar & Grill 1175 Meridian Blvd #108, Franklin, TN 37067

Distance from Hotel: 0.7 miles (16 min walk) **Hours of Operation:** Open 11 AM-9PM on Tuesdays
Cuisine: Louisiana inspired cooking (Burgers and seafood)
Menu: https://cajunsteamer.com/food-drink/

The Eastern Peak 1175 Meridian Blvd STE 106, Franklin, TN 37067

Distance from Hotel: 0.7 miles (16 min walk) **Hours of Operation:** Open 11AM-9PM on Tuesdays
Cuisine: Thai food (GF, Vegetarian, and vegan option)
Menu: https://order.toasttab.com/online/theeasternpeak-franklin

Tupelo Honey Southern Kitchen & Bar 2000 Meridian Blvd Ste 110, Franklin, TN 37067

Distance from Hotel: 0.8 miles (17 min walk) **Hours of Operation:** Open 11AM-8PM on Tuesdays
Cuisine: Southern Style cooking (GF vegan, and vegetarian options)
Menu: https://tupelohoneycafe.com/franklin/menu/

Ugly Bagel 2000 Meridian Blvd #100, Franklin, TN 37067

Distance from Hotel: 0.8 miles (18 min walk) **Hours of Operation:** Open 7AM-3PM on Tuesdays
Cuisine: Bagels (Vegetarian options)
Menu: https://uglybagel.com/menu?utm_source=menu

Little Hats Italian Market 980 Meridian Blvd, Franklin, TN 37067

Distance from Hotel: 0.8 miles (18 min walk) **Hours of Operation:** Open 11AM-9PM on Tuesdays
Cuisine: Italian food (Vegan, Vegetarian, and GF options available)
Menu: https://www.littlehatsmarket.com/menu

Tony's Eat & Drink 1000 Meridian Blvd #100, Franklin, TN 37067

Distance from Hotel: 0.8 miles (18 min walk) **Hours of Operation:** Open 11AM-1AM on Tuesdays
Cuisine: Pub food (Vegetarian options)
Menu: https://tonyseatanddrink.com/menu/#tab1

First Watch 1000 Meridian Blvd #118, Franklin, TN 37067

Distance from Hotel: 0.8 miles (18 min walk) **Hours of Operation:** Open 7AM-2:30PM on Tuesdays
Cuisine: Breakfast options (Vegetarian options and a few GF options)
Menu: https://firstwatch.com/menu?version=core&corp_id=128

Presentation Schedule - Wednesday, April 15

Room	Embassy Ballroom	Azalea	Iris	Magnolia
Topic	SIG	GIS Planning	Workflows	Research
1:30 - 1:52 PM	TNView Presentation Competition *Natalie Robbins*	HEC-RAS Model vs ESRI ArcFlood Sim *Chase Feldman*	From 'Here's a Map' to 'Whoa, This Is Cool': Leveling up your deliverables with Experience Builder *Finn Basler and Sarah Sweat*	The USGS 3D National Topography Model in Tennessee *Eliza Gross and Paul Dudley*
1:52 - 2:14 PM		How to Build a Free and Open Stack for a Data-Driven Human Rights Archive *Carwil Bjork-James*	ADA Compliance for AGOL Applications: A Nashville Story *Chris Parker*	Future-Proofing City GIS: Lebanon's Cloud Revolution *Kevin Cross, Carey Jenkins*
2:14 - 2:36 PM		QGIS + PostgreSQL = Awesome! *Joe Pyle*	Patriot Paths – Mapping Tennessee's American Revolution Pension Applications *Suzanne White & Gordon Belt*	TDOT GNSS Reference Network and NATRF 2022 *Jim Waters*
2:36 - 2:58 PM		Building a Mapbook Using QGIS *Randal Hale*	Unlock More Value from Your GIS Through Customization *Andrew McDonagh, Leah Fuller*	Mapping the Invisible: Exploring how subsurface utilities can be precisely located and setting expectations for the tools commonly employed in this endeavor. *Ben Drury*

Presentation Schedule - Wednesday, April 15

Room	Embassy Ballroom	Azalea	Iris	Magnolia
Topic	SIG	Workflows	Solutions	Utilities
3:30 - 3:52 PM	Intro to FOSS4G, OSGEO, and the QGIS-US Users group *Randal Hale*	ArcGIS Monitor Webhook Messages to your Favorite Chat Software *Kevin Sadrak*	Scalable Work Order Management Solutions *Mandy O'Shea*	Preserve Heritage, Embrace Technology, and Streamline Geospatial Asset Management *Joe Martin*
3:52 - 4:14 PM		GIS Infrastructure Planning for a Growing City: An Enterprise GIS Assessment for the City of Portland, Tennessee *Eli Risch, Kevin Sadrak*	Transforming Legacy Maps with Experience Builder *Jeff Kirchberg & Kevin Cross*	Benefits of ESRI's Trace Network for A Sewer Dataset *Jon Brandt*
4:14 - 4:36 PM		From Frenemies to Besties: Leveraging the Best of CAD and GIS to Make Projects Smarter *Jeff McCann and Mark Crow*	Utilizing Esri's Road Closures Solution to Streamline Traffic Navigation *Andriah Friend, Philip Early*	From Data to Decisions: Using Cloud GIS and AI for Asset Risk Rating in Water Utilities *Bernie Drahola*
4:36 - 4:58 PM		Land Management: A GIS- Centric Approach to Managing Permits, Licenses and Plan Review *Tara Feaga*	A Partnership in the Sky: Tennessee's Statewide Aerial Imagery Program *Brian Sowa*	Geospatial Framework for Equitable PFAS Contamination Response in Community Water Systems *Natalie Robbins*

Presentation Schedule - Thursday, April 16

Room	Embassy Ballroom	Azalea	Iris	Magnolia
Topic	SIG	GIS Planning	Workflows	GIS Grab Bag
1:30 - 1:52 PM	Geospatial Innovations in Cemetery Mapping: Detecting Unmarked Graves with Drone-Based Methods *Eileen G Ernenwein*	Capital Project GIS (CPGIS) System *Jennifer Higgs; Bimal Shah*	State-Wide Flood Risk Assessment - GIS Automation at it's Finest *Leah House*	Mapping Haemaphysalis longicornis and Theileria orientalis Ikeda *Elizabeth Short and Gwyn McClelland*
1:52 - 2:14 PM		PODs: Applying Federal Practices for Local Solutions *Daniel Nielsen*	Befriend ModelBuilder - simple building blocks that help models function *Monika Staszczak*	Map It Before You Count It: Getting Tennessee Ready for the 2030 Census *Tim Kuhn*
2:14 - 2:36 PM		Project Management for GIS *Steve Veltman*	From Metrics to Action: Using ArcGIS Monitor to Improve Enterprise GIS Performance *Baylor Wagehoft*	Building a Geospatial Foundation: Lidar, Imagery, and 3D Models for Smarter State & Local Government *Heather Geyer*
2:36 - 2:58 PM		Winter Storm Fern - TDF's Response and Recovery Efforts *Colin Stiles*	Mapping Success: The Power of GIS in Project Management *Benjamin Lundberg, Michael Rhoten*	From Capture to Actionable Insights: Integrating Geospatial, Appraisal, and AI Solutions *Sam Moffat*

Presentation Details

Wednesday, April 15, 10:30 AM - 11:30 AM
Embassy Ballroom
TOPIC: State of Tennessee STS GIS Services Update

TITLE: **Tennessee and the Geospatial Maturity Assessment**

PRESENTERS: **Dennis Pedersen, State GIS Coordinator, State of Tennessee, STS GIS Services; Suzanne White, Paul Dudley, Andrew Griswold - State of Tennessee, STS GIS Services; April Letellier, Brandon Webb - State of Tennessee Dept. of Transportation; TJ Muzorewa - Comptroller of the State of Tennessee Treasury/Division of Property Assessments**

ABSTRACT: The National States Geographic Information Council (NSGIC) recently completed the 2025 Geospatial Maturity Assessment (GMA) focusing on the development and progress of several framework GIS datasets across all 50 states. This presentation will showcase and highlight several State agency GIS managers and their role in developing the authoritative framework GIS datasets in Tennessee, and how TNGIC members can access or engage with these important and foundational GIS layers.

BIOS: Dennis has served as the Tennessee State GIS Coordinator for over 20 years. He has managed the TN Base Mapping Program and developed partnerships among federal, state, and local governments to help fund the creation of several framework GIS datasets that are accessible for the TN GIS community. He manages a team of 10 staff in STS GIS Services that also provide technical assistance and GIS development services to internal State agencies. He has been a TNGIC member since 1994 and a TN state employee since 1993.

Wednesday, April 15, 11:30 AM - 12:00 PM
Embassy Ballroom
TOPIC: Central Magnet School GIS

TITLE: **CMS GIS for Good Update**

PRESENTERS: **Clay Burns and students, Central Magnet School**

ABSTRACT: Clay Burns and his students will present an update on their Intro to GIS class at Central Magnet School. Clay will highlight how the course has evolved over time and how Frank Romo integrated his GIS for Good program in the class. Clay will be followed by brief student presentations.

Presentation Details

Wednesday, April 15, 1:30 PM – 3:00 PM
Embassy Ballroom
TOPIC: Special Interest Group (SIG)

TITLE: **TNView Presentation Competition**

PRESENTER: **Natalie Robbins**

ABSTRACT: The TNView student remote sensing competition awards are comprised of one first-place award valued at $300, one second-place award valued at $200, and one third-place awards valued at $100 each. This special session will include the 5 TNView Student Fellowship recipients. Learn more about TNView!

Presentation 1 - TITLE: **Fault Lines and Landslide Relations in Humboldt Range, Nevada**

PRESENTER: **Bianca Cain, Middle Tennessee State University**

ABSTRACT: For my Space Grant project, I used a 1m cell size LiDAR 3DEP DTM acquired by the USGS in 2020 to map fault scarps adjacent to the Humboldt Range, northern Nevada. The objective is to accurately map scarps depicted in a generalized way on the Nevada Bureau of Mines and Geology Quaternary Fault map and in the USGS Quaternary Fault and Fold Database. I used the DTM to create color-shaded relief and aspect rasters, and then I used these rasters to manually map faults in ArcGIS Pro. After mapping the faults, I used the ArcGIS Pro "Generate Transects Along Lines" Data Management tool to place scarp-perpendicular transects every 25m along these faults. The overall project goal is to use these transects to analyze spatial patterns in scarp height and slope.

BIO: Bianca Cain is a graduate student and research assistant for the Department of Geoscience at Middle Tennessee State University, currently working under the NASA Space Grant. She graduated with a Bachelor of Science in Plant and Soil Science in 2024 and is set to graduate with her Master of Science in Professional Science with a concentration in Geosciences in 2027. Her previous work includes a historical marker database of over 2,000 entries for the Tennessee Historical Commission, and implementation of environmental disaster aid programs and producer data maintenance through the Department of Agriculture.

Presentation 2 - TITLE: **Imaging Spectroscopy in the Humboldt Range: Geologic Patterns Seen From Space**

PRESENTER: **Emily Keiningham, Middle Tennessee State University, Tennessee Space Grant**

ABSTRACT: This presentation will briefly review an imaging spectroscopy project which combined spectral angle mapping with existing geologic maps to identify and analyze mineral patterns in the Humboldt Range in Nevada, looking at landscape features with comparison to surface minerals.

BIO: Emily Keiningham is completing her final semester of her Masters in Geosciences at Middle Tennessee State University. With a focus on remote sensing, GIS, and geospatial statistics, Emily's research has ranged from water utility innovations to natural hazard susceptibility mapping. This spring, she has completed a project focused on imaging spectroscopy to identify mineral patterns in major geologic features in Nevada.

Presentation 3 - TITLE: **The Hunt for Fort Lee**

PRESENTER: **Cannon Kelly, East Tennessee State University**

Presentation Details

ABSTRACT: During the American revolution Fort Lee was being at the confluence of the Nolichucky River and big Limestone Creek. The construction of the Fort was abandoned when an impending attack from British forces was discovered. The abandoned fort was then burned by the British as the settlers withdrew to Fort Watauga. The goal of this project is to potentially find the site of abandoned Fort Lee using geospatial methods. Using drone surveying, ground penetrating radar, and magnetometry data, this project can give insights into how these methods can be used to detect partially or fully destroyed subsurface structures. This project also seeks to strengthen and add to the archaeological record of the Nolichucky River by gaining potential insights into the human landscape and life ways of the region during the colonial period. These insights could also help preserve the cultural heritage of the region and help tell the story of Eastern Tennessee.

BIO: A master's candidate in geoscience that received their bachelor's degree in archaeology. With their research focusing on the intersection of archaeological research and geospatial analysis. The present brings a unique view point to the field of remote sensing and its applications. Naturally that view point is focused on how humans impact the environment and how advances in remote sensing impacts broader human communities.

Presentation 4 - TITLE: **Scottish Rhododendron: understanding an invasive floral species with GIS**

PRESENTER: **Josh Loiacono, Tennessee Technological University**

ABSTRACT: Rhododendron ponticum has used the past few centuries to capture and transform native woodlands across the United Kingdom. Local initiatives have only recently begun to fight back against the flowering shrub, and public awareness of it's invasivity is hampered by its traditional ornamental use. To understand rhododendron's specific effects on the island of Raasay, Scotland -the front lines of ponticum management-, biodiversity surveys were conducted and environmental factors were modeled to determine potential spread factors and which habitats were the most threatened. Certain plant communities were found to be more impacted than others.

BIO: Josh Loiacono is a graduate student at Tennessee Tech studying GIS and environmental informatics under Dr. Samantha Allen. His passions for the environment, science, and community have intersected to allow him to develop a thesis project that includes all of them and has allowed him to travel the world while doing so. For anyone interested, he recommends good shoes and bug spray.

Presentation 5 - TITLE: **Cross Domain Generalization of Sentinel 2 Marine Debris Models for Inland River System Pollution Detection**

PRESENTER: **Caroline Petersen, University of Tennessee, Knoxville**

ABSTRACT: Microplastic and floating debris pollution threaten freshwater ecosystems, yet most remote sensing detection models have been developed for coastal or marine environments. This study evaluates whether marine trained debris detection models can be transferred to inland river systems using the Tennessee River as a case study. Sentinel 2 surface reflectance imagery and supervised machine learning, including Random Forest classification, are used to detect debris related spectral signatures. Model performance is assessed to determine how well coastal trained algorithms generalize to inland conditions with different turbidity, shoreline complexity, and land cover. Spatial analyses examine debris hotspots and their relationship to surrounding land use. This research addresses a gap in freshwater monitoring and proposes a transferable framework for adapting marine debris detection tools to inland rivers.

Presentation Details

BIO: Caroline Petersen is a senior at the University of Tennessee, Knoxville majoring in Geographic Information Science with a minor in Data Science. She is interested in using GIS and remote sensing to better understand environmental change and support more sustainable communities. Her research has focused on modeling sustainable applications of environmental remote sensing and predictive spatial tools. Caroline enjoys translating complex spatial datasets into clear visual stories that help connect data to real world decision making. She is passionate about conservation and community centered geospatial work.

Presentation 6 - TITLE: **GeoAI Modeling of Urban Wildlife Corridors**

PRESENTER: **Raj Jaiswal, Middle Tennessee State University**

ABSTRACT: This project investigates wildlife–vehicle collisions in Rutherford County, Tennessee, using geospatial analysis and machine learning techniques. By integrating environmental, road, and human-activity datasets, the study identifies high-risk collision zones and key contributing factors. Kernel Density Estimation and Getis-Ord Gi* are applied to detect and validate spatial hotspots, while a Random Forest classifier is used to predict crash occurrence. The trained model is further applied to randomly generated points to produce predictive risk maps classified into low, moderate, and high-risk zones. Results show that nighttime light, population density, and vegetation indices strongly influence collision patterns, with high-risk areas concentrated near major highways and forest–urban transition zones. This GeoAI-based framework supports data-driven planning for wildlife protection and safer transportation systems.

BIO: Raj Jaiswal is a graduate student in Geosciences with strong interests in GIS, remote sensing, and artificial intelligence. He focuses on automating geospatial workflows using Python and applying machine learning techniques to satellite imagery for environmental and infrastructure analysis. With experience in research, teaching, and spatial data processing, he is passionate about using location intelligence and GeoAI to support sustainable development and data-driven decision-making. He aims to build a career in geospatial analysis and innovation.

Presentation 7 - TITLE: **Assessment of Sinkhole Lake Sediment Cores at Sharp Springs Park in Smyrna, TN: Understanding and Reconstructing Past Flood Events in Middle, TN**

PRESENTER: **Grace Sandidge, Middle Tennessee State University**

ABSTRACT: Consequences of global warming is the increased likelihood that major precipitation events will escalate into flash floods, threatening people and infrastructure, especially for those vulnerable. Despite these hazards, many areas lack long-term flood records, limiting flood-risk assessment. Reconstructing past overflow events from sedimentary records can extend regional flood histories beyond modern observations. At Sharp Springs Park in Smyrna, TN, four sinkhole lakes receive runoff and sediment from the West Fork Stones River during extreme floods, making them well suited to preserve records of past inundation. This research project uses a multi-proxy analysis to investigate major flood events, which include grain size analysis and using ArcGIS to georeference the extent of the 2010 Tennessee Flood for Sharp Springs Park. This project aims to improve understanding of the frequency and magnitude of past floods and strengthen the basis for hazard assessment in Middle Tennessee.

BIO: Grace Sandidge is a graduate student in Geosciences at Middle Tennessee State University (MTSU), graduating magna cum laude with her Bachelor of Science in 2025. She has done undergraduate research on sinkhole flooding using ArcGIS, LiDAR, and Dove satellite imagery to assess inundation events and potential urbanization impacts. Her thesis research is reconstructing past historical flood events using sediment cores and running a range of tests such as grain size analysis, loss on ignition, and magnetic susceptibility. She will also use georeferencing as a tool to show the extent of the 2010 Tennessee Flood for Sharp Springs Park (The study's area of interest). She's an Undergraduate Research Experience and Creative Activity (URECA) Silver awardee for both team and independent projects, a Gilman Scholar, and recipient of NAGT, AAPG, AIPG, GSA scholarships, the TN View Fellowship, and the Estwing Rock Hammer Award.

Presentation Details

Wednesday, April 15, 1:30 PM – 3:00 PM
Azalea Room
TOPIC: GIS Planning

TITLE: **HEC-RAS Model vs ESRI ArcFlood Sim**

PRESENTER: **Chase Feldman, WSP**

ABSTRACT: I first learned about ArcFlood Sim when I saw ESRI announce it at their user conference a few years back and was instantly intrigued. I thought, how close can this actually get us to the actual modeling outputs? Can this be useful in the discovery phase of the FEMA process to show what has changed in our project areas? This curiosity led me to taking one of the areas that our engineers have previously modeled in the new 2D rain on mesh approach, and see just how close the ArcFlood Sim extension in pro can get to those outputs, as well as the effective data in that region from the early 2000s.

BIO: I am currently a GIS Analyst II for WSP here in Brentwood, TN. I started with WSP fresh out of college and have been working on the water team doing mostly floodplain mapping for 4 years now. I am passionate about the work I do, and I hope to share some of the things I have been working on with the TNGIC group, and in doing this will help me towards accomplishing my goal of obtaining my GISP.

TITLE: **How to build a free and open stack for a data-driven human rights archive**

PRESENTER: **Carwil Bjork-James, Vanderbilt University**

ABSTRACT: Ultimate Consequences is an open-access digital archive documenting nearly 700 lives lost in Bolivian political conflicts since 1982. It enables comparative analysis across twelve presidential administrations, four episodes where protesters successfully sought the end of a presidential term, and 202 protest events in 19 domains of conflict. The project has been built at the intersection of open science and digital humanities. With the encouragement of Federal science funders, it is also an experiment in using open tools for creating and sharing data visualizations, interactive maps, historical narratives, and source materials. This talk shares my experiences building the project using R, Quarto, leaflet, GDAL and other open source tools. I'll describe how this stack has very light coding requirements as well as the challenges of mapping using incomplete and fragmentary data sources.

BIO: Carwil Bjork-James is a cultural anthropologist who conducts immersive and historical research on disruptive protest, environmental struggles, state violence, and indigenous collective rights. He is the principal investigator of Ultimate Consequences, a digital archive on death in Bolivian political conflict, and author of The Sovereign Street: Making Revolution in Urban Bolivia. A Wikipedian since 2005, he serves on the board of Wiki Education. He is an Associate Professor of Anthropology and of Law at Vanderbilt University.

TITLE: **QGIS + PostgreSQL = Awesome!**

PRESENTER: **Joe Pyle, Oak Ridge National Laboratory**

ABSTRACT: Keeping spatial data in a database ensures consistency and performance that file-based workflows can't match. In this talk I will show how my team uses QGIS with PostgreSQL/PostGIS to make editing faster and more collaborative. I will share how a single, shared dataset in Postgres replaces scattered files and fragile copies, makes concurrent editing seamless, and supports consistent QA/QC. I'll highlight practical techniques like role-based access to control who can view or edit specific layers, simple constraints to enforce data quality, lightweight functions/triggers that ease data entry and automate checks, and how we deliver customer-ready data in common geospatial formats. I will use examples to demystify Postgres

Presentation Details

for non-database folks with a focus on clear benefits. Expect a friendly, pragmatic session—no prior SQL necessary—designed to spark curiosity and give you concrete ideas for making spatial editing more reliable and collaborative.

BIO: Engineering automated QA/QC processes for geospatial data with Python and SQL, GIS, and identifying/interpreting features in satellite imagery are my specialties. In my ten years at ORNL, I have worked on various projects related to detecting features in satellite imagery, developing automated models to detect buildings damaged by natural and man-made disasters, and building national-level datasets for critical US infrastructure. I am passionate about leveraging my diverse skill sets to help science create a better world for the people living in it.

TITLE: **Building a Mapbook Using QGIS**

PRESENTER: **Randal Hale, NRGS**

ABSTRACT: QGIS is a very popular open source desktop that allows users to create and edit geospatial data. You can also creates maps - and in particular mapbooks. This presentation will take Henderon County GIS data and create a map books using QGIS's Atlas functionality. We'll walk through the database backend, grid setup, and map template setup and hopefully produce a map books that can be used by their 911 department.

BIO: Owner and operator of North River Geographic Systems, Inc. Randal Hale has been in the geospatial industry for way too long. NRGS works with Free and Open Source Software for Geoinformatics (FOSS4G) and including QGIS, PostGIS, Geoserver, and GDAL. NRGS is a business supporter of QGIS and a business partner with Mergin Maps. I will hopefully be found either sifting through data or sitting in a canoe - hopefully a canoe.

Presentation Details

Wednesday, April 15, 1:30 PM – 3:00 PM
Iris Room
TOPIC: Workflows

TITLE: **From 'Here's a Map' to 'Whoa, This Is Cool': Leveling up your deliverables with Experience Builder**

PRESENTERS: **Finn Basler and Sarah Sweat, LJA Engineering**

ABSTRACT: Since 2014, Esri has allowed users the capability to create interactive online applications. While users worked to perfect the art of application building using Web App Builder, Esri was working to develop a highly customizable application package called Experience Builder. It has recently been announced that Web App Builder will be retired in Q2 of 2027. This means that users will be forced to update any applications they are currently hosting in Web App Builder into Experience Builder. To help better understand what all Experience Builder can do, this presentation will discuss tips and tricks on building Experience Builder applications. It will include examples that include building applications for project management, cost estimation, and data exploration. We hope that these tips, tricks, and examples will allow users to feel more confident in taking their application conversion process from a tedious task to an more enjoyable "Experience".

BIOS: Finn Basler is a GIS Analyst at LJA Engineering in Chattanooga, TN. She holds a degree in Environmental Sciences. She has 2 year of experience with field collection, application building and analyses. Sarah Sweat is a GIS Project Manager at LJA Engineering in Chattanooga, TN. She holds a Masters in Biology and is a GISP. She has over 10 years of experience with GIS, large database management and analysis, and field work.

TITLE: **ADA Compliance for AGOL Applications: A Nashville Story**

PRESENTER: **Chris Parker, Metropolitan Government of Nashville & Davidson County**

ABSTRACT: Metro Nashville has been working to improve their public facing AGOL applications by making them compliant with WCAG 2.1 Level AA standards. This presentation describes the journey of how they got there from the initial review sessions with ESRI to complete web app design overhauls and tools that were utilized to make the process easier.

BIO: Chris Parker is a GIS Advisor and Open Data Administrator for Metro Nashville and has over nine years of experience working in the field of GIS. His job centers around Metro's public facing geospatial content, and he is currently working to improve their web applications by making them more accessible to disabled users.

TITLE: **Patriot Paths – Mapping Tennessee's American Revolution Pension Applications**

PRESENTERS: **Suzanne White & Gordon Belt, STS GIS Services, State of TN & Tennessee State Library & Archives**

ABSTRACT: Patriot Paths, an interactive web application, displays maps of Revolutionary War veterans who settled in Tennessee. Locations were extracted from pension applications. The maps reveal research clues of interest to historians and genealogists.

BIOS: Suzanne White is a Location Intelligence Analyst with the State of TN GIS Services and a Certified GIS Professional. She earned BS & MS degrees from TN Tech. She served twice as TNGIC President and 12 years on the TNGIC Board. Her work includes management of the FEMA Certified Technical Partner program, USGS 3D Hydrography Program, and the Patriot Paths program with the TN State Library & Archives.

Presentation Details

Gordon T. Belt is Director of Public Services at the Tennessee State Library & Archives, where he oversees reference and research services and public outreach initiatives that connect Tennesseans with the state's historical collections and government records. A public historian and archival administrator, he has worked in special collections and archives since 1995. He holds a master's degree in history from MTSU and a bachelor's degree in political science from UT Chattanooga. He is the author of John Sevier: Tennessee's First Hero and writes and speaks frequently on Tennessee history.

TITLE: **Unlock More Value from Your GIS Through Customization**

PRESENTERS: **Andrew McDonagh, Leah Fuller, Tennessee State Parks**

ABSTRACT: GIS succeeds when you can extract more value from the work you've already completed. At Tennessee State Parks, we use several strategies to save time, standardize workflows, and help users better understand the data they collect. This session will highlight practical tips using ArcGIS Survey123 Connect, including form and dashboard strategies, select-multiple questions, and linked content. We'll also explore ways to enhance applications with Arcade, new tools, and custom symbology within ArcGIS Experience Builder and ArcGIS Online.

BIOS: Andrew McDonagh is a GIS Manager who received his MS in Geographic Information Science from the University of Redlands, CA in 2017, and BS in Parks, Recreation and Tourism with a Minor in Forestry from the University of Vermont in 2013. With Tennessee State Parks Andrew works with his team to take ideas proposed by a variety of Park staff, to fruition backing and educating Park management with data pulled from GIS. Andrew loves where his mapping work "takes" him daily through maps, travel and photography. Leah Fuller received her MS in Earth System Science from the University of Alabama in Huntsville (2019) and a BS in Environmental Science from Auburn University (2017). As a GIS Specialist for TDEC, she specializes in cartography and field tool development for Tennessee State Parks. In her free time, she enjoys hiking and fly fishing with her husband and dog around the Chattanooga area.

Presentation Details

Wednesday, April 15, 1:30 PM – 3:00 PM
Magnolia Room
TOPIC: Research

TITLE: **The USGS 3D National Topography Model in Tennessee**

PRESENTERS: **Eliza Gross and Paul Dudley, USGS National Geospatial Program and State of TN STS-GIS**

ABSTRACT: The United States Geological Survey (USGS) National Geospatial Program has established the 3D National Topography Model (3DNTM) as an ongoing initiative focused on updating and integrating elevation and hydrography data into a 3D model. This 3D model will serve as a digital twin of the country's topography and deliver high-quality foundational data to support improved geospatial analysis. The 3DNTM includes the 3D Hydrography Program (3DHP) and the next generation of the 3D Elevation Program (3DEP). Acquisition of data for these programs is the direct result of meaningful partnerships with state, local, and federal stakeholders. This presentation will go over the 3DNTM and its programs, the partnership that has been built between the USGS and the State of Tennessee, and the current and upcoming elevation and hydrography data acquisitions that have resulted.

BIOS: Eliza Gross serves as the National Map Liaison to Delaware, New Jersey, New York, Pennsylvania, and Tennessee for the USGS National Geospatial Program User Engagement Office. Eliza uses her expertise on National Map products and services to engage with users and stakeholders. Paul Dudley is a Location Intelligence Analyst with the State of Tennessee STS-GIS Services group helping support various data programs. His primary focuses are imagery, LiDAR, and special projects.

TITLE: **Future-Proofing City GIS: Lebanon's Cloud Revolution**

PRESENTERS: **Kevin Cross, Carey Jenkins, Kevin Cross (City of Lebanon, TN), Carey Jenkins (ROK Technology)**

ABSTRACT: When a 2020 EF-4 tornado struck, the City of Lebanon realized their maxed-out, on-premise servers were a liability. Endless hardware upgrades couldn't provide the speed needed for 38,000 citizens and emergency responders.
Enterprise Systems Manager Kevin Cross shares how natural disasters became the "tipping point" to migrate their GIS to the cloud over one weekend with ROK Technologies.
Discover how Lebanon achieved:
- Speed: Virtual desktops eliminated map loading delays for users and the public.
- Innovation: Cloud tools powered a flood-predicting stream sensor project
- Reliability: Seamless data sharing enabled new 24/7 911 dispatch software.
- IT Alignment: Fully managed cloud services freed the IT department to focus on strategic initiatives instead of server maintenance.
Learn how to secure leadership buy-in and future-proof your Enterprise GIS against the unexpected.

BIOS: Kevin Cross is the Enterprise Systems Manager at the City of Lebanon, TN.
Mr Cross has over 20 years of experience in GIS and field data collection working for local government and private sector clients in Tennessee and Louisiana. He currently oversees the City's enterprise systems including GIS, Asset Management, Permit Management, Land Management, Aerial Photography and IoT.
Carey Jenkins is a Senior Account Executive for ROK Technologies based in Mt Pleasant South Carolina. Ms Jenkins specializes in helping clients understand and achieve return on investment for managing the ArcGIS Enterprise Suite in the Cloud.

Presentation Details

TITLE: **TDOT GNSS Reference Network and NATRF 2022**

PRESENTER: **Jim Waters, TDOT**

ABSTRACT: The presentation will discuss the TDOT GNSS Reference Network and will also discuss TDOT's plans to shift to NATRF2022 once implemented by NGS.

BIO: Jim Waters, PE, RLS, is the Statewide Geodetics Transportation Engineer overseeing Policy and Training in the Headquarters Geodetics Office at TDOT. Mr. Waters has extensive survey and design experience with TDOT. He implemented TDOT's Continuously Operating Reference Network (CORS) across TN and also transitioned TDOT from film imagery to digital imagery in a prior role. Jim is an adjunct professor in the Civil and Environmental Department at Tennessee Technological University since August of 2013. Mr. Waters holds a B.S. in Civil Engineering from N. C. State University and a M.S. in Civil Engineering from the University of Tennessee – Knoxville. He is a licensed Professional Engineer in TN and NC, as well as a Registered Land Surveyor in TN. He is a member of the TN Institute of Transportation Engineers (TSITE), the American Society of Highway Engineers (ASHE), the TN Association of Professional Surveyors (TAPS), and the National Society of Professional Surveyors (NSPS).

TITLE: **Mapping the Invisible: Exploring how subsurface utilities can be precisely located and setting expectations for the tools commonly employed in this endeavor**

PRESENTER: **Ben Drury, OHM Advisors**

ABSTRACT: Subsurface Utility Engineering (SUE) quality levels provide insight into the accuracy of a map of buried utility infrastructure. Most of us are familiar with the lowest level, QL-D, that relies on utility records and verbal recollection to provide a generalized feel for the layout of horizontal assets. Over the past year I have become exposed to some of the tools and methodologies involved with ascribing a higher degree of certainty to the locations of linear features. In this presentation I will compare the practical use of the tools OHM Advisors employs—GPR, cable locator, and CCTV—as we aspire to the higher SUE quality levels in the most cost-effective ways.

BIO: As a geospatial professional with over 16 years of experience in a wide variety of sectors including local government, oil & gas, economic development, city planning, military family housing and engineering I have procured spatial data using a variety of traditional methodologies. At OHM Advisors I have been fortunate to operate and interpret data with some new tools in concert with high precision GPS units and I am excited to share my findings with you. In my spare time I enjoy being outside with my dog and on a stretch of water I can cast a line or two.

Presentation Details

Wednesday, April 15, 3:30 PM – 5:00 PM
Embassy Ballroom
TOPIC: Special Interest Group (SIG)

TITLE: **Intro to FOSS4G, OSGEO, and the QGIS-US Users Group**

PRESENTER: **Randal Hale**

ABSTRACT: This talk will cover Free and Open Source Software for GIS. What is it? How can it benefit me? Can it fit into my existing setup? Users will also be introduced to 2 national organizations: OSGEO.US and QGIS-US. OSGEO US is the US arm of the Open Source Geospatial Group. QGIS-US is devoted solely to advocating and introducing people to the QGIS-US Software. QGIS is an open source Geospatial Desktop that is a bit of a swiss army knife for Geospatial.

BIO: Owner and operator of North River Geographic Systems, Inc. Randal Hale has been in the geospatial industry for way too long. NRGS works with Free and Open Source Software for Geoinformatics (FOSS4G) and including QGIS, PostGIS, Geoserver, and GDAL. NRGS is a business supporter of QGIS and a business partner with Mergin Maps. I will hopefully be found either sifting through data or sitting in a canoe - hopefully a canoe.

Presentation Details

Wednesday, April 15, 3:30 PM – 5:00 PM
Azalea Room
TOPIC: Workflows

TITLE: **ArcGIS Monitor Webhook Messages to your Favorite Chat Software**

PRESENTER: **Kevin Sadrak, dymaptic**

ABSTRACT: Getting real-time ArcGIS Monitor alerts into your team's communication platform has traditionally required complex custom development.
This presentation will walks you through building a real-time alert system that sends beautifully formatted Monitor notifications directly to Slack. And with the help of Claude AI the message will be fluid and interactive.

BIO: As a child, I used to sit and read the CIA World Fact Book, the geographical information and fold-out maps were just fantastic. Fast forward nearly twenty years later and I am making maps, doing analysis, and teaching others GIS. From task automation, custom Google Earth integration, data warehouses, imagery collection, and mobile field maps, I've built many systems over the years. I look forward to the next challenge. I am a GISP and have 3 esri certifications, ArcGIS Online Admin, Enterprise Admin and Python

TITLE: **GIS Infrastructure Planning for a Growing City: An Enterprise GIS Assessment for the City of Portland, Tennessee**

PRESENTERS: **Eli Risch, Kevin Sadrak, City of Portland, dymaptic**

ABSTRACT: As small and mid-sized municipalities grow, their GIS systems often evolve organically — expanding in scope and usage while infrastructure investment lags behind. The City of Portland, Tennessee found itself in exactly this position: a GIS that had become central to city operations but was straining under the weight of its own success. Through staff interviews, hands-on server examination, and custom analytical scripts, the team conducted a comprehensive review of the City's hardware, software, database management, security, and physical infrastructure. The assessment revealed critical risks and performance bottlenecks across data connections, service dependencies, and system topology. This presentation will walk through the assessment methodology, key findings, and lessons learned. Attendees will come away with practical strategies for evaluating and strengthening enterprise GIS systems in resource-constrained environments.

BIOS: Eli Risch - I specialize in bridging the gap between precision engineering and spatial analysis. With over two and a half decades of experience, I design and deploy integrated CAD and GIS ecosystems that power municipalities, utilities, and industrial giants. My expertise lies in transforming complex data into actionable intelligence—whether through developing robust CAD systems for engineering or implementing enterprise GIS solutions. Kevin Sadrak - As a child, I used to sit and read the CIA World Fact Book, the geographical information and fold-out maps were just fantastic. Fast forward nearly twenty years later and I am making maps, doing analysis, and teaching others GIS. From task automation, custom integration, data warehouses, imagery collection, and mobile field maps, I've built many systems over the years. I look forward to the next challenge.

TITLE: **From Frenemies to Besties: Leveraging the Best of CAD and GIS to Make Projects Smarter**

PRESENTERS: **Jeff McCann and Mark Crow, LJA Engineering**

Presentation Details

ABSTRACT: CAD and GIS have, in the past, been competing technologies, which made merging and leveraging the two worlds difficult at best. In recent years there have been great improvements within the platforms toward streamlined interoperability. This session will focus on both ArcGIS Pro and Autodesk Civil 3D tools of importing design elements between each. We will investigate bringing GIS features to C3D for design and pushing C3D back into FGDB. We will also discuss utilizing survey-grade GNSS devices within Esri's Field Maps app to collect data and seamlessly import into Civil 3D. By merging the two platforms, it assists in streamlining design, maintenance, and keeping costs under control as issues can be identified early.

BIOS: Mark has over 20 years of professional land surveying and GIS experience. He works on a wide range of projects including water, wastewater, and stormwater, sanitary sewer rehab, stream restoration, survey and mapping grade GNSS data collection, transportation systems, and GIS mapping for utility districts, federal agencies, and municipalities. Mark is active in the ETSU Surveying and Mapping department and serves as President of the Northeast TN GIS (NETGIS) users group.
Jeff has 30 plus years serving utility sector in Design with AutoCAD, and GIS for Water, Sewer, Storm, and Treatment Plants from field to final deliverables. Jeff has serviced clients from private, industrial, and large municipal sectors with design, mapping, and development of digital submission standards. Also has added sUAS Pilot Certification to the tool chest to assist with projects. He is currently the Design Manager in LJA Engineering's Public Works sector.

TITLE: **Land Management: A GIS- Centric Approach to Managing Permits, Licenses and Plan Review**

PRESENTER: **Tara Feaga, KCI Technologies, Inc.**

ABSTRACT: This session will demonstrate how a well-developed core GIS map and feature layer framework can serve as the foundation for permitting, licensing, and plan review processes. The presentation will highlight how the City of Lebanon, TN leverages GIS to drive workflows for applications for the Building, Engineering and Public Works departments. Participants will learn how spatial data can transform application intake, accelerate review timelines, and improve coordination across departments. By embedding GIS into everyday workflows, the City has streamlined processes, improved data reliability, and strengthened collaboration among staff involved in permitting and development review. The City of Lebanon utilizes Trimble's Cityworks PLL software, integrated with GeoCivix for digital plan review, creating a connected platform that links permitting workflows directly to the GIS data.

BIO: Tara Feaga is a Project Manager specializing in Land Management solutions that support permitting, planning, engineering, and public works operations. In this role, she works closely with organizations to implement and optimize systems that improve efficiency, transparency, and collaboration across departments. Prior to becoming a Project Manager, Ms. Feaga built extensive experience in Geographic Information Systems (GIS). She developed GIS applications, created and managed GIS services, and led GIS database development, primarily using Esri's ArcGIS suite. Her technical background allows her to bridge the gap between technology and operational needs, helping teams successfully implement and manage land management and permitting solutions.

Presentation Details

Wednesday, April 15, 3:30 PM – 5:00 PM
Iris Room
TOPIC: Solutions

TITLE: **Scalable Work Order Management Solutions**

PRESENTER: **Mandy O'Shea, KCI Technologies, Inc.**

ABSTRACT: Many organizations struggle to modernize work order management while balancing budget constraints, staffing levels, and long-term growth. Small utilities and local governments often rely on spreadsheets, email, or paper processes, while larger agencies require enterprise asset management systems with deep integrations and reporting. This presentation explores a scalable, GIS-centric approach to work order management—highlighting tools that meet organizations where they are today and can evolve as operational complexity increases.

BIO: Mandy O'Shea is a Geospatial Solutions Manager at KCI Technologies with nearly 19 years of service at the firm and more than 25 years of experience in geospatial technologies and asset management. She specializes in delivering GIS-driven solutions that support infrastructure planning, utility asset management, and operational efficiency for public sector clients. Mandy brings deep expertise in enterprise GIS, system integration, and strategic implementation of geospatial technologies to improve decision-making and long-term asset sustainability.

TITLE: **Transforming Legacy Maps with Experience Builder**

PRESENTERS: **Jeff Kirchberg & Kevin Cross, KCI**

ABSTRACT: Many organizations rely on GIS web applications that become difficult to maintain as platforms evolve. The City of Lebanon, Tennessee faced this challenge with a mapping application nearing the end of its support lifecycle and needed a sustainable path forward.
This presentation outlines the migration of that application to ArcGIS Experience Builder. Using Esri's supported framework created a stable, configurable solution that can grow with the organization's GIS environment. Custom Experience Builder components were implemented to meet operational needs and expand functionality. A key design element was a role-based management model: administrators control the overall application while designated power users maintain the datasets that drive individual maps. This separation allows departments to manage their own data without altering the application itself.
The result is a flexible, maintainable web GIS solution that modernizes a legacy system while enabling scalable data stewardship.

BIOS: Jeff Kirchberg is a GIS professional and Solutions Engineer for KCI with more than a decade of experience developing and modernizing geospatial products for utilities and local governments. He specializes in transforming complex infrastructure and asset data into clear, usable maps and applications using ArcGIS Pro, ArcGIS Online, and enterprise GIS environments. He will be presenting alongside Kevin Cross, Enterprise Systems Manager for the City of Lebanon, Tennessee. Kevin oversees the city's GIS and AWS environment in partnership with managed services provider ROK Technologies. With more than 22 years of GIS experience across the private sector and local government, he has served Lebanon as a GIS Technician, GIS Manager, and now Enterprise Systems Manager. His work includes supporting ArcGIS Enterprise, Cityworks, and flood monitoring initiatives, including a project that received the 2021 Esri Special Achievement in GIS (SAG) Award.

Presentation Details

TITLE: **Utilizing Esri's Road Closures Solution to Streamline Traffic Navigation**

PRESENTERS: **Andriah Friend, Philip Early, City of Chattanooga**

ABSTRACT: Is effectively communicating road closures to the public a challenge for your organization? Join Philip and Andriah for a deep dive into the Esri Road Closure Solution. We will walk you through the end-to-end process of deploying the solution, from initial configuration to sharing real-time data with the public. We'll discuss the "ins and outs" of the implementation—including common hurdles we encountered and the specific workflows we used to overcome them. Attendees will leave with a clear understanding of how to streamline communication and improve public safety through this solution. Our goal is to help you move past manual updates and get authoritative, real-time closure data directly into the hands of the people who need it.

BIOS: Philip Early is a GIS Analyst 2 for the City of Chattanooga, specializing in workflow automation. Philip spearheaded the use of FME to streamline the city's as-built submittal process, significantly improving departmental efficiency. From developing pedestrian safety maps to building intuitive dashboards, Philip is dedicated to enhance the infrastructure and public services of the Scenic City. When he's not automating workflows, you can find him climbing at local crags, or bouldering on his own backyard rock wall.
Andriah Friend is a GIS Analyst 1 for the City of Chattanooga, dedicated to solving community challenges through spatial data and technical innovation. Driven by a passion for conservation and service, she enjoys creating practical solutions that benefit other departments as well as residents. If she isn't analyzing data or creating maps, Andriah is likely planning her next vacation, whitewater kayaking on local creeks, or hiking through the mountains with her dog.

TITLE: **A Partnership in the Sky: Tennessee's Statewide Aerial Imagery Program**

PRESENTER: **Brian Sowa, Vexcel Data Program**

ABSTRACT: This session explores the collaboration between Vexcel and the State of Tennessee to deliver consistent statewide aerial imagery. We'll discuss how the program is collected, how the imagery is used across government, and how shared imagery helps agencies work from the same, current view of the state.

BIO: Brian Sowa is the Vice President of Business Development at Vexcel, where he focuses on bringing imagery and data solutions to the Government sector. Brian has built his expertise and knowledge of the geospatial data industry serving in growth positions across many aerial imagery and analytics organizations, delivering solutions for customers across a wide spectrum. He received his BS in Finance from Clarion University of Pennsylvania and CORe certification from Harvard Business School.

Presentation Details

Wednesday, April 15, 3:30 PM – 5:00 PM
Magnolia Room
TOPIC: Utilities

TITLE: **Preserve Heritage, Embrace Technology, and Streamline Geospatial Asset Management**

PRESENTER: **Joe Martin, LDA Engineering**

ABSTRACT: LDA Engineering partnered with the City of Belle Meade to move from a paper-based system to a digital model. LDA used various collection methods, including Global Positioning System units, Ground Penetrating Radar equipment for buried assets, and integration with an online Geographic Information System to streamline quality control, track progress, and communicate results to the client. LDA ensured compliance with all grant requirements by gathering required data early in the collection process. LDA implemented a maintenance response system using existing software. LDA Engineering delivered the City of Belle Meade a digital representation of their system to efficiently manage their system.

BIO: Joe Martin enjoys spending time with his family, being active outdoors, and enjoying a quality cup of coffee. He graduated from Tennessee Technological University in 2014 with a master's degree in Geographic Information Systems (GIS). He has accumulated over 10 years of experience working in the telecom, energy, and engineering industries. He is passionate about leveraging geospatial data to provide value to and support decision making for community leaders. He is grateful that his work at LDA Engineering contributes to making Stronger, Happier, Communities.

TITLE: **Benefits of ESRI's Trace Network for A Sewer Dataset**

PRESENTER: **Jon Brandt, Johnson City Water and Sewer**

ABSTRACT: Quick review of the simple workflow of building a trace network against a sewer dataset. Review the benefits and how it bolsters your analysis and turnaround time. How it improves editing functions. How it is a nice way to tiptoe into the branch versioning environment Demo an upstream trace from a wastewater treatment plant. Demo a downstream trace from a grease trap. In each demo display ESRI charts that auto populate based on the traces selection. Final quick demo of diagram that can be produced from a trace.

BIO: Graduate of Stephen F. Austin State University at Nacogdoches Texas. He is a little bit of a scholar of history, world travel, and cultures. Having grown up in the highlands of New Guinea where running water and flushing toilets were few and far between then having suffered a bout with typhoid a strange obsession grew within him to map out water and sewer systems. With 15 years experience in GIS applications and about 25 years in residential construction he's been able to find these two passions uniquely joined by ESRI's GIS applications.

TITLE: **From Data to Decisions: Using Cloud GIS and AI for Asset Risk Rating in Water Utilities**

PRESENTER: **Bernie Drahola, DRAHOLA TEchnologies, Inc. | yey'maps**

Presentation Details

ABSTRACT: Water utilities face growing challenges from aging infrastructure, limited budgets, regulatory pressures, and rising service expectations. This session explores how utilities can strengthen asset management through risk-based asset rating using cloud GIS and AI technologies.
Participants will learn how to build a digital foundation for risk management by combining spatial data, asset condition, and performance metrics within a unified cloud environment. Using real-world examples demonstrated with the yey'maps cloud GIS platform, Bernie Drahola shows how AI-assisted analytics can calculate probability and consequence of failure to visualize risks, predict maintenance needs, and support funding decisions. The presentation is focusing on simple adoption, workflow automation, and staff engagement. Attendees will gain strategies to modernize operations, improve resilience, and clearly communicate asset risks to decision-makers and the public.

BIO: Bernie Drahola is a geospatial technology strategist and founder of yey'maps, a cloud-based GIS platform empowering municipalities and utilities with intuitive mapping, data management, and AI-enhanced decision support tools. With over 20 years of experience in the geospatial industry, Bernie has led GIS implementations across Europe, the U.S., and Canada, focusing on infrastructure management, utility networks, and public-sector transformation. His work emphasizes automation, cross-team collaboration, and long-term sustainability through the smart use of cloud and AI technologies. Bernie is passionate about making powerful geospatial tools accessible to non-experts and equipping utility directors with the insights they need to deliver reliable, efficient services in today's data-driven world.

TITLE: **Geospatial Framework for Equitable PFAS Contamination Response in Community Water Systems**

PRESENTER: **Natalie Robbins, Vanderbilt Institute For Spatial Research**

ABSTRACT: Predicting the presence and concentrations of per- and polyfluoroalkyl substances (PFAS) in drinking water is an emerging research area. In Tennessee, from 2023-2025, TDEC analyzed 752 samples of the raw water supplying community water systems (CWS) in Tennessee, USA for PFAS analytes per the 2024 EPA rule. Collaborating with partners in TDEC, TAUD and TDH, we developed a Geospatial Assessment of PFAS Contamination in CWS tool. We identified 200 social, environmental, and anthropogenic geospatial PFAS risk predictors and CWS characteristics, which we applied to nonparametric Bayesian machine-learning methods to predict PFAS presence and concentration at the water source and applied to its CWS level. The final PFAS tool's user-friendly, accessible approach can address immediate PFAS contamination concerns and provides a replicable methodological blueprint for understanding complex environmental contamination risks and the resource capacity of CWSs and the communities they serve.

BIO: Natalie Robbins works at the Vanderbilt Institute for Spatial Research (VISR) in the College of Arts & Science at Vanderbilt University providing geospatial and geophysical consulting for researchers and groups across the state and country. Natalie's work touches a lot of disciplines, including anthropology, public health, water justice, and historical preservation. Her work often includes a mix of open-source and commercial solutions, as adapted for the project needs. When she isn't mapping, Natalie enjoys spending time outdoors with her dog Lucy, reading, and practicing yoga.

Presentation Details

Thursday, April 16, 1:30 PM - 3:00 PM
Embassy Ballroom
TOPIC: Special Interest Group (SIG)

TITLE: **Geospatial Innovations in Cemetery Mapping: Detecting Unmarked Graves with Drone-Based Methods**

PRESENTER: **Eileen G Ernenwein**

ABSTRACT: Historic cemeteries across the United States contain countless unmarked graves that reflect both the diversity of past communities and the complexities of their histories. These burial sites can provide insight into local traditions, demographic change, and historical inequities in how individuals were remembered and memorialized. Traditional methods such as ground-penetrating radar (GPR) have long been used to identify subsurface burials, but these approaches can be time-intensive, costly, and logistically constrained. This session explores how emerging drone-based remote sensing technologies—particularly thermal imaging and LiDAR—are transforming the detection and documentation of unmarked graves in complex environments.

Presentation 1 - TITLE: **The Cold Truth: Detecting Unmarked Graves with Drone-Based Thermal and LiDAR Imaging**

PRESENTER: **Eileen G Ernenwein, East Tennessee State University**

ABSTRACT: Situated on a steep hillside in Bristol, Virginia, the historically segregated Citizen's Cemetery contains burials dating to the mid-1800s. While some grave markers remain, many have been lost or destroyed, leaving numerous unmarked graves. Ground-penetrating radar (GPR) is commonly used to detect and map such burials, but surveys are labor-intensive and require highly specialized expertise. Recent work at nearby Sinking Spring Cemetery demonstrated that unmarked graves can also be detected using drone-based thermal and lidar imaging. In nighttime thermal imagery, graves appear as relatively cool anomalies, while lidar-derived terrain models reveal subtle surface depressions. To evaluate whether these aerial methods can reliably detect burials and potentially complement or replace GPR, we surveyed Citizen's Cemetery using a DJI Mavic 3T for thermal imaging and a DJI Matrice equipped with an L1 lidar sensor. Limited GPR data were collected in two test plots for comparison.

BIO: Dr. Eileen Ernenwein is an Associate Professor of Geosciences at East Tennessee State University and an expert in archaeological geophysics and remote sensing. Her research focuses on the development and application of non-invasive methods, including Ground Penetrating Radar (GPR) and aerial imaging.

Presentation 2 - TITLE: **Erased in Life, Hidden in Death: Remote Sensing the Unmarked Graves of East Hill Cemetery**

PRESENTERS: **Mei Cornell, Eileen Ernenwein, Cannon Kelly, Johnathan Smith, East Tennessee State University**

Presentation Details

ABSTRACT: Established in 1857 on the Bristol, TN/VA border, East Hill Cemetery holds a complex history of the region. During the Civil War, a local hospital used the cemetery as the primary burial site for many of its patients. The cemetery also includes burial sites of enslaved peoples. Due to this proximity, burials of enslaved peoples, and standard practices of the era, unmarked graves are distributed across the entire property. Local oral history also suggests the presence of a potential mass grave on-site. This study uses drone-based LiDAR and thermal sensing to identify undocumented subsurface features. By analyzing microtopography and thermal patterns, it aims to locate burials obscured by time. The combined results of thermal and lidar data proved successful in detecting many unmarked burials. The research demonstrates the value of non-invasive remote sensing while offering insight into how social class shaped burial practices and erased individuals from the historical record.

BIOS: Mei Cornell, Cannon Kelly, and Johnathan Smith are graduate students in the M.S. in Geosciences program at East Tennessee State University, concentrating in Geospatial Analysis. Their collective research focuses on the integration of advanced remote sensing technologies—specifically drone-based LiDAR and thermal imagery—to address complex spatial problems and preserve historical landscapes. The team specializes in high-resolution data acquisition and processing to identify undocumented features in sensitive environments. Dr. Eileen Ernenwein is a Professor in the Department of Geosciences at ETSU and an expert in archaeological geophysics and remote sensing. Her research focuses on the development and application of non-invasive methods, including Ground Penetrating Radar (GPR) and aerial imaging. Under her mentorship, this student-led team is bridging the gap between high-resolution geospatial technology and historical preservation at East Hill Cemetery.

Presentation 3 - TITLE: **Identifying Graves Under Dense Canopy with UAV LiDAR**

PRESENTERS: **Ellie Bernstein, Michael Camponovo, Tim Kane**

ABSTRACT: Mapping graves in historic cemeteries is especially challenging under dense vegetation, where traditional survey methods and optical imagery are limited. In partnership with Keep Knoxville Beautiful and Knox Heritage, this project evaluates UAV-based LiDAR and multispectral data to identify burial features across nearly 30 acres of heavily vegetated terrain.

BIOS: Ellie is an undergraduate student studying Cultural Geography and GIS at UT Knoxville. Ellie has a strong interest in urban planning and community engaged design, which she has applied through internships at the East Tennessee Development District and the Knoxville Housing and Neighborhood Development Department. Ellie is graduating in May and plans on gaining more experience before pursuing a graduate degree in planning. As the GIS Outreach Coordinator at UTK, Michael focuses on helping students transition to young professionals, maintaining alumni relations, and supporting community outreach efforts. In addition, Michael teaches classes focused on GIS, UAVs, and professional development. Tim is the GIS Lab Manager in the Department of Geography & Sustainability. He obtained a BS in Wildlife & Fisheries Sciences and a MS in Forestry, both from the University of Tennessee. He specializes in multidisciplinary applications of geospatial equipment and enjoys working with students and faculty to find creative solutions to difficult problems.

Presentation Details

Thursday, April 16, 1:30 PM - 3:00 PM
Azalea Room
TOPIC: GIS Planning

TITLE: **Capital Project GIS (CPGIS) System**

PRESENTERS: **Jennifer Higgs; Bimal Shah, Metropolitan Government of Nashville and Davidson County; NuOrigin Systems, Inc.**

ABSTRACT: The Capital Project GIS (CPGIS) System is an enterprise-level companion application to the Capital Project Management System (CPMS), built on Oracle Primavera. The system is designed to support the planning and management of capital funding projects across Metro Nashville and Davidson County. By integrating spatial data with project management tools, the system improves decision-making, operational efficiency, and resource allocation throughout the project lifecycle.
CPGIS delivers real-time visualization of project locations and progress, improving coordination across departments. Integrated with CPMS and powered by advanced mapping, it unifies data from internal Metro systems into a single platform that increases transparency, streamlines operations, and drives informed decisions for effective infrastructure development.

BIOS: Jennifer Higgs leads a team of 10 for the GIS Division for Nashville and Davidson County. She has been with Metro for 29 years and has her graduate degree from Murray State University. Mr. Shah has extensive experience designing and developing software solution, with more than 25 years of hands-on experience in GIS software development and data management. He holds a Master's degree in Computer Science from Vanderbilt University, an MBA from the University of Phoenix, a Post Graduate Diploma in Advance Computing and a Bachelor's degree in Computer Engineering from the University of Pune, India.

TITLE: **PODs: Applying Federal Practices for Local Solutions**

PRESENTER: **Daniel Nielsen, Tennessee Division of Forestry**

ABSTRACT: Potential Operational Delineations (PODs) is a practice developed at the Rocky Mountain Research Station by the USFS. This is a method of predetermining locations and features that would be useful in the containment of wildfires. As seasoned staff members retire, their local knowledge goes with them. Some of this knowledge may include where containment lines were previously installed, where on a ridge is the best place to descend in a dozer for a new containment line, and so on. PODs are a way of capturing and documenting that knowledge for future generations as well as reducing the burden on local staff to direct resources that may be coming from outside the area to assist in containing fires. This has already been implemented on federal lands in the State of Tennessee but the State's Division of Forestry is expanding the practice to our entire response area, starting in East TN with counties where Hurricane Helene has changed the fuel load and therefor necessitates new strategies.

BIO: I have a BS in Geography from the University of Utah with an emphasis on Ecology & Biogeography. I also hold a MS in Natural Resources from the University of Minnesota with an emphasis on Forest Hydrology & Watershed Management, and a Geography minor. I have been with The Division of Forestry for almost five years, starting as an on-the-ground forester and moving my way up into my current role as a Data Program Specialist in the Forest Data and Analysis Unit. In my current role I focus primarily on our data relating to wildland fire and administering our UAS program.

Presentation Details

TITLE: **Project Management for GIS**

PRESENTER: **Steve Veltman, Memphis Light Gas and Water Division**

ABSTRACT: This presentation cover practical lessons on project management for GIS, including business case development, stakeholder engagement, data management, and effective project management approaches.

BIO: Steve Veltman is the Supervisor of GIS and Enterprise Reporting for Memphis Light, Gas and Water Division, one of the largest three-service municipal utilities in the United States. With more than 25 years of experience in GIS, he leads enterprise geospatial initiatives supporting electric, gas, and water infrastructure improvements and operations. In his presentation he'll share practical lessons on project management for GIS, including business case development, stakeholder engagement, data management, and effective project management approaches.

TITLE: **Winter Storm Fern - TDF's Response and Recovery Efforts**

PRESENTER: **Colin Stiles, Tennessee Division of Forestry**

ABSTRACT: In late January 2026, Winter Storm Fern triggered a state of emergency across Tennessee, resulting in severe infrastructure disruption due to widespread tree failures and hazardous tree debris. In response, the Tennessee Division of Forestry executed a massive, rapid-response operation, mobilizing personnel and heavy equipment to restore critical roadway access and mitigate public safety threats across sixteen counties. Now, during the recovery phase, TDF has deployed an Urban Forest Strike Team across the Nashville metro to assist with assessing public tree damage and to estimate tree canopy loss as a result from the storm.

BIO: Unit Leader and GIS Manager for the Forest Data & Analysis Unit at the Tennessee Division of Forestry.

Presentation Details

Thursday, April 16, 1:30 PM - 3:00 PM
Iris Room
TOPIC: Workflows

TITLE: **State-Wide Flood Risk Assessment - GIS Automation at it's Finest**

PRESENTER: **Leah House, Stantec**

ABSTRACT: An executive order from Alabama's governor.... Over 6000 state owned buildings to assess flood risk for.... This presentation dives into what tools were created, using ArcPro SDK, to analyze flood risk. It explores how ArcPro Map Series were used to relay this information to the client.

BIO: Leah has worked as a GIS Programmer for 12 years. She has been involved with the FEMA Flood Risk program to help GIS Analyst and Engineers automate processes using ESRI SDKs. In her free time, she enjoys crafting, collecting, and spending time with her family.

TITLE: **Befriend ModelBuilder - simple building blocks that help models function**

PRESENTER: **Monika Staszczak, Stantec**

ABSTRACT: Model Builder is an ESRI tool that presents a lot of opportunities, but can be intimidating to start using effectively. In GIS and consulting we tend to talk a lot about efficiency and task automation, and at the end of the day it comes down to figuring out how to stop doing the same manual steps over and over. In this session, I'll break down how I use variables and utilities as building blocks to create simple, repeatable workflows that actually save time and that you can incorporate into any process. I will also go over some examples of tools I have built to automate a variety of tasks.

BIO: Monika Staszczak graduated from Murray State University in 2019 with a Bachelor of Science in Geosciences and a concentration in GIS. She has been working professionally as a GIS Analyst in the consulting industry for since then. Her work has focused on projects within her background in environmental sciences, primarily in the FEMA floodplain mapping program. She's been with Stantec for two years as part of the water team, and this is her third time attending the TNGIC conference.

TITLE: **From Metrics to Action: Using ArcGIS Monitor to Improve Enterprise GIS Performance**

PRESENTER: **Baylor Wagehoft, Maurer-Stutz Geospatial Services**

ABSTRACT: ArcGIS Monitor can provide far more than system status dashboards. In this session, attendees will see how to use ArcGIS Monitor to identify meaningful performance patterns across ArcGIS Enterprise, connect those patterns to likely root causes, and turn monitoring data into practical operational improvements.

BIO: Baylor Wagehoft is a lead Geospatial Engineer with Maurer-Stutz Geospatial Services who enjoys helping organizations implement and use their Enterprise GIS in practical, meaningful ways. His work includes implementing, administering, and monitoring ArcGIS Enterprise (both on-premise and cloud-based), specifically for clients in the engineering, municipal, and fiber broadband sectors. Baylor is passionate about connecting technical geospatial tools to everyday business needs and helping teams get more value from their data.

Presentation Details

TITLE: **Mapping Success: The Power of GIS in Project Management**

PRESENTERS: **Benjamin Lundberg, Michael Rhoten, LJA Engineering**

ABSTRACT: Traditionally, construction and project management methods consist of written notes in field books, paper forms, and excel spreadsheets. These methods are often time-consuming, can be erroneous, and are costly to track project progress. This presentation will offer a paradigm shift by implementing Esri's ArcGIS web-based field input and tracking applications for project management. Utilizing these applications can increase efficiency when managing a project. Through this cloud-based workflow, field personnel can provide notes, photos, and comments on the status of a project. Leveraging this workflow allows for the creation of customizable and user-friendly dashboards for viewing real-time metrics, allowing progress tracking from anywhere. This presentation will demonstrate a real-world application of this process and provide end users with ideas and strategies that they may consider implementing in their own organizations.

BIOS: Benjamin Lundberg is a GIS Manager with LJA Engineering in Chattanooga, TN. He holds a Masters in Geography and is a GISP. He has over 20 years of experience in GIS, with Enterprise database management and field experience ranging from Alaska to the Caribbean. Michael Rhoten is a Senior Project Manager with LJA Engineering in Knoxville, TN. He holds a Masters in Water Resource Management and is a PMP and a GISP. He has over 20 years of experience in water resources design and construction surveying, management and inspection.

Presentation Details

Thursday, April 16, 1:30 PM - 3:00 PM
Magnolia Room
TOPIC: GIS Grab Bag

TITLE: **Mapping Haemaphysalis longicornis and Theileria orientalis Ikeda**

PRESENTERS: **Elizabeth Short and Gwyn McClelland, University of Tennessee, Knoxville**

ABSTRACT: The Asian Longhorned tick (Haemaphysalis longicornis) is an invasive tick that can carry the Theileria orientalis Ikeda pathogen. It was introduced in the United States in 2017 and since has spread to 26 states across the United States, as well as the District of Columbia. This project aims to track H. longicornis as it continues to spread across the United States. Using datasets from the University of Tennessee Medical and Veterinary Entomology Lab and the USDA Animal and Plant Health Inspection Service, we were able to verify and compile reported data to visualize how the tick has spread over time. We are also working to automate and streamline the data collection process in order to better understand and share the severity of H. longicornis throughout US counties and states. This presentation will focus on the visualization and automation of the data collection process and the impacts these results will have on the identification of H. longicornis across the country.

BIOS: Elizabeth is a senior undergraduate student at the University of Tennessee, Knoxville majoring in Sustainability, with minors in Geographic Information Science and English. Gwyn is a senior at the University of Tennessee, Knoxville majoring in Geographic Information Science and Technology with a minor in Studio Art.

TITLE: **Map It Before You Count It: Getting Tennessee Ready for the 2030 Census**

PRESENTER: **Tim Kuhn, Tennessee State Data Center, Boyd Center for Business and Economic Research, University of Tennessee, Knoxville**

ABSTRACT: Preparing for the 2030 Census requires the State of Tennessee, its counties and municipalities to be GIS-ready, well before the count on April 1, 2030. This presentation outlines the U.S. Census Bureau's six major geography update programs and how they align with three critical data types: housing unit addresses, redistricting geography, and governmental/statistical boundaries. We highlight near-term opportunities for local participation, including venerable, daunting and even loathed Local Update of Census Addresses (LUCA) program to validate the Master Address File and reduce missed households.

BIO: Tim Kuhn is Director of the Tennessee State Data Center and a Senior Research Associate at the Boyd Center for Business and Economic Research at the University of Tennessee. He oversees outreach and dissemination of Census-related materials to government, academic, and business users in the state. He is Tennessee's appointee to the Federal-State Cooperative for Population Estimates, is secretary of the group's steering committee and chairs their Data Input subcommittee. His data visualization work has earned recognition from the Association for University Business & Economic Research, Association for Public Data Users, and TNGIC. He was also appointed by Governor Lee to serve on the Tennessee Complete Count Committee for the 2020 Census. In addition to his time at the university, he has over 20 years of experience in local government and planning focused on (GIS), decision support tools, and community indicators. He holds a bachelor's degree in political science from the University of Iowa.

TITLE: **Building a Geospatial Foundation: Lidar, Imagery, and 3D Models for Smarter State & Local Government**

PRESENTER: **Heather Geyer, Fugro Land USA**

Presentation Details

ABSTRACT: This presentation provides GIS managers with a practical roadmap for turning lidar, high resolution imagery, 3D models, and land cover/land use data into operational tools that support smarter government. It outlines how modern geospatial datasets form an integrated foundation for analysis, visualization, and decision making. Attendees will learn how to transform raw data into actionable products such as building footprints, impervious surfaces, canopy metrics, and intuitive 3D scenes. Real world use cases span public safety, planning, zoning, infrastructure, and environmental management. The session also covers sustainable program design, including update cycles, governance, funding models, and cloud native data management. Participants will leave with clear strategies and "quick wins" for modernizing their geospatial programs and delivering greater value to their communities.

BIO: Heather Geyer is a Technical and Business Development Manager at Fugro, where she works with state and local governments to build sustainable, high value geospatial programs. She specializes in transforming lidar, high resolution imagery, and 3D geospatial data into operational datasets that support planning, infrastructure, public safety, and environmental decision making. Heather brings a consultative approach focused on practical outcomes, governance, and long term program success.

TITLE: **From Capture to Actionable Insights: Integrating Geospatial, Appraisal, and AI Solutions**

PRESENTERS: **Sam Moffat Program Director Government Solutions, Matt Yusko, Field Sales Manager Digital Innovations, Billy Burle Geospatial Team Lead Mass Appraisal**

ABSTRACT: Join us to explore how Woolpert transforms data into actionable insights by integrating geospatial services, appraisal technologies, and cutting-edge AI. This session demonstrates how our approach delivers transformative solutions for state and local governments. We will provide an overview of Tennessee's 3DEP and 3DHP programs and their critical role in disaster response and infrastructure. Discover how our cloud-native CAMACloud® suite revolutionizes property assessment and how AI enhances valuation accuracy. Finally, explore the future of smarter government with AI-powered solutions like Geospatial Reasoning, which accelerates problem-solving, and Next-Gen Dispatch & Fleet Routing, which optimizes local government operations.

BIO(S): Billy Burle, Program Director of Appraisal Technologies, has worked in the mass appraisal industry for over 25 years consulting with hundreds of jurisdictions to implement geospatial and mobile-based technologies to improve workflow processes and increase efficiency and productivity. Billy has an extensive background related to geospatial technologies, mobile platforms, and land records management systems. He is a member of multiple assessment organizations at local and international levels and currently serves on the IAAO Board of Directors. Matthew Yusko is the Public Sector Sales Lead at Woolpert Digital Innovations. A Nashville local and Ole Miss graduate, Matthew's career is defined by his experience as an Army Officer, Project Manager in Construction, and an IT Manager. Across these diverse industries, he identified technology—and specifically the power of geospatial data—as the common denominator for success. Whether it was managing steel on a job site or overseeing mission-critical IT infrastructure, Matthew saw firsthand how location intelligence drives better decision-making. Today, he leverages that boots-on-the-ground perspective to help public sector organizations modernize through advanced mapping and geospatial solutions. Sam Moffat is a Geospatial Project Director with expertise that encompasses all aspects of the industry, with specialized knowledge of large-scale state, local government, and federal mapping efforts. He keeps abreast of emerging technologies and the benefits of digital data collection, including aerial imagery and airborne lidar, and has successfully managed five statewide mapping programs. In addition to managing and directing projects, Sam is well-versed in fostering sustainable relationships and assisting organizations to leverage geographic information to drive business value and operational efficiencies.

Sponsor Information

AECOM congratulates the TNGIC community and its members for continued success in the use of geospatial technology across the state. With hundreds of GIS/Digital staff in the Southeast, we take great pride in our ability to assist and to create multi-disciplinary teams to tackle the most challenging projects – leveraging geospatial technology and resources to the full extent. For decades, our Franklin and Oak Ridge staff have performed geospatial-related services for numerous state and local government agencies.

Data Axle enables marketers to harness the power of customer and prospect data while orchestrating relevant, responsive communications across the multichannel marketing ecosystem. Our core competencies encompass a full spectrum of marketing products and services, enabling clients to benefit from the delivery of data, technology, and creative, strategic, and digital services in a single partnership. We empower our clients – from local businesses to the Fortune 100 to the top nonprofit organizations – with the world's leading data, expert client support, outstanding operational performance, and an overarching strategic focus. Data Axle has decades of experience, being founded in 1972.

DRAHOLA Technologies, Inc. is a geospatial technology company and the developer of yey'maps, a modern cloud-based Geographic Information System (GIS) platform designed specifically for municipalities, utilities, and infrastructure managers. With applications ranging from water and wastewater infrastructure to asset management, environmental data, and municipal planning, yey'maps helps organizations turn geographic data into smarter decisions. ur mission is simple: make professional GIS technology accessible, efficient, and affordable for every organization. Learn more:www.yeymaps.com

Duncan-Parnell equips customers with robust geospatial field solutions for mapping and GIS applications. We start with GNSS positioning equipment from Trimble and Juniper Systems and add to it various software solutions from Trimble, Esri, Juniper and Trimble Asset Management to ensure customer success. Our team of field sales representatives and dedicated technical support staff assist customers in the mid-Atlantic and Southeast. Learn more at www.duncan-parnell.com.

Eagleview is the leading imagery provider to local government agencies across the United States. Eagleview provides high resolution ortho and oblique imagery and property analytics. Imagery as high of resolution as 1" and AI/ML datasets including Building outlines, impervious surfaces and transportation features.

Sponsor Information

Esri, the global market leader in geographic information systems (GIS), offers the most powerful mapping and spatial analytics technology available. Since 1969, Esri has helped customers use The Science of Where to unlock the full potential of data to improve operational and business results. Today, Esri software is deployed in more than 350,000 organizations including the world's largest cities, most national governments, 75% of the Fortune 500, and more than 7,000 colleges and universities. Esri engineers the most advanced solutions for digital transformation, IoT, and location analytics to create the maps that run the world. Visit us at esri.com.

Fugro is the world's leading Geo-data specialist, collecting and analyzing comprehensive information about the Earth and the structures built upon it. Adopting an integrated approach that incorporates acquisition and analysis of Geo-data and related advice, Fugro provides solutions. With expertise in site characterization and asset integrity, clients are supported in the safe, sustainable and efficient design, construction and operation of their assets throughout the full lifecycle.

G-Squared is a photogrammetric engineering firm staffed and tooled for massive and efficient aerial survey production. In short, we make maps. Since 1999 we have provided design scale map products that meet all state and federal guidelines for geospatial accuracy. We are a quality over quantity company, so our short list of services is by design. We do a few things and focus on doing them right. All our products are made in America at our facility in Fayetteville, TN to ensure that level of quality.

KCI's staff of professionals provide a broad spectrum of technical services including business advisory, data & analytics, solutions engineering, and asset management and land management consulting and solutions. Supporting clients across all industries, we drive innovation each day, optimize operations, and incubate new ideas for a better tomorrow.

LDA Engineering provides comprehensive GIS and geospatial data services that support planning, design, and asset management for complex infrastructure projects. Our team utilizes advanced data collection technologies, including UAV (drone) aerial photogrammetry equipped with high-resolution cameras and LiDAR sensors, to capture precise terrain, infrastructure, and environmental data. This information supports accurate mapping, surveying, 3D modeling, and site analysis, giving clients a clear and reliable understanding of project conditions. LDA also employs specialized field data collection tools to efficiently gather geospatial information for applications such as ADA compliance assessments and fiber network documentation. By combining advanced technology with practical field expertise, LDA delivers accurate, high-quality geospatial data that supports informed decision-making and successful project outcomes.

Sponsor Information

LJA is an employee-owned, full-service, comprehensive multi-disciplinary consulting firm. With offices across the nation, we offer one-source, one-stop reliability for all of our clients, when and where they need us. We are organized around eight comprehensive sectors and can seamlessly build successful project teams with civil, structural, and electrical engineers, plus hydrologists, planners, landscape architects, construction managers, GIS designers, and surveyors. Our resources are leveraged across the firm to deliver expertise-driven teams, increase responsiveness to your specific needs, and individualize project solutions.

The **Memphis Area Geographic Information Council** (MAGIC) is a nonprofit organization whose mission is to promote the profession and education of GIS in the Memphis Mid-South Area. Established in the fall of 2003, MAGIC provides an educational forum for interested parties to get together and share their GIS knowledge and experiences at our regular meetings and to broaden their exposure at the Annual GIS Conference every November. Headquartered in Shelby County, TN, MAGIC attracts members from the entire Mid-south region including west Tennessee, north Mississippi and east Arkansas; roughly a one hundred mile radius around Memphis (Although membership is open to anyone from anywhere).

NuOrigin Systems, Inc. (NuOrigin) is certified Minority Business Enterprise (MBE) and registered small business with Metro Nashville and Davidson County. We have been actively providing services in the Tennessee area to the local city and county government agencies. NuOrigin was founded in 2005 with a simple goal to provide software development and technology consulting services. We provide software solutions based on state-of-the-art technologies through a comprehensive and integrated enterprise software development approach.

NV5 Geospatial is the geospatial pioneer pushing the boundaries of data and analytics to deliver actionable solutions to transform the way our clients utilize and value geospatial data. We lead the nation in providing end-to-end solutions and services to deliver the highest quality data and geographic insight solutions. We combine unmatched expertise and experience with the latest equipment tech and proprietary software to analyze all types of data.

ROK Technologies helps organizations migrate, optimize, manage, and scale ArcGIS Enterprise in the Cloud. Acting as a dedicated extension of GIS and IT teams, ROK delivers fully managed cloud environments, high-performance architectures, staff augmentation, and expert support across AWS, Azure, and GCP. ROK is an Esri Platinum Partner, ArcGIS System Ready, ArcGIS Cloud Services Specialty Partner, and now one of the first ArcGIS Imagery Specialty Partners.

Sponsor Information

Sanborn is pioneering an approach, Comprehensive Geospatial Solutions, that helps customers meet their spatial information needs, overcome technology adoption challenges, and integrate location intelligence into everyday operations. Sanborn expertly combines aerial, ground, and mobile imagery and lidar data acquisition and mapping with spatial analysis, Geophysics, custom applications, GIS strategic planning, cloud-based mapping platforms, commercial imagery, our own geospatial SAAS solutions, and a range of managed and onsite GIS services options. Each solution is tailored to the needs and circumstances of our customers. Founded in 1866. ISO 2015:9001 certified.

School of Environmental Studies at Tennessee Tech University
The School of Environmental Studies at Tennessee Technological University is proud to support the TNGIC Conference through its Professional Science Master's (PSM) program, which offers concentrations in Environmental Science, Environmental Sustainability, and Environmental Informatics. The PSM in Environmental Informatics (PSM-EI) prepares graduates with advanced expertise in GIS, spatial analysis, remote sensing, policy analysis, and environmental management. By integrating technical training with business and statistical applications, the program equips students with the interdisciplinary skills needed to address complex environmental challenges. With a strong emphasis on collaboration, applied learning, and flexible formats, the program is designed to serve both traditional students and working professionals while contributing to the growth of the geospatial community.

Founded in 2015 in Chattanooga, Tennessee, **Skytec** is a global leader in remote sensing, AI-powered analytics, and geographic information systems (GIS) technologies. With over 50 years of combined experience in GIS and environmental and earth sciences, Skytec delivers industry-leading products and consulting services. Our expertise allows clients to access a single source for on-demand imaging, AI-driven analytics, and data solutions. Specializing in satellite-based remote monitoring and mapping, we offer a full suite of services, including multiscale monitoring, change detection, and digital twin solutions.

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. With every community, we redefine what's possible.

Sponsor Information

The **Tennessee State Data Center** is a cooperative program of the State of Tennessee, The University of Tennessee and the U.S. Census Bureau. Data Centers in each state assist the Bureau by disseminating Census data, as well as other federal data sets and information. The Boyd Center for Business and Economic Research at the University of Tennessee serves as the Lead Agency for the SDC program in the state. We work to provide access and education on timely demographic and economic data for citizens, businesses and government agencies in Tennessee.

True North Geographic Technologies is an award winning GIS services firm in Murfreesboro, Tennessee, serving federal, state and local governments, utilities and private sector organizations, in and out of state.True North is focused on creating solutions that help our customers leverage the Esri platform to meet their current and future business needs. True North delivers successful projects by utilizing our highly skilled staff and over 100 years of collective technical experience with the Esri platform. This commitment to excellence has resulted in our clients receiving 10+ Esri Special Achievement in GIS (SAG) awards.

For over 30 years, **Vexcel** has been the industry leader in the photogrammetric and remote sensing space, providing a comprehensive library of cloud-based geospatial data. Vexcel's unique technology stack results in unrivaled image quality, helping customers streamline remote assessment with confidence. Vexcel captures urban and rural areas across the U.S.

Woolpert is an industry-leading provider of geospatial services in the U.S. with an unmatched reputation for performance, quality, and service. We merge decades of experience and 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 to deliver top-quality geospatial projects on time and within budget to our state and local clients.