











2026 NCAUG Spring Symposium AGENDA

Title:	Elevating Spatial Intelligence: GIS and UAVs in a Connected World A Symposium on Unmanned Aerial Vehicles (UAV) in Geospatial Technology	Date & Time:	5/1/2026 10:00 AM to 4:00 PM
Location:	Chatham County Agriculture & Conference Center 1192 US Hwy 64 West Business, Pittsboro, North Carolina 27312	More Information: https://www.ncaug.com/	
Purpose:	The purpose of this GIS symposium is to explore the latest advances and applications of Unmanned Aerial Vehicle (UAV) technology in geographic information systems (GIS), including data collection, processing, and analysis, and providing a forum for sharing knowledge and best practices among researchers, practitioners, and industry professionals.		

FRIDAY 5/1/2026

Description	Lead(s)	Times
Welcome & Introductions		10:00 – 10:05am
<p>From the Ground Up: Building a Local Government Drone Program</p> <p>Most local government drone programs begin in public safety departments, yet the value of drone technology extends far beyond emergency response. GIS-based drone programs are increasingly becoming powerful tools for supporting tax administration, environmental analysis, infrastructure and facilities management, and economic development.</p> <p>As a GIS-led drone program in North Carolina, Chatham County’s program has worked to expand drone operations into a cross-departmental resource supporting a wide range of county initiatives. This presentation will share lessons learned from building the program from the ground up, including the challenges, learning curves, and practical decisions that shaped its development. Topics will include cost of entry, baseline equipment considerations, flight planning tips, data management practices, and post-processing software comparisons. We will also highlight real-world projects that have supported departments across county government, including economic development, tax administration, environmental monitoring, watershed protection, parks, elections, and facilities management.</p> <p>Attendees will gain practical insight into how local governments can develop and scale a GIS-led drone program that delivers value across departments.</p>	<p>Chatham County, Austin Conklin and Savannah Thomson</p> 	10:05 – 10:30 am
<p>Cross-Platform LiDAR Versatility: Maximizing Operational Efficiency and High-Quality 3D Data with One Sensor for Mobile and UAV Mapping</p> <p>As geospatial firms face increasing pressure to deliver high-accuracy data faster while managing equipment and operational costs, the ability to maximize sensor utilization has become a critical strategic advantage. This presentation explores how deploying a single LiDAR sensor across both mobile mapping vehicles and unmanned aerial systems (UAS) can significantly reduce capital expenditures, streamline workflows, and enhance overall data quality.</p> <p>By leveraging a unified sensor ecosystem, organizations can eliminate redundant hardware investments, standardize calibration and processing procedures, and maintain consistent data characteristics across collection platforms. The session will demonstrate how a shared sensor approach enables seamless transition between terrestrial and aerial acquisition, allowing teams to</p>	<p>KCI TECHNOLOGIES INC. - Brian Flaherty and Nate Kersey</p> 	10:30am – 11:00 am

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<p>select the optimal platform for each project environment without sacrificing accuracy or efficiency.</p> <p>Real-world project examples will illustrate how integrated mobile and UAV deployments improve coverage in complex corridors, urban environments, and inaccessible terrain while reducing mobilization time and field risk. The presentation will also discuss operational considerations including mounting configurations, calibration management, mission planning, and processing workflows that ensure consistent deliverables regardless of platform. We will also show actual data from projects that range from simple to complex.</p> <p>Attendees will gain insight into measurable cost savings, improved asset utilization, and enhanced dataset interoperability achieved through a multi-platform sensor strategy. The discussion will highlight how adopting a flexible, platform-agnostic LiDAR deployment model positions geospatial organizations to scale operations, respond quickly to diverse project requirements, and deliver superior datasets to clients.</p>		
<p>Monitoring Sensitive and Endangered Bird Species Utilizing UAVs</p> <p>Unmanned aerial systems (UAS) are reshaping how wildlife professionals monitor sensitive and endangered bird species. While thermal drone surveys have been tested in academic settings, their transition into real-world commercial conservation work remains limited. This project represents the first commercial application in North Carolina of a Thermal UAS workflow adapted from peer-reviewed marsh bird research to support Black Rail monitoring efforts.</p> <p>AECOM’s UAS team partnered with North Carolina Wildlife to conduct nighttime thermal surveys using an Anzu Raptor T in combination with DroneDeploy’s autonomous flight software. Flights were conducted between 2200 and 0400 during new moon conditions to maximize the opportunity to spot Black Rails since these birds exhibit both nocturnal and crepuscular behavior. While the pilot operated the UAS, NCW staff broadcast Black Rail call recordings in the field to encourage movement. Survey missions were flown at 100 feet above ground level (AGL) at 10 mph using the “Hot Iron” thermal palette in High Gain Mode (–4°F to 302°F). The effective operational range was approximately 2,250 feet from the controller, though proximity to tree lines reduced this distance.</p> <p>When thermal signatures were detected, the UAS descended to 50 feet AGL for closer inspection and then to approximately 15 feet AGL to observe movement patterns to distinguish birds from rodents or other wildlife. Both thermal and RGB imagery were collected, with assistance from an onboard spotlight activated during close-range inspections.</p> <p>The project successfully detected small birds, rodents, egg nests, and larger mammals, showing that thermal drone methods used in academic research can work in real-world conservation settings. However, nighttime operations required careful safety planning, and factors such as dense vegetation and wind reduced detection clarity and range.</p> <p>Overall, this pilot study demonstrates both the promise and practical considerations of scaling thermal UAS technology for monitoring endangered bird species.</p>	<p>AECOM – Alan Pleasant and Emma Butzler</p> 	<p>11:00am – 11:30am</p>
<p>Regional Coordination for Safe and Efficient Drone Operations: Aligning Government and Commercial Partners</p> <p>As drone activity accelerates across municipal, county, and state jurisdictions, government agencies face a critical question: how do you safely integrate commercial and public-safety UAS operations into shared airspace without creating conflicts, compliance gaps, or safety risks?</p>	<p>Airspace Link – Sonny Beech</p> 	<p>11:30pm – 12:00pm</p>

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<p>This presentation explores a unified regional framework for coordinating drone operations across multiple levels of government, cities, counties, state agencies, federal partners, and commercial operators. Drawing on real-world deployments, we'll show how geospatial data layers — including land use, zoning, controlled airspace, and infrastructure — form the foundation of effective airspace management at the local level. Attendees will see how FAA-approved tools like LAANC and B4UFLY connect to municipal GIS environments to give jurisdictions visibility and control over drone activity in their communities.</p> <p>The discussion will cover practical strategies to minimize airspace conflicts, streamline FAA compliance, and build inter-agency and public-private coordination models that scale across a region. We'll highlight how structured collaboration between government and commercial partners can enhance operational efficiency while maximizing public safety benefits.</p> <p>Attendees will leave with actionable insights into how their jurisdictions can stand up a coordinated, compliant, and data-driven approach to drone integration — and how existing GIS infrastructure can serve as the backbone.</p>		
<p>Sponsor Parade</p> <p>The sponsor parade will showcase and acknowledge the contributions of the event sponsors, who have provided support and resources for the symposium. This parade is a way for the symposium organizers to publicly thank and recognize the sponsors, and to give them an opportunity to showcase their products or services to the attendees. The sponsor parade serves as a valuable networking opportunity for sponsors and attendees alike.</p>	 Diamond and Platinum Sponsors	12:00pm – 12:15pm
<p>Lunch & Door Prizes</p>	<i>All Participants</i>	12:15 – 1:00 pm
<p>Lightning Talk/Panel Discussion</p> <p>This panel discussion will focus on the topic of UAV's, GIS, and how they are applied. The discussion will include the exchange of ideas and experiences among experts in the field. It will cover a wide range of topics, including the latest advances in UAV technology, the challenges of integrating UAV data with traditional GIS data, and the potential for UAV's to revolutionize industries. Overall, the discussion will highlight the immense potential of UAV's when integrated with GIS and applied to various disciplines, while also acknowledging the need for careful planning and responsible use of these technologies.</p>	 Presenters & Diamond Sponsors	1:00pm – 1:30pm
<p>Outdoor UAV Demonstrations</p> <p>The afternoon UAV flight demonstrations will be held behind the conference center.</p>	  	1:30pm – 4:00pm
<p>End of Symposium</p>	<i>All Participants</i>	4:00 pm