

AGX Applied Geography Conference 2025: Geographic Confluences

Report of Contributions

Contribution ID: 3

Type: **Paper Presentations**

Sensemaking in Protected Areas: Task-Based Research Using a Geovisualization Tool

Thursday, October 23, 2025 9:10 AM (20 minutes)

In recent years there has been a surge of new research focused on poaching in protected areas, but gaps remain that requires investigation. Specifically, we need to better understand the types of geospatial data collected by practitioners and the processes that protected areas currently use to mitigate poaching. This data is found in two forms: device-based geospatial sensors (from platforms such as UAS, camera traps, and acoustic devices) and human-generated geospatial data (typically in analog form, may include information on illicit campfires, animal carcasses, and other poaching-related observations). In this presentation I discuss results from applied geography research which examines how novice and expert geospatial practitioners understand disparate geospatial data when using a web-based tool. The study asked participants to review geospatially referenced reports and answer a series of questions related to three tasks regarding the most likely movement of poachers through a prototypical protected area and their choice for emplacement of additional geospatial sensors to limit poaching in the protected area.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: Dr ZELLER ZIGAITIS, Wendy (US Government)**Presenter:** Dr ZELLER ZIGAITIS, Wendy (US Government)**Session Classification:** Paper Session**Track Classification:** Geographic Information Science

Contribution ID: 4

Type: **Paper Presentations**

Disparity in Perceptions of OER in Geography Courses

Friday, October 24, 2025 9:50 AM (20 minutes)

Racial and ethnic disparities in college education persist, partly due to unequal access to costly textbooks. Open Educational Resources (OER) offer a low-cost alternative that may help bridge this gap, yet little is known about how students from different racial and ethnic backgrounds perceive OER, particularly in geography courses. This study investigates these perceptions among students enrolled in college-level geographic courses, where about half the student body identifies as minorities. Using survey data and focus groups, the research explores differences in perception, contributing factors, and best practices for improving equity in OER adoption. Findings aim to inform inclusive strategies for implementing OER in higher education.

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Organized Session Details

Author: LU, Jia (Valdosta State University)

Presenter: LU, Jia (Valdosta State University)

Session Classification: Paper Session

Track Classification: Geoeducation

Contribution ID: 5

Type: **Paper Presentations**

School-gentrifying community in the making in China: A case of study of Liwang Community in Changchun

Friday, October 24, 2025 1:50 PM (20 minutes)

School gentrification has been powerful in reshaping urban demographic and socio-economic spaces. An emerging school-gentrifying community in Changchun, China was taken as an example in this study to explore the interrelationships among education, real estate, and gentrification. The analysis revealed that in the context of China's educational inequity and educational reform, the combination of private school and real estate project spawned the school-gentrifying community, which is built on a "real estate and elite school" model. School gentrification has strong embeddedness and its formation mechanisms in China's context are more complex and highly related to real estate projects and local government's "land finance" policy. The emergence of school-gentrifying community inevitably causes the marginalization of urban poor, but it contributes to a more balanced distribution of educational resources and diversification of educational providers.

Is there a SINGLE day you are unavailable to present?

October 22, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Authors: HU, Shuju; SONG, WEI (University of Louisville)

Presenter: SONG, WEI (University of Louisville)

Session Classification: Paper Session

Track Classification: Economics & Development

Contribution ID: 6

Type: **Paper Presentations**

Towards Weather Information Fusion Framework for Climate-Resilient Smallholder Agriculture

Thursday, October 23, 2025 10:20 AM (20 minutes)

Climate change has intensified rainfall variability in timing, duration, and intensity, making smallholder farmers in developing countries increasingly vulnerable to weather-related crop losses. While contemporary adaptation discourse advocates integrating traditional ecological knowledge with modern meteorological systems, existing approaches lack systematic frameworks for meaningful integration.

This study addresses the “Smallholder Weather Information Paradox”—the inverse relationship between meteorological system sophistication and practical utility for farm-level decisions. Modern systems operate on 1-25 kilometer grids while smallholder farms span 0.5-2 hectares, creating a 3-4 order magnitude scale mismatch. Current integration attempts fail due to incompatible information architectures rather than technological limitations.

We propose a “Weather Information Fusion Protocol” analogous to remote sensing pansharpening, where coarse-resolution regional forecasts are enhanced through fine-resolution traditional indicators. Modern meteorology provides regional scope and temporal depth, while traditional knowledge offers spatial precision and local calibration—creating complementary information layers addressing different decision-making scales.

Two domains offer systematic integration pathways: rain prediction and rainmaking. Both traditional and modern systems observe identical atmospheric phenomena through different frameworks—traditional cloud assessment converges with atmospheric pressure analysis. Remarkably, traditional rain ceremonies using coordinated fires parallel modern cloud seeding through shared mechanisms: both target pre-existing clouds during optimal atmospheric windows and introduce artificial nucleation sites via aerosol particles.

The study introduces a “Mechanistic Bridge Model” transforming traditional practices into scientifically-validated measurement methodologies. This enables systematic integration based on atmospheric physics rather than cultural accommodation, directly enhancing climate resilience for vulnerable smallholder farming systems facing unprecedented weather variability.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: Dr WAKTOLA, Daniel (Austin Community College)

Presenter: Dr WAKTOLA, Daniel (Austin Community College)

Session Classification: Paper Session

Track Classification: Climate & Climate Change

Contribution ID: 7

Type: **Paper Presentations**

Calculating Scope 3 Emissions using Campus Study Abroad Air Travel Data and Web GIS

Thursday, October 23, 2025 10:00 AM (20 minutes)

University campuses are actively promoting their campus sustainability efforts to students and the public as evidenced in green campus sustainability ratings and third party reviewers such as AASHE STARS program. While these ratings and reporting programs are often vast in scope, almost all include assessment of carbon emissions generated by the campus(es). Assessment of carbon emissions is often focused on Scope 1 emissions, or carbon generated from consumption of energy to maintain campus infrastructure and operations. In order to provide data on Scope 3 emissions, this presentation reports on a course collaboration between the Campus Energy Manager, Campus Sustainability Outreach Coordinator, Associate Director of Study Abroad, and students of an advanced GIS course at SUNY Cortland in spring 2025. As a pilot study to develop a protocol to calculate Scope 3 emissions as requested by the Campus Energy Manager, students calculated carbon emissions for a calendar year of campus study abroad and international travel activity. In addition, carbon emissions were analyzed at the country, continent, and airport scale as well as in time sequences of semesters and intersessions. The data were presented using a variety of ArcGIS tools including ArcGIS Pro, ArcGIS Online, ArcScenes, and StoryMaps and provided possible amendments to the portfolio of study abroad locations to balance distance of travel with a reasonable amount of carbon emissions.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: Dr BADUREK, Christopher (State University of New York at Cortland)**Presenter:** Dr BADUREK, Christopher (State University of New York at Cortland)**Session Classification:** Paper Session**Track Classification:** Sustainability

Contribution ID: 8

Type: **Poster Presentation**

Lidar and GIS Terrain Analyses of Subsidence related to Historic Salt Mining in Central New York

Thursday, October 23, 2025 2:00 PM (20 minutes)

While Syracuse, New York is known as the “Salt City” due to its historical success in salt mining in the area, few studies have explored the geomorphic impacts of halite mining in the region. This study builds upon a previous 2009 USGS field study work on subsidence in the Tully Valley of central New York State. Specifically, we reexamined data at the East Brine Field of the Tully Valley Mining Region in the light of LiDAR data. In this study, we collected LiDAR data which was used to create multiple bare earth raster files. These files are used to visualize how the known halite mine locations have subsided and if open fracturing is evident in the study area. The previous study did not use LiDAR to supplement field study data of fracturing and subsidence, so this study adds a geomorphometric approach to identifying open fracturing. We processed the LiDAR data with ArcGIS Pro and used surface analysis of the terrain, curvature analysis, and surface roughness rasters to supplement field data digitized from the 2009 field study. We found 74 fractures in the LiDAR data that are not evident from aerial photographs or USGS topo maps. In addition, we used QGIS Line Histogram tool to create Rose diagrams of the open fracture orientations. These findings are relevant because not only are bedrock fractures a safety concern, but they serve as a unique “natural experiment” illustrating how historical human intervention on the landscape affects the area today.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: Dr BADUREK, Christopher (State University of New York at Cortland)**Co-author:** RHODES, Haileigh (State University of New York at Cortland)**Presenter:** Dr BADUREK, Christopher (State University of New York at Cortland)**Session Classification:** Poster Session**Track Classification:** Geographic Information Science

Contribution ID: 9

Type: **Poster Presentation**

Land Cover Change Analysis of Restoration of the North Aral Sea, Kazakhstan, 2000 to 2014

Thursday, October 23, 2025 1:20 PM (20 minutes)

The decline of the fresh-water body known as the Aral Sea is a well-known case study of mismanagement of natural resources in environmental studies. However, recent restoration efforts in the North Aral Sea by the government of Kazakhstan have yielded increases in fresh-water levels and related vegetative cover. This study uses land cover change analysis using Landsat imagery for the time periods of 2000 and 2014. The machine learning classification method maximum likelihood is used with a training data set to derive land cover classes for both time periods. The change over time is calculated by comparing pixel values from land cover classes from 2000 and 2014. Results indicate an increase in biomass both along the edge of the water and inside of it. Overall, trends indicate the amount of water and biomass significantly increased over time, and the amount of sand and salt has decreased.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: KIDDER, Andrew (State University of New York at Cortland)**Co-author:** Dr BADUREK, Christopher (State University of New York at Cortland)**Presenter:** Dr BADUREK, Christopher (State University of New York at Cortland)**Session Classification:** Poster Session**Track Classification:** Environmental Analysis & Policy

Contribution ID: 10

Type: **Poster Presentation**

Intercomparison of NASA GLOBE Observer Land Cover Data with Satellite-Derived Products in 2020

Thursday, October 23, 2025 1:00 PM (20 minutes)

Citizen science has grown tremendously in recent years due to its ease of data collection and ability to generate large volumes of observations, which is particularly valuable for artificial intelligence (AI) applications that rely heavily on labeled reference samples. NASA GLOBE Observer is a global citizen science platform that enables volunteers to collect environmental data, including land cover and land use (LCLU) information, key inputs for understanding ecosystem dynamics and its ecosystem services, such as climate regulation. Accurate classification of LCLU from satellite imagery requires large amounts of labeled reference data, which citizen science can help supply. In this study, we evaluated the agreement between the GLOBE Observer Land Cover dataset (data, number of comparison points) and three widely used remote sensing products: MODIS Land Cover, ESA WorldCover, and Dynamic World in 2020. Our objectives were to (1) assess the agreement between citizen science-based land cover photos and remote sensing products and (2) harmonize the datasets to produce a reliable reference dataset for downstream applications. Among the nine LCLU classes assessed, the urban category exhibited the highest agreement, with User's consistency values of 76.07% for MODIS, 89.67% for ESA WorldCover, and 48.86% for Dynamic World. Results also show that overall consistency between the GLOBE Observer Land Cover dataset and MODIS, ESA WorldCover, and Dynamic World is 19.23%, 23.39%, and 27.84%, respectively. The low agreement may be due to the inconsistent spatial resolutions and classification systems, which require further exploration.

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Organized Session Details

Author: HE, Yaqian (Indiana University Bloomington)

Co-authors: SORKER, Raihan; YANG, Di; HUANG, Xiao; LOW, Russanne; NELSON, Peder

Presenter: HE, Yaqian (Indiana University Bloomington)

Session Classification: Poster Session

Track Classification: Spatial Analysis & GIS

Contribution ID: 11

Type: **Paper Presentations**

Geographies of Mortality Inequality

Friday, October 24, 2025 9:10 AM (20 minutes)

Abstract: Physical environment has received increasing attention for its potential influence on mortality rates, but the complex role of urban sprawl remains insufficiently understood. Using county-level data for the contiguous United States, we examine a multidimensional set of urban sprawl indicators alongside natural environmental factors as correlates of mortality. We also explore the mediating role of intergenerational mobility (IM), and account for spatial heterogeneity in these relationships. Overall, most sprawl indices are associated with higher mortality risks, include population sprawl, employment mixed layout, land mixed use, and transportation accessibility. In contrast, other sprawl indicators, such as reduced population density and more urban areas, are linked to lower mortality risks. Natural environment factors align with expectations: air pollution relates to higher mortality risks, whereas green space coverage mitigates them. In terms of relative importance, poverty, obesity, and air pollution emerge as the strongest predictors of mortality, and most sprawl indicators and natural environmental factors show threshold effects and play significant roles in certain stages. Indirectly, population clustering, employment mixed layout, land mixed use, and high transportation accessibility relates to lower mortality risks by enhancing IM, whereas employment clustering, high population density, and urban areas are associated with higher mortality risks through reducing IM. Spatial heterogeneity further underscores the varying effects of influencing factors. These findings highlight the intricate and diverse impact of urban sprawl on mortality risks, pointing to the need for targeted and context-sensitive policy approaches.

Keywords: Urban sprawl; Natural environment; Intergeneration mobility; Mortality inequality

Is there a SINGLE day you are unavailable to present?

October 24, 2025

Is there a time of day you are unavailable to present?

Afternoon

Organized Session Details

Author: Prof. WEI, Yehua Dennis (University of Utah)

Co-author: WANG, Yu (University of Utah)

Presenter: Prof. WEI, Yehua Dennis (University of Utah)

Session Classification: Paper Session

Track Classification: Health & Medical Geography

Contribution ID: 12

Type: **Paper Presentations**

Spatiotemporal patterns of COVID-19 cases and deaths in Oklahoma and preparing for the next pandemic

Friday, October 24, 2025 9:30 AM (20 minutes)

Though the COVID-19 pandemic has reached its five-year milestone since the disease first sparked massive disruption in 2020, research continues to examine the spatial and temporal patterns of its spread as a means of using past experience to shape responses to likely future epidemics. With this in mind, the focus of this research is to provide insights and add to existing knowledge on the COVID-19 virus by analyzing the spatial and spatiotemporal patterns of COVID-19 in Oklahoma. Due to the nature of the virus, it is important to continually assess the geographic distribution of cases and deaths as well as factors that contribute to the patterns. The study uses spatial analysis methods and time series clustering to identify hotspots of COVID-19 cases and deaths in Oklahoma at the ZIP code level from the Oklahoma State Department of Health. The results show that hotspots of COVID-19 *cases* were found around Oklahoma City where higher concentrations of Blacks and Hispanics are located. In contrast, for COVID-19 *deaths*, significant hotspots occurred in rural areas where higher concentrations of Native Americans are located. Overall, the results indicate that chronic socioeconomic status inequality exacerbates poor health outcomes, with rural and higher minority areas more affected by cases and deaths, while higher income areas were similarly afflicted by cases but not deaths. Temporally, Oklahoma was affected in the second and third waves of COVID-19 due to its greater rurality and remoteness compared to other locations in the US.

Is there a SINGLE day you are unavailable to present?

October 22, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: COMER, Jonathan (Oklahoma State University)**Co-author:** AMUNE, Ofuje (Oklahoma State University)**Presenter:** COMER, Jonathan (Oklahoma State University)**Session Classification:** Paper Session**Track Classification:** Health & Medical Geography

Contribution ID: 13

Type: **Paper Presentations**

Local environmental responses to regional climatic changes during the Holocene: a case study from Palmetto State Park, Texas

Thursday, October 23, 2025 10:40 AM (20 minutes)

Reconstructing paleoenvironmental history is important not only for understanding how local environments responded to climate changes in the past, but it also offers insight into how these places might be affected by future climate trends. Proxy records embedded in the banks of the San Marcos River are effective for analyzing changes that occurred throughout the Holocene. This study focuses on XRF weathering indices, XRD mineralogy, magnetic susceptibility, and particle size analysis to reconstruct the paleoenvironmental history of Central Texas recorded in the river's floodplains. According to radiocarbon dating, the oldest sediments collected in this study dated back to ~1290 BP. Proxy records indicate that prior to that date, the floodplain developed during a period of stability, increased precipitation, and few flood events. After 1290 BP, the floodplains reveal a period of instability marked by low overall precipitation and increased flashy floods. These findings support earlier research discoveries and fill gaps in our understanding of Central Texas paleoenvironmental history.

Is there a SINGLE day you are unavailable to present?

October 22, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: BARNEY, Amanda (Texas State University)**Co-authors:** Dr MEITZEN, Kimberly (Texas State University); Dr DIXON, Richard (Texas State University); Dr KRAUSE, Samantha (Texas State University)**Presenter:** BARNEY, Amanda (Texas State University)**Session Classification:** Paper Session**Track Classification:** Geomorphology

Contribution ID: 14

Type: **Paper Presentations**

Quantification of social vulnerability to power outage: PCA-AHP Vs. SoVI and CDC SVI

Thursday, October 23, 2025 11:00 AM (20 minutes)

PSPS (Public safety power shutoff) is an emerging and commonly utilized strategy for mitigation of wildfire threats to safe operations of power systems. PSPS typically aims to cut down the supply of electricity in an area experiencing high wildfire risks to avoid fires sparked by power devices. Vulnerable populations who depend on the availability of electricity have not been studied when PSPS decisions are made. This study aims to bridge this gap and conduct a comprehensive social vulnerability analysis of the planned power outages in California, in which diverse social and socioeconomic status, community and neighborhood, race and gender, and health will be considered. In comparison with traditional inductive or hierarchical social vulnerability index (SVI) analysis, this study develops an integrated principal component analysis and analytical hierarchical process (PCA-AHP) SVI method, considering experts' knowledge into the computation of PCA-AHP SVI, in addition to people with health issues to be more vulnerable during a power cut-off period. The results uncover spatial patterns of vulnerable social groups in historical PSPS areas, which suggests that PCA-AHP is a more informed, practicable, and equitable approach for safety power outage shutoff, which integrates social vulnerability analysis and wildfire risks into safety power system protection.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: MENG, Qingmin (Mississippi State University)**Presenter:** MENG, Qingmin (Mississippi State University)**Session Classification:** Paper Session**Track Classification:** Health & Medical Geography

Contribution ID: 15

Type: **Roundtable Discussion**

Building a Dynamic Mentorship Culture at AGX Part 1

Wednesday, October 22, 2025 2:00 PM (1 hour)

Mentorship has long been at the heart of AGX, fostering the success and well-being of students, faculty, and practitioners alike. In today's evolving academic and professional landscapes, AGX is launching a formal mentorship program to strengthen these vital connections. Through two interactive workshops, participants will co-develop the structure of this program, identifying the types of mentorships needed—from career coaching and publication support to guidance across subdisciplines. Together, we will explore the goals, expectations, and responsibilities of both mentors and mentees, creating guardrails that balance professional growth with community care. Join us in shaping a mentorship culture that reflects the diverse needs of our field and sustains our shared commitment to mutual support.

Workshop one will focus on an adaptive structure to meet professional and academic goals and challenges.

Workshop two aims to identify the needs, limitations and expectations of mentor/mentee relationships.

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Organized Session Details

Author: BARNEY, Amanda (Texas State University)

Co-author: Dr CERNEY, Dawna (YSU)

Presenters: BARNEY, Amanda (Texas State University); Dr CERNEY, Dawna (YSU)

Session Classification: Roundtable Session

Track Classification: Career Development

Contribution ID: 16

Type: **Poster Presentation**

Geospatial Determinants of Boil Water Notices: A Block-Level Analysis

Thursday, October 23, 2025 2:00 PM (20 minutes)

Boil Water Notices (BWNs) are critical public health advisories that disproportionately impact vulnerable populations and underscore persistent challenges of water insecurity in urban environments. These recurring events are often linked to aging infrastructure, climatic variability, and underlying socioeconomic inequities, making them a complex phenomenon that requires integrated spatial analysis. This study develops a geospatial framework to systematically examine the spatial distribution of BWNs in Jackson, Mississippi, by incorporating determinants across physical, climatic, environmental, and social domains. Explanatory variables include building characteristics (age and value), precipitation, temperature, vegetation indices, land surface temperature, and demographic indicators such as race, age, and poverty. Independent datasets were compiled from secondary sources including the American Community Survey and Google Earth Engine, while BWN records were obtained from the Mississippi State Department of Health (MSDH). To enhance spatial resolution, block group level socioeconomic data were disaggregated to the block level using building counts, census records, and GIS datasets. The resulting fine-scale dataset enabled robust spatial statistical and regression analyses to identify drivers of BWNs, assess clustering patterns, and detect localized disparities. The findings reveal the complex interplay between built environment vulnerability, environmental stressors, and social inequities in shaping water insecurity in Jackson. Furthermore, the analysis generates predictive insights that can inform proactive monitoring and targeted interventions. This research contributes to the advancement of geospatial methodologies for urban water security studies and supports the development of an open geospatial platform for real-time monitoring, forecasting, and mitigation of BWNs across diverse urban contexts.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Authors: Dr QINGMIN MENG; MALAKER, Tanmoy (Graduate Student)

Presenter: MALAKER, Tanmoy (Graduate Student)

Session Classification: Poster Session

Track Classification: Social Impacts

Contribution ID: 17

Type: **Poster Presentation**

Priority Sites for Colorectal Cancer Screening at Health Centers in Texas, 2024

Thursday, October 23, 2025 2:00 PM (20 minutes)

The poster shows colorectal cancer (CRC) screening rates at the county level in Texas and in 6 sub-sections (5 major metropolitan areas and Northeast Texas) in 2024. They also display the locations of federally qualified health centers (FQHCs) and highlight CRC screening information for each. Each circle on the maps marks the county location of an FQHC's administrative office. The size of the circle corresponds to the number of patients not up to date with screening. The 10 priority FQHCs are highlighted.

There was a total of 336,421 age-eligible patients (ages 45–74) not up to date with screening across all FQHCs in Texas in 2024. The 10 priority health centers, ranked by the number of age-eligible patients not up to date with screening in 2024, are: Travis County Healthcare District/Central Texas Comm Health Center, Legacy Community Health Services, Barrio Comprehensive Family Health Care Center, El Centro Del Barrio, Heart of Texas Community Health Center, Lone Star Circle of Care, Brazos Valley Community Action Agency, Stephen F Austin Community Health, Regence Health Network, and East Texas Border Health Clinic.

Based on the number of age-eligible patients served by each center in 2024, it is estimated that a total of 147,351 patients were not current with screening in 2024 across the 10 priority FQHCs. The estimated number of such patients per FQHC ranged from 8,450 to 25,068. These 10 FQHCs are located in the following counties: Travis, Harris, Bexar (2), McLennan, Williamson, Brazos, Brazoria, Hale, and Harrison.

Is there a SINGLE day you are unavailable to present?

October 22, 2025

Is there a time of day you are unavailable to present?

Organized Session Details

Author: ZHAN, Benjamin (Texas State University)

Co-authors: LIU, Yanyan (Texas State University); SPENCER, Jennifer (Dell Medical School, University of Texas at Austin); KLUZ, Nicole (Dell Medical School, University of Texas at Austin); MITCHELL, Ginny (Dell Medical School, University of Texas at Austin); SHOKAR, Navkiran (Dell Medical School, University of Texas at Austin); PIGNONE, Michael (3. Duke Cancer Institute, Duke University)

Presenter: ZHAN, Benjamin (Texas State University)

Session Classification: Poster Session

Track Classification: Health & Medical Geography

Contribution ID: 18

Type: **Paper Presentations**

Geographic Analysis of Texas SB 840's Impact on Urban Development Rights and Potential Future Housing Market Development

Friday, October 24, 2025 2:30 PM (20 minutes)

Geographers have long examined how exclusionary zoning practices and NIMBY (Not In My Backyard) opposition constrain urban development, particularly regarding new urbanist principles and multifamily housing projects. These regulatory barriers have historically enabled affluent communities to maintain low-density residential character while displacing housing demand to other areas, contributing to spatial inequality and housing affordability crises. Local zoning review processes have served as key institutional mechanisms through which exclusionary practices operate, allowing organized opposition groups to block or significantly modify proposed developments. However, recent legislative interventions at the state level represent a fundamental shift in this dynamic, potentially reshaping the geographic landscape of urban development permissions. In summer 2025, the Texas legislature passed one of the most sweeping deregulations to land use law in US history. Signed into law by the governor and in effect as of September 1st, 2025, SB 840 allows mixed-use and multi-family developments by right in any area with current zoning that allows for retail, commercial, office, or light-industrial activity. As a result, any new proposal for mixed-use or multi-family development in cities with over 200,000 residents, located within counties with over 300,000 residents, will no longer be subject to the municipal zoning review process. In this paper, we present initial results of an analysis detailing the size of affected zones in each of the 19 eligible municipalities.

Is there a SINGLE day you are unavailable to present?

October 25, 2025

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Morning

Organized Session Details

Author: CROTTY, Sean (Texas Christian University)**Presenter:** CROTTY, Sean (Texas Christian University)**Session Classification:** Paper Session**Track Classification:** Economics & Development

Contribution ID: 19

Type: **Roundtable Discussion**

Scaling Local Voices: GIS, Trust, and Community Engagement Roundtable

Thursday, October 23, 2025 10:00 AM (1h 20m)

As geography enters a transitional era shaped by Big Data, AI, and expanding public access to real-time information, universities are also calling for more pragmatic, community-connected research. This moment presents a prime opportunity to place geography at the center of engaged scholarship by developing approaches that combine data-driven analysis with community knowledge. While Big Data dominates, small-scale projects require timely, appropriately scaled information and citizen insights that cannot be found in large datasets.

This roundtable explores strategies for fostering trust, addressing knowledge gaps, and sustaining inclusive partnerships during the often chaotic early stages of engagement. Drawing on citizen-led revitalization efforts in Swissvale, Pennsylvania, we will discuss pathways for integrating GIS tools, applied student learning, and local voices into long-term collaborations. Participants are invited to share experiences and co-develop best practices for strengthening geography's role at the intersection of data, community, and societal needs through a two-part roundtable session.

Part 1 - Identification of need through university and community partnerships to clarify and elevate the role of geography

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Organized Session Details

Author: CERNEY, Dawna (Youngstown State University)

Co-author: Dr LUCAS, Susan (University of Pittsburgh)

Presenters: CERNEY, Dawna (Youngstown State University); Dr LUCAS, Susan (University of Pittsburgh)

Session Classification: Roundtable Session

Track Classification: Other

Contribution ID: 20

Type: **Roundtable Discussion**

Scaling Local Voices: GIS, Trust, and Community Engagement Roundtable

Thursday, October 23, 2025 1:00 PM (1h 20m)

As geography enters a transitional era shaped by Big Data, AI, and expanding public access to real-time information, universities are also calling for more pragmatic, community-connected research. This moment presents a prime opportunity to place geography at the center of engaged scholarship by developing approaches that combine data-driven analysis with community knowledge. While Big Data dominates, small-scale projects require timely, appropriately scaled information and citizen insights that cannot be found in large datasets.

This roundtable explores strategies for fostering trust, addressing knowledge gaps, and sustaining inclusive partnerships during the often chaotic early stages of engagement. Drawing on citizen-led revitalization efforts in Swissvale, Pennsylvania, we will discuss pathways for integrating GIS tools, applied student learning, and local voices into long-term collaborations. Participants are invited to share experiences and co-develop best practices for strengthening geography's role at the intersection of data, community, and societal needs through a two-part roundtable session.

Part 2 - Developing pathways to applied scholarship, learning and community relationships

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: CERNEY, Dawna (Youngstown State University)

Co-author: Dr LUCAS, Susan (University of Pittsburgh)

Presenters: CERNEY, Dawna (Youngstown State University); Dr LUCAS, Susan (University of Pittsburgh)

Session Classification: Roundtable Session

Track Classification: Other

Contribution ID: 21

Type: **Roundtable Discussion**

Publishing Pathways: A Roundtable with Editors of Papers in Applied Geography

Friday, October 24, 2025 1:30 PM (1h 20m)

This round table offers guidance on publishing your first paper, revisiting older research and data, developing new projects, or simply seeking a space for brainstorming and feedback, consider joining this roundtable discussion. Editors and associate editors from Papers in Applied Geography will share insights and practical advice to support your publication goals. This session offers an open, collaborative venue to explore ideas, ask questions, and take the next steps toward turning your work into a published contribution.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: Dr MENG, Qingmin (Mississippi State University)

Co-author: CERNEY, Dawna (Youngstown State University)

Presenters: CERNEY, Dawna (Youngstown State University); Dr MENG, Qingmin (Mississippi State University)

Session Classification: Roundtable Session

Track Classification: Other

Contribution ID: 22

Type: **Paper Presentations**

MULTI-SCALE REMOTE SENSING AND CLIMATE TIME SERIES FOR MODELING ORANGE YIELD DECLINE IN FLORIDA (2007–2023)

Thursday, October 23, 2025 4:00 PM (20 minutes)

Florida has long been the center of U.S. citrus production, particularly for orange juice, but output has declined by more than 90% since the early 2000s due to the combined pressures of disease, hurricanes, and rising costs. Despite this collapse, Florida still maintains the majority of U.S. orange acreage, making it a critical region for understanding the dynamics of perennial crop decline. Reliable yield forecasting has become increasingly urgent in this context, yet existing approaches rarely integrate remote sensing and climate data across multiple temporal scales. This study develops a remote sensing and climate-based framework to model county-level orange yield variability in Florida from 2007 to 2023. Using MODIS NDVI and PRISM climate variables aggregated at four temporal resolutions, seasonal, monthly, 16-day, and 8-day, we evaluate the predictive capacity of vegetation and climate indicators for explaining interannual yield variability. Results show that coarser seasonal and monthly summaries capture broad yield patterns, while finer 16-day and 8-day composites provide more detailed insights into short-term phenological and climatic fluctuations influencing yield. By systematically comparing time scales, this research demonstrates the trade-offs between temporal resolution, model performance, and interpretability. The findings provide new biophysical evidence of Florida's citrus decline and establish a methodological framework for applying multi-scale time series analysis to perennial crop yield forecasting.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Author: AHMED, Shaibal**Co-author:** MENG, Qingmin (Mississippi State University)**Presenter:** AHMED, Shaibal**Session Classification:** Student Paper Competition**Track Classification:** Climate & Climate Change

Contribution ID: 23

Type: **Paper Presentations**

New Construction Activity Detection and Classification via Satellite Imagery and Machine Learning

Thursday, October 23, 2025 8:50 AM (20 minutes)

The Census Bureau's Survey of Construction provides national and regional statistics on starts and completions of new single-family and multifamily housing units and statistics on sales of new single-family houses in the United States. To reduce the need for costly fieldwork, Reveal developed an end-to-end system using high-resolution satellite imagery and machine learning to detect new residential construction, track progress month-to-month, and classify building type at scale. Monthly 50 cm scenes are captured within five-day window around month-end with quality screens. Two segmentation models drive the workflow: an attention U-Net for construction stage (excavation, foundation, framing, roof) and a DeepLabV3+ model for building type. From the model masks we extract vector "blobs," remove duplicates across overlapping captures, and apply footprint, road, water/park, and cloud exclusions. A geohash-based matcher links blobs across months to build property timelines from start to completion; where coverage is missing (e.g., clouds), we use documented imputation and a capture-window adjustment to report calendar-month counts. On held-out data, construction-stage segmentation shows strong agreement (mIoU 0.865; accuracy 0.948); building-type classification achieves 0.873 accuracy, with known class-imbalance limits for multifamily and attached units. The pipeline produces place-level and higher-level aggregates suitable for Housing Starts indicators, reducing field workload and tightening reporting latency. We outline current limitations (e.g., large parcel splitting, closely spaced builds) and practical next steps, including targeted labeling, model refinements, and permit data integration.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Authors: WALKER, Doren (Reveal Global Consulting); NAYAM, Dwarakh (Reveal Global Consulting); PENG, LEI

Presenters: WALKER, Doren (Reveal Global Consulting); NAYAM, Dwarakh (Reveal Global Consulting); PENG, LEI

Session Classification: Paper Session

Track Classification: Spatial Analysis & GIS

Contribution ID: 24

Type: **Undergraduate Student Poster Competition**

Russian Effects of Energy Projects in the Republic of Congo

Thursday, October 23, 2025 2:00 PM (20 minutes)

This project examines the influence of Russian energy initiatives in the Republic of Congo, providing a historical context of Russia-Africa relations and detailing the specific projects and companies involved. This discussion is particularly relevant as Russia seeks partnerships post-Russian-Ukraine war.

For our research, we predicted that Russia was exploiting the Republic of Congo's resources with minimal benefits for the host nation. To support this prediction, we focused on the question: "What are the economic and energy security impacts of Russian-backed energy projects in Africa?" This led us to develop our main talking points: the history of the Russia-Republic of Congo partnership, the companies involved (specifically Lukoil and Rosatom), specific energy projects like oil pipelines and hydropower plants, and the impacts of this relationship. We analyze key locations of current and planned energy projects, such as oil pipelines and hydropower constructions in the -Congo, Pointe Noire, Loutete, Brazzaville, and Ouesso- and assess their implications for the region's economy and energy security. The method used to showcase this research is Esri's ArcGIS StoryMaps software. Additionally, we utilized HEAVY.AI and Maxar software to create visualizations and referenced multiple research outlets to back our findings.

Our research revealed potential advantages for the Republic of Congo, including GDP growth, enhanced energy self-sufficiency, and a stronger military presence. However, we also identified significant concerns such as environmental degradation, socio-economic displacement of local communities, and potential security concerns for the U.S. if Russia continues its partnerships with African countries.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Afternoon

Author: WILKS, Lyana (Harris-Stowe State University)

Co-author: Dr WILLS, Freddie (Harris-Stowe State University)

Presenter: WILKS, Lyana (Harris-Stowe State University)

Session Classification: Student Poster Competition

Track Classification: Energy

Contribution ID: 25

Type: **Undergraduate Student Poster Competition**

A New Alliance? Geospatial Analysis of Russian Influence in Egypt

Thursday, October 23, 2025 1:40 PM (20 minutes)

In recent years, Egypt's relationship with Russia has strengthened significantly, particularly since the presidency of Abdel Fattah el-Sisi in 2014. This alliance, marked by military cooperation and strategic investments, signals a shift in Egypt's foreign policy as it seeks to diversify international partnerships beyond traditional allies like the United States. Russia's involvement in key sectors, especially energy and military development, has played a central role in this transformation, focusing on high-profile projects such as the El Dabaa Nuclear Power Plant and the Zohr Gas Field.

We aim to use ArcGIS to explore the geospatial relationships between Russian investments and Egypt's energy infrastructure, specifically in the Mediterranean region. We focused on key locations such as the El Dabaa Nuclear Power Plant, the Zohr Gas Field, and critical Mediterranean ports. These locations are integral to Russia's broader geopolitical strategy, as they provide access to vital energy resources and trade routes, while also helping Egypt secure a more stable energy future.

Geospatial data from satellite imagery and trade network analysis reveals that Russian investments have significantly increased in these areas, contributing to both Egypt's energy independence and Russia's influence in the region. Analysis of the El Dabaa project, which is primarily financed by a Russian loan, indicates that this nuclear power plant will play a pivotal role in diversifying Egypt's energy mix, reducing its reliance on fossil fuels, and improving its position as an energy provider in the region.

Furthermore, data analysis from 2015-2020 shows that Russian collaboration in Egypt's energy sector, including the Zohr Gas Field and other oil and gas reserves, has not only strengthened economic ties but also enhanced Russia's geopolitical influence, providing access to critical resources and strategic trade routes like the Suez Canal. The increased presence of Russian firms in these sectors suggests a long-term shift in Egypt's international alliances and energy policies.

Our results reveal the growing economic and geopolitical interdependence between Egypt and Russia, with implications for energy security, regional power dynamics, and international trade routes. This type of GIS analysis could be applied to other regions experiencing similar shifts in international relations, providing valuable insights for policymakers and researchers monitoring the geopolitical landscape.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: LONG, Shamari (Harris-Stowe State University)

Co-author: Dr WILLS, Freddie (Harris-Stowe State University)

Presenter: LONG, Shamari (Harris-Stowe State University)

Session Classification: Student Poster Competition

Track Classification: Energy

Contribution ID: 26

Type: **Undergraduate Student Poster Competition**

Geospatial Analysis of water retention and soil type to develop an Irrigation System Adaptable to Its Environment

Thursday, October 23, 2025 2:00 PM (20 minutes)

Water scarcity has long been a concern due to increased demand for food for increasing populations. Urban agriculture is made up of community rooftops, backyard gardens and small commercial farms which serve a vital resource of food in urban areas especially for those communities living in food deserts. ArcGIS was used to correlate soil type and water retention capability using SSURGO data. Vegetative health was hypothesized as an indicator of soil moisture holding capacity and maps showing soil drainage, available water storage and soil hydrologic group were analyzed across the United States and variables such as soil type were found to be predictive of the available water storage of the soil. This exploratory analysis was used as a basis for obtaining ground truth data in a greenhouse setting. Based on the SSURGO explorative data, sunflowers were grown in two groups of pots. The pots were split into two separate groups, one with an automated watering system with computer vision, the other, watered manually. The pots were monitored for the water they received. The experiment was conducted over 8 weeks and results show that the automated watering system triggered watering more frequently compared to manual watering in response to wilting. While comparing data mid-way through, it was found that the threshold for the automated system was too high and that it could be lowered while maintaining the current health of the plant. Different compositions of soil such as those indicated by the SSURGO data are the next step in this research.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 23, 2025

Is there a time of day you are unavailable to present?

Author: MITCHELL, Aubree (Harris-Stowe State University)**Co-author:** Dr MEYER, Rekha (Harris-Stowe State University)**Presenter:** MITCHELL, Aubree (Harris-Stowe State University)**Session Classification:** Student Poster Competition**Track Classification:** Environmental Analysis & Policy

Contribution ID: 27

Type: **Paper Presentations**

Represent Tropical Cyclone Wind Impact Areas from Wind Radii at Discrete Center Points in the National Hurricane Center HURDAT2

Thursday, October 23, 2025 8:30 AM (20 minutes)

National Hurricane Center (NHC) HURDAT2 database archives the center point locations and other information of tropical cyclones (TC) at discrete time intervals since 1861. From 2004, it also includes wind radii for tropical storms and hurricanes at four quadrants. This study developed a method to represent the full TC wind impact areas by computing the contiguous potential wind lateral reach between consecutive center points using a geospatial bounding polygon method. It assumes the farthest lateral wind reach at both sides of the TC track is bounded by the wind radii at the two consecutive times and the change of lateral reach in between is gradual and linear. Geodetic methods are used in the geospatial computation process as necessitated by the context and the spatial reference system. The challenges of the method implementation include numerous computational cases due to anisotropic wind radii differences between quadrants, their changes between two consecutive times, and the complexity of the geodetic methods for distance and location calculation. The solution and implementation are demonstrated with actual HURDAT2 data. The resulting wind impact areas provide a good foundation to analyze the impact of a TC in addition to using the center points or connected line path.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 22, 2025

Is there a time of day you are unavailable to present?

Author: Dr XIE, Zhixiao (Florida Atlantic University)**Co-author:** Dr ZHU, Yijie (Florida Atlantic University)**Presenter:** Dr ZHU, Yijie (Florida Atlantic University)**Session Classification:** Paper Session**Track Classification:** Hazards & Disasters

Contribution ID: 28

Type: **Paper Presentations**

Policy Change in Ohio: How Failure-to-Pay Driver's License Suspensions Disappeared...in Seven Short Years

Friday, October 24, 2025 10:10 AM (20 minutes)

This paper chronicles the seven-year journey that led to the end of Ohio's practice of suspending driver's licenses for failure to pay fines and fees. It began with a simple question from Legal Aid attorneys in Cleveland: Why do so many bankruptcy clients have suspended driver's licenses? To investigate, we submitted two data requests to the Ohio Bureau of Motor Vehicles (BMV). Our analysis confirmed a troubling pattern—most suspensions were not due to unsafe driving, but rather to unpaid debt.

We found that debt-based suspensions were disproportionately concentrated in marginalized communities: they were 40 times more likely in low-income neighborhoods and 130 times more likely in non-white neighborhoods. The total amount of fines and fees preventing Ohioans from regaining their licenses exceeded 900million.

Armed with these findings, we built a coalition of organizations committed to reform. Our advocacy culminated in the passage of Ohio House Bill 29, signed into law in early 2025. The legislation eliminated over 400,000 failure-to-pay suspensions and forgave more than \$8 million in associated fees.

This paper outlines the challenges, strategies, and lessons learned throughout this policy reform effort, offering insights for applied geographers seeking to engage in similar work.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Author: MIKELBANK, Brian (Cleveland State University)

Presenter: MIKELBANK, Brian (Cleveland State University)

Session Classification: Paper Session

Track Classification: Justice

Contribution ID: 29

Type: Undergraduate Student Paper Competition

Community GIS and the Missouri Autism Projects

Thursday, October 23, 2025 5:40 PM (20 minutes)

Community geography is an area of research focusing on bringing together researchers, community members, and stakeholders to support societal action towards addressing community issues. (Guhlincozzi, 2022). The Missouri Autism Projects is an initiative of the Missouri Department of Mental Health that aims to provide services such as behavior management training, language therapy, caregiver training, and advocacy training, to autistic individuals and their families (Missouri Department of Mental Health, n.d.). As such, the initiative serves as an example of a statewide effort to increase regionalized access to resources that can enhance an autistic individual's daily life and provide additional support to their caregivers. To request any of these services, it is necessary to contact one of the five regional offices based on county of residence. To this end, the Missouri Department of Mental Health directs viewers to a series of regional maps to help them identify the appropriate office to contact, reflecting a reliance on accurate, accessible spatial information to connect individuals to the resources they need. From a community geography standpoint, all Missouri residents would benefit from the collaboration between professionals in state departments, GIS professionals, and affected community members. Such an integration would ensure accuracy and assistance in accessing services while increasing awareness of issues impacting residents throughout the state. This presentation shares two simple mapping examples taken up by the Critical and Community Geographies Lab at the University of Missouri and how they will support more integrated efforts to improve access to care with accurate geographic mapping efforts.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: RILEY, Rachel (University of Missouri)

Co-author: Dr GUHLINCOZZI, Aida (University of Missouri)

Presenter: RILEY, Rachel (University of Missouri)

Session Classification: Student Paper Competition

Track Classification: Health & Medical Geography

Contribution ID: 30

Type: **Undergraduate Student Poster Competition**

Flood Risk and Socioeconomic Inequality in Pittsburgh and Allegheny County

Thursday, October 23, 2025 1:00 PM (20 minutes)

Pittsburgh's topography, composed of steep hills and valleys with urbanized floodplains, leaves residents uniquely vulnerable to extreme weather events and geological hazards such as flash floods and landslides. This research examines the geography of flood risk and socioeconomic inequality in Pittsburgh and Allegheny County, investigating whether disadvantaged communities are more susceptible to severe flooding due to intensifying climate stressors. Historical flood data is integrated with the FEMA National Flood Hazard Layer (NFHL) to determine areas of high flood risk; this data is subsequently compared to flood pattern visualizations generated with ArcGIS and remote sensing methods. The relationship between social inequality and flood risk is extrapolated using a multivariate index containing a number of relevant indicators, including demographics and income, infrastructure resilience, floodplain proximity, and impervious surface coverage. As global climate change further influences the severity and predictability of flooding events, this framework provides an opportunity to reassess the annual exceedance probability (AEP) and recurrence intervals that guide contemporary risk assessment methodologies. Findings suggest that although climate change elevates flood risk across large portions of the city, the spatial distribution of social inequality places the greatest burden on Pittsburgh's most disadvantaged neighborhoods.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Afternoon

Author: PAMPENA, Fiorente (University of Pittsburgh)**Presenter:** PAMPENA, Fiorente (University of Pittsburgh)**Session Classification:** Student Poster Competition**Track Classification:** Climate & Climate Change

Contribution ID: 31

Type: **Undergraduate Student Poster Competition**

The Geography of Risk: Crash Data Disparities in Philadelphia

Thursday, October 23, 2025 1:20 PM (20 minutes)

Vehicular crashes remain a serious public safety issue in Philadelphia County, with neighborhoods disproportionately experiencing high rates of collisions involving injury, sometimes fatal. The focus of this research will be on examining Philadelphia's High Injury Network, which are specific roads with severe crashes that are heavily concentrated. The construction of the roads that make up this network, such as the Roosevelt Boulevard in Philadelphia, often disproportionately impact communities of color.

Building on past research, analyzing the socioeconomic and historical census data to explore correlations between crash density and factors such as property values and household income, highlighting how systematic inequality may affect transportation safety. Additionally, accessing the types of vehicles involved in crashes to better understand how different modes of transportation contribute to the risk. Other factors important to look at could be biking infrastructure as well as public bus routes to see if proximity to public transit plays a role. Environmental features like tree canopy will be looked at with tools such as remote sensing and satellite imagery to see if there is an influence driving behavior. This study incorporates the Delaware Valley Regional Planning Commission's (DVRPC) Indicators of Potential Disadvantage (IPD) to evaluate equity impacts and Title VI compliance in crash distribution.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Afternoon

Author: BOTTIGLIERI, Sophia (University of Pittsburgh)**Presenter:** BOTTIGLIERI, Sophia (University of Pittsburgh)**Session Classification:** Student Poster Competition**Track Classification:** Geographic Information Science

Contribution ID: 32

Type: **Graduate Student Paper Competition**

Quantifying Crop Water Productivity Gaps to Overcome Future Climate-Driven Losses in Indian Winter Wheat Systems

Thursday, October 23, 2025 4:20 PM (20 minutes)

Climate change poses a significant threat to the food security of India, a global hotspot of groundwater depletion crisis. This study investigates the impact of rising vapor pressure deficit (VPD) on winter wheat crop water productivity (CWP) in India using novel high-resolution remote sensing data and fixed-effect panel regression models. We find that increased VPD significantly reduces winter wheat CWP. We conducted CWP gap analysis to assess the potential for India's winter wheat systems to adapt to future climate-driven CWP declines under various climate scenarios (SSP126, SSP245, SSP370, SSP585) for mid-century (2041-2060) and end-century (2081-2100) utilizing outputs from ten CMIP6 models. We identified regions where the historical CWP gap is greater than the projected decline, indicating a strong potential to overcome future VPD-induced stress. While some areas show considerable resilience under mild scenarios, extreme scenarios reveal significant challenges where projected CWP losses may exceed past adaptive capacities. These results underscore the urgent need for targeted, climate-adaptive water management strategies to enhance agricultural resilience in India.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 24, 2025

Is there a time of day you are unavailable to present?

Afternoon

Author: SHAYEGHI, Afshin (University of Oklahoma)**Co-authors:** Mr PAN, Li (University of Oklahoma); Prof. JAIN, Meha (University of Michigan); Dr BHATTARAI, Nishan (University of Oklahoma); Dr XIAO, Xiangming (University of Oklahoma); CHEN, Xiaodong (University of Oklahoma)**Presenter:** SHAYEGHI, Afshin (University of Oklahoma)**Session Classification:** Student Paper Competition**Track Classification:** Climate & Climate Change

Contribution ID: 33

Type: **Undergraduate Student Poster Competition**

Comparative Analysis of Opportunities for Small and Medium Private Sewage Treatment Plants in Wayne and Geauga Counties

Thursday, October 23, 2025 2:00 PM (20 minutes)

Sanitary sewer systems provide a cost-effective and environmentally sound alternative to decentralized wastewater management methods such as septic tanks and leach fields. Centralized ownership and operation distribute maintenance costs across users, creating both economic and ecological benefits. However, the development and expansion of sewer infrastructure face constraints related to physical conditions as well as cultural and social considerations. This study compares Wayne and Geauga Counties in Ohio to explore the potential for small- and medium-scale private sewage treatment plants. While Wayne County currently maintains 12 Facilities Planning Areas (FPAs) with established sewer systems, Geauga County has only 7 FPAs and limited small-scale, single-business wastewater treatment facilities. Additional cultural dynamics, such as resistance to rural development and the presence of a large Amish population, further shape Geauga's wastewater infrastructure landscape. By examining these differences, this analysis highlights opportunities and challenges for expanding private sewage treatment solutions in regions where centralized sewer systems face physical and social limitations.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: HARNAR, Henry (Youngstown State University)

Presenter: HARNAR, Henry (Youngstown State University)

Session Classification: Student Poster Competition

Track Classification: Urban & Rural Issues

Contribution ID: 34

Type: **Paper Presentations**

Mapping Influence: GIS Reconstruction of Nicholas Jarrot's Estate in Early 19th-Century Cahokia

Thursday, October 23, 2025 9:30 AM (20 minutes)

This study explores the application of Geographic Information Systems (GIS) in reconstructing historical landscapes, focusing on the estate and influence of Nicholas Jarrot, a prominent French American entrepreneur in early 19th-century Cahokia, Illinois. By employing geospatial techniques, the research reconstructs the spatial dimensions of Jarrot's extensive landholdings and examines their significance within the broader sociopolitical context of the Mississippi River region during the early American Republic. GIS analysis facilitates the visualization of land use patterns, property boundaries, and the strategic positioning of Jarrot's estate, highlighting how his activities shaped Cahokia's development as a vital economic and cultural hub. The study also investigates the intersections of geography, economy, and power, revealing how spatial relationships influenced the region's historical trajectory. Through this interdisciplinary approach, the research underscores the value of GIS as a tool for historical inquiry, offering new insights into the spatial dynamics of historical figures and their environments. This work contributes to the growing body of scholarship that integrates geospatial technologies into historical studies, enhancing our understanding of the complex interplay between geography and history in early America.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: BROWN AMILIAN, Stacey (SIUE)

Presenter: BROWN AMILIAN, Stacey (SIUE)

Session Classification: Paper Session

Track Classification: Spatial Analysis & GIS

Contribution ID: 35

Type: **Graduate Student Paper Competition**

Evaluation of the Food Environment(s) Surrounding Middle Schools in Madison County, Illinois

Thursday, October 23, 2025 5:00 PM (20 minutes)

Food environments can impact a community in a variety of ways, including increased obesity, higher risks of diabetes, and difficulty with cognitive functions for residents. The aim of this study is to evaluate the food environment(s) surrounding middle schools in Madison County, Illinois. This research allows us to identify how the food environment itself can impact students. Food environment classifications in this study included food desert, food swamp, food oasis, acute desert, and mixed neighborhood, all of which were present in the results throughout schools studied in Madison County, Illinois. The food environments were classified for each middle school using a Modified Food Retail Environmental Index and an 800-meter buffer. Each food environment classification was found within the study area. Demographic data was brought in for comparison purposes between the middle schools in Madison County, Illinois and their food environments. The demographic data included urbanicity, race/ethnicity, enrollment rates, and overall student enrollment. Results showed significant association between the schools and their food environments. The findings from this study can be used to better understand how a food environment affects students, show if there are locational consistencies between the presence of different food environments, and aid toward the creation of healthier food programs in schools.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 24, 2025

Is there a time of day you are unavailable to present?

Author: MORRISEY, Mollie**Presenter:** MORRISEY, Mollie**Session Classification:** Student Paper Competition**Track Classification:** Food Security

Contribution ID: 36

Type: Undergraduate Student Paper Competition

Underutilized Locations for Passenger Train Analysis

Thursday, October 23, 2025 5:20 PM (20 minutes)

This research examines contemporary demand for passenger trains. Amtrak is currently the leading provider of regional passenger train service in the United States. The study area for this research is New York state, New Jersey and Pennsylvania. The greater New York City area including these three states are a major hub for these trains. But in central New York state and Pennsylvania there are many old industrial areas that are no longer being serviced; and many of these areas could greatly benefit from a passenger train being re-established.

This research addresses these questions: Where in the study area could Amtrak passenger service be re-established?

By utilizing ArcGIS Pro, datasets of predicted population data and pre-existing railways can be used. Overlapping areas with this data can be identified as viable options. Towns/cities within a 30min drive time will not be considered, narrowing the focus to areas with no current available stations. By combining these datasets, towns/cities with railways, increasing population and no near stations can be identified to focus on areas where an Amtrak station would be beneficial.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Author: SZCZAWINSKI, Mia

Presenter: SZCZAWINSKI, Mia

Session Classification: Student Paper Competition

Track Classification: Spatial Analysis & GIS

Contribution ID: 37

Type: **Graduate Student Paper Competition**

Mapping Sargassum in the U.S. Virgin Islands with High-Resolution Satellite Imagery and Machine Learning

Thursday, October 23, 2025 4:40 PM (20 minutes)

Early Warning Systems are invaluable resources for communities attempting to mitigate the harmful effects of stranded and decomposing sargassum seaweed. Yet, forecasting systems are subject to the limitations of available satellite remote sensing data. Technology and resource availability often require a choice between spatial and spectral resolution, with implications of the tradeoff that vary across disciplines and methodologies. Higher spectral resolution can support calculations for popular algae indices that utilize Red-Edge and Short-Wave Infrared (SWIR) bands. On the other hand, since spatial resolution is proportionate to the total pixel count per area, increasing spatial resolution simultaneously enhances detection of small-sized features and diminishes uncertainty introduced by mixed pixels. This study utilizes satellite images from Planet's ultra-high resolution (0.5 m) 4-band (Red/Green/Blue: RGB; Near-Infrared: NIR) SkySat constellation. We use feature extraction techniques to create six raster datasets: True Color (RGB) and False Color (Color Infrared; CIR) raster band composites, calculated Normalized Difference Vegetation Index (NDVI), Dimension Reduction Analysis (DR), and Principal Component Analysis (PCA). Machine Learning (ML) model training and classification followed with Random Forest classification (>92% accuracy) for each of the derived datasets. Our results reveal that sargassum can be distinguished based on (a) raw spectral values (spectral profiles and histogram reflectance distributions) and (b) images and rasters directly derived from the raw spectral values (color composites, NDVI, and PCA). Based on these results, we conclude that ultra-high spatial resolution 4-band imagery is sufficient for detection and classification of sargassum, both on land and in the water.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: BODEN, Pause (Saint Louis University)

Co-author: Dr AYDIN, Orhun (St. Louis University)

Presenter: BODEN, Pause (Saint Louis University)

Session Classification: Student Paper Competition

Track Classification: Climate & Climate Change

Contribution ID: 38

Type: **Paper Presentations**

The best of times, the worst of times: the department store reshuffle in Canada

Friday, October 24, 2025 2:10 PM (20 minutes)

For many years department stores anchored the shopping mall business model. Department stores were seen as pivotal to the success of enclosed shopping centres across North America. The retail scale and consumer attraction associated with these major retailers formed the basis for long-term leasing models. The mix of department stores was a major determinant of the rents paid by the non-anchor tenants. This paper provides insights into the rise, fall and rebirth of department stores in Canada. Based on a set of vignette case studies the paper chronicles department stores at varying points in the life stage of retail operation. The analysis addresses the real estate impact of the department store reshuffle and explores the future for department stores in Canada. The paper highlights the value-add of an applied geographic perspective to understanding the trajectory of a business through growth, decline and reinvention.

Organized Session Details

Business & Retail Geography

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Morning

Author: HERNANDEZ, Tony (Toronto Metropolitan University)**Presenter:** HERNANDEZ, Tony (Toronto Metropolitan University)**Session Classification:** Paper Session**Track Classification:** Business & Retail Geography

Contribution ID: 39

Type: **Panel Discussion**

Publishing Pathways: –Insights from the Editors of Papers in Applied Geography

Friday, October 24, 2025 9:10 AM (1h 40m)

This first session brings together the Editor and Associate Editors of Papers in Applied Geography for a panel discussion on the journal's mission, scope, and evolving role in advancing applied geographic research. The panel will highlight the journal's core subject areas and introduce its innovative publication formats designed to provide rapid, peer-reviewed feedback to authors.

A central feature of the discussion will be the journal's dynamic feedback model, which emphasizes iterative editorial dialogue to support authors in refining their work. Panelists will share insights on how this process fosters collaboration, strengthens manuscript quality, and expands opportunities for applied geographers to share impactful, practice-oriented research.

This session sets the stage for Part II, which is a round table session that will focus on supporting participants in collaborative environment to explore ideas, ask questions, and take the next steps toward turning your work into a published contribution.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: QINGMIN MENG

Co-author: CERNEY, Dawna (Youngstown State University)

Presenter: CERNEY, Dawna (Youngstown State University)

Session Classification: Panel Session

Track Classification: Other

Contribution ID: 40

Type: **Paper Presentations**

Retail Portfolio Disposition Insights Offered by a Bankrupt Regional Retailer's Liquidation

Friday, October 24, 2025 1:30 PM (20 minutes)

Prior to its bankruptcy filing in April 2024, 99 Cents Only Stores LLC operated 374 “dollar stores” in four southwestern states. This session examines the status of the store portfolio roughly 1.5 years after the commencement of the liquidation of the chain’s real estate assets, which included both owned and leased stores. Insights from the store data pertain to store size, location type (e.g., neighborhood-focused versus community-focused), location within a center (e.g., end-cap or freestanding versus in-line), prevailing market rents and vacancy, prevailing demographics, several of which can be helpful indicators when seeking to forecast whether a store will be re-leased promptly or remain vacant for an extended period. Methodological challenges related to accurately quantifying such portfolios are also discussed for the benefit of those seeking to apply similar analyses to other retail portfolios.

Organized Session Details

Can be a freestanding session to fill the entire time with a hybrid presentation/workshop format, or can be shortened to fit other papers into the session, or fit into another session needing an additional paper.

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: Mr DWYER, Tom (Harbinger Real Property Advisors, Inc.)

Presenter: Mr DWYER, Tom (Harbinger Real Property Advisors, Inc.)

Session Classification: Paper Session

Track Classification: Business & Retail Geography

Contribution ID: 41

Type: **Undergraduate Student Poster Competition**

Mapping Memory: Geospatial Preservation at Homestead Cemetery, Pa.

Thursday, October 23, 2025 2:00 PM (20 minutes)

Homestead Cemetery, a significant landmark in the Borough of Munhall, Pennsylvania, has been an integral part of the Pittsburgh region's history since 1886. Its long and rich history, spanning from the Civil War to the Homestead Steel Strike and the Civil Rights Movement, is the final resting place for thousands of individuals. That said, the passage of time, erosion, and neglect have led to many graves becoming unmarked, unreadable, or completely lost, posing difficulties for ongoing record-keeping and preservation efforts.

Starting in Spring 2024, the Homestead Cemetery Board partnered with student researchers at the University of Pittsburgh to address this issue using GIS technology. The project asked a central question: How can spatial analysis and geolocation tools help identify and document missing graves? To answer this, the team marked each visible grave as a reference point, using estimated three-foot intervals to indicate probable grave locations along each row. A Trimble DA2 receiver was used to collect precise GPS data, which was then imported into ArcGIS Field Maps for attribute collection and visualization.

Within ArcGIS Pro, student researchers began to analyze spatial patterns, estimated missing grave positions, and created a comprehensive, digital record of the cemetery's layout. This geospatial approach not only helps locate unmarked or lost graves but also offers a promising methodology that can be replicated in other historic cemeteries facing similar preservation challenges.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

October 25, 2025

Is there a time of day you are unavailable to present?

Author: COLEMAN, Emma (University of Pittsburgh)

Presenter: COLEMAN, Emma (University of Pittsburgh)

Session Classification: Student Poster Competition

Track Classification: Spatial Analysis & GIS

Contribution ID: 42

Type: **Poster Presentation**

Visually Accessible Cartography: A Case Study in St. Louis, Missouri

Thursday, October 23, 2025 1:40 PM (20 minutes)

Maps are a powerful tool for communicating geospatial information. However, the inherent graphic nature of maps can be difficult for those with visual disabilities to read and understand. To ensure visual accessibility in analog and web maps, standards such as the Web Content Accessibility Guidelines (WCAG) are used throughout the cartographic process. The City of St. Louis Board of Public Service (BPS), Department of the President, has begun implementing several WCAG guidelines related to color, contrast, and symbology into the department's web maps. BPS created the city's first customized, visually accessible basemap and continues to create and implement mapping accommodating standards.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Author: HOOG, M.SC., Alyssa (City of St. Louis, Office of the President of the Board of Public Service)

Presenter: HOOG, M.SC., Alyssa (City of St. Louis, Office of the President of the Board of Public Service)

Session Classification: Poster Session

Track Classification: Other

Contribution ID: 43

Type: **Panel Discussion**

"Mapping" a Route Forward: A Discussion with Geospatial Professionals

Thursday, October 23, 2025 2:30 PM (1h 20m)

In this panel, a diverse group of geospatial professionals will come together to discuss the many paths available after graduating from high school or college. Whether attendees are considering further education, entering the workforce, or exploring specialized fields within geography and spatial analysis, this session offers an opportunity for attendees to receive grounded advice from those who have navigated similar crossroads.

Panelists will share insights on building a career in both public and private sectors, leveraging technical skills, and finding mentorship and community within the geospatial field. The panel is not a one-way conversation, but an interactive session that encourages attendees to ask questions, share their thoughts, and learn from one another. From internships and certifications to graduate school and industry applications, participants will leave with a clearer sense of direction and a realistic understanding of how to translate their education into meaningful professional work.

Organized Session Details

Panel Organizer: Elizabeth Skender

Panel Participants: Mike Ratcliffe (michael.ratcliffe@revealgc.com), Dr. Susan Lucas (sdl44@pitt.edu), Amanda Barney (ab1448@txstate.edu)

Is there a SINGLE day you are unavailable to present?

October 22, 2025

Is there a time of day you are unavailable to present?

Morning

Author: SKENDER, Elizabeth (Western Land Services)

Co-authors: BARNEY, Amanda (Texas State University); CERNEY, Dawna (Youngstown State University); RATCLIFFE, Michael (Reveal Global Consulting); Mr BERRY, Stewart (Caliper Corporation); LUCAS, Susan (University of Pittsburgh)

Presenters: BARNEY, Amanda (Texas State University); SKENDER, Elizabeth (Western Land Services); RATCLIFFE, Michael (Reveal Global Consulting); LUCAS, Susan (University of Pittsburgh)

Session Classification: Panel Session

Track Classification: Career Development

Contribution ID: 44

Type: **Paper Presentations**

How Students Can Apply “The Ten Steps of Walkability” to Evaluate Any Downtown

Friday, October 24, 2025 10:30 AM (20 minutes)

In his 2012 book, *Walkable City: How Downtown Can Save America, One Step at a Time* (2012), Jeff Speck offers ten planning steps for creating American downtowns that are useful, safe, comfortable, and interesting. While the ten steps emphasize walkability, they include improvements to land use, public transit, bicycle use, and traffic flow. In this presentation, I will demonstrate how I used Speck’s “Ten Steps” to design a downtown field assignment for geography students. After reading and discussing the ten steps, students participated in a guided walk of downtown Edwardsville, Illinois, to collect notes and photos of their observations. They were instructed to answer two questions as they wrote up their results: (1) What does the city do well to promote walkability? and (2) How could walkability in downtown be improved? The assignment concluded with an in-class discussion of their results. The outcome of this discussion was students’ desire to learn more about the planning decisions behind what they saw in the field. Applying Speck’s “Ten Steps” gave students the structure to make sense of their field observations and draw meaningful conclusions.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Presenter: HUME, Susan (Southern Illinois University Edwardsville)

Session Classification: Paper Session

Contribution ID: 45

Type: **Conference Event**

Map This: Places That Need Mapping and How It's Being Accomplished

Thursday, October 23, 2025 11:30 AM (1h 20m)

Mapping has always been a means of making the invisible visible—of translating lived, remote, or rapidly changing environments into forms that can be studied, managed, protected, and understood. This session, Map This, brings together researchers and practitioners working in diverse and often under-mapped contexts to explore how contemporary mapping practices are revealing overlooked geographies and reshaping our understanding of place. Panelists will discuss projects mapping the shifting dynamics of Arctic sea ice, the reclamation and representation of Native American lands, and efforts to document rural landscapes in India where official data remain incomplete or outdated. Through these examples, the panel will highlight the necessity of mapping these areas, the social, cultural, and technological challenges involved, and the opportunities that arise. It will also examine the collaborative tools—ranging from community-led cartography to satellite-based remote sensing—used to address these challenges. Discussion will also consider how these approaches might inform mapping in other vulnerable or data-poor regions, inviting participants to reflect on what it means to “map” a world in continual transformation.

Organized Session Details

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Presenters: COUCH, Gareth (President and CEO Tribal GIS); Dr MOORMAN, Lynn (Mount Royal University); Dr RASHMI (Government Ripudaman College, Nabha)

Session Classification: AGX 25 Global Stage

Contribution ID: 47

Type: **Roundtable Discussion**

Building a Dynamic Mentorship Culture at AGX Part 2

Wednesday, October 22, 2025 3:00 PM (1 hour)

Mentorship has long been at the heart of AGX, fostering the success and well-being of students, faculty, and practitioners alike. In today's evolving academic and professional landscapes, AGX is launching a formal mentorship program to strengthen these vital connections. Through two interactive workshops, participants will co-develop the structure of this program, identifying the types of mentorships needed—from career coaching and publication support to guidance across subdisciplines. Together, we will explore the goals, expectations, and responsibilities of both mentors and mentees, creating guardrails that balance professional growth with community care. Join us in shaping a mentorship culture that reflects the diverse needs of our field and sustains our shared commitment to mutual support.

Workshop one will focus on an adaptive structure to meet professional and academic goals and challenges.

Workshop two aims to identify the needs, limitations and expectations of mentor/mentee relationships.

Is there a SINGLE day you are unavailable to present?

Is there a time of day you are unavailable to present?

Organized Session Details

Author: BARNEY, Amanda (Texas State University)

Co-author: Dr CERNEY, Dawna (YSU)

Presenters: BARNEY, Amanda (Texas State University); Dr CERNEY, Dawna (YSU)

Session Classification: Roundtable Session