

**Middle States Division American
Association of Geographers**

Annual Meeting

October 27-28, 2023

Temple University, PA



The Meeting at a Glance

The meeting will take place in the **Howard Gittis Student Center South** at Temple University (located on Cecil B. Moore Ave and 13th St.). The entrance is on 13th Street, at marker 29B on [this campus map](#). The student center is accessible from the Cecil B. Moore subway stop, Temple University Regional Rail stop, as well as multiple bus lines. Please check the map for the location of (paid) parking garages.

The meeting will take place on the 2nd floor of the Student Center in the following rooms:

- - 200C: Registration, keynote speakers, poster sessions, coffee breaks, and meals
- - 217C: Panels, roundtables, and paper sessions
- - 217D: Paper sessions
- - 200: Paper sessions

Friday, October 27

11:45am: Registration begins **(200C)**

12:15-12:25pm: Welcome and opening remarks from Dr. Hamil Pearsall, 2023 Middle States AAG President, Temple University **(200C)**

12:30-1:50pm: Paper Session 1: Outreach and Critical Pedagogy **(217C)**
Paper Session 2: Modeling and Mapping Diverse Environments **(217D)**
Paper Session 3: Urban and regional labor dynamics **(220)**

2pm-3pm: Coffee Break + Poster Session 1 **(200C)**

2.30pm-3pm Temple University Graduate Programs Open House **(217C)**

3.10-4.30pm Paper Session 4: Novel perspectives on infrastructure systems **(217D)**
Panel: Graduate School and Jobs Panel **(217C)**

4:40pm-6pm: Keynote: Clinton Johnson, ESRI, Racial Justice and Social Equity lead, *"Towards An Equitable And Just Geography"* **(200C)**

6pm-7:15pm: Dinner **(200C)**

7:30-9pm: Geography Bowl, led by Dr. Megan Heckert, 2023 Middle States AAG Vice President, West Chester University **(200C)**

Saturday, October 28

8am: Registration begins **(200C)**

8.20-8.25am Welcome Back **(200C)**

8.30-9.50am Paper Session 5: Geopolitics and transnationalism **(217C)**

Paper Session 6: Sustainable Environments **(220)**
Paper Session 7: Political Ecology and Climate Justice **(217D)**

10:00am-10:50am: Poster session 2 + Coffee Break **(200C)**

11am-12.20pm Paper session 8: Housing and Urban Geography **(217D)** Paper session 9:
Hazards and Health Geography **(220)**
Roundtable Undergraduate Student Experience **(217C)**

12:30pm: Keynote: AAG President Dr. Rebecca Lave: "*Critical physical geography in practice: Our depth perception improves when we look through biophysical and social lenses*" **(200C)**
Lunch

1:30pm-2pm: MSAAG Business meeting and student competition awards **(200C)**

Keynote Presentations

Friday, October 27, Clinton Johnson, *ESRI*, Racial Justice and Social Equity lead *Towards An Equitable And Just Geography*

Geography stands at a crucial juncture: it can either perpetuate systemic inequities deeply rooted in racism, xenophobia, and classism, or act as a catalyst for a more equitable and just future. The challenge is also an opportunity. As students, educators, and professionals in geo fields, we are uniquely positioned to transform the narrative and address past and present injustices through equitable geographic practices.

I will introduce a transformative framework aimed at reimagining the role of geography. With the time we'll have available, I will highlight actionable pathways for converting geography into a tool for justice and equity and invite attendees on a more exhaustive exploration and journey.

This keynote aims to equip attendees with a "getting started" toolkit, laying out practical and achievable steps to identify and champion equitable geographic approaches, initiate intersectional strategies in both research and professional practice, and leverage geospatial technologies as powerful tools for advancing social justice. While the eradication of systemic racism remains an ongoing struggle, the adoption of these equitable geographic approaches has the potential for far-reaching impact. Together, we can begin the work needed for a seismic shift towards a geography that is racially just, socially equitable, and intersectionally inclusive.

Saturday, October 28: Rebecca Lave, AAG President & Professor, Indiana University

Critical physical geography in practice: Our depth perception improves when we look through biophysical and social lenses

Poster Session 1 (200C)

1. Ashley Allen, *SUNY Oneonta*, A Geospatial Analysis of Sinkholes and Structural Inequity in Baton Rouge, Louisiana
2. Douglas Bartholomew, *SUNY Oneonta*, LGBTQIA+ Development of New York City
3. Julian Rocha, *Hofstra University*, Rails to Tales: The Location of Public Libraries in New York City in Relation to Subway Stops and Predominantly Black Census Tracts
4. John Gross, *Farmingdale State College*, Identifying Southern Pine Beetle Damage In High Spatial Resolution Drone Imagery Using Multiscale Image Segmentation and Random Forest Classification
5. Nicholas Lucchetto, *Hofstra University*, Traffic v. Timetable: The Impact of Congestion on MTA Buses In Queens
6. Genevieve McCormick, *Hofstra University*, We Didn't Start the Fire
7. Madison Colyer, *Shippensburg University*, A Citizen-Science Framework for Monitoring Water Quality in the Conodoguinet Watershed in Franklin County, PA
8. Jase Bernhardt, *Hofstra University*, GEOTeams: Piloting an innovative multilevel team approach to creating summer research pathways to geoscience
9. Caitlin Barry, *General Douglas MacArthur High School*, The Impact of Challenge Day on 10th Grade High School Students
10. Zarif Jamal, *General Douglas MacArthur High School*, Place-making: Effects of Portable Gaming Devices on Making Place for Adolescents
11. Steve Baron, *Temple University*, "Hazardous' Neighborhoods": How Philadelphia's Redlining Legacy Drives Gentrification and Income Inequality

Poster Session 2 (200C)

1. Natalie Correa, *Hofstra University*, Waffle House has found it's new manager: FEMA
2. Jase Bernhardt, *Hofstra University*, How can poor heat perception lead to heat related illness?
3. Arielle Nogueira, *Villanova University*, Sedimentological characteristics of Hurricane Ian's storm surge deposit in Charlotte Harbor, southwest Florida
4. Alisha Armstrong, *Temple University*, Research on the Impacts of Marine Debris in Hopkins, Belize
5. Timothy Frankstone, *Penn State University*, Mapping the Historical Wetlands of the Lower Mississippi River Basin
6. Jaylin Calistro, *Kutztown University*, Intensification and Evolution of Nor'easters affecting the New England Region, 2000 to 2020
7. Steven Schnell, *Kutztown University*, Gentrification in Comics and Graphic Novels
8. Emmanuel Olamiriki, *University of Delaware*, Evaluating Wave Glider Meteorological and Oceanographic Data Using in Situ and Remotely Sensed Coastal Data in the Delaware Region
9. Madeline Scolio, *Villanova University*, Challenges of Defining Urban Flood Impacts When Considering Equity
10. Katrinka Somdahl, *Rowan University*, The Geopolitics of Late-Night Humor about Russia Aggression in Ukraine
11. Puja Jani, *University of Delaware*, "Where can I go?" Finding replacement housing after a rural floodplain buyout

12. Luis Berrios, *Villanova University*, Spatial Distribution of Arbuscular Mycorrhizal Fungal Diversity and Heavy Metal Soil Concentrations as a Function of Urban Structure in Philadelphia, PA
13. Danicia Malone, *Temple University*, Public Art Census: A New Tool to Measure Spatial Equity

Panel: Graduate School and Jobs Panel **(217C)** Chair: Hamil Pearsall, *Temple University*

1. Elizabeth Janczewski, Professional Science Master's Program Coordinator and Advisor, *Temple University*
2. Caroline Burkholder, Sustainability Manager, *Temple University*
3. Claire Jantz, Professor and Chair of Geography and Earth Science, *Shippensburg State University*
4. Emily Fekete, Communications, Education, and Social Media Specialist, *American Association of Geographers*
5. Darion Porter, Senior Account Analyst, *PolicyMap*
6. Gen Rollins, Workforce Training/Assistant Managing Director (Taking Care of Business Program), *Philadelphia Department of Commerce*
7. Victoria Sarmiento, PhD student in Geography and Urban Studies, *Temple University*
8. Adam Dohrenwend, PhD candidate in Geography, *Louisiana State University*
9. Tesla DuBois, Geospatial Data Analyst at *Fox Chase Cancer Center* & PhD Student in Geography and Urban Studies, *Temple University*

Paper Session 1: Advancing Outreach and Critical Pedagogy (217C) Chair: Jo Mano, *MSAAG + SUNY New Paltz*

1. Lisa Jordan, *Drew University*, Case Studies in Settler Colonialism Ecology as Introductory Activist-Scholar Pedagogy
2. Michael Davis, *Kutztown University*, Our First Adventure: Geofiction and Roleplaying
3. Carlos Morales-Ramirez, *West Chester University*, Seeing the World through Maps: The Effectiveness of Map Knowledge in Flag Recognition
4. Kermit O, *Temple University*, Participatory Methods, Counterpower, and the Co-Production of Space

Paper Session 2: Modeling and Mapping Diverse Environments (217D) Chair: Paul Marr, *Shippensburg University*

1. Madeline Scolio, *Villanova University*, Spatial-Temporal Modeling of the Relationship Between Surface Temperature and Air Temperature in Metropolitan Urban Systems
2. Elpidio Guzman De La Cruz, *The Pennsylvania State University*, Delineating a Stream Network at Gale Crater, Mars, on ArcGIS Pro: A Geographic Information Systems Approach
3. Paul Marr, *Shippensburg University*, Sourcing Diabase Hammerstones from the Green Cabin Prehistoric Quarry Site
4. Josh Galster, *Montclair State University*, Racial and Income Differences in Exposure to Floods across U.S. Neighborhood

Paper session 3: Urban and regional labor dynamics (220) Chair: Renata Blumberg, *Montclair State University*

1. Richard Wolfel, *US Military Academy*, *They Didn't Pave Paradise: Grassroots Urban Redevelopment in Zurich*
2. Elizabeth Riedman, *Temple University*, *The Work of Greening our Cities: Examining the Role and Labor of Volunteer Leaders within a Tree Planting Initiative in Philadelphia*
3. Liana Katz, *Rutgers University*, *Logistics State: Land and Labor in New Jersey's Warehouse Sector*
4. Kwame Adovor Tsikudo, *Thomas Jefferson University*, *Labor Politics, African Agency, and the Future of Africa-China Engagements*

Paper session 4: Novel perspectives on infrastructure systems (217D) Chair: Nate Gabriel, *Rutgers University*

1. Sarah Heck, *Temple University*, *Envisioning place-based public schools as critical infrastructure for sustaining community well-being during and beyond the COVID-19 pandemic*
2. Triparnee Kushari, *Rutgers, The State University of New Jersey*, *A Sciography of 'Dark Stores' in New York City: Light, Shade and Transparency*
3. Kendra Kintzi, *Cornell University*, *The Smart Grid Archipelago: Infrastructures of Networked (Dis)Connectivity in Amman*
4. Nasha Virata, *Rutgers, The State University of New Jersey*, *Sourced Locally, Controlled Globally: A Mixed-Methods Case Study of Platform Urbanism in Makati City, Philippines*

Paper session 5: Geopolitics and transnationalism (217C)

Chair: Hamil Pearsall, *Temple University*

1. Hanbyeol Jang, *Temple University*, *The Shifting Geopolitics of Whales in East Asia: The Politics of Urban Whale Tourism in South Korea*
2. Thomas Owusu, *William Paterson University*, *Rethinking the African Immigrant Experience in North America: Some: Theoretical and Empirical Insights*
3. Melissa Tolosa, *Temple University*, *Viva La Resistencia: Undocumented women fight back against the carceral state*
4. Elizabeth Wu, *United States Military Academy at West Point*, *Chinese Influence on Urban Vulnerability in Bukina Faso*

Paper session 6: Sustainable Environments (220) Chair: Paul Marr, *Shippensburg University*

1. Tiana Thorp, *University of Delaware*, *Known Saltwater Intrusion Threats to the Built Environment with the Adaptation Solutions and Resilience Pathways to Move Forward*
2. Claire Jantz, *Shippensburg University*, *Towards a Sustainable Trail System in the Mountain Creek Watershed, Michaux State Forest, Pennsylvania*
3. Jacqueline Ganter, *Rowan University*, *Estimating Changing Habitat and Conservation Potential for Diamondback Terrapins In New Jersey Under Climate Change and Development Pressures*
4. Gabrielle Reagan, *Temple University*, *Taste, Pleasure and Sustainability: Locating Points of Convergence for Gastronomy and Sustainability Studies*

Paper session 7: Political Ecology and Climate Justice (217D) Chair: Megan Heckert, *West Chester University*

1. Adam Dohrenwend, *Louisiana State University*, Plant(-ation) Landscapes of Louisiana's 2nd Congressional District: An Industrial Political Ecology
2. Austin Martin, *Temple University*, Urban processes and urban pollinators: A political ecological answer to the luxury effect framework
3. Naznin Nahar Sultana, *University of Delaware*, The influence of structural racism in climate justice: The narratives of power dynamics and exclusion in the decision-making process of climate resilience
4. Shenika McFarlane-Morris, *The University of the West Indies, Mona Campus (Jamaica)*, "When the Going Gets Tough, the Tough Gets Going:" An Exploration of Residents' Resilience to Climate Change in Hellshire Beach, Jamaica

Paper Session 8: Housing and Urban Geography (217D) Chair: Hamil Pearsall, *Temple University*

1. Kwadwo Gyan, *BibiniKojo Consultancy*, The Issue of Affordability in Housing and Implications for the Regional Planning of Drainage Infrastructure: A Case of Affordability as part of Inclusive Decision Making
2. Mya Garrett and Dorothy Ives-Dewey, *West Chester University*, Redlining in Harrisburg: Exploring its Legacy and Reinforcement Through Zoning
3. Gabriel Meier, *CUNY Graduate Center*, At Home in the Box: Shipping Container Housing, Logistics and the Crisis of Social Reproduction
4. Alisa Shockley, *Temple University*, Surviving the Streets: A Black Feminist Autoethnographic Exploration of Trauma, Space, and Gun Violence Among Black Women in Philadelphia

Paper Session 9: Hazards and Health Geography (220) Chair: Thomas Pingel, *Binghamton University*

1. Thomas Pingel, *Binghamton University*, From Space to Place: Lidar Sensing and Human Dynamics in Indoor Environments
2. Veronica Gomes, *Temple University*, Ethnic enclaves and colon cancer stage at diagnosis among New Jersey Hispanics
3. Jase Bernhardt, *Hofstra University*, "Hangover" Currents? The Challenges of Spanish Language Rip Current Outreach
4. Xiaojiang Li, *Temple University*, Examining the vulnerability and sensitivity to summer extreme heat in major US cities

Paper Abstracts

A Sciography of ‘Dark Stores’ in New York City: Light, Shade and Transparency

Keywords: Dark Stores, Urban Platforms

Authors:

Triparnee Kushari, *Rutgers, The State University of New Jersey*

Abstract

Urban platforms form interfaces between existing networks, reducing friction in the exchange of goods, services, and information, making city life more efficient for some residents at the expense of others (Sadowski, 2020). While urban platforms have inserted themselves in almost all essential processes of city life and affect urban rent contours (Stehlin, 2018), the profit-making objectives of these companies do not make for open and collaborative research subjects.

This paper aims to ‘make present’ (Thatcher & Dalton, 2022) the on-ground infrastructure of online instant delivery platforms in New York City, using forms of data produced by these platforms in conjunction with socio-demographic and land use data, textual analysis, and direct observation. These ‘dark stores’ are semi-open- to-public food warehouses, scattered throughout the city with the goal of fulfilling 30-minute deliveries. My aim is to shed light on the legality of these stores with respect to zoning, to reveal how their locations are related to that of their user base, and to investigate the “shadows” cast on these neighborhoods.

Preliminary findings reveal that fewer than 20% of these ‘stores’ are located on land zoned for warehousing uses. Most are located within lower income census blocks close to high-income, majority white census blocks, transforming commercial spaces that could be serving their immediate neighbors into back lots of consumerism for wealthier residents. This contribution casts a critical upward gaze at digital platforms by repurposing their data traces to interrogate their effects on urban form and political economy.

At Home in the Box: Shipping Container Housing, Logistics and the Crisis of Social Reproduction

Keywords: housing, logistics, shipping container, social reproduction, circulation

Authors:

Gabriel Meier, *CUNY Graduate Center*, Miranda Strominger, *CUNY Graduate Center*

Abstract

This paper discusses the standardized shipping container as commodity. Analyzing the object and relations of the shipping container, we trace the afterlives of the growing surplus of these uniform boxes in the United States. Among these uses of surplus, we take up shipping container homes in their varied forms, including informal, precarious and luxury housing in rural and urban sites. The shipping container is situated within ‘regimes of property’ that facilitate exploitation across the circuit of social reproduction, from financial speculation on the home to both violent and mute forms of relative surplus value extraction throughout the logistics supply chain. The shipping container is both objectification of these mutually constituting exploitations and metaphor for the alienation of our social activity.

Our aim is to grasp the correspondences, subjectivity-formations and autonomies that allow for housing struggles, particularly in their shipping container form, to be connected with other moments of struggle in production, circulation and social reproduction. Alongside the traditional figures of capitalist social relations—workers, bosses, the unemployed—we see a new set of personifications emerge: tenants, asset holders, financial rentiers, gendered and racialized gig workers and debtors. Several questions ensue: If the shipping container is the archetypal representation of capitalist modularity, even of exchange value, then what explains the surplus of containers sitting unused in port hinterlands, or implemented for indirect uses in housing and infrastructure? And what are the social property relations that presuppose, and reproduce, this articulation of logistics and housing?

Case Studies in Settler Colonialism Ecology as Introductory Activist-Scholar Pedagogy

Keywords: settler colonialism; ecology; case studies; pedagogy; activism

Authors:

Lisa Jordan, *Drew University*

Abstract

Changes to landforms and ecosystems that trace their origins to settler colonial practices deserve relational, contextual study. For demonstration purposes, we compare settler legacies from production of cotton, sugar, tobacco, gold, uranium, and destruction of bison, with advocacy efforts in conservation, anti-militarism, mutual aid, environmental justice, food justice, and sustainability. These examples can illuminate how contemporary environmental challenges often find their origins in the damage and contamination introduced by cash crop production and resource extraction. By centering Native and Afro-Indigenous definitions and interpretations of settler colonialism, we explore new praxis in teaching by reflexively engaging both scholarship and activism. To be clear, the US colonial and imperial project enacted genocide and enslavement to achieve expansion and power. What we wish to elaborate on are the many ways that practices of imperialism and racial capitalism, while dispossessing people of land, freedom and dignity, also introduced landscape-wide transformations found in geologic and archival records that help us understand declines in biodiversity, fresh water, and interruption of

functioning ecosystems and agrarian systems. The harmful recursiveness in settlement practices over time, as found through material artifacts, presents an opportunity to interrupt ongoing settlement. Case study approaches that invite connection between engagement in activism and the palimpsest of historical record could foreground truth and reconciliation, particularly in the US where reckoning with the dual histories of genocide and ecocide remain underexamined.

Chinese Influence on Urban Vulnerability in Burkina Faso

Keywords: Geopolitics, Africa, Great Power Competition

Authors:

Elizabeth Wu, *United States Military Academy at West Point*

Abstract

Political geography is increasingly important in Great Power Competition on a global scale. While Africa has tremendous strategic importance to the United States, the country of Burkina Faso plays a vital role as several global powers compete intensely to manipulate its social opinion and vulnerabilities to gain influence and access the country's wealth. This project investigates Burkina Faso's recent coups and identifies the role of foreign actors in manipulating local political sentiment. Specifically, this project explains how China exerts striking geopolitical impacts on the region through its Belt and Road Initiative (BRI).

Explaining how China expands its spheres of influence is essential to understanding modern geopolitics and the strategic preparations the U.S. must make to “win without fighting” as part of our Multidomain Operations (MDO) framework. BRI's potential should not be underestimated, with its 151 countries' partnerships worldwide. To show the influence of soft power on modern geopolitics, we employ the Modeling Dense Urban Networks (MDUN) analytical tool to identify and explain the impact of economic, geographical, and political changes on the local population's opinion on crucial societal tipping points. Through the identification of critical societal tipping points, we can identify key points of competition and instability in a region. Thus, in the case of Chinese strategies in Burkina Faso, by identifying and explaining societal vulnerability, we can gain greater insight into local conditions that help the United States design its geopolitical and strategic plans.

Delineating a Stream Network at Gale Crater, Mars, on ArcGIS Pro: A Geographic Information Systems Approach

Keywords: Gale Crater, Mars, Gediz Vallis, Curiosity, GIS, HiRISE, Hydrology

Authors:

Elpidio Guzman De La Cruz, *The Pennsylvania State University*

Abstract

The northwestern region of the Gale crater experienced flooding in the past. Delineation of stream networks for the northwestern region of Gale Crater, Mars employing geographic information systems (GIS) techniques is applied. The stream network produced by the algorithm in the study traverses the clay unit in Gediz Vallis, and visual HiRISE imagery analysis correlates with a topologic cross section of an inverted river channel of 750 meters wide and 90 meters deep. HiRISE imagery analysis confirms a sulfate and clay stratigraphic unit in a stream 125 meters wide and 25 meters deep. Data smoothing procedures are cross referenced by examining the Curiosity rover landing site. This area is visually analyzed using a HiRISE stamp and the stream network, which suggests minimal change in elevation. The findings of this work and the reliability of the results suggest implementation of GIS tools for continued surficial planetary exploration. The production of thematic hydrologic maps for larger regions on Mars and other rocky planets will serve as a dependable educational tool for mission planning as well as pedagogic benefit.

Envisioning place-based public schools as critical infrastructure for sustaining community well-being during and beyond the COVID-19 pandemic

Keywords: social infrastructure, COVID-19, public schools, equity, community resilience

Authors:

Sarah Heck, *Temple University*

Melissa Gilbert, *Temple University*

Hamil Pearsall, *Temple University*

Simi Hoque, *Drexel University*

Abstract

As the COVID-19 pandemic unfolded in Spring 2020, public school districts across the United States made the difficult decision to close physical school buildings and pause educational programming until remote learning infrastructure was in place. Concurrently, districts had to determine how to meet the acute needs of students and their families including providing access to vital resources such as school meals, child care, and information and communication technologies (ICTs). These school closures revealed the essential role schools play in supporting the everyday needs of students and families through fundamental social services. These services are beyond the core mission of schools, which include delivering curricular and co-curricular education, yet district leaders across the country were able to develop innovative ways to deliver critical non-educational services because of their significant knowledge and concerns about the needs of families with school-aged-children and the critical social infrastructure in place to deliver these services. In this paper, we develop a transdisciplinary framework that

conceptualizes schools as essential social infrastructure. Integrating intersectional feminist theories of place and scale with disaster and resilience research offers a means to understand how essential social infrastructures (including schools, libraries, community centers, etc.) mediate geopolitical relations from the intimate to the global. This approach may offer insights into mitigating community vulnerabilities, resiliency, and equity during disasters and disruptions beyond the pandemic. We argue for multi-scalar public policies regarding disaster preparedness and long-term sustainability to provide equitable resources to schools given their role as critical community social and physical infrastructure.

Estimating Changing Habitat and Conservation Potential for Diamondback Terrapins In New Jersey Under Climate Change and Development Pressures

Keywords: diamondback terrapin, habitat modeling, species conservation, climate change, land use modeling

Authors:

Jacqueline Ganter, *Rowan University*

Abstract

The diamondback terrapin, a brackish water turtle native to the eastern US, is listed as a species of ‘special concern’ in the state of New Jersey, due to decreasing habitat from development and changing climatic conditions. Diamondback terrapins reside in saline marshes and wetlands and nest in sandy substrate, primarily beaches and dunes, in June and July. The state of New Jersey is vulnerable to both sea level rise, leaving diamondback terrapin habitats and nesting areas at risk of inundation under future climate scenarios, and, as the most densely populated state, continual development pressures on potentially conservable land. Changing sea level and climatic conditions will cause accretion and migration of marshes into open grassy land, yielding new potential terrapin habitat, though changing temperatures could affect the availability of male-producing nesting sites. This study spatially modeled lost and gained habitat, and nesting areas under sea level rise scenarios for 2050 and 2100 in New Jersey and quantifies these by municipality to offer insights into potential conservable land. Results indicate an overall decrease in potential habitat coupled with a decrease in both overall and male-producing nesting ranges.

Ethnic enclaves and colon cancer stage at diagnosis among New Jersey Hispanics

Keywords: Cancer disparity, ethnic enclaves, colorectal cancer, Hispanics, residential history

Authors:

Veronica Gomes, *Temple University, Department of Geography and Urban Studies, Polett Walk, Philadelphia, PA, 19122 USA*

Daniel Wiese, Department of Surveillance and Health Equity Science, American Cancer Society, Atlanta, GA, USA

Antoinette Stroup, New Jersey State Cancer Registry, Trenton, NJ, USA and Rutgers Cancer Institute of New Jersey, Rutgers University School of Public Health, New Brunswick, NJ, USA

Kevin Henry, Temple University, Department of Geography and Urban Studies, Polett Walk, Philadelphia, PA, 19122 USA and Division of Cancer Prevention and Control, Fox Chase Cancer Center, Philadelphia, PA, USA

Abstract

Ethnic enclaves are neighborhoods with high concentrations of individuals of the same ethnic origin. Researchers have hypothesized that residence in ethnic enclaves may contribute to cancer outcomes through detrimental or protective pathways. However, a drawback of prior research is their use of a cross-sectional approach, which only captures an individual's enclave residence at the time of diagnosis. This study overcomes this limitation by using a longitudinal approach to investigate the link between residence duration in an ethnic enclave and colon cancer (CC) stage at diagnosis. Colon cancer incidence cases diagnosed between 2006 and 2014, for Hispanics aged 18 years and older from the New Jersey State Cancer Registry (NJSCR) were linked to residential histories of cases obtained from a commercial database LexisNexis, Inc. We examined associations between residence in an enclave and stage at diagnosis using binary and multinomial logistic regression, adjusted for individual-level variables. Out of the 1462 Hispanics diagnosed with invasive colon cancer, 48.4% resided in a Hispanic enclave at the time of diagnosis, while 32.6% had been enclave residents for the entire period. We found that Hispanics living in an ethnic enclave at diagnosis had significantly lower odds of distant-stage CC than Hispanics not living in an enclave during diagnosis. We also found that living a substantial amount of time in an ethnic enclave has a significant association with lower odds of distant stage CC. Integrating residential histories opens research possibilities to examine how minorities' mobility and residence in enclaves affect cancer diagnosis over time.

Examining the vulnerability and sensitivity to summer extreme heat in major US cities

Keywords: Urban heat; vulnerability; sensitivity;

Session Type: Paper Abstract

Authors:

Xiaojiang Li, *Temple University*

Abstract

Many cities are experiencing more and more frequent extreme heat events in hot summer because of the warming global temperature and urban heat island effects. The land surface

temperature (LST) derived from remotely sensed thermal imageries has been widely used in understanding the spatial distribution of urban heat. However, the coarse resolution LST that indicates the surface temperature of building roofs and treetops, cannot fully indicate human heat stress levels. In this study, we applied urban microclimate modeling to map human heat stress indicator of Universal Thermal Climate Index (UTCI) at unprecedentedly fine spatial resolution level (1 m) and examined the human heat stress levels across different socioeconomic and racial/ethnic groups in 14 major cities in the United States. This study further investigated the sensitivity of human heat stress level to air temperature increase by modeling and mapping the UTCI in the scenarios of 1 °C higher air temperature. Results show that there is no nationally consistent pattern between the association of social statuses and the heat stress level across cities, while generally, people with higher income tend to live in neighborhoods with less heat stress level. The sensitivity analysis results show that 1 °C increase in air temperature would impact human heat stress level significantly, while the impacts are different for different cities. The results of this study will help us to better evaluate the impact of extreme heat on urban residents and provide reference for building more resilient cities to extreme heat.

From Space to Place: Lidar Sensing and Human Dynamics in Indoor Environments

Keywords: lidar, remote sensing, movement

Authors:

Thomas Pingel, *Binghamton University*

Timothy Baird, Virginia Tech, Addison Flack, Virginia Tech, Shashank Karki, Virginia Tech, Tanner Uptegrove, Virginia Tech, David Franusich, Virginia Tech, Nicold Abaid, Virginia Tech, Elif Tural, Virginia Tech, David Kniola, Virginia Tech

Abstract

Most people spend a significant portion of their lives indoors, but these spaces are challenging to analyze using the remote-sensing techniques that geographers typically employ to examine human-environment interactions outdoors. New techniques using photogrammetry and laser scanning (lidar) have improved our ability to create “digital twins”, but these are typically only recreations of the physical environment. We present methods and early findings from a study utilizing a network of lidar sensors to track occupancy and movement of people in a recently constructed mixed-use residential and academic building. While we believe these methods have a broad range of potential applications, we explore how these methods address a particular research question of significance to geographers: what do observed patterns of movement and pause tell us about how space becomes place in a shared indoor environment?

“Hangover” Currents? The Challenges of Spanish Language Rip Current Outreach

Keywords: Meteorology, hazards, language barriers

Authors:

Jase Bernhardt, *Hofstra University*

Abstract

Rip currents are poorly understood by the public and thus a leading cause of weather-related fatalities in the United States. Individuals who speak languages other than English, such as Spanish-speaking communities, have been historically underserved by National Weather Service (NWS) risk communication efforts for natural hazards and thus are at additional risk from rip currents. In response to that issue, the NWS recently released rip current informational brochures translated into Spanish, though their efficacy has not been systematically tested. We therefore surveyed members of the Spanish-speaking community in Nassau and Queens Counties, New York during the summer of 2022 to gain insights into how the brochures are working and possible improvements to be made. Survey results indicate that while the Spanish-language brochure is somewhat effective, several changes could be made to improve clarity and relatability. For example, the translation of the term Rip Current itself used by the NWS was found to be confusing by Spanish speakers of certain ages and dialects. Moreover, some of the graphics contained in the brochure were difficult to understand for users with limited knowledge of beach hazards. To work towards ameliorating those issues, a virtual reality simulation of a rip current was developed in Spanish, to promote awareness in a new and engaging way. A pilot study of the new simulation's efficacy was conducted in 2023. The results of the two surveys can be used directly by the NWS and other agencies to improve their Spanish risk communication tools and those in other languages.

Logistics State: Land and Labor in New Jersey's Warehouse Sector

Keywords: critical logistics studies, labor, racial capitalism, New Jersey

Session Type: Paper Abstract

Authors:

Liana Katz, *Rutgers University*

Abstract

Over the last two decades, commercial warehouses have proliferated across the United States in tandem with a sharp rise in e-commerce as well as an ongoing reconfiguration of global networks of production and consumption. This trend was heightened by the COVID-19 pandemic, which deepened consumer reliance on the distribution services provided by warehouses and put pressure on industrial land markets. Critical logistics scholars have described

the logics, politics, and material relationships that make possible contemporary goods movement. In the United States, research often focuses on California's Inland Empire which serves as the distribution hub for the port of Los Angeles-Long Beach. Yet, New Jersey is home to the second largest container port in the country, perched between the New York and Philadelphia metropolitan areas, and has been particularly affected by these changes. This presentation offers early findings from ethnographic work in New Jersey's logistics and warehousing sector, attending to a little-explored but crucial geography of industrial development, labor politics, and local activism. It contends that warehouses are embedded not only in large-scale networks but also in state and community patterns of land use and employment. These everyday dynamics are crucial to the maintenance of racial capitalism, a mode of profit-making dependent upon racialized and other forms of difference, as warehouses become sites of reinscription of both white suburban landscapes and precarious labor.

Our First Adventure: Geofiction and Roleplaying

Keywords: teaching, education, roleplaying, geography, pop culture

Authors:

Michael Davis, *Kutztown University*

Abstract

Geography Departments may have difficulties attracting the 21st century student to their program. Innovative and unique ways of engaging these students and drawing them to geography programs are becoming increasingly critical across university landscapes. One such way that is proposed in this paper is through roleplaying games with emphasis on the geographical aspects. Recently, Kutztown University piloted a course entitled Geofiction and Roleplaying to undergraduate students. This course aimed to tap into a pop culture zeitgeist and draw students to the program through examination of fictional maps, world building, and roleplaying. Map discussions centered on geographical features and representation in fantasy worlds of literature, film, television, video games, and more. In addition to the cartographic analysis of these maps, students will be asked to create their own fantasy worlds along with hand drawn maps to accompany them. The creation of playable characters and roleplaying in small groups, following the Dungeons and Dragons 5th Edition rules, will provide an outlet for expressing and creating ideas in both written and oral formats consistent with the General Education model at the university. This venture may encourage students to take more geography courses, possibly declare a major or minor in geography, and aid in retention of students at the university by forging friendships and a tighter knit campus community. Early findings from the course will be provided.

Plant(-ation) Landscapes of Louisiana's 2nd Congressional District: An Industrial Political Ecology

Keywords: Louisiana, labor, environmental justice, capitalocene, political geography, gerrymandering

Session Type: Paper Abstract

Authors:

Adam Dohrenwend, *Louisiana State University*

Abstract

Louisiana's Second Congressional District (LA-2) is a gerrymandered constituency taking up most of the city of New Orleans, North Baton Rouge, and a narrow tract that snakes through the intervening River Parishes. Majority-Black, sugarcane plantations and enslaved labor dominated the land included in this district. It now encompasses the lion's share of South Louisiana's heavy industry along with many descendants of the enslaved. While producing immense quantities of hydrocarbon products in its dense clusters of heavy industry, this district's landscapes of industrial modernity have provoked alarm among workers, community members, and environmentalists—earning the nickname “Cancer Alley.” One of many "sacrifice zones" of what Moore calls "the Capitalocene," South Louisiana's Cancer Alley is (and has been) foremost a landscape of capital—with the state, through the political process, mediating (and often subsidizing) capitalogenic change. This paper examines this landscape's development, with special attention to the role of the political process, and argues that labor-environment coalition-building is the key towards pushing back against further capitalogenic change and the construction of more just landscapes.

Racial and Income Differences in Exposure to Floods across U.S. Neighborhood

Keywords: Environmental racism, flood exposure, environmental justice

Authors:

Josh Galster, *Montclair State University*

George Galster, *Wayne State University*

Karl Vachuska, *University of Wisconsin*

Abstract

Real estate economists have produced a large literature on the relationship between flood risk and property values. By comparison, the few studies on distributive environmental justice issues related to differential flooding exposures across racial/ethnic and income groups have been limited in geographic coverage and, afflicted by severe measurement shortcomings, and inconsistent in findings. We provide the first U.S. national and state-by-state descriptive portrait of annual average exposure to floods across all Census-defined racial/ethnic groups and income groups. Specifically, we investigate whether there are statistically significant interracial-group

differences in average annual probabilities of experiencing a flood in one's neighborhood, and whether differences vary across states and coastal vs. inland areas. We use predictions from the recent First Street Foundation flooding exposure model and demographic and income data from the US Census Bureau American Community Survey in our analysis. Nationally, we find that Native Americans in inland neighborhoods and Hispanics in coastal ones face (statistically) significantly higher average exposure to flooding than non-Hispanic Whites, even when neighborhood income composition is controlled. Beneath these national patterns lie substantial variations in disparities across states and between inland and coastal sets of neighborhoods. Surprisingly, we observe no states in which non-Hispanic Blacks and Asians generally have a (statistically) significantly higher lower average exposure to floods than non-Hispanic Whites. Lower-income groups exhibit substantially higher exposure in inland areas than higher-income groups—but not in coastal areas—when neighborhood racial/ethnic composition is controlled.

Redlining in Harrisburg: Exploring its Legacy and Reinforcement Through Zoning

Keywords: Redlining, Zoning, Harrisburg

Authors:

Mya Garrett, *West Chester University*

Dorothy Ives-Dewey, *West Chester University*

Abstract

This research investigates long-term impacts of redlining on neighborhoods in the City of Harrisburg in Pennsylvania. Using a mix of methods including case studies, field observation, and quantitative comparison of key indicators across red-lined and green-lined neighborhoods, the analysis compares neighborhood development history and the impact on household socio-economic outcomes. Findings illustrate how one of the most negative impacts of redlining – the disparity in household wealth creation – was established through redlining practices and perpetuated through local planning and zoning once redlining had ended. Findings suggest how steps can be taken today to reinvest in disadvantaged neighborhoods and employ land use regulations to help mitigate the worst impacts of redlining.

Rethinking the African Immigrant Experience in North America: Some Theoretical and Empirical Insights

Keywords: Africans, Immigrants, Transnationalism

Authors:

Thomas Owusu, *William Paterson University*

Abstract

The African immigrant experience in North America has been the subject of considerable research effort. A review of the large and growing body of literature on this subject, however, suggests that a rethinking and reconceptualization of this experience is needed, to adequately account for the variety and complexity of this experience, given the size of the population and the length of residence. Traditional conceptual frameworks have become less useful for analytical purposes. Based on theoretical and empirical information derived from various sources, including census data, surveys, content analysis, and participant observation, this paper discusses the usefulness of the concept of transnationalism as a framework for explaining and understanding the African immigrant experience, using Ghanaian immigrants as a case.

Seeing the World through Maps: The Effectiveness of Map Knowledge in Flag Recognition

Keywords: cartographic vexillology, location, maps on flags, Singapore

Authors:

Carlos Morales-Ramirez, *West Chester University*

Abstract

This study aims to understand students' knowledge of the use of political maps in flags. Students from a module at the National University of Singapore were provided a six-item questionnaire. The questions asked students to identify countries looking at a map, identify the Korean Unification Flag, identify the first flag of Bangladesh, identify flags with maps, and identify a theme in four different flags with maps. The results showed that Singapore was the most known country (92%), while Brunei was the least known (12%) based on the country's political boundary outline. Only 19% of students were able to identify the countries correctly in the Korean Unification Flag and 31% identified the historic flag of Bangladesh correctly. In the final questions only 13% identified the correct flags with maps, while 36% mentioned the theme of location as a common theme amongst the four flags provided. These results showed that more exposure to these maps and flags is needed. The use of maps in flags can provide a new perspective for cartographic approaches and expand knowledge of cartographic vexillology.

Sourced Locally, Controlled Globally: A Mixed-Methods Case Study of Platform Urbanism in Makati City, Philippines

Keywords: platform urbanism, food delivery, global south, Philippines

Authors:

Nasha Virata, *Rutgers, The State University of New Jersey*

Abstract

While recent research on platform urbanism has focused on its expression in the Global South, notably in sub-Saharan African cities and Jakarta, (Cirolia et al., 2023; Nowak, 2023), Southeast Asian cities remain relatively understudied. Yet they are just as deeply implicated in the planetary process that is platform urbanism. This paper takes a mixed-methods approach, combining archival and computational research, and spatial analysis, to investigate the presence and character of platform urbanism through the food delivery app FoodPanda in Makati City, the financial center of the greater Manila region and the Philippines as a whole.

Digital geographic methods and literatures offer a productive lens to critically analyze the political economy of platform urbanism, along with their uneven distribution and effects across regional, as well as on the neighborhood, city, national, and global scales. The paper furthers ongoing conversations on platform urbanism as a form of smart city neocolonialism (Mouton & Burns, 2021)? How does platform urbanism interact with processes such as informal labor, gentrification and displacement as expressed in this part of Southeast Asia? This paper hopes to shed light on the role of cities such as Makati in the territorializing process that is platform urbanism.

Sourcing Diabase Hammerstones from the Green Cabin Prehistoric Quarry Site

Keywords: geoarchaeology, diabase, Pennsylvania, prehistoric

Authors:

Paul Marr, *Shippensburg University*

Mark Tucker, Independent Professional Geologist

Abstract

The Green Cabin prehistoric rhyolite quarry site on Pennsylvania's South Mountain was a heavily utilized source of tool-stone. Hammerstones composed of two types of diabase were used at the quarry site for lithic reduction. Large, metamorphosed diabase cobbles, which are found at the site, were used as hammers to break down rhyolite boulders into manageable pieces. Small, non-metamorphosed diabase cobbles from exposures 15+km east of the site are also common artifacts and appear to have been used for later stage reduction. Material characteristics (color, grain size, limonite staining, and weathered shape) of non-metamorphosed diabase hammer artifacts from excavations at the site were compared to 46 exposure and 29 stream gravel samples compiled from around the Gettysburg, PA area. We found that the most likely sources for fine grained diabase hammers were the thin dikes and sheet margins where cooling was most rapid and that these locations were clustered near the easiest eastern access point to the site. We also suggest that upland areas appear to be a better source for hammers than gravel bars, due to

the extreme weathering and friability of diabase stream samples we collected at the exposures. This research has given us new insight to the chaîne opératoire (operational sequence) and level of effort of rhyolite tool-stone acquisition in the prehistoric mid-Atlantic.

Spatial-Temporal Modeling of the Relationship Between Surface Temperature and Air Temperature in Metropolitan Urban Systems

Keywords: Air Temperature; Surface Temperature, Spatiotemporal Modeling, Spatial Autocorrelation, Temporal Autocorrelation, Urban Heat

Authors:

Madeline Scolio, *Villanova University*

Peleg Kremer, *Villanova University*

Yimin Zhang, *Villanova University*

Kabindra Shakya, *Villanova University*

Abstract

Research about urban local climate and urban heat island often relies on land surface temperature (LST) data as a proxy for urban air temperature. Although using remotely sensed data for such work has the advantage of continuous spatial coverage at regular temporal intervals, it is recognized that surface temperature is not an ideal proxy for air temperature (AT). This study's goal is to develop a spatiotemporal model revealing the relationship between LST and AT in an urban environment. A mobile weather monitoring unit was used to collect spatially explicit fine scale AT data while Landsat 8 and 9 passed overhead collecting LST data. A spatiotemporal model of the relationship between LST and AT in Philadelphia was constructed with this data utilizing basis functions to account for spatial and temporal autocorrelation. The spatiotemporal model results show a strong relationship between LST and AT and indicate that it is possible to predict AT using remotely sensed LST in an urban context (r -squared = 0.99). The spatiotemporal model outperforms models that do not account for spatial and temporal autocorrelation, highlighting the importance of considering these dependences in temperature modeling. Obtaining accurate AT data is critical for understanding local climate and its interactions with human well-being.

Surviving the Streets: A Black Feminist Autoethnographic Exploration of Trauma, Space, and Gun Violence Among Black Women in Philadelphia

Keywords: trauma geographies, health geography, gun violence, qualitative, autoethnography, co-victims, Black feminist geographies

Authors:

Alisa Shockley, *Temple University*

Abstract

This paper is based on my dissertation research in Philadelphia and examines how Black women who are co-victims of gun violence navigate their immediate environments and daily active spaces after their sudden loss. The research utilizes auto-methodology (auto-methods), specifically Black Feminist Auto-ethnography (BFA), and builds on health geography, trauma geography, and Black feminist geography scholarship. Black Feminist Autoethnography analyzes one's own experiences in relation to their communities, therefore, I use BFA to analyze my lived experience in the neighborhood where I grew up after losing my brother to gun violence. I theorize how racism, poverty, and trauma intertwine to inform Black women's survival strategies while they engage in their daily active spaces. Conventional approaches to understanding gun violence often overlook the nuanced understanding of trauma and the lived experiences of co-victims, which this paper addresses. Through BFA, I center Black women's lived experiences and highlight ways we engage with the world while processing the gun-violence-related trauma, that we carry within us.

Taste, Pleasure and Sustainability: Locating Points of Convergence for Gastronomy and Sustainability Studies

Keywords: sustainability, food studies, taste, pleasure, terroir

Authors:

Gabrielle Reagan, *Temple University*

Abstract

Our food system is increasingly dominated by big industry and corporate companies peddling ultra-processed foods, profiting off of the homogenization of taste. Responsible for a third of all greenhouse gas emissions, this now global food system has increasingly been targeted in urgent pleas to quell catastrophic effects of climate change. While modern attempts at a reorganization to more regionally sensitive food systems suggest progress, they provide unequal access to pleasurable taste experiences.

This paper aims to place sustainability literature—often framing needs above wants—in conversation with food studies literature. Currently, both the corporate food system *and* sustainability academics speak of food in terms of scarcity narratives, further enabling the conditions that permit a diversity of pleasurable taste experiences for an elite few. Food geographers on the other hand often emphasize issues not in terms of scarcity but in terms of distribution and favor a food system that prioritizes pleasure, desire, taste and terroir.

In placing these two academic spheres in conversation with one another, multiple questions come to the surface: What kinds of inquiry matter to sustainability geographers as opposed to food geographers? What are the points of intersection and divergence? How can placing the literature in relation help foster a more just and equitable food system? Ultimately, this work aims to understand if and how pleasure, desire, and taste can be compatible with sustainable growing systems? Is pleasure, as opposed to scarcity, a salve for our food system conundrums, allowing the power of taste to enable transformative change?

The influence of structural racism in climate justice: The narratives of power dynamics and exclusion in the decision-making process of climate resilience

Keywords: Structural racism, Exclusion, Climate justice, Southbridge, Wilmington

Authors:

Naznin Nahar Sultana, *University of Delaware*

Rebecca Nixon, *University of Delaware*

Abstract

Climate change disproportionately affects disadvantaged and racially discriminated populations globally and locally. Inequity is also reflected in community participation in policy formulation and execution for robust resilience. Since 1992, from the Rio Summit to recent climate change policies, e.g., NDCs of the Paris Agreement, the inclusion of communities has achieved key attention; however, the answer to ‘how’ is missing with diverse socio-economic-political scales. The present paper explores the influence of structural racism in ensuring climate justice by analyzing the narratives of power dynamics and exclusion in the decision-making process aiming at climate change resilience from macro to micro-scale. By considering the climate change vulnerability of South Wilmington, Delaware, the study scrutinized the power dynamics and exclusion of racially and socioeconomically marginalized groups and missing “recognition space” in formulating climate policy, resulting in unjust outcomes. The study examined state, city, and neighborhood-level climate policy and action plans to understand participation in the decision-making process. Furthermore, by verifying census data for 2021 and the neighborhood plan, the paper emphasizes the unequal outcomes of climate resilience endeavors such as displacement. The paper will provide insights to evaluate effective community participation by ensuring “recognition space” in the decision-making process and practice.

The Issue of Affordability in Housing and Implications for the Regional Planning of Drainage Infrastructure: A Case of Affordability as part of Inclusive Decision Making

Keywords: Climate change, Affordability, Inclusivity, Equity, Contextualization, Regionalism

Authors:

Kwadwo Gyan, *BibiniKojo Consultancy*

Abstract

Cities are growing at unprecedented levels. Meanwhile, governments in the Global South are already overwhelmed by this growth and are unable to provide infrastructure proactively as expected. As a result, urban residents resort to providing their own infrastructure such as drainage systems as part of self-built housing development. Their small-scale incremental housing practices, which often represent formation of dense and diverse housing types, styles and ages, have been identified to affect planning of drainage systems at the regional-scale. Such developments reflect the varied affordable responses as part of a collective effort to curb regional problems, specifically flooding in this case. However, while some are included in this collective action, others are excluded as they are unable to afford to be included. This phenomenon, in addition to the formation of new autonomous localities, has led to challenges in mitigating flooding and has affected resilience to climate change. Using a qualitative approach, this paper explores how the mismatch between housing development which occurs at an individual scale and drainage infrastructure which is provided at a regional scale, affects a regional effort to mitigate flooding in Tema, Ghana. It seeks to explore and reveal a relationship between affordability and inclusiveness. It also explores how density and diversity influences public infrastructure provision and their connection with affordability.

The Shifting Geopolitics of Whales in East Asia: The Politics of Urban Whale Tourism in South Korea

Keywords: Tourism Geopolitics, Politics of Scale, Human-Whale Relations, Resource, Korea,

Authors:

Hanbyeol Jang, *Temple University*

Abstract

This research examines the politics of urban whale tourism in Ulsan, South Korea, with a focus on how this form of tourism contributes to the construction of geopolitical discourses and practices related to whales in East Asia. Drawing on insights from tourism geopolitics, politics of scale, and resource geography literature, this study uncovers the representations used to justify whales as nationalized and locally territorialized resources, while also framing them as integral to the culture and tradition of both Korea and Ulsan. I employ qualitative research methods, including in-depth interviews, written interviews, archival document surveys, and site observation to analyze the politics of urban whale tourism. This analysis dissects the politics into three key dimensions: temporal politics, spatial politics, and the politics of specific whales. These dimensions involve framing strategies that hinge on selective representations of historical, geographical, and even environmental aspects of human-whale interactions in Korea, presenting them as indisputable truths. One example of these strategies highlights the extensive history of

Korean whaling by linking prehistorical whaling records with more recent whaling activities in the 1960s-1980s. While the whale tourism exhibits mobilize and derive legitimacy from historical facts, their underlying purpose is geopolitical in nature, seeking to establish whales as emblematic nationalistic and territorialized resources of South Korea and Ulsan. This study underscores the significance of urban whale tourism sites as a crucial place where different interpretations of human-whale relations are adapted to bolster the geopolitical positioning of the state and city within the global landscape of whale governance.

The Smart Grid Archipelago: Infrastructures of Networked (Dis)Connectivity in Amman

Keywords: smart urbanism, renewable energy, (post)colonial property, urban political ecology, property technology

Authors:

Kendra Kintzi, *Cornell University*

Abstract

This article examines the fragmented connections of Jordan's smart grid, building on geographic scholarship that questions how smart infrastructures reshape governance, sociospatial exclusion, and the fabric of urban life. Jordan's ambitious smart energy program is often held up as a global model by investors, as it catalyzed over US\$4 billion in private investment for new renewable and smart energy development. Yet smart energy transition is experienced in powerfully uneven ways, as distributed solar installations and smart grid technologies radically remake the spaces of urban life. Rooted in sixteen months of ethnographic fieldwork, this article traces the vertical materialization of the smart grid from the ground up, from in-home smart meters through the evolving interconnections that they enact. I argue that (post)colonial property relations engender an archipelagic landscape of (dis)connectivity that redistributes the benefits and burdens of digitalization. Drawing from Glissant's archipelagic thought, I examine (dis)connection and urban fragmentation as a form of relation that links enduring (post)colonial relations to contemporary projects of smart development. In the (post)colonial world, as smart infrastructures are built into the conduits of uneven property relations, they come to incorporate not only capitalist logics but also racialized logics and historically contingent relations of exclusion and differentiation. This article raises key questions for scholarship at the intersection of urbanism, coloniality, and digital geography, bringing focus to exclusionary processes of propertied accumulation that mark diverse global sites of smart grid experimentation, and the possibilities for undoing them.

The Work of Greening our Cities: Examining the Role and Labor of Volunteer Leaders within a Tree Planting Initiative in Philadelphia

Keywords: community leadership, recognitional equity, stewardship, tree planting initiative, volunteer labor, urban forestry

Authors:

Elizabeth Riedman, *Temple University*, Hamil Pearsall, *Temple University*, Lara Roman, *US Forest Service*, Tim Ifill, *Pennsylvania Horticultural Society*, Dana Dentice, *Pennsylvania Horticultural Society*, Jehane Samara, *Pennsylvania Horticultural Society*, Asha-Lè Davis, *Pennsylvania Horticultural Society*, Mindy Maslin, *Pennsylvania Horticultural Society*

Abstract

Urban forestry programs across North America rely on volunteers to lead urban forest stewardship activities and encourage participation in tree planting and general maintenance. We examined the leadership structure of a tree planting initiative (TPI) in the greater Philadelphia region to understand the role and labor contributions of volunteer leaders, and the current challenges of achieving equitable urban tree canopy within community-led TPIs. Using an online survey, we found that leaders contribute unpaid labor, time, and skills within the following categories: group organization and communication, tree-planting and event coordination, tree care and maintenance, and broader environmental education and advocacy. Volunteer leaders also face challenges related to leadership and administrative tasks. This study deepens understandings of the labor needs within volunteer TPIs and potential ways to support the equitable growth of these initiatives moving forward. Future research is needed to understand recognitional equity gaps in volunteer leadership more broadly.

They Didn't Pave Paradise: Grassroots Urban Redevelopment in Zurich.

Keywords: Urban redevelopment, deindustrialization, Europe

Session Type: Paper Abstract

Authors:

Richard Wolfel, *US Military Academy*

Christiana Fairfield, *US Military Academy*

Amy Richmond, *US Military Academy*

Abstract

Urban redevelopment is a significant challenge facing cities of the Global North in the post-industrial era. As cities deindustrialize, former industrial sites frequently fall into a state of disrepair and neglect. The redevelopment of these sites is often driven by a top-down approach,

led by a coalition of large-scale real estate developers, city level government agencies, and larger corporations. Often, this results in a gentrified landscape accompanied by displacement of the original residents of the neighborhood. Such a top down, gentrified approach tends to think of urban development at a regional or city-wide scale and often fails to address local interests or context in their plans.

Frau Gerald's Garten, in the Züri West region of Zurich, provides an interesting contrast to the top-down development scheme standard in many cities. What was conceived as a temporary solution for a former industrial site, the Garten has not only persevered, but grown as a trendy leisure destination. The use of shipping containers as commercial structures provides a unique nod to the temporary intent for the region, and many small scale, owner-operated businesses have found a home there.

Towards a Sustainable Trail System in the Mountain Creek Watershed, Michaux State Forest, Pennsylvania

Keywords: outdoor recreation, sustainability, trails

Authors:

Claire Jantz, *Shippensburg University*

Ayrton Marriot, GHD

Kyle Myers, *Shippensburg University*

Abstract

The existing multiuse trail system in Michaux State Forest's (Pennsylvania) Mountain Creek watershed has evolved over decades and consists of old logging roads, state forest roads, formal trails, and informal user built trails. With minimal planning and intensifying use, especially by mountain bikers, this trail system faces several social and environmental sustainability challenges, ranging from user conflicts to the degradation of stream health. This study will present results from a comprehensive trail inventory and sustainability assessment, along with a preliminary analysis of a stakeholder survey, both of which will inform management efforts to design a more sustainable trail system.

Viva La Resistencia: Undocumented women fight back against the carceral state

Keywords: resistance, feminist geopolitics, Latinx geography, community organizing, immigration system

Authors:

Melissa Tolosa, *Temple University*

Abstract

The criminalization of immigrant groups who cross the U.S.-Mexico border continues to be a political issue in the U.S. Immigrant groups are currently struggling to find where they belong in their communities without the fear of being detained and deported. This paper will focus on the different ways that undocumented women's activism and resistance hold in spaces that might feel unsafe for their mobility. My research aims to better understand how the perceptions of women's sense of identity, mobility, and safety changed when they migrated to Philadelphia, PA. Through archival data and participant observation, women have been sharing their stories and opinions regarding the immigration "justice" system. Undocumented women are fighting back against a white supremacist system by speaking their truth at protests, interviews, and community gatherings. The proposed research draws upon feminist political geography and Latinx geography to examine women's sense of safety and identity as well as their daily and long-term mobility as they navigate everyday life as undocumented immigrants. Drawing upon theories of feminist geopolitics will help to better understand how undocumented women navigate carceral spaces because it focuses on how gender intersects with other relations of power, identity, mobility, and violence at multiple scales.

Urban processes and urban pollinators: A political ecological answer to the luxury effect framework

Keywords: Urban political ecology, urban ecology, bees, luxury effect, sustainability fix

Session Type: Paper Abstract

Authors:

Austin Martin, *Temple University*

Abstract

Urban ecology is an inherently interdisciplinary field, but its theoretical scope remains limited to reductive understandings of urban processes. Here, I examine the concept of the luxury effect in urban ecology, or the observed tendency for urban biodiversity to exhibit positive correlations with household income in a given area. Using my own empirical data from sampling of wild bees in the City of Detroit, Michigan, USA and its suburbs, which display a negative correlation between bee genus diversity and household income, I provide a counterexample to the luxury effect and outline alternative theoretical foundations in the sub-field of urban political ecology. I also provide additional context with my ongoing field work in Philadelphia, PA, USA and Montreal, QC, Canada.

Results from the Detroit wild bee study run counter to the luxury effect hypothesis, which begs for a more robust theoretical foundation towards a better understanding of urban socio-ecological

systems. One possible reason for this current lack in explanatory power is that urban ecology's reductive understanding of urban processes does not adequately account for the dimensions of urban land cover change and uneven urban development. Urban political ecology's framing of political economic drivers (e.g. growth machine coalitions and the sustainability fix framework) would offer a more robust and complete framework for interpreting urban ecological empirical data.

“When the Going Gets Tough, the Tough Gets Going:” An Exploration of Residents’ Resilience to Climate Change in Hellshire Beach, Jamaica

Keywords: Climate Change, resilience, sea level rise, coastal erosion, indigenous climate action, Jamaica

Authors:

Shenika McFarlane-Morris, *The University of the West Indies, Mona Campus (Jamaica)*

Abstract

Like other Small Island Developing States (SIDs), coastal Jamaica residents are apprehensive about climate change's devastating effects on their lives, properties, and livelihoods. Coastal towns and villages are typically significant geographical spaces in SIDs which magnetize people desiring to establish businesses and gain employment. However, sea level rise (SLR), coupled with the occurrence of powerful hurricanes, has culminated in the loss of up to 77 metres of beach space within the last 15 years in Hellshire Beach. This alarming loss of beaches has driven the community into resilience mode. The overarching objective of this research was to explore the impacts of the changing environment on the community and to understand the barriers to resilience. This research is part of a larger body of work centred on climate change adaptation in Jamaica. The data were collected from residents, fisherfolk and seafood restaurant operators using semi-structured interviews and observation. The findings revealed that SLR and erosion culminated in a decline in tourist visits and patronage; widespread damage to business and home infrastructure; the cost of ‘bottom-up’ climate action is overbearing, yet meaningful intervention from governmental stakeholders has been slow in coming, running contrary to Sustainable Development Goal number 13 which calls for urgent climate action.

Poster Abstracts

A Citizen-Science Framework for Monitoring Water Quality in the Conodoguinet Watershed in Franklin County, PA

Keywords: Water quality, TMDL, Monitoring program, Citizen-Science, Sample sites, Franklin County, Conodoguinet Creek

Authors:

Madison Colyer, *Shippensburg University*

Abstract

In response to degrading water quality in the Chesapeake Bay, a total maximum daily load (TMDL) was established to define pollution reduction goals across the entire watershed. The U.S. Environmental Protection Agency and state governments rely on local government cooperation to identify ways reduction goals can be achieved. The Franklin County Conservation District in south-central Pennsylvania is currently addressing a Countywide Action Plan focused on TMDL reduction goals for nitrogen and phosphorus. The need for real time water quality data, instead of modeled estimates of nitrogen and phosphorus loading, through a monitoring program has been in discussion for several years. This research aims to create a stream monitoring program that will produce data approved for use in this regulatory context by the Pennsylvania Department of Environmental Protection. Through a series of interviews, GIS methodology, and review of scholarly literature, results are being compiled to answer the needs for volunteers, equipment, funding, and site locations. This poster shows work currently completed and areas that are still in development. With ArcGIS Pro 3.0, sampling locations were analyzed using land cover and tax parcel data. Field reconnaissance of selected sites show most sites being accessible for monitoring, however, the rural sites are situated around private lands and require permissions from landowners. Continued research is being conducted to solidify the sample site locations and begin monitoring efforts.

A Geospatial Analysis of Sinkholes and Structural Inequity in Baton Rouge, Louisiana

Keywords: Hazards, Environmental Justice, GIS, Sinkholes, Louisiana

Authors:

Ashley Allen, *SUNY Oneonta*, Jacob Warner, *SUNY Oneonta*, James Reardon, *SUNY Oneonta*

Abstract

In recent years, residential and commercial development in Baton Rouge, Louisiana, has moved closer to the Mississippi River, where developers can capitalize on lower land prices and

proximity to Louisiana State University while renting commercial space and “luxury” apartments. This rapid development has increased economic mobility, but it raises environmental concerns due to the geologic conditions of the floodplain where much of the construction is located and the risk of overengineering compromising the river's traditional structure and levee system.

This project aims to assess the impact of sinkholes on marginalized populations by analyzing current sinkhole data in two distinct, historical, and adjacent neighborhoods with wildly different histories and current demographics, particularly in terms of race and socio-economic status: The Bottoms, a historically Black, lower-income neighborhood with a history of flooding, and the Garden District, a predominately white, upper-middle-class neighborhood.

Photographic documentation of sinkholes, coupled with observations of government intervention, revealed significant disparities that we further analyzed using GIS. This analysis showed the stark contrast between neighborhoods and highlighted observed inequities in sinkhole mitigation and repair. While both neighborhoods had sinkholes, only the Garden District received substantial government attention for repairs. The Bottoms, with a higher prevalence of sinkholes, face risks to residents and urban infrastructure. Examining these observable disparities can set the stage for a community-driven dialogue on environmental racism in Baton Rouge.

Challenges of Defining Urban Flood Impacts When Considering Equity

Keywords: Flooding, Urban Stormwater, Vulnerability, Equity, Philadelphia

Authors:

Madeline Scolio, *Villanova University* Kate Homet, *Villanova University* Achira Amur, *Villanova University*, Peleg Kremer, *Villanova University*, Bridget Wadzuk, *Villanova University*, Virginia Smith, *Villanova University*

Abstract

Accurately delineating flood risk is critical to protecting vulnerable populations in urban environments. For example, Philadelphia is a city with a large proportion of vulnerable populations and is plagued by flooding with expectations that flood risk will increase as climate change progresses. Although there are currently models and frameworks to estimate and predict urban flooding, there is a lack of observations to validate their results since floodwaters usually remain in affected areas for at most a few days. In this research, we compare and contrast different methodologies for capturing flood extent in order to highlight the challenges inherent in current methods for urban flooding delineation. This research uses two case study Philadelphia neighborhoods, Manayunk and Eastwick, that face frequent flooding. An array of data, including remotely sensed satellite imagery after major flooding events, FEMA 100-year floodplains, road closures, NFIP claims, redlining maps, and community surveys were compared for the study areas. One finding is that community surveys were best able to describe pluvial flooding in

comparison while other approaches such as FEMA floodplains were better at delineating fluvial flooding. Given the complexity of flooding, there is no single method to fully encompass the impacts on both human well-being and the environment. Thus, we propose utilizing a combination of methods to best capture the scope of urban flooding.

Evaluating Wave Glider Meteorological and Oceanographic Data Using in Situ and Remotely Sensed Coastal Data in the Delaware Region

Keywords: Coastal Flooding, Wave Glider, coastal forecasting, oceanographic Observation, Meteorological Observation, Autonomous Vehicle

Authors:

Emmanuel Olamiriki, *University of Delaware*, Dana Veron, *University of Delaware*, Arthur Trembanis, *University of Delaware*

Abstract

One of the limitations of coastal forecasting is the lack of high spatial-resolution meteorological and oceanographic observations. One platform that can fill the sensing gap is Wave Glider, a coastal autonomous vehicle that can obtain simultaneous meteorological and coastal data in real time. During 15 days in November of 2022, the wave glider was deployed off the Delaware coast. During this period in late fall, there were several storms and turbulent ocean conditions, one of which occurred entirely while the wave glider was station-keeping to be compared with the closest NOAA buoy. In this study, we focused on the use of the wave glider atmospheric and oceanographic observations to identify mesoscale environmental variations and characterization of the storms. The wave glider data were compared with data from available coastal stations, buoy observations, weather radar (Dover, DE station), and the NOAA-GOES16 SST product to evaluate spatial and temporal patterns. In general, the wave glider and Buoy 44009 data showed strong correlation regarding air temperature, SST, wind speed, and wind direction. The largest variations occurred during frontal passage, indicating that the wave glider platform and sensors would be very helpful in storm detection and tracking along the Northeastern US coast. Data from the Wave Glider will be compared with output from a high-resolution, mesoscale atmospheric model (WRF) for each storm. Additionally, future research will focus on investigating the utilization of wave glider data as input to enhance the prediction of variable coastal weather conditions that will occur before and during storm passage.

Gentrification in Comics and Graphic Novels

Keywords: gentrification, comics, graphic novels, place attachment

Authors:

Steven Schnell, *Kutztown University*

Abstract

Over the last decade, comic and graphic novel creators have increasingly examined the constant churn and change of gentrification, and its profoundly dislocating effects. Through an examination of a range of works from Julia Wertz, Ben Katchor, Lucio Zago, G. Willow Wilson, Roz Chast, and Ezra Clayton Daniels, this poster will explore how authors and artists have used the marriage of words and images found in comics to capture, and perhaps to preserve for posterity, some of the ineffable essence of their changing city and its sense of place. Gentrification is inherently disruptive of place attachment, and this poster analyzes the ways that artists and authors have responded to this disruption.

GEOTeams: Piloting an innovative multilevel team approach to creating summer research pathways to geoscience

Keywords: STEM Education, Summer research programs

Authors:

Jase Bernhardt, *Hofstra University*

Christa Farmer, *Hofstra University*

Abstract

The geoscience profession must attract and retain more geoscience students in secondary and post-secondary educational settings to address a projected shortage of geoscience professionals in the United States in the next decade. The geoscience workforce is also among the least diverse of all the STEM workforce populations in the U.S., motivating efforts to increase participation by women and non-binary people, Hispanics or Latinos, Blacks or African Americans, and American Indians or Alaska Natives. NSF award #1911514 established the “GEOTeams” program, which tested an approach to broadening participation in geoscience education through intensive team-based summer research experiences, skills workshops, and career networking seminars. Over three summers, a total of 36 participants have worked in four teams per year, each comprised of a high school student, an undergraduate STEM major, and a pre-service STEM teacher, undertaking geoscience research under the guidance of a faculty member in the Hofstra University Department of Geology, Environment, and Sustainability. Evaluation of the mixed-level team-based cohort model used in the GEOTeams program showed that this approach provides engaging and effective introductions to geoscience research and careers for all participants. The project has also met its goal of including a significant number of female and underrepresented minority participants in each annual cohort. We hope that our successful pilot

of this model will stimulate further research on the value of teamwork in geoscience training and encourage institutions to expand participation in undergraduate summer research experiences to include high school students and pre-service teachers.

How can poor heat perception lead to heat related illness?

Keywords: Heat, Meteorology, Worker Safety

Authors:

Samantha Friedman, *Oceanside High School*, Conor Latimer-Ireland, *Hofstra University*, Erika Torres, *Uniondale High School*, Jase Bernhardt, *Hofstra University*

Abstract

Every summer, a common theme in newspaper articles is about the “silent killer,” extreme heat, and how it affects vulnerable groups, especially those who work outside. Working outdoors in extreme heat can cause serious illness or even death. Between 2011 and 2019, an average of 38 outdoor workers reportedly died due to extreme heat every year, although the true number is likely higher (OSHA). Climate change is only increasing these numbers as well as cases of heat related illness. The purpose of this study was to improve understanding about the effects of intense heat on people who work outdoors on the Hofstra campus and how people perceive temperature. The information gathered will be used to assess weather communication and warning systems for extreme heat conditions.

Identifying Southern Pine Beetle Damage in High Spatial Resolution Drone Imagery Using Multiscale Image Segmentation and Random Forest Classification

Keywords: Remote Sensing, Drone, Machine Learning, Southern Pine Beetle

Authors:

John Gross, *Farmingdale State College*, Alice Jenks, *Farmingdale State College*, Saija Villanova, *Farmingdale State College*

Abstract

This research combines multiscale image segmentation methods, image texture metrics, and random forest classification to develop a novel approach to identification of individual tree crowns damaged by southern pine beetle using ultra-high spatial resolution imagery collected with an unmanned aerial system. An outbreak of southern pine beetle (SPB) (*Dendroctonus frontalis*) can cause significant ecological damage to pine dominated forests, and potential economic damage to surrounding communities who rely on them (e.g. natural tourism). These

outbreaks are especially concerning for geographic regions such as Long Island, New York, where outbreaks threaten local Pine Barren communities, an endangered ecosystem endemic to Eastern North America. An unmanned aerial system (UAS) was used to generate an image with a spatial resolution of 7cm over a mixed canopy forest in Long Island, NY. This image was then subjected to multi-scale image filtering and watershed analysis to identify individual tree crowns (ITC). Each crown segment was then used to calculate a variety of spectral and textural metrics that were used as the basis for a random forest classification. Overall, the results indicate the potential to accurately identify individual tree crowns of evergreen canopy species that have been damaged or destroyed (dead). However, the method was not able to determine specifically if the cause of that damage was SBP.

Intensification and Evolution of Nor'easters affecting the New England Region, 2000 to 2020

Keywords: Nor'easter, New England, Intensification, Evolution

Authors:

Jaylin Calistro, *Kutztown University*, Michael Davis, *Kutztown University*

Abstract

Understanding what allows Nor'easters to intensify will allow weather forecasters, and the general population to better predict how intense a Nor'easter will turn out to be. In turn, this could save lives and money. The goal of this research is to better understand exactly how different variables impact and cause Nor'easters to intensify. The variables that will be focused on in this study are maximum and minimum temperature, rainfall and snowfall amount, sea level pressure, and the North Atlantic Oscillation Index. This data is collected from 10 separate Nor'easter events in New England between 2000 and 2020, five of them occurring between 2000 and 2010 and then five occurring between 2011 and 2020. Data is collected from two days before, during and then two days after the Nor'easter event. Through the use of various statistical analyses using these variables we hope to better understand what causes Nor'easters to intensify.

Known Saltwater Intrusion Threats to the Built Environment with the Adaptation Solutions and Resilience Pathways to Move Forward

Keywords: saltwater intrusion, sea level rise, built environment, adaptation, resilience

Authors:

Tiana Thorp, *University of Delaware*, Jennifer McConnell, *University of Delaware*, A Siders, *University of Delaware*

Abstract

Climate change is causing sea levels to rise, and with this growing threat to coastal communities comes the accompanying danger of saltwater intrusion (SWI). SWI occurs when saline water interacts with a system (i.e., aquifers, soils, buildings) and can cause many issues if left unhindered. SWI threats must be identified to ensure adequate climate readiness in coastal communities as sea levels rise. Through a systematic review utilizing the Web of Science database, 163 papers were selected and evaluated via keyword search to identify threats SWI poses to civil infrastructure (Thorp et al. (in progress)). The research presented in this paper investigates documented SWI threats to the built environment, including both private and public buildings, that were identified in that review (n = 28 papers), as well as their accompanying adaptation solutions and resilience pathways. Eight threats, twelve adaptation solutions, and fifteen resilience pathways were identified for the built environment. Further, relevant actors are identified with an indication of which adaptation solutions and resilience pathways are currently in practice and if they are mandated. Most of the identified adaptation solutions and resilience pathways still need to be implemented, and those in practice are not mandated at a large scale. The results should serve as a starting point for the identified relevant actors to respond to the identified SWI threats to ensure adequate climate readiness of coastal communities.

Labor Politics, African Agency, and the Future of Africa-China Engagements

Keywords: Africa, labor politics, Ghana, Bui Dam

Authors:

kwame adovor tsikudo, *Thomas Jefferson University*

Abstract

Africa and China have, over the past two decades, forged robust relationships involving cooperating on issues such as COVID-19, mutual developments, and multilateral bloc voting. While African countries welcome the burgeoning engagement for fulfilling vital fiscal and infrastructural deficits, the extent to which African agency shapes the interactions remains an issue. Drawing on research from Ghana's Bui hydropower dam, this presentation contextualizes African agency by examining how Chinese African (Ghanaian) employees resisted and challenged poor working conditions and unfavorable labor practices and regimes. This analysis transcends the state-to-state conversation on agency and proposes social agency (micro-scale agency) as essential in shaping the future of Africa-China engagements. The discussion challenges the state-centric approach to agency and argues that socio-political contexts, including history, law enforcement, and institutional effectiveness, are prerequisites for successfully exercising agency in Africa-China relationships. The study reinforces the centrality of autonomous, sagacious, and resourceful institutions in facilitating mutual benefits of Africa-China relations.

LGBTQIA+ Development of New York City

Keywords: LGBTQIA+, LGBTQIA+ Geography, History, Development, New York City, Data Visualization

Authors:

Douglas Bartholomew, *SUNY Oneonta*

Abstract

In the United States, LGBTQIA+ rights are currently facing significant challenges, underscoring the pressing need to assess the progress made and forge ahead. This research project explores the historical landscape of LGBTQIA+ experiences in New York City, a pivotal center in the struggle for LGBTQIA+ rights, through the lens of historical location data spanning several decades. This visualization-driven study not only presents geographic data but also delves into the historical significance of each location, shedding light on the rich history of LGBTQIA+ activism and milestones in the city.

Mapping the Historical Wetlands of the Lower Mississippi River Basin

Keywords: Wetlands, environment, river, habitat, water filtration, terrain analysis

Session Type: Poster Abstract

Authors:

Timothy Frankstone, *Penn State University*

Abstract

Wetlands are vital ecosystems that provide a range of ecosystem services, including provision of nursery habitat for a range of organisms, mitigation of extreme weather effects, and filtration of excess nutrients such as nitrogen from watersheds. However, wetland habitats are in decline worldwide – in the Midwestern United States, large swathes of wetland have been cleared or filled for agricultural use, contributing to excess nutrient loading in watersheds which can lead to pollution of watersheds and harmful algal blooms. Targeted restoration of wetland habitats has been proposed to reduce nitrogen loading and improve water quality, but because the historical distribution of wetlands in this area is not well understood, it is difficult to assess the potential impact of these efforts. This project uses Digital Elevation Models (DEMs) and hydrography data to identify likely sites of historical Geographical Isolated Wetlands (GIW) across the Lower Mississippi River Basin. These GIW areas are then overlaid with NLCD Land Cover data to identify where former wetlands have likely been converted to agriculture. The findings of this study not only deepen understanding of environmental change in the Lower Mississippi Region, but identify key areas that may be candidates for habitat restoration efforts.

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Wetlands are vital ecosystems that provide a range of ecosystem services, including provision of nursery habitat for a range of organisms, mitigation of extreme weather effects, and filtration of excess nutrients such as nitrogen from watersheds. However, wetland habitats are in decline worldwide – in the Midwestern United States, large swathes of wetland have been cleared or filled for agricultural use, contributing to excess nutrient loading in watersheds which can lead to pollution of watersheds and harmful algal blooms. Targeted restoration of wetland habitats has been proposed to reduce nitrogen loading and improve water quality, but because the historical distribution of wetlands in this area is not well understood, it is difficult to assess the potential impact of these efforts. This project uses Digital Elevation Models (DEMs) and hydrography data to identify likely sites of historical Geographical Isolated Wetlands (GIW) across the Lower Mississippi River Basin. These GIW areas are then overlaid with NLCD Land Cover data to identify where former wetlands have likely been converted to agriculture. The findings of this study not only deepen understanding of environmental change in the Lower Mississippi Region, but identify key areas that may be candidates for habitat restoration efforts.

Place-making: Effects of Portable Gaming Devices on Making Place for Adolescents

Keywords: Gaming, Place-making, Place theory, Sense of place, Digital place-making, Physical place-making, Digital world

Authors:

Zarif Jamal, *General Douglas MacArthur High School*

Matthew Wlazlo, *General Douglas MacArthur High School*

Abstract

Although placemaking as a theory has only existed for a little over 60 years, extensive research has been completed on the subject to determine the best way to create a meaningful environment for the people of an area through the application of place theory in the physical world (Shwartz-Ziv & Strier, 2020). Multiple methods exist to create place, such as Somali refugees in Chicago creating their own community with businesses and community centers (Magan & Padgett, 2021). As technology has developed over the years, especially with the creation of the internet, researchers began to look into another facet of placemaking: digital placemaking. Similar to placemaking, digital placemaking aims to create a comfortable environment for people within a digital world, which has been accomplished through virtual-reality (VR) technology. While

many studies have been conducted on digital placemaking and its effects on people's sense of place in the digital world, only a few studies about how the digital world affects people's sense of place in the physical world were conducted, such as on location-based exploring games' effect on a physical sense of place (Pang et al., 2019). This study aims to analyze how gamers' attachments to their digital environments affect their sense of place in the physical world, specifically in unfamiliar environments, through a survey on the use, or lack thereof, of portable gaming devices. These variables were then compared with other influential variables to determine how important one's connection to the digital world was to their sense of place in the physical world.

Rails to Tales: The Location of Public Libraries in New York City in Relation to Subway Stops and Predominantly Black Census Tracts

Keywords: Transit, New York City, Libraries, Race, Census

Authors:

Julian Rocha, *Hofstra University*

Abstract

What is the spatial relationship between public libraries, subway stops, and predominantly Black census tracts in New York City? For a variety of reasons, such as racist urban planning, transportation flow, and density, access to neighborhood amenities varies vastly across New York City. This research looks at library access, as given that they are a public resource, they should be equally accessible across the city via public transit, another public resource. Given that subway operations are independent of traffic and road conditions, they tend to be much more consistent than bus service. Using U.S. Census data, combined with the locations of every subway line and public library in New York City, this map shows the spatial correlation between each of the three. When closely examining the Canarsie and East New York neighborhoods, areas with some of the highest percentages of Black people in all of New York City, it is clear that many residents do not have easy access to neighborhoods by train. Sure, the eastern neighborhoods in Queens, with varied racial demographics, do not have any libraries easily accessible by train, but it is reasonable to speculate that is simply due to the extent of the subway, which could prompt further research.

Research on the Impacts of Marine Debris in Hopkins, Belize

Keywords: debris, qualitative geospatial analysis, community-based research

Authors:

Alisha Armstrong, *Temple University*, Ash Siguenca, *Farmingdale State College*, Alicia

Thornton, *La Salle University*, Amy Goldkin, Britta Wilkerson, *Hobart and William Smith Colleges*, Carolina Sandoval, *Fordham University*, Vijay Palacio, *University of Belize*

Abstract

In the coastal village of Hopkins, Belize, the persistent problem of debris has deeply impacted the community. Ocean pollution poses a significant threat to the global ecosystem and its effects are being felt worldwide. This NSF-funded research investigates the impacts marine debris has had on Hopkins Village and the local community's response. By combining local knowledge and geospatial technologies, the 2023 Citizen Science GIS Debris Team has created a comprehensive overview of the debris problem within the village. Our research approach involved both quantitative and qualitative data collection methods. The quantitative data was collected by conducting quadrat mapping, along 3 miles of coastline at 50-meter intervals, to assess marine debris. Qualitative data was gathered through interviews with residents to gain insights into debris-related issues within the village. Findings displayed that the predominant human-made debris is plastic, while sargassum is the prevalent natural debris. Hopkins residents are aware of these trends and propose significant solutions. However, individuals from the community have expressed a need for additional resources in order to effectively address the issue. Collaborative research such as this provides a resource for the local community to have an influence on local policy.

Sedimentological characteristics of Hurricane Ian's storm surge deposit in Charlotte Harbor, southwest Florida

Keywords: sedimentology, hurricanes, organic content, stratigraphy, storm surge, storms, sediment, mangroves, tropical cyclone, Florida, overwash

Authors:

Arielle Nogueira, *Villanova University*, Jennifer Walker, *Rowan University*, Kristen Joyse, *Nanyang Technological University*, Isabel Hong, *Villanova University*

Abstract

Hurricane Ian made landfall on September 28th, 2022 in southwest Florida at Category 4 intensity (maximum wind speed of 178 km/hr and maximum flood heights of 10-15 m above mean higher high water). The destruction was severe and widespread, causing casualties in 19 counties and bringing the total death toll to around 150. Our study of Hurricane Ian overwash sediments in southwest Florida mangroves aims to characterize and compare pre-storm sediment to the storm surge deposit to better understand how paleohurricane deposits can be identified in tropical mangrove environments. Six months after landfall, we sampled both the Hurricane Ian overwash sediment and the pre-Ian sediment at Matlacha Pass in Charlotte Harbor, Florida, an estuary located directly on Hurricane Ian's track. We used grain size analysis and loss-on-ignition to compare sedimentological characteristics of Hurricane Ian overwash sediments to the underlying sediment found in mangrove environments. Results show the underlying pre-Ian

sediment is a dark brown-red, poorly sorted ($1.79 \pm 0.20 \Phi$), organic-rich (7 to 65% organic content) sandy silt to silty sand (mean $4.67 \pm 0.75 \Phi$). In contrast, the Hurricane Ian overwash sediment is a light gray, moderately sorted ($1.44 \pm 0.57 \Phi$), less organic (2 to 15% organic content) silty sand to sand (mean $4.25 \pm 1.11 \Phi$). Results of this work will aid in examining sedimentological characteristics of a high-intensity, landfalling tropical cyclone and can help to identify paleohurricane deposits in southwest Florida.

Spatial Distribution of Arbuscular Mycorrhizal Fungal Diversity and Heavy Metal Soil Concentrations as a Function of Urban Structure in Philadelphia, PA

Keywords: Urban Landscape, Heavy Metals, Fungi

Authors:

Luis Berrios, *Villanova University*

Abstract

To mitigate the impacts of climate change and urbanization, multifaceted solutions that are underpinned by our understanding of biodiversity patterns and ecosystem functions within cities are needed. Arbuscular mycorrhizal fungi (AMF), known for their critical role in ecosystems, are promising candidates for simultaneously addressing multiple challenges borne of urbanization and human activity. However, few studies have investigated the effects of urban structural components and organization on the distribution of AMF and heavy metals, a common environmental pollutant threatening biodiversity. In this study we analyze the distribution of AMF and total heavy metals (THM) and bioavailable heavy metals (BHM) as a function of the urban landscape in Philadelphia, PA using the Structure of Urban Landscapes (STURLA) Classification. A random spatially stratified sampling method was used to collect 75 composite soil samples, 15 for each of the top 5 STURLA classes equally distributed across the 5 major regions in Philadelphia. A metagenomic analysis was done using Illumina MiSeq to identify soil AMF. Soil THM was analyzed using an X-ray fluorescence spectrometer (XRF) and BHM was analyzed using inductively coupled plasma mass spectrometry (ICPMS). We present a preliminary descriptive analysis of the distribution of THM and their relationship with STURLA classes. Next steps include bioinformatics on AMF to determine diversity metrics, and a structural equation model will be used to identify causal relationships between urban structures, THM, BHM, and AMF.

The Impact of Challenge Day on 10th Grade High School Students

Keywords: Challenge Day program efficacy, student mental well-being, student social well-being

Authors:

Caitlin Barry, *General Douglas MacArthur High School*, Jolie Naidus, *General Douglas MacArthur High School*, Vincent McCormack, *General Douglas MacArthur High School*

Abstract

Challenge Day is an intervention program for high school students that aims to build community as well as life skills through icebreakers, small groups, and other interpersonal activities. In this study, we collected data on high school students' perception of their school and teachers before and after experiencing Challenge Day in order to gauge the program's efficacy in achieving its goals. The results indicated that participation in Challenge Day was significantly associated with improved student outlook on their academic environment, as well as greater confidence in the social resources available to them. Overall, the results of this study support that Challenge Day is an effective initiative for improving high school student mental and social well-being and allowing them more general comfort when in school.

Traffic v. Timetable: The Impact of Congestion on MTA Buses In Queens

Keywords: GIS, Public Transit, New York City, Transportation Planning

Session Type: Poster Abstract

Authors:

Nicholas Lucchetto, *Hofstra University*

Abstract

How much is traffic congestion to blame for the fluctuating punctuality of buses in Queens? Coinciding with the MTA's development of its ambitious Queens Bus Network Redesign plan, *Traffic v. Timetable* aims to analyze the potential correlation between clusters of traffic congestion and the on-time performance of Queens buses, using pre-COVID data collected from all MTA Queens bus routes and the vast majority of streets in the borough. Automated samples of traffic volumes on individual streets from 2019 were compared against the MTA's Customer Journey Time Performance (CJTP) metric (the % of passenger trips completed within 5 minutes of their scheduled durations) for each bus route. The data was filtered to show weekday peak hours only, then input into GIS software to display where bus routes (color-coded based on their median CJTP) and areas of high average congestion (as kernel density clusters) overlap and interact. The study concluded that out of the 10 worst-performing bus routes ranked by median CJTP, 9 out of 10 run through at least one congestion cluster, and 4 out of 10 encounter traffic volumes exceeding 500 vehicles (avg.) every 15 minutes. This implies an association between the geographic concentrations of traffic congestion in Queens and the phenomenon of unreliability among bus routes in the borough, further highlighting the need for a redesigned bus network to prioritize punctuality improvements.

data. Urban ecology and urban political ecology would mutually benefit as academic disciplines if channels of communication were more deliberately opened between the fields.

Waffle House has found its new manager: FEMA

Keywords: GIS, FEMA, emergency management, hurricanes, Waffle House

Session Type: Poster Abstract

Authors:

Wilmer Mejia, *Hofstra University*, Natalie Correa, *Hofstra University*

Abstract

Can Waffle House be the answer to hurricane crisis management? Craig Fugate of FEMA coined the idea of the "Waffle House Index" to refer to how Waffle House can be a measure for storm severity. With its 24/7/365 service, they are able to provide food, a community gathering space, and a sense of normalcy during emergencies. This research considers past storm tracks alongside a suitability analysis to determine areas where Waffle Houses could be opened as a preemptive form of emergency management. Using ArcGIS Pro, the analysis was conducted using free, secondary data. The results suggest that expansion of locations to the Northeast and some areas in the upper regions of the South would be ideal to provide more areas to the emergency management of Waffle House.

We Didn't Start the Fire

Keywords: GIS, wildfires, drought, rainfall, precipitation, land cover

Authors:

Genevieve McCormick, *Hofstra University*

Abstract

How does the annual rainfall affect droughts and wildfires across the contiguous United States? Using data from 2021 to examine how yearly rainfall affects drought severity and wildfires across the United States. This research considers the country's land cover and the Palmer Drought Severity Index as a form of drought measurement to see where the wildfires have been and which places would be most at risk the following year. The results conclude that the annual rainfall across the United States affects droughts and wildfires. However, the amount of rain a state/region receives does not ensure that there will be no droughts or wildfires.

“Where can I go?” Finding replacement housing after a rural floodplain buyout

Keywords: Buyouts, Replacement Housing, Place Attachment, Flooding

Authors:

Puja Jani, *University of Delaware*

Abstract

Local governments across the United States use buyout programs to purchase flood-prone homes to reduce long-term flood exposure, but after selling, residents face a challenge in finding replacement housing. Residents in rural areas, with slower housing markets and physical land-based place attachment, may face distinct challenges, but most evaluations have focused on urban programs. Recent urban buyout studies find participants move less than 10 miles on average. However, in a rural Wisconsin program, we find residents move an average of 168 miles (31 median). The absolute distance was less important than changes in context: whether they crossed state lines, moved from rural to urban areas, or changed housing types. Two general strategies for relocation emerge: staying as close as possible to the original neighborhood, or finding a new home, regardless of distance, that improved their lives, e.g., by reducing commute times, improving financial wellbeing, or being near family. Residents who moved farther paid more attention to avoiding flood risk at their new site than residents who stayed local. Results have implications for buyout program evaluation and strategies to support residents in finding replacement housing.
