

Program Guide  
2022 Annual Meeting

# Pennsylvania Geographical Society

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# JOHNSTOWN, PENNSYLVANIA



Johnstown Flood Museum

304 Washington Street, Johnstown, Pennsylvania 15901

4 November 2022

Sponsored by: University of Pittsburgh–Johnstown

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Holiday Inn Johnstown–Downtown

# 2022 Annual Meeting of the Pennsylvania Geographical Society



Hosted by the Department of Geography  
University of Pittsburgh-Johnstown



## 2022 Meeting Arrangements Committee

Ola Johansson, University of Pittsburgh–Johnstown

Francis A. Galgano, Villanova University



## Schedule of Events

Time	Event	Location
Posters will be available for viewing all day in the Crown Ballroom		
8:30 – 9:00 a.m.	Registration and Continental Breakfast	Lobby
9:00 – 10:20 a.m.	Paper Session 1	Napa Room
10:00 – 1:30 p.m.	Posters Available for Viewing	Sonoma Room
10:20 – 10:40 a.m.	Coffee Break	Napa Room
10:40 – 12:00 p.m.	Paper Session 2	Napa Room
12:00 – 1:30 p.m.	PGS Luncheon, Awards Ceremony, and Business Meeting	Crown Ballroom
1:30 – 2:15 p.m.	Poster Session: Presenters Available for Questions	Sonoma Room
2:20 – 4:00 p.m.	Paper Session 3 with Coffee	Napa Room
4:15 – 4:30 p.m.	PGS Student Awards Presentations	Napa Room

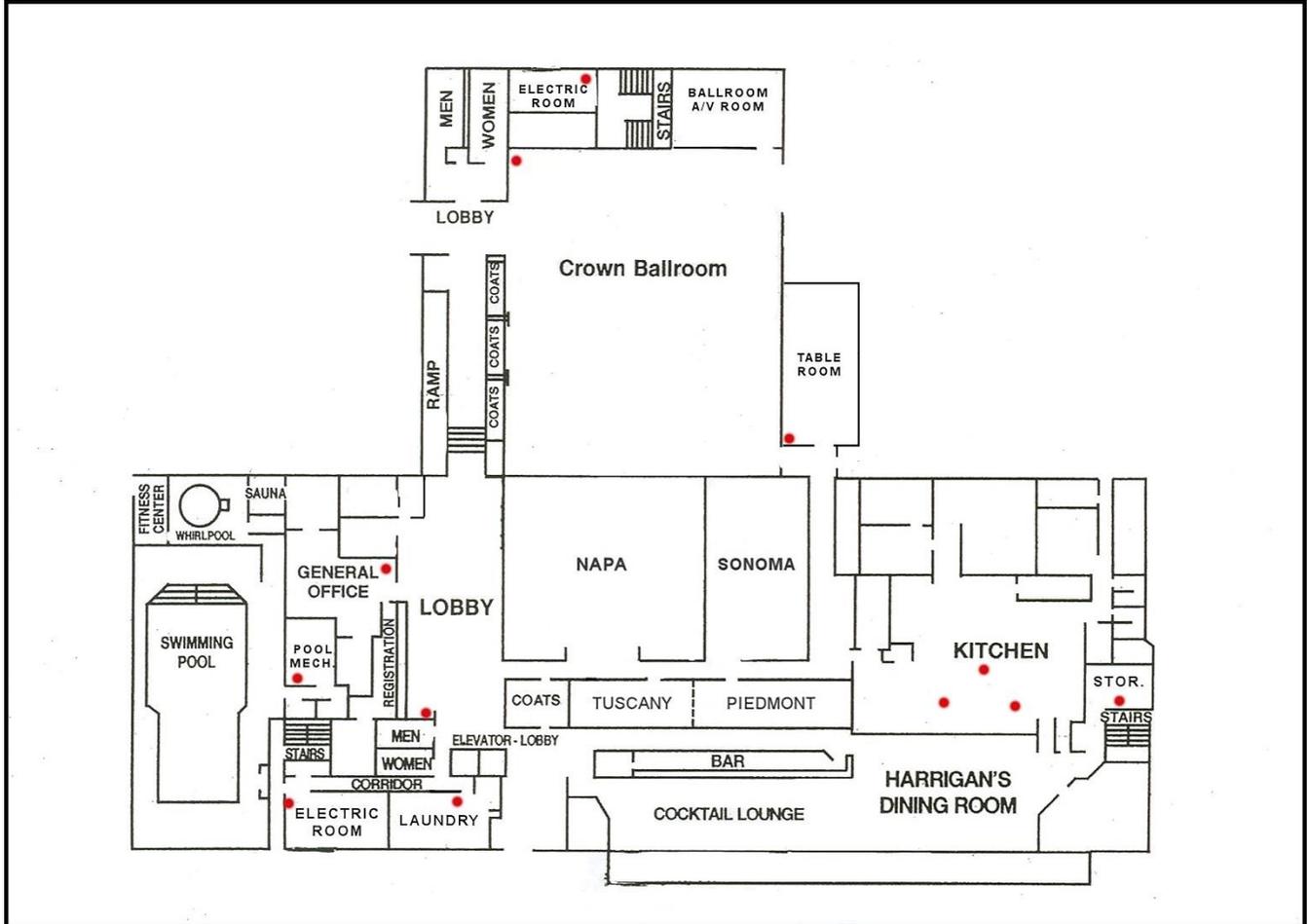
**Please Join Us For Next Year’s Meeting**

**Tentative Date: Friday, 3 November 2024**

*Please check out Places to See in Johnstown on the backpage!*

# Conference Floor Plan

## Holiday Inn Johnstown-Downtown



# THE PENNSYLVANIA GEOGRAPHICAL SOCIETY

## Annual Award Recipients



*Please join us in recognizing this year's PGS Award winners*

### COLLEGE / UNIVERSITY DISTINGUISHED TEACHING AWARD

Dr. Daniel Harris, Salisbury State University

Dr. Bonnie Henderson, Villanova University

### DISTINGUISHED SERVICE AWARD

Dr. Timothy J. Dolney, Penn State, Altoona

### DR. WILLIAM B. ("BILL") KORY DISTINGUISHED MENTOR AWARD

Ola Johansson, University of Pittsburgh–Johnstown

Dr. James C. Saku, Frostburg State University

### DISTINGUISHED GEOGRAPHER AWARD

Dr. Michael Glass, Director of the Urban Studies Program, University of Pittsburgh



The Pennsylvania Geographical Society is now accepting nominations for its 2023 Annual Awards  
Please go to <https://thepgs.org/awards> for information on award criteria and the nomination process

## IN MEMORIAM

Dr. William B. “Bill” Kory, Emeritus Professor of Geography  
University of Pittsburgh–Johnstown

On behalf of the Executive Board of the Pennsylvania Geographical Society, it is with great sadness that I announce that Dr. Bill Kory, Editor of the *Pennsylvania Geographer* as well as Professor Emeritus at the University of Pittsburgh–Johnstown, passed away at his home in Florida last winter.

Bill was born in 1939 in Kharkov, today’s Ukraine, and raised in a Russian-speaking family. He lost his father during World War II. Subsequently, the family were captured by German troops and sent to a prison camp in Bavaria. After the war, the family migrated to America and settled in Buffalo, NY.

Bill earned a degree in mathematics from SUNY Buffalo, he volunteered for the Peace Corps and

lived in Liberia for two years. Back in the United States, he received a master’s degree in geography at Case Western Reserve and subsequently enrolled as a PhD student in geography at the University of Pittsburgh. While ABD, Bill started teaching geography at Pitt–Johnstown in 1971 (and eventually earned his PhD in 1977). There he established the Johnstown Geography Department and taught courses in population geography, political geography, Africa, Russia, and many others. Together with colleague Mary Lavine, he later also established an environmental studies program. Bill retired in 2021.

Beyond his academic position at Pitt–Johnstown, Bill was active in the community as a junior high football coach, a borough councilman, and of course as a Board member of the Pennsylvania Geographical Society for decades. In particular, his “baby” was our journal, *The Pennsylvania Geographer*, which he was instrumental in guiding to become a peer-reviewed journal. Bill tirelessly devoted much of his time to the editorial duties. He received our lifetime achievement award in 2021.

Bill was also unrelentingly committed to his students’ success, and he formed an unbreakable bond with many of them. Every semester, students from year, even decades, ago came to visit him in his office. In his own words, one of Bill’s proudest achievements was that he had sent 200 students to graduate schools during his time at Pitt–Johnstown. His unmatched joy for the discipline of geography, and for life in general, will be sorely missed.

Ola Johansson  
Professor of Geography  
University of Pittsburgh–Johnstown  
Editor, *The Pennsylvania Geographer*



Dr. Bill Kory (left) and Dr. John Katana

# MEETING PROGRAM

## Summary of Papers and Presentations

Breakout Session 1: 9:00 – 10:20 a.m.	
<p>Napa Room</p> <p>† Indicates a Graduate Student Paper Contest Entrant</p> <p>‡ Indicates an Undergraduate Student Paper Contest Entrant</p>	<p style="text-align: center;"><b>Student-Faculty Research Across Disciplines and Institutions</b></p> <p><u>Session Chair:</u> Donald Buckwalter</p> <p>9:00 – Susan Lucas: <i>Using GIS to Examine the Persistence and Disappearance of Tiger Snails in the Northeastern U.S.</i></p> <p>9:20 – Aurora Slovensky‡: <i>Using GIS to Examine Local Sustainability and the Effects of Redlining In Pittsburgh</i></p> <p>9:40 – Roberta Mendonca De Carvalho: <i>Pittsburgh Urban Sustainability Profile</i></p> <p>10:00 – Zikuan Dong‡: <i>Urban Acupuncture, Gentrification, and Working-Class District Urban Renewal in Lawrenceville and Prenzlauer Berg</i></p>
Posters are available for viewing in the Sanoma Room: 10:00 a.m. – 1:30 p.m.	
Coffee Break (Napa Room): 10:20 – 10:40 a.m.	
Breakout Session 2: 10:40 – 12:00	
<p>Napa Room</p> <p>† Indicates a Graduate Student Paper Contest Entrant</p> <p>‡ Indicates an Undergraduate Student Paper Contest Entrant</p>	<p style="text-align: center;"><b>Human-Environmental Interactions</b></p> <p><u>Session Chair:</u> TBD</p> <p>10:40 – J.T. Bandzuh†: <i>Knowledge, Attitudes, and Practices Related to Mosquito Control and Malaria Prevention in East Sumba, Indonesia</i></p> <p>11:00 – Tim Dolney: <i>Research Problems, Findings, and Implications of the Second Golden Age of Natural Disaster Movies</i></p> <p>11:20 – Jessica Woods†: <i>An Examination of the Nile River Basin and Water-Driven Interstate Conflict in the Warming World</i></p> <p>11:40 – Josh Marcinik: <i>Spatial Big Data for Disaggregating Port-Level Pandemic Trade Shocks in the Delaware Bay</i></p>
PGS Annual Luncheon (12:00 – 1:30) Crown Ballroom	
<p><i>Lunch</i></p> <p>Opening Remarks, Frank Galgano, PGS Executive Director, Villanova University</p> <p><i>Annual Awards Ceremony</i></p> <p>Jennifer Pomeroy, President PGS, York College of Pennsylvania</p> <p><i>Distinguished Geographer Address</i></p> <p>Dr. Michael Glass, Director of the Urban Studies Program, University of Pittsburgh</p> <p><i>Seeing Like an Infrastructural Region: Technology, Industry, and why the Future Never Arrived</i></p> <p><i>PGS Business Meeting</i></p> <p>Frank Galgano, PGS Executive Director, Villanova University</p>	

Poster Session (Presenters Available for Questions): 1:30 – 2:15 a.m.   Sanoma Ballroom	
Breakout Session 3: 2:20 – 4:00 p.m. (with coffee)	
<p>Napa Room</p> <p>† Indicates a Graduate Student Paper Contest Entrant</p> <p>‡ Indicates an Undergraduate Student Paper Contest Entrant</p>	<p style="text-align: center;"><b>Topics in Human Geography</b></p> <p><u>Session Chair:</u> Susan Lucas</p> <p>2:20 – Donald Buckwalter: <i>Delineation of Employment-Based Urban Activity Centers: A Comparison of Two Methods</i></p> <p>2:40 – Mario Cardozo: <i>Migrant Narratives in Philadelphia’s Street Art: The Endangerment of Monarch Butterflies</i></p> <p>3:00 – Ola Johansson: <i>The Death of Einár: Media Discourses of Violence, Music, and Place</i></p> <p>3:20 – Eliza Gross: <i>On Demand, Custom, Topographic Maps from the USGS with topoBuilder</i></p> <p>3:40 – John Benhart Jr.: <i>Primary Data Derivation for City Comprehensive Plan Development Utilizing Aerial Unmanned Aircraft Surveys</i></p>
Student Awards Presentation: 4:15 – 4:30 p.m.	
Room Name	

## DISTINGUISHED GEOGRAPHER

Dr. Michael Glass, Director of the Urban Studies Program, University of Pittsburgh



Dr. Glass is an urbanist who works at the intersection of geography and planning. His primary research is on city-region governance and planning, housing, and urban infrastructure; he has regional expertise in Southeast Asia, North America, and Australasia. He is the co-editor of *Urban Violence, Resilience and Security: Governance Responses in the Global South* (Edward Elgar, 2022), *Performativity, Politics, and the Production of Social Space* (Routledge, 2014) and co-author of *Priced Out: Stuyvesant Town and the Loss of Middle-Class Neighborhoods* (NYU Press, 2016). His most recent research examines the ways that infrastructure shapes regions and influences regional equity. He has published extensively and is on the editorial boards of *Asian Geography Journal*, *Journal of Urban Affairs*, and *Regional Studies, Regional Science*. He is also the Regional Studies Association’s Territorial Ambassador to the United States. Winner of the 2015 Bellet Award for Teaching Excellence, Dr. Glass is the Director of the Urban Studies Program and serves as the undergraduate advisor.

# PAPER ABSTRACTS

† Indicates an entrant in the Graduate Student Paper Competition

‡ Indicates an entrant in the Undergraduate Student Paper Competition

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**Bandzuh, J.T.** † (Florida State University), *Knowledge, Attitudes, and Practices Related to Mosquito Control and Malaria prevention in East Sumba, Indonesia*

Co–Authors: Kacey C. Ernst, Jayleen K. L. Gunn, Salmon Pandarangga, Linda Rambu Kuba Yowi, Sarah Hobgen, Kerry R. Cavanaugh, Rambu Yetti Kalaway, Norlina Rambu Jola Kalunga, Maklon Felipus Killa, Umbu Ho Ara, Christopher K. Uejio and Mary H. Hayden

With an estimated 241 million human cases and 627,000 deaths in 2020, malaria remains a significant and ongoing global health challenge. This study employs a qualitative approach to investigate knowledge, attitudes, and practices surrounding mosquito control and prevention methods in East Sumba Regency, Indonesia. While malaria is under control in much of Indonesia, transmission in Sumba Island remains high, with incidence as high as 500 per 1000 population in some areas. A qualitative study was undertaken to explore use of insecticide treated nets, (ITNs), traditional Sumbanese mosquito control methods, and the role of women, integrated health service posts, (posyandu) and community-based health workers (kaders) in combatting malaria and controlling mosquitoes. Focus group discussions (n = 7) were conducted in East Sumba Island stratified by urban/rural location and level of malaria transmission. Key informant interviews (n = 14) were conducted with religious leaders, health workers, and women’s group leaders. Results indicate that environmental conditions, such as high temperatures, were common deterrents to regular ITN use. Furthermore, our results suggest that community embedded health workers, kaders, and health service posts, posyandu, play an important role in information dissemination related to mosquitoes and mosquito-borne diseases as well as the distribution and use of ITNs in East Sumba Island. The role of the posyandu and kaders could be expanded to improve malaria prevention by integration with educational campaigns, aiding ITN distributions, and malaria diagnosis and treatment. This study is the first to examine mosquito-borne disease-related knowledge, attitudes, and practices in East Sumba Island, Indonesia. Results could improve mosquito control and malaria prevention by providing insights into local knowledge of Anopheles mosquitoes and malaria as well. Tailoring mosquito control and malaria prevention strategies around local knowledge and perceptions is likely to be more acceptable and sustainable.

**Benhart, John Jr.** (Indiana University of Pennsylvania), *Primary Data Derivation for City Comprehensive Plan Development Utilizing Aerial Unmanned Aircraft Surveys*

Co–Authors: Mr. Trajan Jones, Mr. Jeff Raykes, and Mr. Scott Yackuboskey

This presentation focuses on a cooperative project carried out by planning staff and consultants from the City of Greensburg, Pennsylvania and IUP students and faculty involving drone flights to derive data regarding parking usage and availability. The City of Greensburg is undertaking a year-long comprehensive planning process involving public workshops, steering and advisory committee

meetings, and data development and analysis to develop a plan to guide key decisions regarding the use and development of land, parks and recreation, housing, mobility, and public infrastructure. As part of this effort, during the summer of 2022 the City of Greensburg Planning Department requested that the IUP Regional Planning faculty and students assist in carrying out a series of drone flights to document parking usage and availability in the City's downtown core. Aspects of the comprehensive planning process, contributions by two IUP Regional Planning student interns, undertaking aerial drone missions in a dense urban area, and the results of a parking analysis as an input to the City of Greensburg's 2023 comprehensive plan will be discussed.

**Buckwalter, Donald** (University of Pittsburgh Center for Social and Urban Research (UCSUR)), *Delineation of Employment-Based Urban Activity Centers: A Comparison of Two Methods*

Widespread acceptance of a polycentric paradigm of urban structure creates a methodological challenge for urban geographers. This presentation concerns technical aspects of two methods used to delineate employment-based activity centers, and it examines in a few details of what they show for the Pittsburgh metropolitan area. The two methods are the threshold method and employment to population ratios. The threshold method produces a better rendition of the distribution of high intensity land use, and it is a better approximation of the spatial concept of nodes. Employment/population ratios describe the push-pull relationships that make commuting necessary. Discrepancies between the two methods are large even where data units are fine-grained. The contrasting results matter because issues of efficiency and equity hinge on the outcomes of analysis of urban structure.

**Cardozo, Mario** (Kutztown University of Pennsylvania), *Migrant Narratives in Philadelphia's Street Art: The Endangerment of Monarch Butterflies*

Eastern monarch butterflies migrate seasonally from and to Mexico, the USA, and Canada. Since July 2022, the species has been classed as endangered by the IUCN, and it is now considered at a high risk of extinction because of habitat fragmentation. The monarch butterfly is, also, a political symbol for human migrants and their rights and plights. I draw from "landscape semiotics" and the concept of "semiotic assemblages" to illustrate parallels, convergences, and divergences between monarch butterflies' transboundary ecologies and human migrant narratives in political-activist street art in Philadelphia, Pennsylvania. I engage with two declarations of "endangerment" linked to the migratory monarch butterfly: that of the species (in 2022), and the perceived endangerment of the Hispanic migrant during President Trump's administration (2017-2021). I conclude by highlighting types of local and transboundary processes that impact human and nonhuman migrants, and how these processes are embodied in artistic and protest representations of the monarch butterfly.

**Dolney, Tim** (Pennsylvania State University, Altoona), *Research Problems, Findings, and Implications of the Second Golden Age of Natural Disaster Movies*

Disaster movies provided an attractive viewing experience beginning in the early 1900s. Several disaster movies were produced from 1910-1930 and 1950-1970 before the market saturated during what is considered the golden age of disaster movies, the 1970s. A social scientific study of 1970s disaster movies was conducted with results published in a 1980 article entitled "The Study of Disaster Movies: Research

Problems, Findings, and Implications.” The study noted the importance of popular culture in affecting people’s beliefs and discussed the roles movies play in shaping the conceptions and ideas held by the public about the physical and human features of disastrous events. It also illustrated the major substantive observations and impressions (clichés) derived from the content of the disaster movies studied. This research conducts a similar social scientific study of natural disaster movies during what can be considered the second golden age of disaster movies, the late 1990s-early 2000s. How have the major substantive observations and impressions (clichés) illustrated in natural disaster movies changed since the 1970s, if at all?

**Dong, Zikuan**‡ (University of Pittsburgh), *Urban Acupuncture, Gentrification, and Working-Class District Urban Renewal in Lawrenceville and Prenzlauer Berg*

This research has first reviewed the history of modern urban renewal and how ideas of micro urban renewal, careful urban renewal, and urban activism were developed into the concept of Urban Acupuncture by Jamie Lerner, inventor of Bus Rapid Transit (BRT) (Lerner 2014). As a reaction to large scale urban rebuild and gentrification, Urban Acupuncture is a way of thinking to solve urban issues that does not cause large physical changes. In Jamie Lerner’s book, he has discussed topics such as public lives, community, continuity, urban design, transportation, and people. To study the actual benefits of Urban Acupuncture, Lawrenceville Pittsburgh and Prenzlauer Berg Berlin have been selected as comparing study areas. Both areas are working-class districts when they were first built in the 19th Century, started to decline in the 1960s, and gentrified in the 1980s. Nevertheless, after study the two areas’ urban developing history, a series problems affected by continuity and solidary have caused Lawrenceville and Prenzlauer Berg went to two different paths.

**Galgano, Francis** (Villanova University), *The Evolution of Geostrategic Space*

Military geography involves the application of geographic information, tools, and technologies to military problems. In essence, military operations involve time, space, and the nature of what exists within the confines of that time and space—this is an inherently geographic perspective. By their very nature, military operations are geographic: they occur in places; and places contain unique natural and human landscapes. Consequently, there is a compelling, and immutable link between geography and national security because national security—and so too geography—is about space and the content of space. Because geographers characteristically employ an integrating approach to their inquiries, we are cognizant of the variety of processes affecting a place, and thus, geography offers an unusually important and relevant vantage point from which to examine and explain matters of national security. This paper examines the evolution of the national security landscape since the fall of the Soviet Union—an event that fundamentally altered how geographers examine national security issues and geostrategic space. Furthermore, events following 11 September 2001 have demonstrated the need for expanded geographic awareness as it relates to asymmetrical warfare and operations other than war, along with the dynamics of the new strategic reality of a multi-centric world.

**Gross, Eliza** (U.S. Geological Survey), *On Demand, Custom, Topographic Maps from the USGS with topoBuilder*

The U.S. Geological Survey (USGS) National Geospatial Program has released the topoBuilder application, which enables users to create topographic maps on demand using the best available National Map data. In topoBuilder, users can generate USGS topographic maps, called OnDemand Topo, centered anywhere in the United States or Territories, with customized contour smoothing, and export formats GeoTIFF or GeospatialPDF. Maps are made at 1:24,000-scale for the conterminous United States and Hawaii, 1:20,000-scale for U.S. territories, and 1:25,000 for Alaska. Future releases are planned for additional customizations such as user-selected layers, user-added content, GIS data exports, and other map scales. TopoBuilder, its capabilities, and OnDemand Topo maps will be demonstrated.

**Johansson, Ola** (University of Pittsburgh at Johnstown), *The Death of Einár: Media Discourses of Violence, Music, and Place*

In October 2021, the Swedish rapper Einár was shot to death in Stockholm. The shooting has been tied to gang rivalries. Having topped the Swedish music charts, the event received a high degree of publicity in his native country. While not widely known abroad, the event nevertheless resonated with and was reported by international media. The shooting took place during a period of heightened attention to Sweden's recent surge of gun violence. Einár's shooting therefore reinforced an existing narrative of Sweden as a place of social change—and not for the better. This paper analyzes English-language articles that covered the event. A series of media discourses are identified that juxtaposes Sweden's history as a peaceful welfare state with themes such as current immigration, social malaise, and rap music as a mirror and magnet for violence.

**Lucas, Susan** (University of Pittsburgh), *Using GIS to Examine the Persistence and Disappearance of Tiger Snails in the Northeastern U.S.*

Co–Authors: Zoya Domashnev and Timothy A. Pearce

Climate change induced declines in a wide variety of flora and fauna are widely discussed in scientific and popular literature. Less well-known are debates about changes in the population size and distribution of land snails and the causes of those changes. This research seeks to map the persistence and disappearance in *Aguispira alternata* (Tiger Snail) across the Northeastern US and to understand if and how acid soil, below normal soil calcium levels and snail persistence or disappearance are connected. The data used includes 1300 county-level field observations about Tiger snails, calcium levels in the top 5cm of soil and acid rain levels. After cleaning, ArcGIS Pro© is used to first map the persistence and disappearance of Tiger Snail, variations in soil calcium levels and acid levels. Union overlay analysis is then employed to examine whether acidic soils, below normal soil calcium and the affects persistence and disappearance of Tiger snails are correlated. Results of the analysis show that Tiger snails persisted (present before and after 1960) in an area north from Virginia, through Pennsylvania into New York state. Counties where snails existed before 1960 but disappeared after 1960 are widely scattered and non-contiguous, with the greatest concentration of these counties in West Virginia, Virginia and Pennsylvania. Results of the overlay analysis show that there is no clear correlation between soil acidity, soil calcium depletion and the disappearance of Tiger Snail. Tiger Snail only disappeared from nine counties with both below normal calcium levels and acidic soils.

**Marcinik, Josh** (West Chester University), *Spatial Big Data for Disaggregating Port-Level Pandemic Trade Shocks in the Delaware Bay*

The COVID-19 pandemic resulted in supply chain disruptions across the United States with the effect on ports and maritime traffic varying from region to region. Measuring these trade shocks historically relies on port-level trade data aggregated to monthly totals. Spatial big data, in particular Automated Identification Systems (AIS), is increasingly used to “nowcast” and measure trade volumes between nations. This study attempts to use AIS data to measure regional trade shocks using vessel port calls, focusing on major Delaware Bay ports from 2019 through 2021. A geospatial model is created to identify stopped and moored vessels. By using a data-driven approach, port boundaries for Camden, Chester, Gloucester, Paulsboro, Philadelphia, and Wilmington are delineated. This allows measurement of stopped and moored vessels within each port over time. The results show that regional vessel traffic of all types fell from March through May 2020 but increased to a peak in September 2021, largely driven by an increase in cargo vessel traffic. Statistical analysis further demonstrates that while the AIS-derived vessel traffic has a weak relationship to total shipping weight of trade, it has a moderate-to-strong positive relationship with total port-level trade value.

**Mendonca De Carvalho, Roberta** (University of Pittsburgh), *Pittsburgh Urban Sustainability Profile*

The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all, assembled by the United Nations General Assembly, and intended to be achieved by 2030. At its heart are the 17 Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. Goal 11 is Sustainable Cities and Communities, with the overarching objective to make cities and human settlements inclusive, safe, resilient, and sustainable. This research is the result of a joint activity of Urban Studies' courses Urban Sustainability and Data Visualization in the Spring 2022 where students were required to submit a report for each of the 10 targets of goal 11. Each target is composed by one or more indicators. The targets are normally measurable as “all people”, “at least by half”, “for all”, whereas the indicators show the measurement by which those targets can be judged a success or failure. The report identifies data and provide data visualization and analysis for the sub indicators composing each target. Where does Pittsburgh stand in meeting the Sustainable Development Goal 11? The report profiles Pittsburgh's performance in achieving urban sustainability. Besides, this work results in the collaboration across courses, with students forming a working group that reach beyond their classroom environment and mimics the professional world dynamics.

**Saku, James** (Frostburg State University), *The Dynamics of Ethnic Conflict in Sub-Saharan Africa*

Sub-Saharan Africa is endowed with tremendous natural and human resources. While more than 50% of the world's cobalt supply comes from the Democratic Republic of Congo, about 89% of global gold production is from the sub-continent (South Africa 56%; Ghana, 13%; Tanzania, 10%; and Mali, 8%). Within the framework of human resources, the present Director General of World Health Organization is from Ethiopia and the seventh Secretary General of the United Nations, Mr. Kofi Annan (1997-2006) was a Ghanaian. Notwithstanding these excellent successful stories, Sub-Saharan Africa (SSA) remains one of the poorest and least developed regions in the world. While many factors may account for this

problem, ethnic conflict and instability remains important impediments to economic and social development in SSA. Historic factors such as colonization and present Geo-political events are responsible for the conflict. The effect of ethnic conflict on the people of sub-Saharan African is substantial. National economies of Ethiopia, Ivory Coast, Sierra Leone, Liberia, and Rwanda deteriorated during years of ethnic conflict. Without ethnic harmony and peace, economic growth and prosperity will continue to deteriorate in sub-Saharan Africa. This presentation discusses the factors responsible for ethnic conflict, its impact, and potential solutions to this endemic problem.

**Slovensky, Aurora**‡ (University of Pittsburgh), *Using GIS to Examine Local Sustainability and the Effects of Redlining in Pittsburgh*

Extensive research links the HOLC neighborhood rankings of the 1930s with continuing inequality between communities of color and white communities across US cities and patterns of disinvestment negatively impacting communities of color. Less research has examined how the HOLC neighborhood rankings might affect neighborhood level variations in sustainability across individual urban places. This research seeks to address this deficiency by examining if there is a correlation between the HOLC's neighborhood rankings for Pittsburgh neighborhoods and the distribution of variables that measure two of three traditional pillars of sustainability, environment and social equity. The research was conducted using ArcGIS Pro version 2.9.1 (2021). Data on tree equity scores, tree canopy and parks were used to measure environmental sustainability. Data on bike lanes were used to measure social equity. ArcGIS software was used to overlay this data on the HOLC ranking for Pittsburgh city neighborhoods, calculate spatial statistics, perform buffer analyses, and process raster layers. In general, the results of the analysis show that environmental and social sustainability are correlated with HOLC grade. However, the relationship is nuanced. Neighborhoods ranked as 'best' (A) and 'still desirable' (B) had higher tree equity scores and more extensive tree canopy than neighborhoods ranked as declining and hazardous. Concomitantly, this suggests that residents of neighborhoods ranked A and B enjoy lower levels of air pollution and improved mental health than residents of neighborhoods once ranked C or D. However, neighborhoods ranked declining (C) and hazardous (D) had more access to parks and bike lanes.

**Wood, Jessica**† (Villanova University), *An Examination of the Nile River Basin and Water-Driven Interstate Conflict in the Warming World*

The allocation of freshwater from transboundary rivers is difficult to manage as the water-use practices of upstream states directly affect downstream states. Disagreements over water-use and water-rights have been and will continue to be a source of conflict. The primary issue at hand is that the method of determining sovereignty over transboundary rivers remains contentious and conflict resolution is not well-supported by robust international law. Climate change is projected to further strain the freshwater supply, which will exacerbate conflict as a result. This is the case particularly in the world's under-developed regions where the capacity to adapt to change is diminished from a lack of proper governance and institutions. To address this issue, I will conduct an examination of the Nile River Basin, which is an under-developed, poorly governed, and a severely water scarce region of the world, which is expected to undergo severe reductions in precipitation because of climate change. I will conduct a literature review on the history of water-related conflict for this region, and I will present spatial analyses of multiple

scenarios of potential climate change and water scarcity outcomes. I will also utilize physical condition factors, political stability factors, and de-escalating factors as indicators to construct a composite indicator to generate a risk index for conflict driven by climate change. From this examination of present day to 2100, I expect that water availability per capita will decrease while the potential for conflict is exacerbated. The goal of future work would be to continue to apply this index to more transboundary river basins of the world.

# POSTER ABSTRACTS

⊕ Indicates an entrant in the Elaine Bosowski Student Poster/Map Contest

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**Felix, Samantha** ⊕ (University of Pittsburgh at Johnstown), *Pitt-Johnstown Trail System*

Pitt-Johnstown's extensive hiking trail system was first established in the early 1970s, and since then has offered a wilderness experience for students, staff, and public visitors. Unfortunately, the maps available were outdated and the trails themselves were in poor condition. Over the course of the 2022 summer, the trails were restored, and a new trail map was made using a GPS unit and ArcGIS Pro.

**Frizzell, Hannah** ⊕ (University of Pittsburgh at Johnstown), *Does Hydraulic Fracking Pose a Threat of Cancer to Local Communities?*

Hydraulic fracking has created a new system of resources and opportunities for the American people. Millions of jobs have been granted, as well as dollars saved, with natural gas being the cheaper option of fossil fuel use. Natural gas has been named as one of the cleaner fossil fuels because of its' significantly lower carbon dioxide emissions when burned. But, the cleanness of this procedure may not be rated based off the results of carbon dioxide emissions, but rather the amount of cancer cases following the well pads. Thousands of chemicals, buffers, sand particles, radioactive tracers and minerals are used to break through the Marcellus Shale for access of natural gas- and have instead been found in private water wells, soils, and the waters of the Commonwealth of Pennsylvania. As these potential exposures have been diagnosed as carcinogenic via case-studies, sediment testings, and water testings, the Pennsylvanian people question how safe this new industrial practice is. To test this theory, I took the counties in Pennsylvania who have been participating in the hyper production of unconventional gas and compared expected cancer cases versus actual cancer incidents through the Enterprise Data Dissemination Informatics Exchange (EDDIE) of Pennsylvania's Department of Health.

**Gutierrez, Micah** (University of Pittsburgh at Johnstown), *Affected Waters of Cambria County*

There are many ways waters of our area can be affected by local runoff and industrial processes. The waters surrounding the Johnstown Campus will be examined and the findings will be presented to show the current day conditions of the surrounding watershed. A variety of tests will give a clear picture of what these bodies of water on campus are affected by.

**Hampton, Jess** (University of Pittsburgh at Johnstown), *The Effect of Water Quality on Tomato Plant Growth and Fruit Production*

With water quality declining globally from anthropocentric causes, it is important to understand how the agriculture sector will respond, as well as the crops we grow. The quality of water from different sources will be explored through extensive data collection. Growth rate and fruit yields of tomato plants will be documented as well.

**Long, Hope** ☐ (University of Pittsburgh at Johnstown), *Mapping Nature Works Park*

Creating maps for Nature Works Park in Hollidaysburg PA.

**Long, Hope** ☐ (University of Pittsburgh at Johnstown), *Propagating Golden Pothos and Spider Wort*

The goal of this experiment is to find the best growing medium for propagating Golden Pothos or Spider Wort.

**Lux, Lillian** ☐ (University of Pittsburgh at Johnstown), *Using Remote Sensing to Assess the Impact of Sea Level Rise within the Saxis Wildlife Management Area*

Co–Author: Christopher Schaney

Mitzy Schaney Assistant Professor, Director Environmental Studies, University of Pittsburgh Johnstown

Saxis Wildlife Management Area (SWMA) is located in Accomack County Virginia on the Chesapeake Bay. SWMA is mostly comprised of tidal wetlands encompassing 5,678 acres of land bordered by brackish waters of Beaseley Bay, Pocomoke Sound, and Messongo Creek. Impacts of climate change have increased Chesapeake Bay water temperature by 1.2° F and have raised sea level 30 cm over the past century. Sea level is projected to rise an additional 39 cm – 1.5 m within the next 100 years. SWMA and the nearby town of Saxis is approximately 2 m above sea level and are feeling the impact of rising seas. This project uses remote sensing and Uncrewed Aerial Vehicles (drones) to map and measure dynamic point landforms at the mouth of Messongo Creek. This research will use historic aerial photography and current drone imagery to identify changes in landforms at Green, Dicks, and Drum Points as they are impacted by rising bay level. This research will enable an understanding of land inundation rates associated with these landforms and will lead to insights on the future of this dynamic environment.

**Malmgren, Andrew** ☐ (Millersville University), *Risks Posed by Aging Sewer Infrastructure to Small Watersheds in Lancaster County*

Sewer pipes with higher likelihoods of age-related deterioration in close proximity to streams within the service area of a Lancaster County wastewater utility. The likelihood of deterioration was determined based on the ages and materials of the pipes. A visual scale was developed to show the risk posed to individual watersheds from aging sewer infrastructure. This could be used as a way to prioritize and potentially find grant funding for sewer rehabilitation projects. Further studies will expand the project to include more of Lancaster County.

**Meharey, Jared** ☐ (University of Pittsburgh at Johnstown), *Reducing Triangular Gaps in Automated Aerial Drone Mapping*

Co–Author: Ahmad Massasati

Drone aerial mapping and mosaicking provides a highly accurate ortho data. Current technology uses the principles of finding ground control points on an aerial photograph and triangulate between ground control points to mosaic the aerial photography and georeferenced the elements on the photos themselves. While finding ground control points might sound easy in an urban environment where

structural features are able to be seen by the eyes or computer, in an area where the surface is homogenous ground points can become illusive and hard to see such as over forest. This leads to gaps in the triangular solution in aerial mosaicking. This paper argues that intensive or extra aerial photography will help on finding a solution for the triangulation gaps. Furthermore, artificial targets added on the ground and is visible to the aerial photography can make a possible better triangulation solution. The experiment was done near University of Pittsburgh at Johnstown's campus in order to show evidence of possible improvement to triangulation gaps and connecting ground control points.

**Rising, Hannah**  $\Phi$  (University of Pittsburgh at Johnstown), *The Red Oak's Telling of Johnstown Climate: A Dendrochronological Analysis*

Dendrochronology studies have allowed scientists to document climate change for more than one hundred years (U.S. Department of the Interior, 2022). These studies are important in providing historical environmental and chemical analysis that become preserved within the tree rings. This study will look specifically at climate data from the Johnstown, Pennsylvania area located within the Eastern Mountains and Piedmont Region.

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# THE PENNSYLVANIA GEOGRAPHER

*The Pennsylvania Geographer* publishes articles on a wide variety of geographic themes and invites authors to submit manuscripts. Issues are commonly organized around preannounced themes, but manuscripts dealing with any geographic topics are always considered for publication. Articles should be sent to Ola Johansson (johans@pitt.edu), Editor, *The Pennsylvania Geographer*, Geography Department, University of Pittsburgh at Johnstown, Johnstown, PA 15904. Book reviews and software reviews should be sent to Donald Buckwalter, Department of Geography and Regional Planning, Indiana University of Pennsylvania, Indiana, PA 15705.

Articles submitted for publication in *The Pennsylvania Geographer* will be evaluated for appropriateness and scholarship through a peer review process. To be considered for publication, manuscripts must conform to the following requirements, adopted by the Board of Directors of the Pennsylvania Geographical Society:

1. Deadlines for submitting materials are March 15 for the spring/summer issue and September 15 for the fall/winter issue.
2. Articles of any length will be considered. Book and software reviews should be approximately 2-3 pages in length. Manuscripts should use double line spacing with adequate margins. Please only use a single space between sentences. To aid in the revision process, please insert page numbers on all of the pages.
3. The manuscript text should be submitted as a Word (.doc or .docx) file. Please **do not** insert figures, tables or diagrams directly into the manuscript (see below).
4. For each manuscript, provide a title page including the title of the work, the name and affiliation of the author(s), and the name and address to whom correspondence should be directed. Articles should be accompanied by an abstract of not more than 150 words. No keywords are needed.
5. Citation of references must conform to the style found in current issues of the AAGs *Professional Geographer*. Use parenthetical notation of author and date in the text and provide complete citation of sources at the conclusion of the article, titled: Literature Cited. Do not use footnotes. If you choose to include endnotes, use the superscript function in Word, not the endnote function.
6. Figures and photos can be in color or black and white. Images should be a minimum of 300 dpi resolution. Graphs and tables may also be submitted as an Excel (.xls or .xlsx) file. Ideally, figures and tables should be submitted in format such that they fit within a single column (2½" wide) or a double column (5" wide) without having to reduce them from their native size. Be sure all text is black in color. Make sure graphs and tables use large fonts. All tables should use Arial fonts. The editors reserve the right to modify the images and tables as needed to conform to the journal's formatting standards.  
  
Each figure, diagram and/or table should be submitted as a separate file. Each file should be named with the lead author's name followed by the figure or table number.  
  
For example: "Zaprowski\_Fig-1.jpg" or "Zaprowski\_Table-1.xls"rs.
7. Figure and Table captions should be submitted as a separate Word file using the lead author's name (e.g., Zaprowski\_Figure\_captions.doc)
8. Include a short biographical sketch of the author(s) at the end of the manuscript.

## WHAT TO DO IN JOHNSTOWN

Here are a few recommendations for restaurants and tourist sites while you are in Johnstown:

### PLACES TO EAT

*Downtown locations within walking distance from the conference hotel:*

**Balance Restaurant.** Modern menu with both a dining room and a bar.

**Craft.** Popular new addition to the local food scene. Mainly small plates with (but not exclusively) an Asian fusion flavor. Local beer served.

**Stonebridge Brewing.** Right next to Craft restaurant. Same owners; this is in essence the bar section of Craft. Locally brewed IPA's, oktoberfest, pilsners, stouts, seltzers, etc.

**Scott's by Dam.** Tiny place with pub fare a block away from the conference. Next to the arena so they learned how to make poutine from Canadian hockey players! Carries "punko shells" which is a local tradition; basically a huge flatbread.

*Elsewhere you can find:*

**Franklin Street Bar & Grill.** Near downtown. Don't let the somewhat rough surroundings fool you! Cozy interior with interesting specials. Best breakfast in town.

**The Boulevard Grill.** American fare in a historic brick building. Popular with the locals.

**Tap 814.** Suburban location with fancy burgers and flatbreads on the menu.

**Asiago's.** Semi-upscale Italian place at the top of the incline plane.

### PLACES TO VISIT

**The Incline Plane.** Unfortunately closed for repairs. But you can drive up to the top and take in the view. And there is a souvenir shop and a glass window where one can see the engine that pulls the incline.

**Johnstown Flood Museum.** The history of the most famous event of the city. Walking distance from the conference.

**Hertiage Discover Center.** Exhibits about steel making and the immigrant history of Johnstown.