Abstracts for the 2017 EL-AAG Meeting in Ypsilanti, Michigan

Khaled Aboganah, Department of Geography and Planning, University of Toledo,

Session 2 – Room SC 330

Urban Map Updating Using satellite Images Case Study of Tripoli, Libya

For urban areas, land cover maps are very important in planning and decision-making. Tripoli, Libya has been growing rapidly especially in areas with poorer populations. The land cover maps of Tripoli are not up to date which makes them useless for planning of the city today and for the future. The second issue is the very high cost of acquiring aerial photographs in order to update the land cover maps for a particular urban area. Third, rapid growth of population in the city creates significant impacts. It increases the demand for the up-to-date land cover maps for planning especially when urban areas are expanding. Update the maps are needed regularly and continuously. Due to the emergence of remote sensing, satellite images with different spatial and temporal resolution, it is easier to keep urban maps up to date, and it reduces the time and budget of map updating. In this study, the possibility of urban map updating using remote sensing data was demonstrated. Updating urban land cover/land use map of the urban city in Libya was generated using the Landsat imagery. Field data and old topographic maps were used to extract the land cover types and evaluate the results.
KEY WORDS: Map updating, Remote Sensing, Land cover/Land use

Veronica Ahadzie: Department of Geosciences, University of Akron, Akron, Ohio - vma12@zips.uakron.edu – **Poster Session**

Population Density and Crime in the City of Boston Massachusetts in 2013

Population density has always been associated with crime, and this has been a subject of concern. This research addresses the relation of crime to population density, using geographic information system (GIS). For this, analysis the city of Boston census tract data of 2010 was used to display the high population density areas, crime locations, with much emphasis on aggravated assault and robbery. Police stations and colleges/universities locations, exhibiting the proximity of crime acts to them respectively.

The analysis, depicts that, from the city of Boston population of 607,445 in 2013, there was total crime of 58616 and out of it 2,363 involved robbery and aggravated assault, which is mostly centered in the high density areas. Universities and colleges, are no exceptions as they also experience high incidence of crime. Moreover, in as much as police stations are located around high populated areas, crime happens close to them. The results from the analysis show the relation of crime and population density and the need to further find measures to address the problem. Possibly the establishment of more police stations around, and the encouragement of more patrols and checks should be set up.

Keywords: Population density, Crime, Robbery and Aggravated assault, Geographic Information System

Sarah Arnold, Department of Geography, DePaul University **– Session 5 – SC Room 330**

Against Dichotomies: The Mediation of the Berlin Landscape. Key words: historic materialism, humanism, landscape.

This paper explores how the structural dichotomizing of reality does harm to an enriching pursuit of academic knowledge and damages the multi-perspective nature of history. To illustrate this point, I will present a classic binary in geographic study: Historic materialism vs.humanism. By applying these opposing structures to landscape studies, I will show how the relationship between them is inherently antagonistic and how the struggle for control leaves a gap of true understanding. I will then use the case study of Berlin to show how, when it comes to extremely complex historical landscapes, there must be a mediation of the two sides in order to truly do justice to the material, aesthetic, and historical construct of an environment.

Felix Asare-Bediako & Dr. Shanon Donnelly; *Department of Geosciences, University of Akron.*
Impact of Buildings in Routing Shale Gas Gathering Pipelines in Carroll County, OH. Poster Session

Routes of gathering gas pipelines are mostly unregulated by the state except when it has to go through a protected land cover such as wetlands. The routes that gathering pipelines follow through the landscape are therefore determined by numerous negotiations at the parcel scale. The purpose of this study is to examine the relationship of building locations and the location of shale gas gathering pipelines in Carroll County, OH. This study seeks to find answers to the following research questions:
· What percentage of parcels have pipelines running through them but do not have buildings on it?

· What is the minimum, mean and standard deviation distance of buildings to gas gathering pipelines?

David Beard and John Heppen, Department of Writing Studies, University of Minnesota Duluth, Department of Geography and Geographic Information Science, University of Wisconsin River Falls – **Session 8 – SC Room 320**

Midwestern Values Visible in the Ring: Local Professional Wrestling as Crucible for Community. Key Words: Wrestling, Social Geography, Spatial Analysis -

We theorize that most wrestling shows will be located in areas that are demographically, white, working-class or moderate to low income areas. Professional wrestling has a fan base that skews toward white, male and working-class—or that is the stereotype. We collected the addresses of the locations of professional independent wrestling shows in Minnesota with a focus on Minneapolis-Saint Paul from 2006 to 2016. Social and economic data for the census tract and

block for each of the locations of the independent wrestling shows. A structural-spatial analysis found that modest income and neighborhoods that were more diverse areas than expected were locales for local independent wrestling shows. This raises significant questions about whether the venues are chosen for proximity to the audience, or whether other factors (e.g. low rental prices for halls in economically modest and demographically diverse) affect selection of the venue, and the audience travels the distance required to attend.

Kathleen Bergen[1], Wanqi Ouyang[1], Josh Newell[1], Yu Xin[1], Chris Fort[2]
[1]The University of Michigan, School for Environment and Sustainability
[2]The University of Michigan, Center for Russian and East European Studies – **Session 7 – SC Room 301**

How do Natural and Human Factors affect Forests in the Russian Far East?

The globally important forests of the Russian Far East (RFE) are at a nexus of increasing demand for timber, expanding infrastructure, and global climate change. Yet integrative quantitative studies of the relationships of disturbances to both landscape natural features and human use factors are scarce for this region. This research addresses this gap by answering the following: how are human and/or landscape factors alone and/or in combination influencing disturbances? And in turn, what human and natural landscapes are most affected? The research focuses on the most biologically productive landscapes in the RFE region (Primorsky and Khabarovsk Krais) and uses multiple spatial and quantitative data to statistically test relationships. Lands converted to agriculture or urban occurred disproportionately on the grassland and lowland natural landscape types and in areas outside of the Russian Forest Fund. Actual forest harvest was postively related to leased area and forest volume, and allowable forest harvest also to the mountain taiga and mature forests. Frequent fire occurred disproportionately on the grasslands and outside of Forest Fund lands; whereas never-burned areas occurred disproportionately within leased areas. Fire density was also positively related to road density in *lesnichestva* (forest service units), more so in protected areas, but not in leased areas. These results reveal strong underlying geographies and provide new statistical understanding of both separate and combined influences of human and natural factors on forests and landscapes in the RFE.

Thomas Carroll, Department of Geography, DePaul University

Gentrification, white flight, or something else? Demographic change in the suburbs. Key words: suburbs, gentrification, white flight. – Session 1 – SC Room 320

Abstract: This project discusses issues of white flight, potential for gentrification and the general growing pains some inner ring suburbs are experiencing using the city of Burbank, Illinois (a suburb of Chicago directly adjacent to the city's Southwest Side) as a case study. This is a historically white ethnic area with a fairly significant increase in non-white residents in recent years. Also, there has been an interesting trend involving teardowns of smaller homes on large lots being replaced with multiple larger homes. The paper discusses whether or not a case for either white flight or gentrification can be made regarding the town. Burbank has some of the symptoms of gentrification but not some of the important factors like displacement and cost of living increases. Despite the alarmism of some residents (particularly evident on social media) I found that the town is fairly stable and not experiencing dramatic levels of white flight, just more of a gradual shift in demographics towards slightly higher income and more non-white residents, Hispanic in particular.

Tianyang Chen – Geography & Geology – Eastern Michigan University

A new weighted method to detect the lag effect of climate on vegetation: a study case in loess Plateau, China: 1982-2013 – Session 6 – SC Room 350

Climate change obviously impact the ecosystem on the ground, in addition, it appears obvious complex and diversity in space and time. Despise the complexity and variety of the vegetation responding to climate variation, the time lag effect is detected by more and more scholars. The approaches to test this lag effect mainly consist lag method and its extension, lag-acc approach. Even though these two methods are effective in testing the effect, two problems of them should be addressed. (1) The hypothesis of them is that the lag is a certain period, which seems lack of evidence to support it. (2) The extension of lag approach, lag-acc is to use the average of a climate factor in two or two more continuous time periods as the lag. In fact, it indicates that both selected time periods contribute the same weight in lag effect, however, it looks not rigorous since they may or may not share the same weight.

To better confirm the lag effect of climate factor on vegetation, we introduce a new approach to overcome these issues. Our method considers the continuous of distinctive time periods impacting on vegetation variation, moreover, we use weight to display the lag-effect degree of different time periods. The new approach sufficiently considers the climate in all possible time periods impacting on the vegetation, moreover, it also provides the weight for each lag period. It is, therefore, an extension of lag and lag-acc method in time lag effect detecting.

At last, we adopt loess Plateau as a study case to compare the new method with previous approaches in linear regression. Moreover, the decision coefficient and the significant test are used as two metrics to validate the advantages of this weighted method.

Allison Carvalho, Department of Geography, DePaul University,\
Spatial dimensions of urban masculinity. **Session 4 – SC Room 320**

How are conceptions of masculinity socially constructed and reconstructed? In order to begin interrogating this question, I conducted semi-structured interviews with self-identified male undergraduates at DePaul University (Chicago, IL), an urban, diverse and private university in order to explore the ways in which identity construction occurs in college. Covering topics of emotionality, masculinity and authenticity, the study revealed the fragility in developing constructions of masculinity for college age men at DePaul, as well as the diverse perspectives apparent based on academic major and geographical origin. The study identified dominant narratives associated with emotional and physical strength, as well as emerging narratives encouraging silence as a means of "right masculinity". It found that major choice, much like career choice and class for older males, largely correlated with expressions of masculinity. While academia is often a space for critical dialogue, the interviews affirmed the need for an intellectual and emotional space to discuss constructions and expressions of masculinity.
Key words: masculinity, emotion, Chicago

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Analyzing Spatial distribution of the accident locations - A Case Study of Mirpur Corridor, Dhaka, Bangladesh – Session 2 – SC Room 330

The goal of this paper is to understand the spatial distribution pattern of the accident locations for Mirpur Corridor, Dhaka, Bangladesh. For that reason, total 2716 accidents over a period of 2007-2011 were collected from the Dhaka Metropolitan Police. The accident locations were geo-referenced over Dhaka Metropolitan Road network and used for this analysis. Nearest neighbor distance method had been used to understand the spatial pattern of the crash points. Through Monte Carlo simulation, the Clark and Evan aggregate index was found a significant value 0.33 which shows a spatial clustering pattern. Then for further analysis, Global Moran's I had been performed and found an insignificant random value of 0.018. It supports the hypothesis that these accident points are statistically independent or have no influence on each other. Wards 9,10,11, 40,41,43,45, 51,52, 62 found most vulnerable to the traffic accident along the Mirpur Corridor. The Network Kernel Density Estimation map concluded that these acute, intense crash points have a significant negative relationship (Spearman's R = -.07) with the population density. The more the population, less the traffic flow and hence it reduced fatal or moderate accident chance. The total number of accidents also showed a decreasing trend over the study period. The study revealed that most of the accidents are related to the pedestrian collision. The number of life-threatening accidents found higher than the severe and minor accidents.

Madeleine Coalmer – Session 3 SC Room 350

Ohio Wesleyan University

Undergraduate Geography Student

ELDAAG Conference Paper Presentation

Hey! Watch where you step: The Effects of Ecotourism on the Icelandic Natural Landscape

Tourism within Iceland has skyrocketed since 2008, when the financial crisis of the small island country decreased the currency exchange rates. In order to restore the Icelandic economy, nature has been advertised and commodified as a unique "natural"

experience with fantastical waterfalls, glaciers, and volcanoes. This commodification has attracted millions of tourists each year, promoting economic development and stabilization. However, high foot and automobile traffic have detrimental effects on both the physical and cultural landscape. A lack of pre-existing on the ground research presented an opportunity to analyze the effects of tourism on the environment firsthand. In this paper, I explore the effects of high rates of tourism on the physical and cultural landscapes through face-to-face interactions with international tourists and native Icelandic people, as well as ethnographic observations at geoparks and national parks.

Matthew Cook - Eastern Michigan University

Historical Geographies of the African American Experience: Analyzing Museums' Changing Narratives – Session 8 – SC Room 320

In this paper, I present initial findings on American museums' varying abilities and constraints to changing their narrative focus. Conducted in summer 2017, the research encompassed an examination of how museums around the country have responded to expanding geographies of racism and racial violence in the U.S. Focusing specifically on African American historical and cultural narratives, the project was the first stage in a larger planned study that asks, "What is the role of the museum in the 21st century?" and "How do American museums change and adapt their narrative emphases in response to contemporary events?" In an era of increased public awareness of police violence against people of color, the schools-to-prisons pipeline, outright boldness of and increased number of racist organizations seen since the 2016 presidential election cycle, and various responses such as the Black Lives Matter and the Movement for Black Lives, this research seeks to analyze how museum professionals address controversial current events as part of their missions to support communities at the local, regional, and national scales. Building upon and drawing together museum geographies and black geographies—two rapidly growing subfields of geography—this research is among the first to survey the scope and breadth of how African American history and culture are presented at museums that vary in ownership types, management philosophies, and that are located in different regions across the United States.

Kevin Czajkowski, Ishfaq Rahman

Effects of the Great American Solar Eclipse through Citizen Science Observations – Session 10 – SC Room 301

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Key Words: Solar Eclipse, Weather, Citizen Science

The Great American Solar Eclipse of August 21, 2017 captivated the country. As the first total solar eclipse in the United States in more than 40 years, it was anticipated to make a big impact on the public's interest in science. Previous studies have shown that a solar eclipse will impact local weather, specifically air temperature and clouds. Students and citizens participated in the GLOBE Program taking air temperature, clouds and surface temperature observations during the eclipse across the US. GLOBE is an international program in 117 countries to engage students and the public as citizen scientists by taking observations of their environment to answer scientific research questions. Over 4000 people participated in GLOBE observations during the solar eclipse collecting over 100,000 observations. In this presentation we will present preliminary results from the data collected including the changes in clouds and temperature. We will show the impacts in the area of totality versus areas outside of totality that were still influenced by the eclipse.

Key Words: Solar Eclipse, Weather, Citizen Science

M.S. DeVivo, Grand Rapids Community College, mdevivo@grcc.edu. **A Reflection on Wildlife Conservation Strategies for Africa's Iconic Mammals**. **Key words: Conservation, Leadership, Africa – Session 11 – SC Room 330**

The actual departure of Black and White Rhinos from the wild is indeed a tangible fear. Although the poaching rate has fallen, 2017 will be the fifth consecutive year rhino killings exceed 1000 in South Africa alone. Across the continent, mega-herbivore numbers have seriously declined during the past century, as have other mammals. As vectors of death for African wildlife, poaching and habitat loss occur in a region marked by poverty, despair, and uneven economic development

Robert Durkee, Western Michigan University – **Session 1 – SC Room 320**

The Law of the Land: A Ranking Index of Conformity with Zoning Codes of Vacant Property in the City of Kalamazoo

Abandonment and vacant land is a common occurrence in the central city of many metropolitan areas within the United States. Kalamazoo, Michigan is a small sized city that is the principal city of its metropolitan area. Kalamazoo features many such areas of abandonment and open space. This research poses the question of whether the Zoning Ordinance standards are in conflict with the vacant parcels in the City of Kalamazoo.

City data vacant parcels were identified in a study area of two census tracts with a high rate of vacancy in the city of Kalamazoo. City data to identify vacancy are based of city assessor's property classification, condemned properties, demolition permit records and vacant Kalamazoo County Land Bank parcels. The three Zoning Ordinance standards analyzed against the vacant parcels are minimum lot width, minimum land area and whether the current zoning matches the future land use map. Using GIS the minimum

standards for these criteria are compared to vacant parcels and used to create a visual map of deficiencies in the current zoning code related to vacant land in the city.

This study based on two census could be replicated at any scale of any geographic division in the city of Kalamazoo. The methods with the availability of data could even be replicated in other municipalities. The Vacant Parcel Nonconformity Index could assist planners, community members and investors to better manage and plan the limited resource of land in the central city of the Kalamazoo metropolitan region.

Marcia R. England, Ph.D. Miami University m.england@miamioh.edu
Selecting the "perfect" donor: Choices in Artificial Insemination
Session 8 – SC Room 320

This paper will explore reproductive geographies using a case study of female clients of a cryobank in the Pacific Northwest. The cryobank is unique in that it sells gametes without a doctor's supervision and will deliver to private residences. Women purchase sperm and/or eggs for artificial insemination either at home or at a clinic. I will examine the process that goes into their decision-making regarding donors and how that relates to body geographies. Women are given a wide array of information regarding the physical and social characteristics of donors, which provides insight into desirable traits of the body. Questions of pedigree and selection are important to analyze in this field of research. This paper is based on interviews and seeks to understand how geographies of the body play out in reproductive decision-m

Key words: Reproduction, bodies, artificial insemination

Alec Foster,

School for Environment and Sustainability, University of Michigan.

Citizen Science for Urban Forest Management? Predicting the Data Density and Richness of Urban Forest Volunteered Geographic Information. – Session 10 – SC Room 301

Volunteered geographic information (VGI) has been heralded as a promising new data source for urban planning and policymaking. However, there are also concerns surrounding uneven levels of participation and spatial coverage, despite the promotion of VGI as a means to increase access to geographic knowledge production. To begin addressing these concerns, this research examines the spatial distribution and data richness of urban forest VGI in Philadelphia, Pennsylvania and San Francisco, California. Using ordinary least squares (OLS), general linear models (GLM), and spatial autoregressive models, our findings reveal that sociodemographic and environmental indicators are strong predictors of both densities of attributed trees and data richness. Although recent digital urban tree inventory applications present significant opportunities for collaborative data gathering, innovative research, and improved policymaking, asymmetries in the quantity and quality of the data may undermine their effectiveness. If these incomplete and uneven datasets are used in policymaking, environmental justice issues may arise.

Key Words: volunteered geographic information (VGI), environmental justice, digital divide.

Charles Frederick, RLA+LEED AP
Graduate Landscape Architecture College of Architecture and Environmental Design;
Kent State University – **Poster Session**

In planning and design education, such as landscape architecture, planning, or urban design, the studio is the primary method to educate the student and let them "experience" a project. Conventionally these are idealist projects – based upon theoretical and controlled assumptions, or unique projects – based upon special circumstances and still controlled for certain academic learning objectives. Both can present significant learning opportunities for a student. Yet for a future planning or design professional there are lost opportunities in educational platforms such as these. Are there better learning opportunities in combining the ideal and unique into the realism of community engaged projects with real people, real sites, and real issues? These are "messy" intellectual and academic methods, but typically are rewarding for students, community members, and project stakeholders. This poster reveals critical lessons learned from community engaged and experiential learning projects with three post-industrial Ohio cities – East Cleveland, Youngstown, and Akron. These studio projects were conducted from 2015 – 2017 by students from the Graduate Landscape Architecture program at the College of Architecture and Environmental Design at Kent State University and help demonstrate the importance of educational partners and shared learning outcomes.

Key Words: Experiential Learning: Hands-on successes and failures

Robin Gallagher, Department of Geography, DePaul University
Disco Will Survive: Sexual Liberation in Discotheques of the 1970s. Key words: disco, civil rights, LGBTQ rights. – Session 4 – SC Room 320

Music often goes hand in hand with certain political movements. Disco, something that is known for being heavily manufactured and ingenuine, played a large role in social movements of the 1970s, giving power to minority groups in the United States. Often criticized as vapid, disco gave power to underprivileged groups. The disco club was a liberated space for many people, mainly homosexuals and African Americans, and is an evolution of the previous revolutionary decade which witnessed civil rights and LGBTQ rights movements. The disco club offered sexual liberation and a place for the gay community to stay organized. It brought minorities into public space that they had previously been segregated from, however, racism and homophobia still existed. Often white gay men controlled the disco, and who could be there. Racial minorities and lesbians were often excluded from high end discos. The atmosphere of the discotheque and the newfound social confidence from minority groups that brought people together to listen to the infectious and repetitive pop music, and at the same time it was the music that created a space for socially radical movement.

Kyle Gibbs – Poster Session

Redlining Factors: Digitized Residential Security Map of the City of Dayton, Ohio

This poster explores maps and original documents used by the Home Owners Loan Corporation (HOLC) to conduct redlining in Dayton, Ohio. In the 1930s HOLC sent agents out to canvas the financial risk of 239 cities across the United States. In a process called redlining, the agents graded neighborhoods from "Best" to "Hazardous"

and were released as a series of Residential Security Maps. Using GIS I geo-referenced the original HOLC map of Dayton, created a digital overlap, and applied information from original documents to create maps of ethnicity, infiltration, income, sales value, and flood damage. This study will be the basis for a larger project which explores the long-term impact of redlining on current day Dayton.

Denise Goerisch, Department of Liberal Studies, Grand Valley State University

Geographies of Student Debt – Session 8 – SC Room 320

This paper examines the university as a key space for producing indebted subjects and the broader debt economy of the United States. Given recent political debates concerning college affordability, the university is an imperative site for understanding the spatial politics of debt. For many students, college is conceived as a space in which to improve upon one's position in life but ever-increasing costs force many students to obtain public and private loans to pay for their education, which not only impacts the ways in which they experience college but also their futures. Despite the multiple contributors to students' experiences with indebtedness including employment, families, and access to state services, universities construct a narrative of debt and indebtedness that often does not align with students' realities. Based upon ethnographic fieldwork at a university in the Midwest, I argue that universities are not simply containers for indebted subjects but rather key spaces in which debt becomes embedded in the totality of students' lives in ways that both perpetuate and deviate from neoliberal conceptions of the college experience. Key Words: Higher Education, Debt, Young People

John W. Gross [a] Center for Geographic Information Science and Geography Department, Central Michigan University, Mt. Pleasant, MI 48859, and **Benjamin W. Heumann**, [a] Center for Geographic Information Science and Geography Department, Central Michigan University, Mt. Pleasant, MI 48859

Does Continuous Wavelet Feature Transform Improve The Spectral Diversity Hypothesis?
Session 7 – SC Room 301

The spectral diversity hypothesis states that as the biodiversity of a defined area increases, the variation measured by remotely sensed data over the same area should also increase. This relationship offers the potential to use remotely sensed data to evaluate biodiversity at spatial-temporal scales beyond those of traditional field surveys, without the need to detect individual species. While some studies have demonstrated potential associations, several others have been unable to detect a relationship. This research posits that applying the continuous wavelet feature transform (CWT) to the raw data prior to analysis improves results and provides a more consistent relationship. This is due to the fact that CWT identifies and isolates specific spectral signatures and can detect critical discriminating features not readily visible in the raw data. This research specifically answers the following question, how does the inclusion of CWT compare to non-CWT transformed data using the most common modeling approaches? To address this question, a handheld spectrometer database consisting of 1692 spectra representing 181 wetland species was used to generate 327 simulated plots. Both hyperspectral and multispectral data were simulated. This dataset was then used to compare Ordinary Least Squares

Regression (OLS), Partial Least Squares Regression (PLS), and Random Forest (RF) modeling of both CWT transformed and non-transformed data. Initial results indicate that random forest modeling of wavelet transformed hyperspectral data provide the best results (R^2 .773). Preliminary results also indicate that random forest outperforms other models regardless of data type, and that wavelet transformed data provides better results than non-transformed data. This research is among the first to show the power of wavelet transformation in regards to the spectral diversity hypothesis.

John Heppen, Department of Geography and Geographic Information Science, University of Wisconsin River Falls;

Atlas of the 2016 Elections. **Poster Session**

Rowman & Littlefield publishers will release Atlas of the 2016 Elections in 2018. This poster presents a selection of maps from the atlas. This is a continuation of atlases published after the 2008 and 2012 elections. Nine editors and dozens of contributors offer over 200 maps, charts, and tables that offer analysis that shed light on one of the most controversial and historical elections ever. The atlas analyzes the presidential election at the national, state, regional, county, and local scales. Beyond maps of results, the atlas offers an analysis of the results in light of changing economic, social, racial, religious, and cultural trends. Groundbreaking research into social media, campaign spending, spatial analysis, and comparative analysis push the atlas beyond just maps. The main findings indicate that lower turnout in areas of previous democratic strength and changing voter allegiances in areas of economic distress contributed to one of the most surprising elections in history. The atlas also analyzes state and congressional elections as well as state and local referendum concerning minimum wage and marijuana legalization.
Key Words: Electoral Geography, 2016 Elections

William M. Hunter – Session 9 – SC Room 350

Forests and Fields: Reconsidering the Rural Landscape in Cuyahoga Valley National Park. National Park Service, Cuyahoga Valley National Park, william_hunter@nps.gov
Keywords: Political Ecology; Historical Geography; Cuyahoga Valley
People have practiced agriculture in Ohio's Cuyahoga Valley for thousands of years, shaping the landscape and ecology from prehistoric times to the present. From the beginning, humans relied on forests and fields, together as agricultural landscapes, for sustenance and survival. Over time, however, the definition of rural landscape began to change from the site of productive labor to a more passive construct that deemphasizes the forest component of the region's agriculture and misrepresents the historical practices of successful farming in the valley. Through study of the historical ecology of the Brown Bender Farm - representative of all the historically agricultural properties in the Park – we can situate agriculture within the web of life, demonstrate the centrality of the woodlands to the practice of agriculture, and reveal the links between the appearance of the landscape and the historical forces responsible for its production. Equipped with this insight, the NPS can work toward a more accurate understanding of the role of the woodland in the story of Cuyahoga Valley's agriculture and in doing so, fashion a geography that finally restores the rural landscape to its rightful scale: land bearing the material result of its use for agriculture, field and forest.

Karen D. Johnson-Webb, Department of Geography, Bowling Green State University,
Session 10 – SC Room 301

Connecting Structural Racism and Maternal Stress to Low Birth Weight Births in Lucas County, OH: An Intersectional Analysis. Key Words: Infant mortality, structural racism, intersectionality. Ohio has one of the highest rates of infant mortality in the US, and the gap between black and white infant mortality has been persistent. In Ohio, two-thirds of infant deaths are due to complications associated with prematurity and low birth weight. Results of previous studies suggest that maternal stress produced by structural racism contributes to premature and low birth weight births. This qualitative study seeks to connect structural racism to stress in a group of black women of childbearing age in Lucas County, OH. Research on health inequities that locate the experiences of racism at the individual have not been able to explain the persistent gap in infant mortality. This study gathers experiences of black women in their everyday lives and analyzes them using an intersectional framework, with includes not only the multiple dimensions of structural racism, but the cumulative effects of them and their role in producing health inequities.

Kara Jueckstock, Department of Geography, Grand Rapids Community College
Tourism in the Caribbean: Utopian Ideal or Dystopian Disaster?
Session 3 – SC Room 350

Cruise tourism, which aggressively markets across a broad socio-economic spectrum as a relatively affordable luxury vacation option, is booming across the globe. Boasting captivating beaches and a tropical climate throughout the year, as well as close-proximity to American ports, the Caribbean islands are among the most popular destinations for cruise ships. Yet, despite the growth and profitability of this industry in the Caribbean, empirical research concerning its impact is limited. This paper explores the development of the cruise industry within the region and offers insight into some of the more significant adverse cultural, economic and environmental impacts this form of tourism generates on the Caribbean; a far cry from the manufactured utopia presented by industry promoters. Key words: Caribbean Cruise Exploitation

Peter Kimosop. Youngstown State University. **Poster Session**

Detecting and Assessing Harmful Algal Bloom Concentrations in the Cuyahoga River Watershed, Ohio using SWAT and Satellite Remote Sensing

Monitoring and assessing the water quality of freshwater lakes and reservoirs is essential because these resources provide drinking water to millions of residents especially in the United States. Nutrient and sediment inputs from agricultural and urban areas result in elevated concentrations of pollutants, such as nitrates and phosphates which impair water quality and increase biological growth. Proper understanding of the hydrology of reservoirs such as those located in the upper

Cuyahoga River watershed in northeastern Ohio is important as they provide drinking water to cities such as the City of Akron. The Soil and Water Assessment Tool (SWAT) model was used in this study to evaluate the hydrologic conditions of the upper Cuyahoga River watershed in northeastern Ohio for the period 2010 – 2017.

Joseph M. Lane and Joseph P. Stoltman, Department of Geography and The Mallinson Institute for Science Education, Western Michigan University

Guided Educational Tourism as Informal Physical Geography Education on St. Helena Island, Michigan. Session 11 – SC Room 330

Guided educational tours are a major activity within informal education. This article examines the potential for tour guides of a largely historical tour of St. Helena Island, Michigan, to include physical geography within the tour. Using field data and interview methods, the researchers identified the physical features of the island that could be included based on evidence provided by the tour guides. Key Words: geography education, earth science, tourism. Key Words: Geography Education, Tourism, Physical Geography.

Whitney Lambert – Western Michigan University - **Session 3 – SC Room 350**

Recreational hiking trails are popular outdoor destinations for both tourists and local populations, offering health, educational, and social benefits. A well-planned trail maximizes user enjoyment while minimizing environmental and economic costs. The North Country Trail (NCT) offers a unique hiking experience by taking hikers through the diverse landscapes of New York, Pennsylvania, Ohio, Michigan, Wisconsin, Minnesota, and North Dakota. However, several gaps exist along the NCT as undeveloped temporary connector routes, often forcing the hiker to walk on public roads. In Calhoun County, MI, large portions of the trail follow these roads, causing fragmentation between on and off road trail alignments. This research explored priorities for trail design as perceived by different interest groups. These interest groups were hikers, non-profit organizations, and local businesses affected by the NCT route through Calhoun County. A weighted scoring model was used to analyze these priorities. Surveys and interviews were conducted for each group to determine important trail attributes, weights of importance, and scores for each group. Attributes, weights, and scores were then combined to give each interest group an overall rating for what they perceived as important trail attributes. These ratings were then compared for each interest group to discern trail design priorities.

Alex LaPorte, Department of Geography, Western Michigan University,

Characteristics of Deer-Vehicle Collisions in Kalamazoo County, Michigan.
Session 6 – SC Room 350

With the white-tailed deer population on the rise, the chances of collisions are also more likely to increase. Studying the relationships between land cover, accident characteristics, and locations of DVCs in Kalamazoo County, areas of increased risk or "DVC Hotspots" were identified.

Geographic Information Systems (GIS) can locate areas with a high rate of collisions using Spatial Analysis along Networks software. Data which correlates with the location and time of each collision within the hotspots can then be analyzed. The creation of statistical models and the use of variable reduction techniques simulate areas of heightened risk based on prominent characteristics associated with the DVCs. Most predictive models developed for wildlife-vehicle collisions are used for specific areas and have localized characteristics that are hard to apply to different locations and animal species. This research focuses primarily on DVCs in Kalamazoo County, Michigan and has shown an increase in DVC risk with respect to time of day, time of year, and different land classifications.

Key Words: **DVC, Kalamazoo, GIS. Kalamazoo County ranked 15 th among 83 Michigan counties in 2015 with 917 DVCs (deer-vehicle collisions).**

Patrick Lawrence, Department of Geography, University of Toledo

If You Build (or Allow) It They Will Come: Unsustaining Coastal Development and Geographic Research: The Case of Hastings Drive, Long Point (Lake Erie), Ontario, Canada-1952 to 2017. **Session 9 - SC Room 350**

Research. Over the last 65 years, the narrow 2 km length of Hasting Drive on the Long Point Peninsula of Lake Erie (Ontario) has experienced four major natural hazard events associated with extended periods of high water levels on Lake Erie, and associated storm waves, erosion and flooding, resulted in repeated damages to private cottages and infrastructure. Since 1952 these events have caused the complete destruction of dozens of homes and repeated calls for increased shore protection as well as need for land use regulations for Great Lakes shoreline flooding and erosion hazards. Hasting Drive and Long Point have also been the focus of a series of major research projects related to understanding the human ecology, natural physical dynamics, and local policy options following the shoreline flooding and erosion hazard events here in 1972/73 (Nelson, Needham, Kreutzwiser et al. from UWO), and 1985/86 (Kreutzwiser, Davidson-Arnott et al. from UGuelph), and subsequent related research by Gabriel, Lawrence and others. The paper examines both the history and reoccurrence of flooding and erosion hazards at this location, and the concurrent and subsequent geographic research leading to an ongoing and unresolved cycle of public and political debate around potential natural hazard mitigation options. Key Words: Great Lakes, Natural Hazards, Geographic

Brian Li, Department of Geography, DePaul University - **Poster Session**

The Quality of Transit of the CTA in Relation to Chicago's Underprivileged Population.

In this study of the quality of Chicago's CTA bus and train systems, ADA accessibility for the mobility impaired is taken into account along with how many bus and train stations are within a quarter-mile radius of each station which is part of the connectivity aspect of quality. Furthermore, the number of direct transfers or connections from the same station are also measured as part of the connectivity index. This poster compares the quality of transit with the spatial distribution Chicago's underprivileged populations, namely low-income, elderly, and

people with disabilities. Side-by-side comparisons of an inverse distance weighted spatial interpolation map showing the quality of transit throughout the city are made with 3 other maps showing median household income, population over 65 years of age, and population with an ambulatory disability per census tract. The results show that the quality of transit is generally substantially poorer in areas where there are higher concentrations of households in poverty and people with an ambulatory disability which were mainly in the south and west sides of Chicago. **Key words: transit, accessibility, Chicago.**

Dianyi Li (ddli@owu.edu)
Department of Geology and Geography, Ohio Wesleyan University

Relationship between the Arctic Oscillation and a Cold Weather Outbreak in Southeast China – Session 6 – SC Room 350

From 20 – 25 January 2016, a significant cold air wave occurred over Southeast China. The strong cold air pushed the snowline southward, reaching its southernmost position since 1951 (Weather China). The average temperature anomaly during this period was 6 to 8° C below the 1981 – 2010 climatological mean.
Similar patterns during previous cold waves have been attributed to variability in the Arctic Oscillation (AO) (Wang and Chen, 2010). He and Wang (2013) also identify a strong relationship between November and December AO values and January mean temperature, with a correlation coefficient of 0.41 and 0.46, respectively. Additionally, the AO index data acquired from the NECP/NCAR reanalysis dataset reveal a negative phase of the AO, peaking from 15 – 18 January; coincident with this cold outbreak.
This work seeks to identify the influence of AO at various time scales on the observed cold air extremes over Southeast China. Numerical analysis between weather stations' mean temperature and AO failed to reveal a strong correlation. By adopting He and Wang's (2013) methodology, regional mean temperature was plotted against the AO, but still showed weak correlation. Further investigations on spatial scale relationships are expected to help explain the extreme cold air propagation. Keywords: Arctic Oscillation; Cold Weather Outbreak; Southeast China

Yuchen Li – Eastern Michigan University

A new urban typology model to identify dominant trajectories of neighborhood change: A case of Metro Detroit, 1970 – 2010 – Session 1 – SC Room 320

Many cities around the world have experienced deindustrialization and population decline over the past few decades. Detroit, MI is a typical rustbelt shrinking city (i.e., cities experiencing population decline) that encounters the stagnation of population growth or even depopulation. This paper develops an integrated methodology to investigate dominant trajectories of neighborhood changes that happened in Detroit during last half century. Our new model adapts a newly developed dynamic sequential analysis to sort and identify dominant trajectories of neighborhood changes. And it

also innovatively synthesizes several statistical procedures to derive the dissimilarity matrix, which naturally integrates the core characteristics of urban neighborhood changes into the sequential reordering. Using the census data in Metro Detroit over five census years (1970, 1980, 1990, 2000 and 2010), this model was tested to identify a unique city's demographic and socioeconomic transition pattern in the past 50 years.

Alyson M. Mabie - Western Michigan University

Brewing on the Edge: The Economic and Community Impacts of Small Town Breweries on the Outskirts of "Beer City, U.S.A. Session 2 – SC Room 330

This paper explores what it means to be a brewery on the edge of Grand Rapids, MI, named Beer City, U.S.A. in 2012, through interviews with three brewers located in outskirt communities. The Beer City appellation served as a catalyst for a massive growth in brewery numbers, brewing supply markets, such as hops, beer tourism, and beer-oriented media and activities. The conversations with these brewers highlights the community focus and neolocalism of the craft beer industry that acts as effective place-making to varying degrees within their communities. The different scale of impacts breweries have in rural or suburban community development versus the urban community are also highlighted. While the area craft brewing industry is generally characterized as collaborative by interviewees, geographic proximity to Beer City, U.S.A. has generated an inclusive business environment on a county level scale and beyond. Brewers and connected industries, such as local farmers and restaurants work together in an effort towards a successful whole, rather than outcompeting one another. Based on these local trends and the knowledge gathered from the interviewees, this paper suggests that Beer City, U.S.A. and the surrounding communities represent a local economic cluster, as defined by M.E. Porter (2000) as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions in a particular field that compete but also cooperate" (p. 15), rather than a dichotomy between city brewers and edge brewers. This craft brewing cluster is characterized by a strong sense of neolocalism and community, which in essence act to extend the boundaries of Grand Rapids to include edge city breweries and their communities, as well regional suppliers and others, under the Beer City, U.S.A. banner, thus assuring them economic and cultural inclusion in the growing craft beer movement. The concept of the so called "Beer Bubble" is discussed, as well as what market changes might look like in the future. **Keywords:** urban typology, neighborhood change, sequential pattern analysis, Detroit

What's Changed and What Does it Matter? Lessons from a Legacy City Housing Market

Brian A. Mikelbank – Cleveland State university

Session 10 – SC Room 301

Two fundamental changes are analyzed and explored for the greater Cleveland housing market. First is the changing composition of residential property occupancy. Vacancy now plays a more prominent role in this discussion, which traditionally focused on owning vs. renting. Changes in this

owner/renter/vacant balance are analyzed at the neighborhood level between 1990 and 2010, producing a "balance sheet" (and map) of changes in neighborhood occupancy composition.

A feeder into this occupancy transition is the second fundamental change, a shift in the transaction profile. Whereas individual households were previously the "typical" buyers and sellers, this is no longer universally the case. Institutions now play a much larger role, and since they operate with different market motivations, they can drive market changes in product, volume and price. These changing purchase-, price-, and property-profiles are analyzed using twenty years of residential property transaction data.

The implications of these changes are far-reaching, impacting not only the many facets of cities' residential landscapes, but also their financial and economic vitality. While these transitions were certainly in motion long before the decades under study, the housing/financial crisis acted as an accelerant on a steady- but slow- burning fire.

Franchesca Mireku: Department of Geosciences, University of Akron, Akron - Ohio

SITE SUITABILITY EVALUATION FOR THE LOCATION OF AN OIL REFINERY AT THE JUBILEE OIL FIELD, GHANA – WEST AFRICA – Poster Session

This study presents a site suitability assessment to identify a potential site (s) that can be used for the construction of an oil refinery to serve the Jubilee Oil Field of Ghana, using Geographic Information Systems. The main objective was to identify optimum locations within the Sekondi-Takoradi Metropolitan catchment area. For this purpose, the following variables were considered, based on guidelines provided by the EPA of Ghana; Sekondi-Takoradi Catchment Area, slope, distance to surface water bodies, land cover, distance to major roads and distance to major towns. The analysis was based on exclusionary approach of multi-criteria decision making. The results of the analysis combined all areas of interest into a final composite map showing suitable areas and unsuitable areas for the construction of an oil refinery. The GIS analysis indicates that there are few locations (approximately 13.67 square kilometers of the area) that are suitable for siting the oil refinery. These locations are found close to Prestea, Nkorful, Mampong and Akropong. However, the final selection will be based on field validation and availability of other vacant lands to accommodate other side works in support of the refinery.

Keywords: **Geographic Information Systems, Jubilee Oil Field, Oil Refinery, Multi-Criteria Decision, Site Suitability Assessment**

Mandy Munro-Stasiuk, James Tyner, Corrine Coakley, Sokvisal Kimsroy, Stian Rice
Geography, Kent State University – **Session 9 – SC Room 350**

Khmer Rouge Irrigation in Cambodia (1975-1979) and landscape impact

With the rise to power of the Khmer Rouge in 1975, irrigation was expanded across the nation to help satisfy larger economic goals of increased rice production. To create the desired infrastructure, the majority of the Cambodian population was forcibly moved from cities to work on engineering and

irrigation projects, as well as on collective farms. Over three years and ten months there was accelerated construction of dikes, dams, and reservoirs which resulted in profound changes to the physical landscape and an enormous loss of human life. Based on patchy reports, interviews and physical evidence we know that many of the irrigation features failed. This research provides the first country-wide analysis of the irrigation infrastructure through mapping from historical Landsat MSS data and declassified KH-9 satellite data. We now know that the Khmer Rouge were responsible for building over 7000 km of canals and over 300 reservoirs between 1975 and 1979. Over half of the canals (in terms of length) and over half of the reservoirs failed or have been abandoned. We will present an overview of the extent and style of the construction, the extent and style of failure, and the impact on the physical landscape. Keywords: Cambodia, irrigation, landscape

Matthew Neitman and Dr. Benjamin Heumann, Department of Geography, Central Michigan University, **Poster Session**

Mapping and Modeling the Critical Habitat of the Poweshiek Skipperling (*Oarisma poweshiek*) using a UAS Platform

The Poweshiek skipperling (*Oarisma poweshiek*), a prairie butterfly, was once found throughout the Midwestern United States and Manitoba, Canada. Populations have rapidly declined within the last decade possibly due to habitat fragmentation and degradation from development and invasive species, pathogens, and exposure to pesticides (Delphey et al 2016). The species was federally listed by the U.S. Fish and Wildlife Service in 2014 (USFWS 2014). The USFWS acknowledges little research exists for the Poweshiek skipperling making the development of well-informed conservation decisions difficult (Austin 2007; Jackson & Robertson 2011). The objective of this study is to map and model Poweshiek skipperling habitat in prairie fen wetlands of Michigan in which the majority of the remaining populations are found. An ensemble of species distribution models within the R package "biomod2" will be used with presence-only data and variables extracted from remote sensing data collected using an unmanned aerial system to predict suitable habitat within a total of 10 occupied and unoccupied prairie fens. The resulting maps and model will hopefully provide managers and future research efforts with a better understanding of the environmental conditions of Poweshiek skipperling's realized niche.

Key Words: UAS, Wetland Remote Sensing, Species Distribution Modeling, Poweshiek Skipperling

Mapping Diabetes to Inform School-based Prevention Interventions in Selected Cities in Michigan - Poster Session

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Objective. To decrease diabetes morbidity and mortality rates, early interventions are needed to change lifestyles that are often cemented early, making school-based prevention interventions important. However, with limited resources, it is difficult to determine specific local areas for intervention. To address this issue, we mapped diabetes by school district using geographic information systems (GIS) to identify school districts to target the interventions.

Methods. 2010 - 2014 death records with diabetes as cause of death were identified for selected 13 cities in Michigan. Diabetes prevalence was estimated using the weighted average of population by school district using the CDC's 500 Cities Project data. Crude prevalence and mortality rate were analyzed and mapped by school district. Years potential life lost (YPLL) were analyzed and presented as YPLL per person to indicate how prematurely people died on average.

Results. There were variations in diabetes prevalence and death across the cities. School districts with high diabetes mortality rate also had high diabetes prevalence with $r_s(13) = .72$, $p = .002$. The YPLL indicates variations in premature death due to diabetes by school districts. Flint City School District showed at the higher rate in diabetes prevalence, death and YPLL which can be considered as a school district to be prioritized for the interventions.

Conclusions. Using school districts, as the geographic level of analysis, identified local variations in diabetes burden for targeted school-based diabetes prevention interventions

Key Words: Diabetes, School district, GIS

John Oswald – Eastern Michigan University

Together/Separated: Ethnonational Identity Narratives, Conflict, and the Geo-visualization of Cyprus' Historic (co)Habitation Patterns – Session 8 – SC Room 320

Abstract: Following the Turkish military action on Cyprus in 1974 that resulted in the militarized division of the island into two ethnically homogeneous regions (Turkish Cypriot north and Greek Cypriot south), politicians, the international community, and NGOs have sought to settle the "Cyprus Problem." With the July 2017 collapse of yet another round of high level reunification talks between the Greek and Turkish Cypriots, many have begun to question if the island's intractable division can ever be solved. In addition to initiatives aimed at political and infrastructural mending, some parties have sought to bridge the cultural divide by calling for a return to a pre-partition status quo of social integration based on the tenets of a common Cypriot

identity and peaceful cohabitation. However, the idea of this common identity is often contested on both sides of the divide. This begs the question--does this meta-narrative reflect the historical, socio-spatial tenancies of the two communities on Cyprus or is it a product of (re)"imagining" past intercommunal realities in an attempt to create a hyphen-less national identity? This presentation critically evaluates the cultural narratives of communal cohabitation and separation through the analysis of the historic population geography of Cyprus. Combining data from British colonial period maps and decennial censuses (1878-1960) in a GIS environment, it is possible to reconstruct the changing population dynamics on the island and challenge the commonly accepted ethno-national narratives that persist on both sides of the divide.

Samuel Owusu-Agyemang, Department of Geography & Planning, University of Toledo,

Gun-related Crime in the City of Detroit, Michigan; Exploring the dynamics of Firearm Availability and Population Characteristics. – Session 1 – SC Room 320

The linkage between firearms and violent crime has been documented in several criminological research, with varying standpoints. This study explores the relationship between gun availability and gun-related violent crimes, using the City of Detroit, Michigan as a case study. Based on the primary role of Federal Firearm Licensees (FFLs) as a spigot for the flow of firearms into communities, spatial accessibility to FFL locations is used as a measure of gun availability. Global regression models are used to investigate the association between gun-related crime rates and spatial accessibility to FFL locations. Geographically Weighted Regression (GWR) is also employed to assess the spatial variation across the study area. In the global model, gun availability and selected population variables explained 59% of the variation in crime rates. The analysis shows a significant positive effect of gun availability on gun-related crime rates, when significant population characteristics are accounted for. Based on the findings, the location and activities of FFLs may be a contributing factor in the rates of gun-related crimes. Keywords: Crime, Detroit, Guns

Christopher Pessell - Ohio Wesleyan University – **Poster Session**

Production and Routing of Surface Meltwater on the Greenland Ice Sheet Ablation Zone

Enhanced glacial melt has been observed across the Greenland Ice Sheet (GrIS), including the Ilullisat Glacier (commonly known as Jakobshavn Isbrae) over the past few decades. This increased glacier meltwater channelizes across the surface to form supraglacial melt lakes in topographic depressions. Surface melt across the ablation zone (or melt zone) of the GrIS is driven by near-surface air temperature above the melting point (0°C). We have identified five supraglacial lakes in the ablation zone that form regularly over subsequent melt seasons, and are in close proximity to a Greenland Climate Network (GC-Net) automated weather station (AWS). The catchment area for these lakes are delineated using high-resolution digital elevation models (DEM). Among the five supraglacial lakes, eight instances of growth are recorded from Landsat-8 satellite imagery. We apply the Positive Degree Day (PDD) model to the catchment

areas to model the production of surface meltwater in the basin over the period of melt lake growth. The modeled results are then compared to the growth in supraglacial melt lake sizes from acquired Landsat-8 imagery over a period of two melt seasons (2014 and 2015). **Keywords**: remote sensing; supraglacial lakes; positive degree day

Brooke Robinson, DePaul University,

The Atlanta BeltLine: Reinscribing Racism in the City's Housing Market. Key words: race, housing, Atlanta. – Session 1 – SC Room 320

Atlanta, Georgia, one of the most segregated cities in the country, has residential racism in its DNA. Recently, the Atlanta BeltLine project, committed to connecting neighborhoods of different racial and socioeconomic makeups through the redevelopment of a 22 mile trail around the city's core, threatens to further entrench historic racial divides that have kept low-income black residents contained to certain areas of the city because of its lack of commitment to securing affordable housing along the trail. As property values along the newly completed East section of the trail skyrocket, the BeltLine has only supported about 200 units of affordable housing - in contrast to the 5,600 units originally promised. This pattern of gentrification threatens to displace low-income black families along future parts of the trail. For the BeltLine to succeed in its original vision, it must place affordable housing at the forefront of all policy-making decisions rather than leaving it as an afterthought. If the latter occurs, the BeltLine will work to reinforce historic patterns of building Atlanta for the wealthier, whiter elite, which pushes low-income black residents (both literally and figuratively) to the margins. We cannot allow this to happen.

Sam Roodbar, Western Michigan University

Spatial and Temporal Change in Halal Food Sales and Consumption A case study of the city of Dearborn, Michigan – Session 5 – SC Room 330

With a population of 3.2 million and growing in the US, Arab Americans are an integral part of the economy and culture of the United States. The southeast portion of the state of Michigan, specifically the Detroit metropolitan area is home to more than 300,000 Arab Americans.
One of the main aspects of Arab American culture is their Halal food tradition. Since its introduction in the United States, the sales and consumption of Halal products have increased immensely, to the point that the global Halal market is estimated to have a $2.1 trillion potential. This article summarizes my thesis research which is focused on the entrance of larger, retail food corporations into this market segment traditionally occupied by smaller scale ethnic food stores.
An online survey of 260 Halal food purchasers forms the core of this mixed method research project which also includes participant observations in the Middle Eastern shopping neighborhoods of Dearborn, MI. The survey was designed to help better understand Halal food consumers, shopping habits, and the reasons behind their selections. Preliminary analysis points to religious reasons as the main driver behind people's Halal food purchase. Other reasons affecting people's Halal food

purchases include the humane treatment of animals and food safety. Key words: Halal Food, Ethnic stores, Spatial and Temporal Change

Holly Roth and Norma Froelich, Northern Michigan University

Inter-Comparison of Off-Shore Weather Buoys: An Analysis of Weather and Wave Data Collection Equipment – Session 6 – SC Room 350

In 2015, Northern Michigan University acquired three off-shore buoys that monitor wave and weather conditions. The three buoys are located five-miles off the southern shore of Lake Superior in Marquette (at Granite Island), Munising and Grand Marais, Michigan. For six weeks, two of the buoys were co-located at Granite Island; one was moored approximately 150 meters off of the southern end of Granite Island, while the other was anchored 400 meters off the northern end of the island. The goal of this research was to ensure that the two off-shore weather buoys are collecting and reading the same data while in the same general location. Statistical analyses including regression and time comparison were conducted to determine the correlation of variables such as air and water temperature, wind speed and direction, and wave height between the two buoys. Slight variations were found between data sets, most likely due to the differences in location of each buoy relative to Granite Island. This inter-comparison, which shows that the two buoys have a similar response to waves and weather, indicates that the buoys will be able to produce reliable, credible data for future use and that any differences in measurements when the buoys are in separate geographic locations can be attributed to spatial variability across the lake. The influence of spatial variability on the measurements is extremely important to understand when identifying and describing geographic patterns of weather conditions on Lake Superior in future research.

Muhammad **Salaha Uddin**[1] Md. **Shakil Khan**[2] [1] PhD student, Spatially Integrated Social Science Program, Dept. of Geography and Planning, University of Toledo, Toledo,OH, Email:muddin@rockets.utoleod.edu; [2] Graduate Research Student, Department of Mechanical and Manufacturing Engineering, RMIT University, Melbourne

Environmental Stress from Roadway Transportation Sector in Urban Area – Session 2 – SC Room 330

Transport sector is playing a vital role to ensure proper connectivity, and economic stability. However, several studies revealed that this sector is the major consumer of fossil fuels, and emitter of CO_2, and thus creating a huge pressure on its surrounding environment to sequester the amount of CO_2. This imbalanced demand, and supply (bio-capacity) in relation to environmental setup and human activities (gap between ecological footprint and bio-capacity) is termed as ecological stress, and it requires appropriate assessment to meet the sustainability standards of different urban systems. This study aims to assess the ecological stress generated from urban road way transportation system by applying data analysis and spatial assessment techniques for

different administrative areas of Khulna city, Bangladesh. Satellite imagery, detailed transportation survey and Spatial analysis platforms (ArcGIS software) have been used for data derivation, analysis, and representation of such stress. Road network data from satellite images and ground corrections have been used to assess the roadway connectivity level utilizing pre-established indexing techniques (α, β, γ indexing, road density etc.). Total ecological footprint of transport sector is assessed in two levels: physical footprint and energy footprint. Finally, the ecological stress is identified and represented by applying mapping techniques in compare with the available biocapacity of the study area. The resulted output of this study will be helpful for policy makers, urban, and transport planners, environmental policy makers, and environmental manages for better decision making.

Keywords: Bio-capacity, Ecological Footprint, Ecological Stress, Transportation System, Spatial Assessment

Jeremy Schroeder[1], Margaret Pippin[2] & Tim Berkoff[3] – Poster Session

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Evaluation of Ozone Gradients Using In-situ Mobile Sensors during OWLETS 2017 Ozone, Troposphere, OWLETS -

The OWLETS (Ozone Water-Land Environmental Transition Study) field campaign performed by NASA (National Aeronautics and Space Administration) from June to August 2017 sought to use multiple measuring platforms to capture significant tropospheric ozone events in the Chesapeake Bay area around Virginia. Current techniques provide insufficient data to perform reliable forecasting models that are able determine wide spread variations in tropospheric ozone concentrations. These results will validate or improve ozone forecasting models provided from NOAA (National Oceanic and Atmosphere Administration). Accurate ozone predictions allow for improved public health warnings for air quality alerts. The use of mobile in-situ measuring platforms mounted to automobiles collected horizontal ozone spatial data along water and land routes. Mobile measurements fill the data gap between stationary ozone monitors. This method refines the coarse surface spatial resolution of available ozone data points. Portable ozone sensors were able to be mounted on automobiles and provided necessary spatial maps to visualize surface ozone trends. Mobile in-situ measurements were able to verify that on some day's predicted ozone gradients between the water and land transition do occur. Future work will include direct comparisons with model ozone predictions.

Adiyana Sharag-Eldin, Kent State University; Dr. Xinyue Ye, Kent State University
Dr. Brian, Spitzberg, San Diego State University – Session 5 – SC Room 330

Connecting Geography with Communication Theory – a Literature Review

Geography and Communication are two academic disciplines that share a border where interdisciplinary activities constitute fecund opportunities at their intersections. The connection between communication theory and geography was first revealed by Lefebvre in 1991 in his significant definition of space and time. In his book, Lefebvre suggested

the 'representation of space,' or the social space of communication, is occupied by artists, writers, and philosophers. The Internet and mobile device technology allow researchers to download Big-Data with georeferenced. Today, we share the space of communication with the Internet bloggers, celebrities, and political figures as well as other social scientists.

Keywords: *spatio-temporal geography, social network analysis, communication theory*

Scott Sheridan, Jacqueline Curtis, and Andrew Curtis, Department of Geography, Kent State University; Heather Trnka, Akron Children's Hospital; Eric Hutzell, Summit County ADM Board; Mary Infantino, Akron Police Department; Beth Kuckuck, Summit County ADM Board; Sherry Blair, Akron Children's Hospital.

Childhood Injury Risk in Akron, Ohio, and the Role of Weather. – Session 5 – SC Room 330

This study analyzes a broad range of injury and risk outcomes over a three-year period (2013-2015) for the city of Akron, Ohio. Child injury data and injury risk data are drawn from a variety of sources including trauma registry, police calls for service, and police incidents of juvenile victimization. Days with extreme weather conditions, using multiple thresholds of high and low temperature, snowfall, and precipitation) are compared to days without extremes. Incidence of outcomes is compared between the extreme and normal days, using non-linear regression models. Results suggest that anomalously warm conditions, but not the hottest days, are associated with increased risk, along with incidence of snow. Heavy precipitation days largely had a protective effect, suggesting lesser social activity and interaction. These comparisons enable us: 1) to identify the spatial pattern of all-cause injuries and risk of injury among children that are unique to days with temperature and precipitation extremes and 2) to create a model for public health practitioners to integrate these otherwise siloed data as an evidence base for geographically targeting prevention and intervention activities for extreme weather events in their communities. Key Words: Hazards, Health, Weather.

Ellen Sizer - Ohio Wesleyan University

Physical Fences and Social Boundaries: The Human Implications of Privatizing Nature in Patagonia Park – Session 3 – SC Room 350

Patagonia Park has undergone a huge shift in the last decade. Monetary investments made by American entrepreneurs, Doug and Kris Tompkins, have transformed the property from the fenced-in cattle ranch that stood for over a century into an international ecotourism destination with remarkable and inspiring landscapes. In January 2017, I traveled to Patagonia Park to learn more about the park's purpose and its impact on local communities. Although its founders and followers forged the park's vision with good intentions, my research suggests that there are clear social implications related to the creation of the park. The fences might have been taken down physically, but new ones were put up socially. In this paper, I argue that creation of Patagonia Park constructed social boundaries through (1) the park's design, (2) how local ideals of nature conflicted those of the park's staff and supporters, and (3) the varied ways that the park and its mission were experienced and perceived. This research suggests that environmental actions can have social implications by revealing the cultural politics that private conservation parks can

forge to accommodate certain identities and reproduce inequality. Key Words: Political ecology, Patagonia Park, conservationism

Erin Slater, DePaul University,

Exploring Rent Regulation as a Tool for Affordable Housing. Key words: rent regulation, affordable housing, Pilsen. - Poster Session

Illinois passed a law in 1997 banning rent control of any kind in the state and the Pilsen Alliance; a social justice organization is lobbying to lift that ban. Pilsen is a neighborhood in Chicago that is experiencing increasing housing prices and this project will research whether or not rent control makes sense in a community with an affordable housing crisis. This project will look at three major cities with rent regulation laws, New York City, San Francisco, and Washington D.C. Rent regulation includes rent control and rent stabilization. Rent regulation laws have kept rent prices in these three cities significantly lower than unregulated units in these cities. There are issues with rent regulation that the city could learn from including the lack of flow of people, fewer units available, and disinvestment in neighborhoods. Rent stabilization is a better solution for than rent control that causes fewer issues. For the Pilsen Alliances intended purpose, which is to stop gentrification, if rent stabilization was put into place with some changes, rent regulation could be a useful tool to address the ongoing affordable housing crisis in the neighborhood.

Michelle Souza, Eastern Michigan University

The Utilization of Citizen-Scientists for Collecting Data in Determining the Quality of Vernal Pools in Michigan. Session 7 – SC Room 301

Vernal pools are small wooded temporary wetlands that fill from rain, snow melt, or high groundwater in spring or fall, and typically dry up by late summer. This seasonal flooding and drying cycle makes vernal pools different from other wetlands and affects what type of species inhabit them. The frequent drying of these pools, and unique species they support are highly specialized assemblages. They function as integral parts of their landscape and their cumulative loss is ecologically detrimental.

There are numerous challenges to protecting temporary wetlands, and one tool that is increasingly being utilized is that of citizen-scientists in collecting data. Michigan State University's MNFI Vernal Pools Project is conducting state-wide vernal pool inventories with citizen-scientists. Steps include pool mapping, inventory of species, field assessments, and guiding local conservation and town development strategies. Potential vernal pools were remotely identified and photo-interpreted. Data were entered into a Geographic Information System database and are accessible to any interested parties. Town strategies can range from amending existing ordinances to improve wetland protection to incorporation of vernal pool

resources into larger biodiversity mapping and planning projects. Communities will be better able to incorporate pool conservation strategies into the local planning and regulatory processes.

Key Words: Vernal Pools, Ecology, Citizen-Scientists.

Emily Szymanski is presenting this poster: **Poster Session**

Teresa Bertossi [1,], Emily Szymanski[1], Jamie Whiting[1], Adam Magnuson[1], Luke Gray[1], Lisa Johnson[2], Gabriel Caplett[2], [1]Department of Earth, Environmental and Geographical Sciences, Northern Michigan University; [3]Community Hand-UP, tbertoss@nmu.edu.

Sustainable Community Development and Military Base Closures: A Case Study of the KI Sawyer Community, a Decommissioned Airforce Base in Michigan's Upper Peninsula.

The Department of Defense has closed more than 128 domestic military bases since the 1980s and future closures are expected. Ongoing research is necessary to address the socio-economic and environmental concerns associated with base closures. There are few comprehensive strategies for base conversion because geographical differences means that a single plan does not fit multiple sites. This ongoing case study of the KI Sawyer community, a former air force base closed in 1995, aims to help address a gap in research on post-closure military bases. Findings from a 2012–2013 asset analysis and census survey (n=200) indicate that the community is concerned with negative perception issues and a lack of inclusion in the development process. A spatial analysis identified the "Shopette Area" as the place survey respondents perceived as the 'least safe'. Data collected in 2016–2017, through a systematic social observation of space, demonstrates that the 'Shopette Area' does not meet the human need for protection and expression. Our findings will help guide future efforts to develop an art and design installation with Sawyer youth in an effort to address perception issues through creative placemaking. Key Words: military base closure, sustainability community development, creative placemaking

Alex Temes, DePaul University

Aftermath of a Mega-Fire: A Case Study of the Rodeo-Chediski Fire, Arizona Through Remote Sensing. – Session 7 – SC Room 301

Wildfires are both a critical aspect of the cycle of forest succession and a major natural disaster to native species and humans alike. But in the case of mega-fires, or fires that burn with the highest intensity, burn uncontrollably and are massive in size, where does the most damage

occur? This research investigates where in the burn pattern of a mega-fire the most change, and therefore burn intensity, occurred through change analysis performed utilizing GIS and Remote Sensing methodologies. By subtracting the end image from an image before the fire, a change image was created and ordinally organized, revealing a pattern in increased change along physical geographies of increased slope with the most visible change occurring at the crest of these geographies. Using this information, it was extrapolated that the Mogollon Rim, a unique physical feature to the American Southwest, facilitated this propensity in fire behavior through its steep but forested face. This information was then applied to a statewide analysis, where geographies of increased slope reflective of a rim or steep-rising plateau were cross-referenced with vegetation maps, revealing a line of increased hazard to increased fire damage across the state. Key words: fire, GIS, remote sensing.

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Historical GIS Approaches to the Industrial Archaeology of Cities: Risk, Mobility, and New Scales of Inquiry – Session 5 – SC Room 330

Archaeologists working in postindustrial urban contexts can link the contemporary legacies of industry with their origins through the study of material remains. However, traditional archaeological field methods may limit the scale of studies of postindustrial urban archaeological landscapes. Historical archaeology as a sub-discipline still lags behind much of the social sciences in adopting GIS-based historical research approach. We demonstrate several ways that Historical GIS (HGIS) methods augment traditional archaeological approaches to the study of postindustrial cities. Our primary research focuses on applying Big Data-based HGIS to investigate the archaeology of risk in the postindustrial city of London, Ontario. The HGIS approach permits fine-grained archaeological prospection and analysis of past industrial activity on the city-scale, and predictively models the persistence of historically generated pollutants in the present using real-world industrial pollution indices. In addition to expanding the scope of archaeological study, our HGIS approach to the archaeology of postindustrial urban landscapes can link archaeology more directly to ongoing discussions of urban heritage, redevelopment, and environmental sustainability efforts in postindustrial cities. **Keywords: Historical GIS, Archaeology, Urban**

James A. Tyner, Mandy Munro-Stasiuk, Sokvisal Kimsroy, Stian Rice, Corrine Coakley

The Political Economy of Irrigation in Democratic Kampuchea, 1975-1979 – Session 9 SC Room 350

Between 1975 and 1979 approximately two million men, women, and children died in the Cambodian genocide. Of these deaths, approximately half were directly murdered through torture and execution; the remainder perished from a combination of indirect causes--starvation, exhaustion, and lack of medical care. In their totality, these deaths are the consequence of a series of political-ecologic decisions that produced the conditions of widespread mortality. Most salient was the Khmer Rouge's attempt to increase agricultural productivity. The attainment of this objective required a monumental effort to rapidly expand irrigation projects (i.e. dams, dikes, canals, and reservoirs) throughout Democratic Kampuchea. In this paper we contextualize the construction of irrigation schemes within a broader understanding of the political economy of Democratic Kampuchea.

Gregory Veeck; Geography, Western Michigan University – **Session 11 – SC Room 330**

Agricultural Transformation: The status of the farm sector in a wealthy Chinese province

Setting aside three of China's four first-order cities (Beijing, Shanghai, Tianjin), by almost any standard measure (per capita income, per capita GDP, per capita disposable income, per capita consumption expenditure), the coastal provinces of Zhejiang, Guangdong and Jiangsu consistently rank as the nation's most prosperous and productive. Jiangsu—the focus of this research- ranked first in the number of total enterprises, in private manufacturing enterprises, in private enterprise total assets, and second to Guangdong in manufacturing employment and the value of international exports (2015). Much of this productivity must be credited to a vibrant and flexible manufacturing sector made possible by a highly educated workforce, supportive government policies at all levels, and an excellent coastal location adjacent to Shanghai, the nation's unofficial banking center.

In previous eras, however, Jiangsu was a very different type of place. The southern third of the province, south of the Chang Jiang (*Jiangnan)*, incorporated the lion's share of the fabled "Land of Rice and Fish" (□米之□), one of dynastic China's most vital granaries for more than a millennium. Even during the first 50 years of the PRC, *Jiangnan* remained a major producer of rice, silk, tea, fish, eels, crabs and fowl. In sharp contrast, the northern 2/3 of the province was prone to flooding, chronically low yields, limited transportation, and few manufacturing opportunities aside from staple agro-processing firms. Much has changed.

The purpose of this research is to provide a spatial analysis of the condition of the agricultural sector across 64 of the province's county-level units for the period from 2005 to 2015. Results indicate that crop production has declined in the traditionally productive areas, but the once-poor north has more than taken up the slack with infrastructural improvements leading to greater production of wheat, rice, vegetables, fruit and fresh water aquaculture products such as fish, shrimp and crabs. Keywords: Cambodia, irrigation, political economy

Justin White, Department of Geography and Anthropology, University of Wisconsin-Parkside,

Critical geographies: preliminary geospatial analyses of migrant death sites in southern Arizona, USA. - Poster Session

Since 2000, there have been 2837 dead migrants processed by the Pima County Medical Examiner in southern Arizona. Estimates suggest that the majority of dead bodies remain undetected in the remote and mountainous Sonoran Desert. Deaths increased drastically from three in 1999 to 100 in 2001, and increased through 2010. While the cause of death was undeterminable for 1335 of the migrants, 1070 were killed by excessive exposure to high temperatures or dehydration, and 299 of them by violence (e.g. gunshot wounds, blunt force trauma, hanging, strangling). Other causes of death included drowning, hypothermia, asphyxiation, and envenomation, among others. Thirty-five percent of the deaths occurred within 15 ft of a state road. I also present a preliminary geospatial analysis of the death sites. Future analyses will involve death frequency and climate extremes and will place the year of death in a greater social context. **Keywords: migrant deaths, humanitarian geographies**

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Dipartimento di Scienze Economiche, Aziendali e Statistiche, University of Palermo, Italy.

Extreme unhatch and fledge rates for an urban Red-tailed Hawk population: life in the city – Session 11 – SC Room 330

Red-tailed Hawks (*Buteo jamaicensis*) are one of few apex predators that regularly access urban cores. Urban habitats in North America have been recorded both as resource islands and ecological traps for raptors. As part of a larger breeding ecology study of urban Red-tailed Hawks in Reno, NV during the 2015 and 2016 breeding seasons, we recorded egg unhatch rates of 15% and 18%, respectively: three times greater than a normal year for buteos and two times greater than a catastrophic year. Complementarily, we recorded fledge and productivity rates nearly two times greater than that of other populations in North America. Our analyses showed that factors such as temperature, precipitation, urban density level, and diet were not correlated with the unhatch or fledge rates. Three dead nestlings in our study were examined by a wildlife care facility and all died from rodenticides. Though we did not collect the unhatched eggs because of ethical and logistical constraints, it has been documented elsewhere that toxins in doses too small to kill adult raptors can still drastically decrease egg fertility. Based on our findings we believe that this populations is stable in number, though individual turnover may be high. Keywords: urban hawk, population dynamics.

Thomas Wile, Department of Geography, DePaul University, **Poster Session**
Factors Influencing Northern Ireland's Brexit Vote. Key words: Brexit, Northern Ireland, EU.

This poster presents the factors that contributed to how Northern Ireland residents voted on the UK referendum on leaving the European Union. I will focus mainly on how national identity, religion, educational status, and proximity to Ireland affected people's voting intention. Using demographic data from the Northern Ireland Statistics and Research Agency. My first predictor variable is national identity, who identifies more as British, Irish, or Northern Irish. My second predictor variable is religious/cultural identity, Catholic or Protestant. My third predictor variable is educational and income status. I measure geographical residency and whether that outweighed national identity in determining people's voting intention.

And Party Every Day: 1970s Rock Music Industry and University Campus Entertainment
Authors: Dr. Harry J. Wilson and Travis Yammine
Presenter: Dr. **Harry J. Wilson**
Institution: Ohio Northern University; Region: East Lakes AAG – **Session 4 – SC Room 320**

On May 9, 1975, a rock concert occurred on the campus of Ohio Northern University, a small private school in the village of Ada, Ohio. The venue brought three bands to ONU, including rock veterans the James Gang, prog band the Flock (filling in for Rush), and a fairly new group, KISS, on the verge of international fame. Interviews with over 30 concert attendees, ONU alumni, and Ada locals illuminate the extent that it impacted local culture. Each person continues to have strong memories of the event. While certainly unique with regard to its impact on local culture, the concert was typical of campus venues of this type in the 1970s. These events brought together rock groups that were young and rising in popularity with older bands whose fame was waning. University campus entertainment served as the gate, ushering groups either up and into

stardom, or down and out of favor. Our research focuses on this concert as a case study that illuminates the nature of the relationship between the 1970s rock music industry and university campus entertainment. Keywords: Historical Geography, Rock Music Industry

Owusua Yamoah, Department of Geography and Planning, University of Toledo,

Patterns of Intercounty Migration in the United States: A Review of Periods Before, During and After the Great Recession of 2007. – Session 4 – SC Room 320

The presence of structural changes in the migration system of the United States have been observed over the years by migration researchers. Pivotal changes occurred in the 1930s, 1940s, and 1970s with the ‘30s and ‘40s considered as particularly notable in the scientific study of migration in the United States. Historically, internal migration patterns in the country have reflected business cycles and changes in the economy. However, research is limited on the effect of local economies on migration during periods of economic hardship. Using county level migration data from 2003 to 2013, this study shows how patterns of inter-county migration changed over time through the use of exploratory spatial data analysis (ESDA).
Generally, we observe a shift of clusters of high “migration efficiency” from coastal states on the Eastern and South-Western parts of the country to inland states during the recession. A sizeable number of larger counties including Los Angeles and Maricopa saw a significant drop in “migration efficiencies” while that of smaller/rural counties remained relatively the same over the years. While the factors accounting for these variations are yet to be identified, the distribution of the changes show variations in county level migration flows during the Great Recession. : Internal migration, Great Recession, Migration Efficiency

Li Yang, Department of Geography, Western Michigan University,

Tourism-driven urbanization in China’s small town development. Keywords: tourism urbanization, real estate development, ancient town. – Session 3 – SC Room 350

The purpose of this study is to examine the process of tourism-driven urbanization of small towns as a local development strategy in China. A case study was conducted in Yiren Ancient Town in Yunnan Province, China. Multiple research methods, including in-depth interviews, informal discussions, on-site observations, and secondary data review were employed to measure residents and tourism decision-makers’ perceptions of tourism urbanization and to explore the impacts of tourism on local environment and communities. Key informants from government officials, tourism developers and local communities were interviewed. The study reveals that the town provides great recreation and leisure opportunities for tourists. Tourism urbanization in the

town has resulted in a rapid population and labor growth as well as dramatic expansion of real estate and urban built environment. Although tourism has brought socio-economic benefits to the town, there is a general concern about the decline of traditional culture and an erosion of local environment and place. Therefore, tourism planners and policy-makers need to be aware the negative impacts of urbanization towards tourism development.

Xining Yang, Geography and Geology, Eastern Michigan University
Visual Analysis of Public Metro Data – Session 10 – SC Room 301

Understanding the quality and usage of public metro resources is important for schedule optimization in temporal dimension and route planning in spatial dimension. Using public metro data from City of Wuhan, China, this paper discusses the development of a visual analysis framework for exploring public metro data. Geographic information system, network analysis and statistical analysis are applied to the massive dataset of public metro transit data in Wuhan. Several findings obtained from our analysis and visualization will be presented. Public metro in the city of Wuhan is undergoing high speed development and this research serves as a springboard to reveal the initial stage of metro operations in Wuhan and help to offer useful insight for future metro development in the city.
Keywords: Public Transportation, Ge-ovisualization, China

Ortis Yankey, Department of Geosciences, The University of Akron; Eric G. Hutzell, Alcohol, Drug Addiction & Mental Health Board, Summit County, Ohio,

Crisis Intervention Incidents, Mental Health and Suicide Rate in Akron, Ohio – Session 2 – SC Room 330

CIT is a specialized training program that is offered to police officers on how to handle individuals experiencing a mental health crisis. The aim of this research was to analyze the spatial pattern of CIT incident locations, to determine frequent CIT related call types and techniques used by police to handle the situation, and lastly to examine whether there is a correlation between CIT rates and suicide rates in Akron.

We found that CIT incidents occurred mostly in the central portion of the city of Akron. The threat of suicide was the most frequent type of calls police responded to. In about 72 percent of CIT cases, police used verbal de-escalation techniques to calm the patient and to take the person to the hospital.

Results from Ordinary Least Square regression analysis using actual suicide rate as the

dependant variable and CIT as the explanatory variable showed that CIT incidents accounted for approximately 13 percent of actual suicide cases. Other factors that might explain suicide rate needs to be explored in addition to CIT data in a future research, and a multiple linear regression can be used in exploring such relationships. KEY WORDS: Crisis Intervention Training (CIT), Suicide rate, Incident locations