

**Program Guide for the
2016 JOINT ANNUAL MEETING OF THE
MIDDLE STATES DIVISION OF THE
AMERICAN ASSOCIATION OF GEOGRAPHERS
and the
PENNSYLVANIA GEOGRAPHICAL SOCIETY**

**NOVEMBER 4-5th
BLAIR COUNTY CONVENTION CENTER
ALTOONA, PENNSYLVANIA**



2016 Joint Annual Meeting of the Middle States Division of the American Association of Geographers and the Pennsylvania Geographical Society

November 4-5, 2016

Blair County Convention Center, Altoona, PA

Hosted by the Department of Earth and Mineral Sciences, Penn State Altoona



2016 Meeting Arrangements Committee

Tim Dolney, Penn State Altoona

Brent Zaprowski, Salisbury University

Joan Welch, West Chester University

Ola Johansson, University of Pittsburgh at Johnstown

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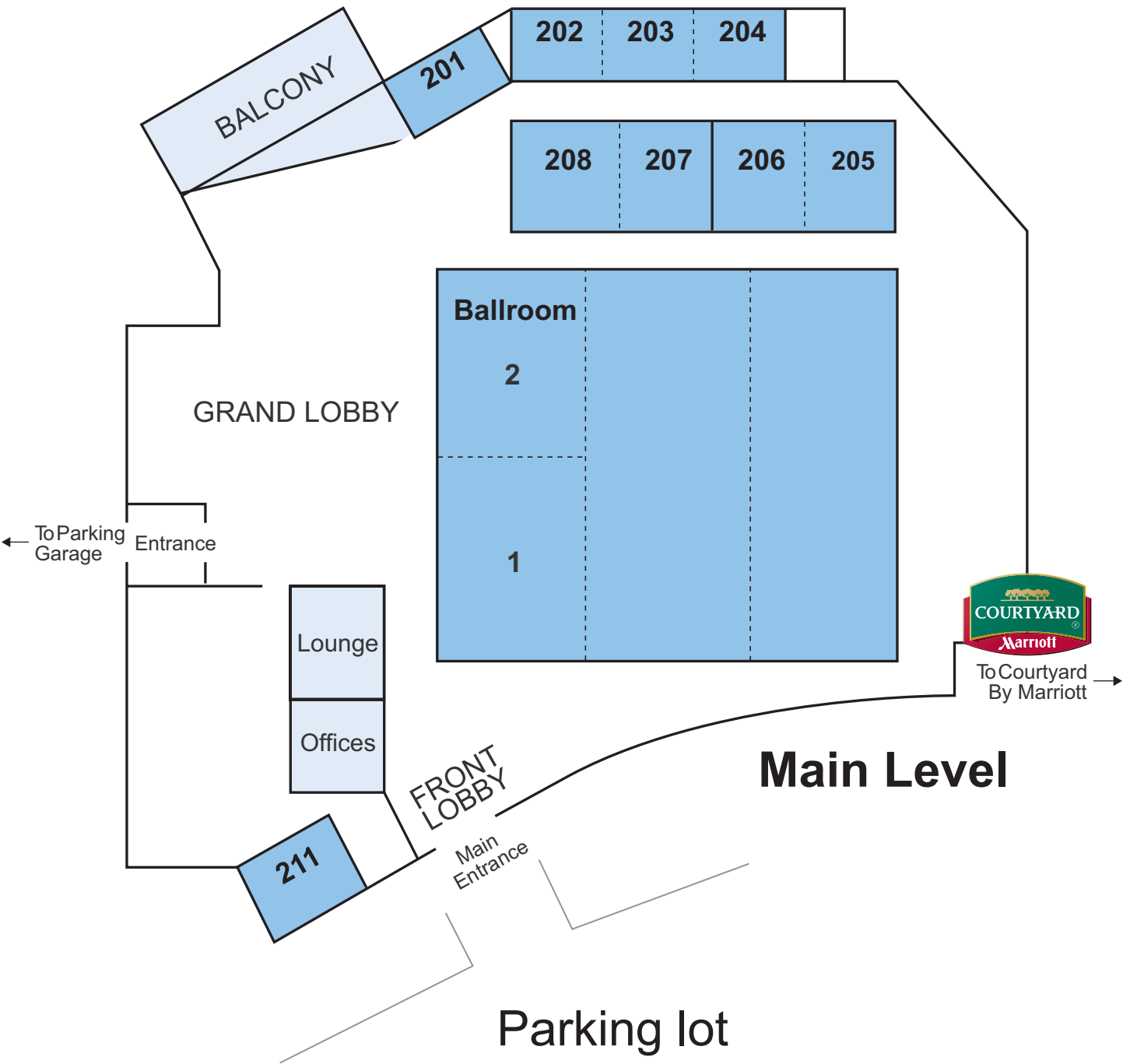
The 2016 meeting committee would like to recognize the Department of Geography and Urban Studies at Temple University as the primary sponsor of the 2016 Joint Annual Meeting. Learn more about Temple University and their Professional Science Master's in Geographic Information Systems at their table in the Grand Lobby.



<http://www.cla.temple.edu/gus/>

FLOOR PLAN

BLAIR COUNTY CONVENTION CENTER



**2016 JOINT ANNUAL MEETING OF THE MIDDLE STATES DIVISION OF THE AAG AND THE
PENNSYLVANIA GEOGRAPHICAL SOCIETY
SCHEDULE OF EVENTS**

Time	Event	Location
Friday, November 4th		
7:30 am-3:00 pm	Registration table	Grand Lobby
9:00 am-4:30 pm	Posters on Display	Grand Lobby
8:00-9:30 am	Paper Session 1 - Recreation Geography	Room 202
	Paper Session 2 - Geopolitics	Room 203
	Paper Session 3 - Cultural Geography I	Room 205/206
	Paper Session 4 - Physical Geography I	Room 207/208
9:30-10:00 am	Coffee Break	Grand Lobby
10:00-11:50 am	Paper Session 5 - Economic Geography	Room 202
	Paper Session 6 - Geography Education	Room 203
	Paper Session 7 - Cultural Geography II	Room 205/206
	Paper Session 8 - Physical Geography II	Room 207/208
12:00-1:15 pm	Luncheon	Ballroom 1/2
1:00-1:15 pm	PGS Business Meeting	Ballroom 1/2
1:30-2:40 pm	Paper Session 9 - Weather and Climate	Room 203
1:30-3:20 pm	Paper Session 10 - Geospatial Technologies	Room 205/206
1:30-3:40 pm	Paper Session 11 - Urban Geography	Room 207/208
2:30-3:30 pm	Map/poster presenters available for questions	Grand Lobby
2:50-4:00 pm	Paper Session 12 - Medical Geography	Room 203
3:30-5:00 pm	Paper Session 13 - GIS Applications	Room 205/206
3:45-4:45 pm	Panel Discussion: Career Opportunities for Geographers	Room 207/208
4:45-5:00 pm	Elaine Bosowski Poster Awards Presentation	Room 207/208
5:00-6:00	Social hour - Cash Bar	Grand Lobby
6:00-9:00 pm	2016 PGS Annual Banquet and Awards Ceremony - Guest Speaker: 2016 Distinguished Geographer Award Winner Mark Bonta, Penn State Altoona University	Ballroom 1/2
Saturday, November 5th		
8:00-11:00 am	Registration table	Grand Lobby
9:00 am-12:00 pm	Posters on Display	Grand Lobby
9:00-10:30 am	Special Session - Fieldwork in the Geography Curriculum: Best Practices for Successful Outcomes	Room 202
10:45-11:45 am	Panel Discussion - Making Our Courses a "Spatial" Experience: Best Practices in Teaching Geography	Room 202
8:30 am-12:00 pm	MSD-AAG Geography Bowl	Rooms 205/206 and 207/208
12:00-1:30 pm	MSD-AAG Luncheon and Student Awards - Sponsored by Temple University	Ballroom 1/2
12:30-12:45 pm	MSD-AAG Business Meeting	
12:45-1:15 pm	Guest speaker: Dr. Sarah Witham Bednarz, Texas A&M University, Past-President, American Association of Geographers	
1:15-1:30 pm	Student Paper Contest Awards	

**2016 JOINT ANNUAL MEETING OF THE PGS AND MSDAAG
SUMMARY OF PAPERS AND PRESENTATIONS**

Friday Nov. 4	Room 202
8:00-9:30 am	<p style="text-align: center;">Session 1 - Recreation Geography</p> <p><u>Chair:</u> Deborah Che</p> <p>8:00 - Deborah Che: Telling the Story of Pennsylvania's Lumber Heritage</p> <p>8:20 - Jame Anania: Main Street Metamorphosis: Cooperstown and the Impacts of Baseball Tourism.*</p> <p>8:40 - Nicholas Minett: The Global Diffusion of Slum Tourism and the Issues it Raises</p> <p>9:00 - J. Duncan Shaeffer: Pennsylvania's Long-Distance Backpacking Trails: Increased Future Popularity and Pressure to Complete the Gaps</p> <p>9:20-9:30 Questions</p>
*student paper contest entrant	
10:00-11:50 am	<p style="text-align: center;">Session 5 - Economic Geography</p> <p><u>Chair:</u> James Saku</p> <p>10:00 - Gregory E. Faiers: The (Rail) Road Not Travelled: Railroad Abandonment in West Tennessee and Socio-Economic Consequences</p> <p>10:20 - James Saku: Economic Change in the Western Arctic of Canada: Opportunities and Problems</p> <p>10:40 - Dana Fiel: Couchsurfing Indonesia</p> <p>11:00 - Kyle Erisman: Casino Adoption</p> <p>11:20 - Dana Keith, et al.: Field Research Study in Eastern India to explore Economic and Environmental Conditions of a declining Chinatown in Kolkata</p> <p>11:40-11:50 Questions</p>
Saturday Nov. 5	Room 202
9:00-10:30 am	<p style="text-align: center;">Special Session - Fieldwork in the Geography Curriculum: Best Practices for Successful Outcomes</p> <p><u>Chair:</u> Kim Irvine</p> <p>9:00 - Kim Irvine and Tricia Seow: Geography Education at the National Institute of Education (NIE), Singapore: Our Approach to Overseas Field Experiences</p> <p>9:20 - Tricia Seow and Kim Irvine: The Sustainability Learning Lab: Enhancing Geographical Inquiry in the Field and Classrooms</p> <p>9:40 - Stephen Vermette and Karen When: Field Courses: Teaching to the Multiple Intelligences</p> <p>10:00 - Timothy McDonnell: Field Courses: The B-WET Upper Susquehanna Project</p> <p>10:20-10:30 Questions</p>
10:45-11:45 am	<p style="text-align: center;">Panel Discussion - Making Our Courses a "Spatial" Experience: Best Practices in Teaching Geography</p> <p style="text-align: center;">Jennifer Haney, Enid Lotstein, Jodi Vender, and Daryl Wenner</p> <p style="text-align: center;">This panel will discuss effective approaches to teaching geography in undergraduate introductory and upper-level courses that enhance student learning. Instructional tools highlighted will include but are not limited to reflective journal writing, group projects, and role-playing activities.</p>

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SUMMARY OF PAPERS AND PRESENTATIONS**

Friday Nov. 4	Room 203
8:00-9:30 am	<p style="text-align: center;">Session 2 - Geopolitics</p> <p><u>Chair:</u> Francis A. Galgano</p> <p>8:00 - Tood Sundberg and Jordan Howell: The Geopolitics of Hygge: Denmark's Affective Soft Power</p> <p>8:20 - Kolson Schlosser: World War I Propaganda as War of Position: Examining the National Security League's Committee on Patriotism Through Education</p> <p>8:40 - Francis A. Galgano: The Evolution of the National Security Landscape</p> <p>9:00 - Mark Blumler: At the Nuclear Brink: Recent American Foreign Policy vs. Russia</p> <p>9:20-9:30 Questions</p>
10:00-11:50 am	<p style="text-align: center;">Session 6 - Geography Education</p> <p><u>Chairs:</u> Chad Kauffman and Thomas Mueller</p> <p>10:00 - Matthew Ramspott and Philip Allen: Integrating UAS into Geographical Research and Curriculum: You Have to Walk Before You Can Run (or Fly)!</p> <p>10:20 - Chad Kauffman: Digital Media Meteorology: A New Curricular Adventure</p> <p>10:40 - Joe Tokosh: Teaching Market Area Delineation: A Classroom Exercise</p> <p>11:00 - Thomas Mueller: YouthMappers: A GIS Service Learning Opportunity</p> <p>11:20 - Benjamin Shultz: The Promise and Paradox of Education in the Global Era: The Case of Higher Education in Macedonia</p> <p>11:40-11:50 Questions</p>
1:30 - 2:40 pm	<p style="text-align: center;">Session 9 - Weather and Climate</p> <p><u>Chair:</u> Jase Bernhardt</p> <p>*student paper contest entrant</p> <p>1:30 - Lesmes Mora Jerez: Effects of Precipitation and Snowfall on Traffic Accidents: Case of Study in Philadelphia County, Pa.*</p> <p>1:50 - Jase Bernhardt: A Comparison of Daily Temperature Averaging Methodologies: Spatial Variability, Seasonal Patterns, and Related Climate Variables in the CONUS</p> <p>2:10 - Heike Hartmann: Developing a seasonal precipitation forecast model for the Aksu-Tarim River Basin</p> <p>2:30-2:40 Questions</p>
2:50-4:00 pm	<p style="text-align: center;">Session 12 - Medical Geography</p> <p><u>Chair:</u> Stephen Vermette</p> <p>2:50 - Stephen Vermette and Justin Blicharski: A Spatial Guide for U.S. Migraine Sufferers: Mapping the Daily Variability of U.S. Barometric Pressure</p> <p>3:10 - Mackenzie Hintze: Obstruction to Obstetrics: A Study of Maternal Mortality in Africa</p> <p>3:30 - Tim Schock: The Role of Unconventional Gas Activities in the Prevalence of Chlamydia in Rural Pennsylvania</p> <p>3:50-4:00 Questions</p>

**2016 JOINT ANNUAL MEETING OF THE PGS AND MSDAAG
SUMMARY OF PAPERS AND PRESENTATIONS**

Friday Nov. 4	Room 205/206
8:00-9:30 am	<p style="text-align: center;">Session 3 - Cultural Geography I</p> <p><u>Chair:</u> Paul Marr</p> <p>8:00 - Darrell Norris: Utopia 500: Revealing the spatial, demographic and economic aspects of More's Utopia</p> <p>8:20 - Norah Henry and Brendan McGovern: Ethnic Tension, Place, and Social Media</p> <p>8:40 - Paul Marr and Sam Edwards: The Kuhn Family Cemetery</p> <p>9:00 - Yanitza Piedra: Gravestone Iconography in a Yucatan Peninsula Cemetery: A Photographic Analysis</p> <p>9:20-9:30 Questions</p>
10:00-11:50 am	<p style="text-align: center;">Session 7 - Cultural Geography II</p> <p><u>Chair:</u> Jennifer Pomeroy</p> <p>10:00 - Veronica Medina and Mika Naor: A Cross-Province Comparison of Double Orphans in South Africa*</p> <p>10:20 - Jimmy Feng: Anti-Chinese Prejudice in Australia 1850-1919: Content Analysis of Newspaper Articles*</p> <p>10:40 - Richard A. Russo: Understanding the Complex Geography of Francophone Communities in Ontario</p> <p>11:00 - Jennifer Pomeroy and Vandana Wadhwa: A Woman's Place? Examining Urban Social Space in India</p> <p>11:20 - Nathan Thayer: Making Georgetown: Place, belonging, and change in rural Delaware*</p> <p>11:40-11:50 Questions</p>
1:30-3:20 pm	<p style="text-align: center;">Session 10 - Geospatial Technologies</p> <p><u>Chair:</u> Gary Coutu</p> <p>1:30 - Kevin Heard, John Frazier, and Lucius Willis: Monitoring Economic Impact with Story Maps</p> <p>1:50 - Gary Coutu and Dottie Ives Dewey: Using 3D Modelling to Build Community Partnerships: Visualizing the Market/Gay East Corridor</p> <p>2:10 - Carl Tompkins and Rui Li: Evaluation of Signage Placement on University Campus using Space Syntax*</p> <p>2:30 - Matthew Bandurchin: Evolving Small Business with Geospatial Technologies*</p> <p>2:50 - Robert Kibbee: HistoryForge: A Web-Based Tool for Exploring the Historical Geography of Communities</p> <p>3:10-3:20 Questions</p>

**2016 JOINT ANNUAL MEETING OF THE PGS AND MSDAAG
SUMMARY OF PAPERS AND PRESENTATIONS**

Friday Nov. 4	Room 207/208
8:20-9:30 am	<p style="text-align: center;">Session 4 - Physical Geography I</p> <p><u>Chair:</u> Lisa Emili</p> <p>8:00 - Presenter withdrew from meeting</p> <p>8:20 - Dana Grabowski and Joan Welch: Vernal Pool Habitat Evaluation of Warwick County Park and Stroud Preserve, PA</p> <p>8:40 - Lisa Emili, Angela A. Spagnoli, and Tracie E. Cobb Irvin: Evaluation of stream water quality in mixed-use watersheds, Blair County, Pennsylvania</p> <p>9:00 - Kelly Frothingham and Daniel L. Potts: The Challenge of "Multiple-use" in Evaluating the Success of Riparian Restoration</p> <p>9:20-9:30 Questions</p>
10:00-11:50 am	<p style="text-align: center;">Session 8 - Physical Geography II</p> <p><u>Chair:</u> Michael Ziolkowski</p> <p>10:00 - Pankaj Lal: Exploring Place-Based Opportunities for Bioenergy Sustainability</p> <p>10:20 - Jonathan Flood: Chemical and Geo-Structural Legacies of Energy Extraction in Western Maryland</p> <p>10:40 - Megan Heckert: How green is greening? Assessing the environmental value of greening vacant lots</p> <p>11:00 - Taylor Wiczerak: An Economic Valuation of Combined Sewer Overflows and Green Infrastructure in Northern New Jersey</p> <p>11:20 - Michael Ziolkowski, Luca Zamparini and Genserik Reniers: Air, marine and rail hazmat accidents over two decades in USA: Comparative analysis and safety policy recommendations</p> <p>11:40-11:50 Questions</p>
1:30-3:40 pm	<p style="text-align: center;">Session 11 - Urban Geography</p> <p><u>Chair:</u> Joe Tokosh</p> <p>1:30 - Donald W. Buckwalter: Pittsburgh's Suburban Sub-centers: contrasts in a re-structured MSA</p> <p>1:50 - Kaleb Alekel: Selective Population Decline Along US 36 in Kansas: Impacts of Interstate 70</p> <p>2:10 - William Goldman, Paul Jackson, and Dana Veron: Social Dimensions of Urban Heat Island Mitigation Using Community Gardens</p> <p>2:30 - Jayme Soyak: Investigating Food Access in Wilmington, Delaware</p> <p>2:50 - Renata Blumberg, Pankaj Lal, Marianella Martinez, Hana Mansur and Eleanor Kelly: Bridging the Rural/Urban Divide: Designing Research to Analyze Low Redemption Rates for the WIC Farmers' Market Nutrition Program</p> <p>3:10 - Amber Blum: Walkability Analysis in Philadelphia County</p> <p>3:30-3:40 Questions</p>

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Friday Nov. 4	Room 205/206
3:30-5:00 pm	<p align="center">Session 13 - GIS Applications</p> <p><u>Chair:</u> Chuck Geiger</p> <p>3:30 - Craig Rogers: Tracing the Spatial Movement of Poverty in the Buffalo MSA: 1970 - 2010 using Exploratory Spatial Data Analysis</p> <p>3:50 - Jennifer Mapes: Mapping the “New American Small Town”</p> <p>4:10 - Chuck Geiger: Mapping the Suburbs</p> <p>4:30 - Bryan Tramontina: Spatial Distribution Patterns of Visual Indicators of Slum Conditions: Case of Rajarghat, Kolkata, India</p> <p>4:50-5:00 Questions</p>

Saturday Nov. 5	Rooms 205/206
8:30 am-12:00 pm	<p align="center">MSDAAG Geography Bowl</p>

**2016 JOINT ANNUAL MEETING OF THE PGS AND MSDAAG
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Friday Nov. 4	Room 207/208
3:45-4:45 pm	<p align="center">Panel Discussion - Career Opportunities for Geographers William B. Kory, Ola Johansson, Dorothy Stroz</p> <p>The panel will address the topic of job opportunities for geography graduates and focus on the current status of the field of geography in the country. The panel will briefly discuss their experiences in school and on the job and welcomes the members of the audience to share their school and work experiences as well. Everybody attending the session is encouraged to participate.</p>
4:50-5:00 pm	Elaine Bosowski Student Poster Award Winners Announced

Saturday Nov. 5	Rooms 207/208
8:30 am-12:00 pm	<p align="center">MSDAAG Geography Bowl</p>

GUEST PRESENTATIONS

Friday PGS Annual Banquet

PGS Distinguished Geography Award Winner Dr. Mark Bonta, Penn State Altoona
Maize and other cycads: Konlif, teocintle, and the sacred geography of the Huastecan milpa

In certain parts of Mexico and Honduras, indigenous societies understand cycads to be types of maize, and vice versa. This presentation reports on the results of ongoing ethnographic research in Teenek Maya and Nahua communities of northeastern Mexico that seeks to elucidate the symbolic and material significance of the maize-cycad connection. Broader and deeper implications are also touched upon via references to new and re-interpreted ethnohistorical, archaeological and genetic data that are beginning to reveal a potential cultural role for cycads in the long processes of maize domestication and diversification.

Saturday MSDAAG Luncheon Sponsored by Temple University

Dr. Sarah Witham Bednarz, Texas A&M University
Past-President, American Association of Geographers
Thriving in a Time of Disruption

PANEL ABSTRACT

Haney, Jennifer (Bloomsburg University), **Vender, Jodi** (Penn State University), **Lotstein Enid** (Bronx Community College/City University of New York), and **Wenner, Daryl** (Bloomsburg University), *Making Our Courses a "Spatial" Experience: Best Practices in Teaching Geography*

This panel will discuss effective approaches to teaching geography in undergraduate introductory and upper-level courses that enhance student learning. Instructional tools highlighted will include but are not limited to reflective journal writing, group projects, and role-playing activities.

PAPER ABSTRACTS

Alekel, Kaleb (State University of New York College at Geneseo), *Selective Population Decline Along US 36 in Kansas: Impacts of Interstate 70*

Population stagnation and decline has been an element of Great Plains demography ever since 1930. A product of the 1925 federal highway program, US 36 crossed northern Kansas east to west and partially sustained 42 mostly small, primarily rural communities. The decennial profiles of population change reveal an overall average loss of 50 percent between 1930 and 2010, with sharpest declines in the 1960s and 1980s. Common sense reasoning that a Darwinian selection process based on size was a factor, and that isolation played a role as well is not sustained by the evidence. More detailed appraisal suggests that the earlier phase of decline was a product of traffic depletion based on the gradual completion of Interstate 70. This hypothesis is supported by the experience of individual communities as sections of Interstate 70 were completed step by step.

Anania, James (State University College of New York at Geneseo), *Main Street Metamorphosis: Cooperstown and the Impacts of Baseball Tourism*

Niche tourism places are a familiar and growing element of the American Landscape. Scholarly attention has focused more on their profile and impacts than on their evolution. Cooperstown is no exception. My paper explores the transition of Main Street Cooperstown from one typical of New York's small towns to a morphology redolent of baseball tourism. Although the Baseball Hall of Fame and Doubleday Field were Depression Era ventures, the accretion of baseball themed uses began in earnest in the 1970s. Analysis of successive directory and photographic sources reveals a gradual accretion of exploitative ventures and diminution of basic Main Street services. But historic preservation and architectural stewardship have maintained the visual integrity of the Victorian streetscape. The nearly complete transition slowed in the new millennium, owing perhaps to the dilution and dispersion of the visitor market.

Bandurchin, Matthew (University at Albany), *Evolving Small Business with Geospatial Technologies*

The purpose of this study is to show how Geographic Information Systems can contribute to business and the economic potential this can have. Nowadays it is apparent GIS technology can be used in nearly every profession to improve workflow, analyze big data, and solve spatial problems. In particular, small businesses, no matter what their niche may be, hold the potential to radically improve their businesses performance while drastically cutting costs through the use of geospatial technology. The latent effectiveness of GIS software in business settings is being harnessed by companies such as Amazon and UPS to reach the highest level of economic success. Though at a diminished scale, small businesses could see commercial growth through similar implementation. This theory was applied to a hair salon in Vestal, New York, to test the effectiveness that geospatial technology can have on a developing small business. Through the analyses of major roads, population density, demographics, surrounding competition, and areas of commercial interest, it was found that the salon was located in an ideal location with sites highlighted for focused advertising. The owners, pleased with the GIS results, now acknowledge GIS as an important business tool for future expansion.

Bernhardt, Jase (Hofstra University), *A Comparison of Daily Temperature Averaging Methodologies: Spatial Variability, Seasonal Patterns, and Related Climate Variables in the CONUS*

Traditionally, daily average temperature is computed by taking the mean of two values- the maximum temperature over a 24-hour period and the minimum temperature over the same period. These data form the basis for numerous studies of long-term climatologies (e.g. 30-year normals) and recent temperature trends and changes. However, many first-order weather stations (e.g. airports) also record hourly temperature data. Using an average of the 24 hourly temperature readings to compute daily average temperature should provide a more precise and representative estimate of a given day's temperature. These two methods of daily temperature averaging ($\text{max} + \text{min} / 2$, average of 24 hourly temperature values) are computed and mapped for first-order weather stations across the United States for the 30-year period 1981-2010. There is a statistically significant difference between the two methods, as well as an overestimation of temperature by the traditional method ($T_{\text{max}} + T_{\text{min}} / 2$), particularly in southern and coastal portions of the Continental U.S. The likely explanation for the long-term difference between the two methods is the underlying assumption of the twice-daily method that the diurnal cycle of temperature follows a symmetrical pattern. There is a relationship of these differences to the regional synoptic climatology, along with related factors such as atmospheric

moisture, land use-land cover, and snow cover, which help to explain both seasonal patterns and spatial variability. Therefore, these climate variables are used to create multiple linear regression models to explain the observed patterns. Additional analysis of station normals based on hourly data should have important applications, such as improved assessment of recent anthropogenic climate change.

Blum, Amber (West Chester University), *Walkability Analysis in Philadelphia County*

A walkability analysis helps to establish which areas are more walkable than others, and help improve those areas that are not as walkable. A walkability analysis was performed in Philadelphia County in Pennsylvania to determine the best areas of walkability in the Philadelphia neighbors. There are multiple factors taken into consideration to perform the study. The factors include positive and negative items, such as population density, tree shade, vacant land, and more. Each factor is placed with a value between 0–1, zero meaning there is no walkability and one being the best walkable location. The factors are then added together to determine the final walkability score. The final walkability score ranges from 0 being the worst to 6.3 being the best walkable area. The most walkable areas are in the southeastern part of the county, mainly located in and around the City of Philadelphia. This study can be used in so many ways, from improving the poor walkable areas too creating a more in-depth study of the area. In further research I hope to determine if crime locations have an effect on walkable areas or if poor walkable areas have health risks such as obesity.

Blumberg, Renata, Lal, Pankaj, Martinez, Marianella, Mansur, Hana and Kelly, Eleanor (Montclair State University), *Bridging the Rural/Urban Divide: Designing Research to Analyze Low Redemption Rates for the WIC Farmers' Market Nutrition Program*

In recent years, the number of farmers markets and other Direct-to-Consumer marketing channels in NJ have increased. Buttressed by growing consumer interest in local food options, farmers markets are increasingly becoming an important source of livelihood for farmers in NJ. However, most existing farmers markets are concentrated in areas with sufficiently high access to fresh fruits and vegetables, while other areas classified by the USDA as being low-income and having low access to supermarkets remain underserved. At the same time, the USDA Food and Nutrition Service provides states funding to issue vouchers to low-income seniors and recipients of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) to purchase fresh fruits and vegetables directly from farmers and at farmers markets. However, the program is not reaching expected redemption rates. For Fiscal Year (FY) 2014 the redemption rate for WIC Farmers Market Nutrition Program (FMNP) vouchers was only 47.93% in NJ. The low redemption rate necessitates a research approach that examines both farmer and consumer perspectives. This paper will detail our developing research protocol as well as preliminary findings.

Blumler, Mark (Binghamton University), *At the Nuclear Brink: Recent American Foreign Policy vs. Russia*

Former CIA analyst Ray McGovern, who likely saved us from a nuclear war with the Soviets in 1983, is warning that we now face an equally dangerous situation. Others with expertise in nuclear arms or foreign policy are issuing analogous warnings. There are strong parallels with both the 1983 crisis, and the invasion of Iraq. In the latter case, the mainstream media for the most part was either dishonest, or ignorant and gullible. Today, the media is more dishonest, and perhaps even more gullible. Consequently, the American people are gravely misinformed. In this presentation, I run

through the facts, and draw some implications with the hope of contributing to averting nuclear devastation.

Buckwalter, Donald W. (Indiana University of Pennsylvania), *Pittsburgh's Suburban Sub-centers: Contrasts in a Re-structured MSA*

Polycentrism is the contemporary paradigm for analysis of urban structure. This study applies the concept using an employment density method for identification of structural elements in the Pittsburgh MSA. Densities are mapped for census tracts and block groups. Consensus density thresholds derived from the literature are compared with alternatives. The study examines two commercial sub-centers in detail. Consensus thresholds accurately render the older commercial centers, but they exclude major employment concentrations in suburban areas that only appear in alternative (lower) thresholds. The distribution of sub-consensus density employment sub-centers suggests a dichotomy between inner-city and suburban land use patterns. Deep analysis of the economic geography of suburban sub-centers will require other data sources such as traffic flow, firm linkages, and sectorial complementarity.

Callaghan, Maddie (West Chester University), *Sea Level Rise in Regards to the Pacific Islands*

In the past several years the topic of global warming has been increasingly prevalent in the news. While there have been many trends of warming and cooling, this global warming trend is different according to NASA because of the anthropogenic forces and the extreme rate of warming. One of the main consequences of this is a rise in sea level because of the melting ice sheets and glaciers as well as the expansion of sea water as it gets warmer. The climate change across the globe will lead to major flooding and the displacement of entire nations of people from their home. Future sea level rise won't be uniform across the globe but more severe in specific regions. Several factors such as low elevation and small land areas make islands like Tuvalu, Kiribati, and the Marshall Islands even more vulnerable than other coast lines. These three nations alone are home to hundreds of thousands of people who will all be forced to leave their homes if sea level rise continues at the predicted rate. Regional sea level rise will have a major impact on the populations of Tuvalu, Kiribati, and the Marshall Islands before the end of the century.

Che, Deborah (Southern Cross University), *Telling the Story of Pennsylvania's Lumber Heritage*

Cultural and heritage tourism is one of the most widespread and investigated types of tourism, as visits to sites of historical importance dominate tourism in many parts of the world. In 2014, heritage-defined visitors to Pennsylvania generated more than \$158.7 million in state and local tax revenues. Pennsylvania's Heritage Areas Program would "develop, build, revitalize and restore the Commonwealth's heritage tourism infrastructure" in heritage areas that would act as "image makers and economic generators." This paper focuses on one such heritage area, the Lumber Heritage Region of Pennsylvania (LHR). Utilizing an environmental history/historical geography approach, this paper first discusses the past environmental change, resource management and land use policies that shaped the LHR, an area of historic resource extraction and subsequent nature-based tourism development. Then it will examine the development of the LHR concept, shaped by Americans' changing attitudes towards their forests, current resource extraction, and more recent regional environmental and economic challenges. Issues including how the story of lumber heritage has and is being told as well as assumptions that cultural or heritage assets are always primary attractions or that heritage assets closely tied to a community will automatically have wider appeal as tourism products will be discussed.

Coutu, Gary and Ives Dewey, Dottie (West Chester University), *Using 3D Modelling to Build Community Partnerships: Visualizing the Market/Gay East Corridor*

3D technologies are on the rise in planning. Three dimensional models of streets, neighborhoods, and entire municipalities can provide decision makers with an effective and interactive visual approach that can result in improved planning decisions. At the site and neighborhood scale, the technology can be used to enhance discussions about streetscape improvements, height limits, setbacks, density, and thereby improve decision making over development. 3D modelling requires an investment in advanced technologies that often extend beyond the resources of smaller municipalities. As such, opportunities arise for collaborative partnerships between the University and the community. This project has the goal of demonstrating the planning applications of 3D technologies and identifying opportunities for community engagement. ESRI's CityEngine was selected to develop a complete model. The software has been adapted to better integrate into existing GIS platforms and utilized on real-world infrastructures to model real-world scenarios. It can be a powerful tool to visual change in a neighborhood and better engage the community in the local planning process. The model was evaluated for ease of use and effectiveness as a tool for community engagement. The research suggests opportunities for Institutions of Higher Education to engage community partnerships around the application of advanced technologies.

Emili, Lisa, Spagnoli, Angela A. and Cobb Irvin, Tracie E. (Penn State Altoona), *Evaluation of Stream Water Quality in Mixed-use Watersheds, Blair County, Pennsylvania*

Since 2011 monthly in-stream data on general indicators of water quality (pH, dissolved oxygen, electrical conductivity, turbidity, total dissolved solids, total alkalinity) as well as nutrients (nitrate, orthophosphate, sulfate) have been measured for three streams (Mill Run, Brush Run, Spring Run) within the county. These data are being used to better demonstrate the progress being made in Blair County in addressing nonpoint source pollutants, particularly as it relates to impaired stream segments and the total maximum daily load (TMDL) identified contaminants. Analyses of stream water quality conditions from 2011-2015 indicate that the concentrations of measured parameters, with the exception of total dissolved solids (TDS), do not exceed recommendations for the protection of human health. Concentrations of TDS above guidelines for the protection of aquatic life (250 mg/L) and human health (500 mg/L) occur in late fall and winter and may be the result of increased runoff of road salts into the streams. Nitrate (mean 1.49 ± 2.59 mg/L) and phosphate (mean 1.76 ± 9.89 mg/L) concentrations exceed the aesthetic criteria for flowing streams, with implications for accelerated eutrophication and algal blooms.

Erisman, Kyle (West Chester University), *Casino Adoption*

From the late 1980's to the mid 2000's, several states across the country have legalized commercial casinos in an effort to become more economically stable. They figure that it will become a tourist attraction and increase the state revenue while lowering interstate taxes. I feel that there is more reason behind the decision in adopting casinos. In the genesis of research on the legalization of commercialized casinos, minimal amount of literature was present but distinct parallels in literature toward lottery adoptions provide us with better overview of the topic. This talk will present preliminary research on Pennsylvania's commercial casino legalization in 2004. I will further lay out a research agenda for discovering why commercial casinos have been placed where they were and exploring similarities and differences between different locations and the aftermath of casino development.

Faiers, Gregory E. (University of Pittsburgh – Johnstown), *The (Rail) Road Not Travelled: Railroad Abandonment in West Tennessee and Socio-Economic Consequences*

Prior to 1957 two railroads largely paralleled each other connecting Central Kentucky with Memphis, TN. One line stretched from Bowling Green, KY to Memphis (Louisville and Nashville) while the other connected Nashville and Memphis (Nashville, Chattanooga and St. Louis). When the two railroads merged in 1957, one of the lines was abandoned. This presentation compares the changes in socio-economic conditions that have taken place along the active and abandoned lines since abandonment.

Feng, Jimmy (State University of New York College at Geneseo), *Anti-Chinese Prejudice in Australia 1850-1919: Content Analysis of Newspaper Articles*

This paper examines the history of anti-Chinese prejudice in Australia between the mid-nineteenth century and the early-twentieth century through analysis of news items. Trove, an online database aggregator created by the National Library of Australia, allows for a comprehensive survey of slurs and negative stereotypes characteristic of white Australia's image of the Chinese, their world, and their perceived shortcomings. In particular, jargon, slang and their context reveal the shifting scale, chronology and place-specific dimensions of prejudice between 1850 and 1919. References to fines imposed, gambling, and opium addiction were especially common, as was the label "savagery." Australia's five principal cities were quite similar in their overall incidence of negative references; small towns were even more prejudiced. Anti-Chinese sentiment in print peaked between 1860 and 1889 and had substantially diminished by the second decade of the twentieth century. An element of Australia's rich and complicated history, a revealed narrative of bias against the Chinese surfaces that sheds light on the struggles and circumstances of a mostly impoverished and uneducated minority population looking to establish itself in a land of opportunity.

Fiel, Dana (State University of New York College at Geneseo), *Couchsurfing Indonesia*

Couchsurfing.com is an internationally used website that provides travelers with homes to stay in while abroad. This free website allows hosts to advertise their homes and interact with travelers around the world. The purpose of my research is to measure the participation rates of the website couchsurfing.com in all 34 provinces of Indonesia. The goal of my research has been to explore couchsurfing.com participation rates in the context of provincial setting and demographic profiles. While Indonesia's 34 provinces exhibit marked differences in couchsurfing.com adoption, there is no clear cut evidence of contagious or hierarchical diffusion as underpinnings of spread. The results demonstrate the mediating effects of urbanization at the provincial level, and the less clear-cut influence of educational attainment. My paper also explores geographical variations in the age, gender, and occupational mix of couchsurfing.com registrants, factors seemingly related to differences in regional context.

Flood, Jonathan (Frostburg State University), *Chemical and Geo-Structural Legacies of Energy Extraction in Western Maryland*

This paper explores (1) anthropogenic chemical cycles involved in energy extraction, energy use, and waste placement/disposal; and (2) the intimate link between modified structural geology, seismicity, and future energy developments in Western Maryland. Extensive mining efforts in Allegany and Garrett County and coal consumption therein and elsewhere have displaced and physio-chemically altered tons of chemical compounds for over a century. Most of these mobilized compounds are

currently stored in the atmosphere, the oceans, or temporarily in biomass across this beautiful planet. Heavier, less volatile elemental components, however, remain as coal ash post-firing/mobilization and are redistributed to dumps, pits, and other nearby storage venues. Coal ash dumps concentrate formerly dispersed trace elements and compounds. These trace elements leave their semi-permanent storage areas through dissolution, oxidation, and absorption. Herein I look at the chemical inputs from ash deposition at Cabin Run Mine (MD) and its regional geochemical impacts. The paper concludes by connecting the modified and compromised structural geology that underpins most extant and future land-developments in Western Maryland to potentially devastating seismic activity associated with hydraulic fracturing. This paper connects present and future hazards of energy extraction in Western Maryland with the legacy of energy extraction from the past.

Frothingham, Kelly and Potts, Daniel L. (SUNY Buffalo State), *The Challenge of “Multiple-use” in Evaluating the Success of Riparian Restoration*

Numerous studies have documented the importance of stream restoration monitoring to evaluate the success of a restoration project. Ideally, a monitoring plan should be designed in relation to explicitly-stated a priori restoration goals in order to evaluate the success of a project. The purpose of this research was to monitor pre- and post-construction conditions at a riparian restoration site located on the Niagara River near Buffalo, NY in support of Buffalo Niagara Riverkeeper’s (BNRK) Niagara River Riparian Restoration program. Project monitoring involved using a Line Intercept Transect (LIT) method along with a total station to survey vegetation and topography before and after restoration. The following geomorphological and riparian plant community characteristics were measured: percent of streambank with vegetation cover in different height classes, percent of stable streambank, percent of hardened streambank, and aquatic vegetation cover. A comparison of pre-versus post-construction results indicates that some restoration goals were met; however, other goals were not met. The reason for some goals not being met will be discussed in light of the fact that the project restoration goals seek to balance characteristics that can be quantitatively measured (e.g., percent of hardened shoreline) with goals that address subjective qualities such as aesthetics.

Galgano, Francis A. (Villanova University), *The Evolution of the National Security Landscape*

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

Geiger, Chuck (Millersville University), *Mapping the Suburbs*

Suburban sprawl is well known to have contributed to urban decline, congested metropolitan transportation systems, a reduction in productive farmland, and many other social, economic and environmental impacts. In an election year the suburbs figure to be the source of many swing votes. However, individual suburban developments can differ widely in economic status and other descriptors. We do not have the means to associate particular suburban attributes with suburban impacts because few areas have mapped the suburbs in the necessary detail. The purpose of this paper is to lay out a strategy for mapping and attributing individual residential suburban developments in a GIS environment, using Lancaster County, PA as a test area. While US Census data will be necessary, no Census Bureau GIS layer contains the necessary features. A hybrid system of observation and research is demonstrated.

Goldman, William, Jackson, Paul and Veron, Dana (University of Delaware), *Social Dimensions of Urban Heat Island Mitigation Using Community Gardens*

Urbanization is linked to increased local heat, a phenomenon known as urban heat islands, which can be problematic in the warmer months. This heating can be mitigated by the presence of vegetation, reducing the temperatures of a city through a related effect called the park cool island. While there has been recent discussion of the use of urban gardens as a form of cooling greenspace in conjunction with their food-providing capacity, prior research has not focused on the variability of the gardens' characteristics and surrounding environment. The physical size, shape and composition of greenspace influences the resulting cooling and human thermal comfort. Many factors can contribute to these differences in garden form; resources and support for urban gardens that are unequally distributed due to social stratification can have implications for the extent of cooling effects that are derived from the size and composition of the gardens. An analysis of existing gardens in Philadelphia, PA, utilizing collected climate data and the urban microclimate model Envi-met will provide data on the extent of garden cooling in relation to variation in garden size, shape and type, as well as the implications this cooling effect will have for promoting thermal comfort for city residents.

Grabowski, Dana and Welch, Joan (West Chester University), *Vernal Pool Habitat Evaluation of Warwick County Park and Stroud Preserve, PA*

Vernal pools in the United States have little to no federal protection, but the species that depend on them are important indicators of environmental conditions. Identifying habitat characteristics of quality vernal pool habitat may better protect these fragile environments. Researchers identified, mapped, and analyzed vernal pool habitat characteristics found in Warwick County Park, Pottstown, PA and Stroud Preserve, West Chester, PA. Warwick County Park had a high count of salamander egg masses and a low count of wood frog egg masses, consisted of about 69% wooded land use, and had only one human-related disturbance within 230 meters of at least one vernal pool. About 54% of the park consisted of 78-92% tree canopy cover and two pools were larger than 500 square meters. Stroud Preserve had a high count of wood frog egg masses and no salamander egg masses, consisted of about 68% agricultural land use, and had 4 human-related disturbances within 230 meters of at least one vernal pool. About 51% of the preserve consisted of 0% tree canopy cover, and two pools were larger than 1500 square meters. Results show that Warwick County Park has good vernal pool habitat, while Stroud Preserve has moderate vernal pool habitat.

Hartmann, Heike (Slippery Rock University), *Developing a Seasonal Precipitation Forecast Model for the Aksu-Tarim River Basin*

Since the 1950s, the population in the arid to hyperarid Tarim River basin has grown rapidly concurrent with an expansion of irrigated agriculture. These processes have threatened the Tarim River basin's natural ecosystems and repeatedly caused water shortages. To improve water resources management in the basin, early warnings for precipitation deficits are crucial. For that reason, a seasonal precipitation forecast model was developed in this study. Possible predictors of precipitation for the Tarim River basin were either downloaded or calculated using NCEP/NCAR Reanalysis 1 and NOAA Extended Reconstructed Sea Surface Temperature V3b data in monthly resolution. To evaluate the significance of the predictors, they were correlated with the global precipitation dataset GPCCv6 extracted for the Tarim River basin for the period 1961 to 2010. The precipitation data were averaged over the subbasins of the Tarim River prior to the Spearman rank correlation analyses. The strongest correlations were detected with lead times of four and five months. Finally, an artificial neural network model and a multiple linear regression model were created for the Aksu River subbasin, predicting precipitation five months in advance. Overall, the neural network model using all predictors performed best.

Heard, Kevin, Frazier, John and Willis, Lucius (Binghamton University), *Monitoring Economic Impact with Story Maps*

In early 2016 the Southern Tier Region of New York State was awarded \$500 million dollars to address economic challenges and help with revitalization. This was part of a regional competition for funding. Our department is leading the effort to track funded projects and monitor economic impacts. Using ESRI's ArcGIS Online Story Maps, we are beginning to develop a template to be used on projects region-wide.

Heckert, Megan (West Chester University), *How Green is Greening? Assessing the Environmental Value of Greening Vacant Lots*

Trees are known to provide myriad environmental benefits in urban environments, and many cities are now developing tree planting programs aimed at harvesting these benefits. One challenge for tree planting programs is identifying planting locations. In blighted areas, vacant lots may provide potential locations, but long-term uncertainty about the fate of the lots may limit their potential for achieving significant benefits. This study modeled the expected environmental benefits of a program in Philadelphia that plants trees and greens vacant lots as well as estimating the impacts of the program were it implemented on all vacant residential land in the city. Over 11 years, trees planted through the program were modeled to have had positive impacts in terms of carbon sequestration, air pollution reduction, and stormwater management, with benefits having increased substantially as the trees aged. When compared to CO₂ emissions, pollution rates, and stormwater reduction needs, however, the figures are modest at best. These findings suggest that tree planting on vacant lots may only be environmentally effective if it can be done with an expectation of the lots remaining undeveloped for a considerable length of time.

Henry, Norah and McGovern, Brendan (Binghamton University), *Ethnic Tension, Place, and Social Media*

Queens, NY in the early 20th Century, a distinct European-origins community that resulted from decentralizing Manhattan residents, and a new wave of migrants locating directly into developing

neighborhoods, created culturally similar, cohesive, communities that valued their ethnic similarity, religious likeness, and European roots, leading to topophilia. Post-Hart-Celler immigration (after 1965) saw the cohesion began to fade as increasingly non-European groups arrived. For example, ethnic Chinese and Indian groups migrated or relocated into Queens between 1980 and 2010, stimulating nostalgia within the early European settlers and their descendants and fomented visible ethnic friction. Advances in geo-technologies, including social media and the anonymity it affords, provide opportunities to reveal reminiscences and tensions as the landscapes change through sequent occupation. This research includes the ethnic tensions revealed through social media, and the opportunities presented for spatial analysis of cultural responses to new ethnic landscapes.

Hintze, Mackenzie (SUNY Geneseo), *Obstruction to Obstetrics: A Study of Maternal Mortality in Africa*

Maternal mortality is an ever present problem in African nations. Many people worldwide do not even know the extent which maternal mortality in Africa is a leading cause of death, for the problem is often overshadowed by the continent's debilitating diseases. The purpose of my research is to shed light on African maternal mortality rates; to ask whether they have improved and whether the improvement can be sustained. Insight can be gained from a comparative analysis of the maternal mortality rates in 43 African nations for which reasonably reliable evidence is available. By examining potential factors that seem to underscore maternal mortality rates and hinder improvement, we can hazard inferences on what needs to be alleviated in Africa to save women's lives during childbirth. Given health care and more contraceptive use, I conclude that the maternal mortality rate can be significantly reduced. However, achieving these remedial goals is much easier said than done, given the volatile socio-political climate and persistent poverty that remain endemic in the African scene.

Irvine, Kim and Seow, Tricia (National Institute of Education, Nanyang Technological University), *Geography Education at the National Institute of Education (NIE), Singapore: Our Approach to Overseas Field Experiences*

NIE is an autonomous institute within Nanyang Technological University that has, as one of its principal mandates, the responsibility of developing Singapore's student teachers. Within our academic group, Humanities and Social Studies Education, we offer a BA(Ed) in Geography and we are pleased to report that the discipline and subject of Geography are thriving in Singapore. In developing broadly-trained Geography teachers, an important capstone course is the required overseas field experience as part of the final year project. Our presentation examines the structure of the final year project but focuses on two aspects, in particular. First, while it is generally accepted that fieldwork is an essential part of Geography, some still question whether it is necessary to take students overseas. We are able to address this issue, at least qualitatively, due to the cancellation of the overseas experience in 2013 two days before the group was to leave for Thailand, due to the ongoing political uncertainty at the time. As part of the course assessment, students were asked to reflect on trip cancellation and the results of this assessment are presented and contrasted with the group that travelled to New York State in 2015. Second, we will present an overview of results from the final year projects in 2015, focusing mainly on water quality assessment in western New York.

Kauffman, Chad (California University of Pennsylvania), *Digital Media Meteorology: A New Curricular Adventure*

The enterprise of Broadcast Meteorology the last 15 years has undergone a tectonic shift in both viewership demographics and weather data presentation/curation. The traditional role of the late 20th century local weathercaster is arguably gone forever. Selected Geography/Geosciences programs during this same period attempted to serve as training facilities for students pursuing a career in this mode with both curricular offerings and laboratory facilities. California University was one such program, 15 years ago, highly focused on this academic pathway for students. Changes in the atmospheric sciences discipline, as well as the job market, have forced programs to adjust curricula and best classroom practices. This paper will highlight the changes noted in the broadcast industry and the concomitant changes in curricula for students still wishing to pursue a career in this field. An argument is made that some changes in scientific communications can apply to all students in Geosciences/Geography, not just those interested in a traditional broadcast role. Examples of digital media productions from a new course offering at California University are presented. These productions are all student-produced and focused on scientific communications with an emphasis on best practices in digital editing and social media integration.

Keith, Dana, Bryan Tramontina, Carl Wells, Dylan Murphy, Guadalupe Ortiz-Cortez, Hortencia Correa, Rachel Wasilko, Nihal Singh Verma, Samya Rakshit, Shantanu Gupta, and Subhas Bera (Indiana University of Pennsylvania), *Field Research Study in Eastern India to Explore Economic and Environmental Conditions of a Declining Chinatown in Kolkata*

A field research study was conducted in the Summer of 2016 to explore issues of declining ethnic enclave, with case study of the Chinatown from the global city of Kolkata in eastern India. Chinatown of Kolkata, which thrived during the early 20th century based on leather and tannery-based industries, has been witnessing economic and population decline since 1995 after a Supreme Court decision that banned tanning activities due to pollution problems. Our study team of 12 students and 4 faculty-members, conducted visual observations, GPS surveys, and waste-water tests to explore existing economic and environmental conditions in the Chinatown. We observed that the leather industries still comprise a significant part of the Chinatown economy, although our waste-water tests could not detect presence of Chromium – a chemical waste associated with tanning activities. While many of the tanneries are closed and abandoned now, a few of them have successfully transformed into large-scale restaurants offering authentic Chinese cuisine in the city. Nevertheless, the ethnic Chinese population is declining and relocating to other parts of the world, such as Canada, US and Australia, due to declining economic opportunities. Although isolated policy approaches aim to revive the Chinatown are formulated by the city government, it will be challenging to sustain its century-old ethnic enclave without integrated policies to physically, economically and socially transform the community.

Kibbee, Robert (The History Center in Tompkins County), *HistoryForge: A Web-Based Tool for Exploring the Historical Geography of Communities*

This presentation will be a demonstration and discussion of HistoryForge, a web-based tool which uses historical maps, such as Sanborn Fire Insurance Maps, as portals to Census, Directory and user-generated information about a community. The maps are geo-rectified and the individual buildings are geo-addressed. At the same time contemporary census records are transcribed and the individual records joined with the addresses. The result is a powerful environment for exploring community history at the individual, family and neighborhood levels.

Lal, Pankaj (Montclair State University), *Exploring Place-Based Opportunities for Bioenergy Sustainability*

The research outlines how geospatial suitability, socioeconomic uncertainty, and life-cycle analysis-based environmental impacts can be used to develop policy solutions for forest and agricultural bioenergy development in the midwestern and southern United States. We will study the interactions among climate, soil, topography, bioenergy production conditions, stakeholder participation, and socioeconomic uncertainty to assess their impacts on the sustainability and development of bioenergy markets. The study is expected to provide new perspectives for U.S. energy by assessing the sustainable production of forest and crop-based biomass dedicated to bioenergy production. We will perform a comprehensive geospatial analyses for bioenergy suitability by analyzing biophysical factors and by incorporating variables assessing human factors, such as stakeholder participation and socioeconomic uncertainty. A geospatial model will be developed to evaluate bioenergy suitability, while interviews and surveys will be used to assess stakeholder participation in bioenergy markets. Feedstock planting and harvest decisions made under uncertain market conditions will be integrated using a reservation price approach. The insights obtained from this study can be adapted to other bioenergy feedstocks and regions and will contribute towards development of longer-term strategies that benefit the agricultural sector and support rural economies and within the U.S. and globally.

Mapes, Jennifer (Kent State University), *Mapping the “New American Small Town”*

Small towns play a strong role in the American imagination, where they are either celebrated nostalgically as models of strong community, or mourned for their social and economic decline. Academic research on urban places tends to focus on large metropolitan areas rather than small cities. This research uses the population density-based U.S. Census category of “urban cluster” to identify 3,087 small towns with populations ranging from 2,500 to 50,000. In this paper I examine the demographic realities of small towns using 2014 American Community Survey data. These data are then visualized through a series of maps that highlight the differences and similarities in today’s American small towns. Additionally, I use cluster analysis to identify shared characteristics that differentiate between types of small towns based on income, education, race, employment, poverty rate, and home values. Finally, I use location quotient to identify differences between small towns and surrounding rural areas. My findings offer a nuanced description and analysis of the demographics of small towns in 21st century America, as well as insights into how best to visualize these data.

Marr, Paul and Edwards, Sam (Shippensburg University), *The Kuhn Family Cemetery*

The Kuhn family cemetery in Franklin County, Pennsylvania is typical of early rural burying grounds. Set aside by landowner Peter Kuhn in the late 18th century, this hilltop cemetery was active for over 100 years. As the family sold off land or left the area, the cemetery fell into disuse and disrepair. In 2016, descendants of Peter Kuhn initiated a project to determine the size and number of burials in the cemetery, as well as an overall assessment of its condition and advice on restoration and preservation. In addition to the 15 currently marked graves, we located another ≈ 22 likely graves and ≈ 10 possible graves. Through the use of grave probes it was also determined that the burials were very shallow (1.25 feet) below the modern surface. This was likely the result of the cemetery’s location where the shallow depth to bedrock, thin soil cover, and erosion which made digging deeper graves very difficult. We advised against active restoration of the grave markers at this time, as this can be expensive and requires skilled application, opting instead for stabilization and maintenance of the markers. Finally, we suggested clearing the undergrowth and the removing

unstable trees which would help preserve the site and limit additional damage to the remaining markers.

McDonnell, Timothy (Monroe Community College), *Field Courses: The B-WET Upper Susquehanna Project*

The New York Geographic Alliance at Monroe Community College promotes geography in schools across the State of New York. In 2015 we received a grant from the National Oceanic and Atmospheric Administration as part of the Bay Water Education Training (B-WET) Chesapeake Program to work with teachers in New York's Susquehanna Watershed. The goal is to help them to develop their own sustainable watershed program for their schools. This involves lessons for indoor study and for work in the field. As part of the program, the staff members of the B-WET New York team assist teachers in our partner schools with developing strategies for studying the watershed from several different perspectives: map interpretation, using GIS and aerial imagery, making models of the watershed, and testing for water quality and biodiversity. During the second year of the grant (2017), teachers will be leading their students in field experiences, analyzing the health of their part of the Susquehanna watershed and performing stewardship projects in their local community. In these field activities, we try to emphasize some important geographic spatial thinking skills, i.e. finding patterns, making associations, and determining if there are analogs in other places in the watershed.

Medina, Veronica and Naor, Mika (State University New York College of Geneseo), *A Cross-Province Comparison of Double Orphans in South Africa*

In 2013, 18% of children in South Africa were classified as orphans. While the majority of orphans in South Africa (10% of children) were paternal orphans, this paper will concentrate on the double orphans (4.1% of the child population). Our work has explored the provincial variation in orphan status and has established through analysis a positive correlation between the percent of double orphans out of all orphans, per South African province, and the percent of children living in poverty. We specifically examine the 4 South African provinces with the highest positive and negative regression residuals. In addition, we determined a relationship between the number of adults infected with HIV/AIDS in 2002 and double orphan rates per South African province in 2013. Finally, this paper considers two outliers to the positive correlation between child poverty rates and double orphan rates: The Free State and Limpopo.

Minett, Nicholas (State University New York College of Geneseo), *The Global Diffusion of Slum Tourism and the Issues it Raises*

Slum tourism began at least as early as the nineteenth century, when London's rich would literally "slum it" in East London. The roots of modern slum tourism appear to have been Favela tourism in Rio de Janeiro, although Kenya's Kibera stands as another early precedent. The phenomenon has since spread to at least twenty major cities which combine extensive squatting by the poor and numerous foreign visitors. The latter are generally tourists and the tours are promoted online as well as locally. My survey of slum tour settings suggests that some milieux transcend the appeal of observing "how the other side lives" with additional magnets such as music, history, culture and even esthetic appeal. Understandably, objections can be levelled at slum tourism because it treats a poor district as what is in effect is a human zoo. However, the firms which offer this service claim that revenue is shared with the slum-dwellers and/or that the tours bring expenditure into the slum districts. They are also apt to justify the tours as raising awareness of and concern for the plight of

the urban poor. These remain open questions. Meanwhile, the phenomenon of slum tourism continues to grow.

Mora Jerez, Lesmes (West Chester University of Pennsylvania), *Effects of Precipitation and Snowfall on Traffic Accidents: Case Study in Philadelphia County, PA.*

This research aims to find the direct association that rain and snow storms produce on the risk of traffic accident with the purpose of helping local authorities to predict the unsafe risk levels based on a particular weather event. In order to answer the research question of this study, two data sets based on Philadelphia County, PA, were integrated, such as daily weather of Philadelphia County, PA from U.S. Climate Data, and number of collision published by a civic technology firm called Azavea from Open Data Philly. As a result, the application of Spearman's Rank Correlation Coefficient allowed to find that there is not a connection between precipitation, and snow storm with the risk of traffic accidents even when there are studies which demonstrate the influence of these weather conditions on crash collision. One of the main reason, which precipitation and snowfall are statistically not significant (terribly weak) with traffic accidents, is the combination of factors constituted for several variables that are not mutually exclusive. Therefore, this study suggests to assess more years, as well as more study areas, and multiple data sources, including records at federal level.

Mueller, Thomas (California University of PA), *YouthMappers: A GIS Service Learning Opportunity*

Humanitarian Crowdsourcing Mapping occurs when volunteers mobilize and create spatial data to assist in the aftermath of a disaster. It is fairly easy and requires little geographic or GIS knowledge. Volunteers use Open Street Map (OSM), a Wikipedia for spatial data, and digitize buildings, roads, and other infrastructure using imagery. These types of mapping events achieved greater prominence after the 2010 Haiti earthquake. Within four weeks of the disaster over six hundred volunteers added features to the Haitian OSM map. Volunteers may work in their own house or office, however they also may go to a central location and work with other volunteers, this is usually referred to as a mapathon. YouthMappers wants to solidify a network of volunteers by encouraging "...a generation of young leaders to create resilient communities and to define their world by mapping it...." (<http://www.youthmappers.org>) by building YouthMapper groups at universities. This paper will examine a nascent YouthMappers program at California University of Pennsylvania (CalU) by describing the application process and the author's integration of humanitarian mapping into classes. The author will also highlight the Fall 2016 project in which the CalU YouthMappers assisted in mapping areas in Kenya for its malaria prevention program. During the fall 2016, CalU also held 2 mapathons and a collaborative mapathon with West Virginia University. Finally there will be a discussion on the best practices of incorporating Humanitarian Mapping into courses.

Norris, Darrell (SUNY College at Geneseo), *Utopia 500: Revealing the Spatial, Demographic and Economic Aspects of More's Utopia*

My paper explores the remarkable interdependence of the geography, urban system, urban morphology, population, and resource base of Thomas More's "Utopia," published 500 years ago. These basic elements of Utopia are revealed for the first time, incorporated in Atlas format, and are shown to have been entirely consistent with criteria of sustainability, despite Utopia's remarkably high level of urbanization, high population and population density, and constraints off early Renaissance agricultural yields. As well, More's vision anticipated Howard's Garden City and Von

Thunen's modalities of agricultural land use. More was the first great Human Geographer and Regional Scientist.

Piedra, Yanitza (State University of New York College at Geneseo), *Gravestone Iconography in a Yucatan Peninsula Cemetery: A Photographic Analysis*

Located in the Yucatan Peninsula is the Cementerio de Hoctun, a cemetery like no other with brightly painted gravestones expressing a mix of both Christian iconography and indigenous features such as scaled replicas of Chichen Itza. Through online tourist photography of the cemetery I was able to analyze 54 gravestones and their variation in form, color and iconography. The icons partially reflect Mexican attitudes toward death but more specifically Hoctun's unusual cultural legacy yielding bright, colorful and even "happy" memorials. My paper includes a brief discussion of the role of the Catholic Church and its position on burial or cremation, the process by which the gravestones have emerged as folk art by folk craftsmen, and an assessment of the iconography of the graves as a blend of Christian and indigenous traditions.

Pomeroy, Jennifer (York College of Pennsylvania) and **Wadhwa, Vandana** (Boston University), *A Woman's Place? Examining Urban Social Space in India*

The December 2012 rape of a young woman in India's capital city highlighted the contested and exclusionary nature of India's urban spaces. We combined the extensive media coverage garnered by this and subsequent similar incidents across urban India with urban gender-based crime data (rape, dowry deaths, sexual harassment) to perform textual and statistical analyses. The mixed methodology helped uncover dominant themes and trends regarding women's place in India's urban spaces and its reflection and reification of their unequal/precarious place in Indian society. Emergent content analysis themes highlighted women's perceptions and experiences of urban space largely as dangerous and insecure, limiting and/or negative social attitudes towards women's occupation of urban space, and primarily policing and urban design-centered causative factors and prescriptive measures regarding such crimes. Sociocultural causative and prescriptive factors regarding such crimes were conspicuous by their relative absence, mentioned only in early media reports following the December 2012 incident. Statistical analysis underscored women's experiences and some causative factors from the text analysis, revealing a steady increase in urban gender-based crimes since 2008 and significant correlations with other violent and property crimes. GIS mapping displayed particularly high incidence levels in north-central and central India, reflecting the impact of sociocultural contexts. Through this analysis we seek to extend the 'social space' framework beyond existing understandings of space as a social construct to furthering nascent geographical literature on viewing society as a space itself, where one's place may be claimed or denied based on one's social position or characteristics within that social context.

Ramspott, Matthew and **Allen, Phillip** (Frostburg State University), *Integrating UAS into Geographical Research and Curriculum: You Have to Walk Before You Can Run (or Fly)!*

Despite long-standing regulatory obstacles hampering their deployment for professional/commercial uses in the United States, Unmanned Aircraft Systems (UAS) have begun to live up to their potential as a valuable tool for aerial survey data collection in a wide array of fields, including Earth and Environmental sciences. The recent updates to FAA regulations will expand the opportunities to use UAS in academic and scientific applications. In this project, a UAS survey was conducted in an upland relict periglacial felsenmeer landscape located at the Bear Rocks Preserve near Dolly Sods, West Virginia. The survey was accomplished with the aid of the UAS Test Center affiliated with the

College of Engineering at the University of Maryland. This report focuses on some preliminary results from that experience, and discusses the challenges and opportunities encountered while working to establish an operational UAS survey capability. Ultimately, this work has led to a continuing effort toward the incorporation of UAS technology into undergraduate curricular offerings in the areas of geomorphology and geospatial science at Frostburg State University. Participation in faculty-led research and class projects involving UAS will offer a valuable and engaging educational experience for students, facilitating the development of technical and teamwork skills.

Rogers, Craig (Canisius College), *Tracing the Spatial Movement of Poverty in the Buffalo MSA: 1970-2010 using Exploratory Spatial Data Analysis*

The objective of this paper is to demonstrate the value of exploratory spatial data analysis (ESDA) within a geographical information systems (GIS) environment as a means of gaining insight into the spatial distribution and extent of poverty in the Buffalo-Niagara Falls, New York metropolitan statistical area (MSA). This paper differs from other metropolitan focused poverty research initiatives in that: (1) uses a consistent census tract based spatial data set to track the changes in the location of poverty over four decennial census periods; (2) delineates the metropolitan area into cities, inner and outer-ring suburban areas; and (3) uses exploratory spatial data analysis (ESDA) within a GIS environment to explore the spatial patterns of intra-metropolitan poverty.

Russo, Richard A. (Frostburg State University), *Understanding the Complex Geography of Francophone Communities in Ontario*

Ontario's francophone population is the largest of all Canadian provinces outside of Quebec. However, Franco-Ontarians find themselves in a variety of local linguistic environments over a vast geographic area, from outright majorities and high-levels of language maintenance to barely 1% of local populations and high rates of linguistic assimilation. Using data from Canada's 2011 Census, this paper analyzes rates of linguistic assimilation in the 22 census divisions that are covered, in whole or in part, by the French Language Services Act of Ontario. Findings show that spatial factors (e.g. francophone density, distance from Quebec) are not strongly correlated with rates of assimilation. Strong correlations existed between high levels of language maintenance and higher proportions of francophones as well as with higher rates of anglophone bilingualism within a given census division.

Saku, James (Frostburg State University), *Economic Change in the Western Arctic of Canada: Opportunities and Problems*

Modern Land Claim Agreements (MLCAs) within Aboriginal communities in northern Canada has given rise to the creation of new institutional structures. The first MLCA achieved in the Canadian North was the 1975 James Bay and Northern Quebec Agreement. Three years later, an agreement was achieved with the Naskapis of North-eastern Quebec. While these agreements set the stage for Modern Land Claim Agreements, the first Comprehensive Land Claim Agreement (CLCA) was signed with the Inuvialuit in 1984. An important outcome of the Inuvialuit Land Claim Agreement was the creation of Inuvialuit Regional Development Corporation (IRDC). With complex institutional structures, this corporation is designed to promote regional economic development. This paper examines the nature, opportunities, and problems of the IRDC in the Western Arctic of Canada. While the corporation has been involved in the economic transformation of the Western Arctic, there are inherent problems preventing the full realization of its positive impact.

Schlosser, Kolson (Temple University), *World War I Propaganda as War of Position: Examining the National Security League's Committee on Patriotism through Education*

The National Security League was an elite private lobbying group in the World War I preparedness movement in the United States. Its educational wing was a group consisting mostly of college professors called the Committee on Patriotism through Education, which sought to use education to promote a militaristic brand of patriotism. This paper adds to our knowledge of the geopolitics of the period by critically reviewing the Committee's propaganda efforts, as organized into its Patriotism through Education Series. This paper also theorizes this propaganda in the contexts of Gramsci's concept of war of position. More specifically, the Committee deliberately sought to direct emotion toward militaristic ends, and saw teachers as foot soldiers in that effort. Understanding how war propaganda works through affect, that is, how it positions country as an object of affection, also qualifies and dovetails with an understanding of war propaganda as elemental to Gramsci's theories of class dominance. Quite apart from accusations of war-profiteering, elite manipulation of desire and affect toward the war effort also worked to obfuscate class interest in favor of gender and other social roles.

Schock, Tim (Shippensburg University), *The Role of Unconventional Gas Activities in the Prevalence of Chlamydia in Rural Pennsylvania*

Due to the development of horizontal drilling techniques and the rise in oil and gas prices, Pennsylvania experienced substantial growth in its natural gas sector during the latter half of the 2000s creating a demand for new laborers. Drilling jobs are mostly temporary and filled by out of state employees, and there are known associations between temporary foreign laborers and sexually transmitted infections. This research analyzes the role of natural gas activities on the prevalence of chlamydia trachomatis in rural Pennsylvania. Using data from Pennsylvania's Department of Health and Department of Energy, this study examines the number of new wells, oil and gas employment, and chlamydia rate per county by year. Preliminary findings show that while chlamydia increased statewide, these increases were more exaggerated in counties with more unconventional wells.

Seow, Tricia and Irvine, Kim (National Institute of Education, Nanyang Technological University), *The Sustainability Learning Lab: Enhancing Geographical Inquiry in the Field and Classrooms*

This presentation highlights the role of the Sustainability Learning Lab (SLL) in the fostering geographical inquiry in Singapore. It draws on Shulman's (2005) view of signature pedagogies as ways of teaching that organize fundamental approaches for educating practitioners. This project develops a baseline understanding of teachers' knowledge and understandings about disciplined inquiry, field work, and other key components of disciplined inquiry. The project identifies the challenges teachers face in doing inquiry-based fieldwork to better understand how these challenges can be addressed. In this paper, we also outline specific strategies developed to engage teachers and students in authentic discipline-based learning experiences, methodologies, thinking processes, and work. In particular we highlight the development of a field-based laboratory in the Jurong Eco-Garden, which includes the installation of meteorological and water quality sensors, and the provision of water quality measurement kits to schools. Used together with its associated data portal and website for teachers to access resources for teaching and learning geography, we believe these resources can be used by teachers and students in classrooms across Singapore to enhance teaching and learning in geography.

Shaeffer, J. Duncan (Arizona State University), *Pennsylvania's Long-Distance Backpacking Trails: Increased Future Popularity and Pressure to Complete the Gaps*

The popularity of long-distance backpacking is exploding and Pennsylvania is well-poised to be a major part of this growth. With this heavy increase, backpackers will increasingly be looking for trails away from the more established, and perhaps “too popular,” long-distance trails, such as the Appalachian Trail (with 229 miles in the Keystone State) or the Pacific Crest Trail in the West. Pennsylvania is indeed blessed to have numerous trails, separate from these ultra-popular ones, for those wanting multi-week backpacking adventures. Some of these, such as the North Country Trail and the Mid State Trail, traverse the state as part of long multi-state thru-hikes. Plus, there are enough trails—using a combination of long-distance and connecting trails—to spend an entire multi-week trek within the state itself. With Pennsylvania's trails poised to grow in popularity, pressure will come to complete the remaining gaps on these long-distance trails.

Shultz, Benjamin (Indiana University of Pennsylvania), *The Promise and Paradox of Education in the Global Era: The Case of Higher Education in Macedonia*

In the past few decades, the increasing sophistication of information and communications technologies have helped disseminate academic knowledge cheaply and efficiently. Digitized published material can be instantly diffused and stored online at no extra cost to the end user. Theoretically it follows that in the digital age, information no longer faces the geographic and financial barriers that once disadvantaged places on the global periphery. While that is partly true, meaningfully engaging in mainstream academic discussions remains difficult for scholars living in low-income countries, especially where English is not the first language. Using the experience of professional academics in Macedonia as a case study, this paper illustrates the difficulties that continue to inhibit scholars from low-income countries as they attempt to increase their academic profiles. Among the enduring challenges are the high costs of subscriptions to academic journals, the lack of quality and affordable English language proofreading services, and the persistence of cultural practices that do not fit neatly into Western ideals of academic integrity.

Soyak, Jayme (University of Delaware), *Investigating Food Access in Wilmington, Delaware*

Advocates for food security aim to create food accessibility for all. In urban areas, the overall goal is to eliminate food deserts and create better access to healthy foods through a variety of methods including nutrition education, farmers' markets, cooking classes, and urban agriculture. To assess the problems and solutions surrounding urban food deserts, I focus on urban agriculture and mobile farmer's markets in Wilmington, Delaware. For my research, I undertook volunteer work in a small community at an urban farm called Bright Spot Ventures. Bright Spot Ventures is designed to help eliminate food deserts in the city of Wilmington by bringing fresh produce directly to communities through a mobile farmer's market. Ten weeks of research revealed that eliminating food deserts is a complex process. My preliminary research demonstrates that the overall aims of Bright Spot might not align with the needs of the communities they serve. This raises questions about the effectiveness of urban food production and distribution as a solution to food deserts in Wilmington. It became evident that further research is necessary. In this paper, I argue that existing measures to address food deserts must engage the community and address the root of the problem.

Sundberg, Todd (University of Delaware) and **Howell, Jordan** (Rowan University), *The Geopolitics of Hygge: Denmark's Affective Soft Power*

Critical geopolitics explores the role of space in international relations while affective geographies seek to understand the emotional dimensions of spatial-social relationships. This paper examines a hybridization of these two concepts in the context of Nordic countries, particularly Denmark. The Nordic countries primarily wield soft power to achieve their geopolitical strategies. Danish soft power tools evince a peculiar affective sociocultural construct known as “hygge” or “coziness”. Drawing on affective critical geopolitics, we examine how Denmark amasses significant international geopolitical clout via hygge. We collected and analyzed English language social media, Nordic popular literature, Danish grey literature and rely on participant observation to ground the research. The deployment of hygge in Denmark is uneven and potentially contradictory as hygge is used to attract potential migrants yet is juxtaposed with the experiences reported by foreigner visitors. This creates a potentially compromising position for Denmark’s geopolitical strategies; how can Denmark hope to attract capital and labor if it cannot extend hygge to residents within the country? We conclude that Denmark, from the state to businesses to influential individuals, explicitly employs hygge through soft power to achieve geopolitical aims. However, further research is required to understand the role of affect in Danish geopolitics.

Thayer, Nathan (University of Delaware), *Making Georgetown: Place, Belonging, and Change in Rural Delaware*

Immigration trends in recent years have seen increasing numbers of migrants bypassing traditional gateway cities to settle in rural parts of the United States. This shift in settlement patterns has brought changes in the social, political, and economic geographies of many small towns across the country, helping to fuel contemporary debates over immigration and illegality. In this research I examine the ways in which Georgetown, Delaware – a small rural town in the state’s southernmost county – navigated changes in its place identity spurred by the rapid and ongoing settlement of Guatemalan migrants beginning in the 1990s. Drawing on archival data from town documents and the local newspaper, as well as field observations and semi-structured interviews, the present study will build on past geographic research concerned with immigration, place, and belonging by exploring the ways in which place and belonging are (re)negotiated over time in new, rural immigrant destinations.

Tokosh, Joe (Kent State University), *Teaching Market Area Delineation: A Classroom Exercise*

Teaching geography students about market areas involves distinct problems. The growth of online shopping has made the idea of market areas less domineering in today’s consumer industry, therefore student motivation is crucial to the implementation of the exercise. This study describes an in-class exercise where students will be exposed to the fundamentals and theoretical underpinnings of market area delineation. The exercise creates an archetypal competition between two local businesses (convenience stores) in a neighborhood. Students will be given responsibility of determining the market areas for both stores, based on customer data (provided during the exercise) and what they have learned from the preceding introduction to retail and marketing geography. Students will work independently to allow their responses to be analyzed and compared with one another to determine consistencies and discrepancies in the responses.

Tompkins, Carl and Li, Rui (SUNY Albany), *Evaluation of Signage Placement on University Campus using Space Syntax*

The main campus of the author's university can be a challenge for visitors due to its symmetric design and similarity of building exteriors. The university has installed signage on campus to provide directional information. The signage, anecdotally, is still not helpful to new comers driving to this campus as they often get disoriented. This paper reports a study, which uses space syntax, a concept for quantifying the physical environment, to associate potential impacts of signage placement with motorists' access and navigation throughout the campus. In particular, space syntax measures including Visibility Graph Analysis, Axial Map Analysis, and Isovist Fields are employed in this study to examine the general visibility, connectivity, and local visual access respectively of the campus environment from a potential visitor's perspective. Results from these analyses provide quantitative assessments on how physical characteristics of the built environment may have different effects of traveling motorists on campus. These results were then compared and validated with a conventional traffic analysis assessment conducted by a local engineering and land survey firm. This paper then summarizes the effectiveness of current sign placement and then further suggests locations for ideal signage placement.

Tramontina, Bryan (Indiana University of Pennsylvania), *Spatial Distribution Patterns of Visual Indicators of Slum Conditions: Case of Rajarghat, Kolkata, India*

With the continuing rise of urban and slum populations, new ways of studying the slum phenomenon and slum conditions are of growing importance. This study analyzes the spatial distribution patterns of visual indicators of slum indicators in Rajarghat, a slum in Kolkata, India. This study uses visual analysis and spatial analysis techniques such as Local Moran's I and HotSpot Analysis to assess these patterns and the potential geographic influences that may affect these patterns. Significant patterning was found that related to distinct geographic features of the slum. Repeatable methods are also generated for future, similar analysis.

Vermette, Stephen and Blicharski, Justin (SUNY Buffalo State), *A Spatial Guide for U.S. Migraine Sufferers: Mapping the Daily Variability of U.S. Barometric Pressure*

Migraines are excruciating painful headaches, complicated by nausea, vomiting, and sensitivity to light. While the cause of migraines is largely unknown, the onset of a migraine can be triggered by a number of factors. For some individuals a specific trigger, or triggers, can be identified. This study is based on our personal communication with a Buffalo, NY migraine sufferer who has clearly identify the trigger as a change in atmospheric pressure. This migraine sufferer is searching out a location in the United States which experiences the least variability in atmospheric pressure – a location that could offer relief from his headaches. For this study, average daily barometric pressure data were obtained from 30 cities, chosen to ensure an even distribution across the United States. Daily pressure differences were calculated for the year 2014. The average daily pressure difference for the year, as well as the seasons, were mapped using ArcGIS – providing a spatial guide for U.S. migraine sufferers who have identified pressure change as a migraine trigger. In general, the daily variability of barometric pressure change decrease with decreasing latitude. However, there are a number of seasonal and regional exceptions to this generalization that are explored in this paper.

When, Karen (Erie Community College) and **Vermette, Stephen** (SUNY Buffalo State), *Field Courses: Teaching to the Multiple Intelligences*

The Department of Geography and Planning at SUNY Buffalo State has offered numerous field courses over the years, but it is the ‘Cavern Studies’ and the ‘Bahamas Field Experience’ courses that have been offered repeatedly since 2000, and thus have had the opportunity to be fine-tuned. These courses are self-contained (no-prerequisites and completed in the field), are open to all majors, and are open to all student at all levels (college freshman to senior). While our educational system is heavily biased toward linguistic modes of instruction and assessment, these field courses are taught using a mix of media, what is referred to as a ‘multiple intelligence’ approach (developed in 1983 by Dr. Howard Gardner). This theory recognizes that students possess different kinds of minds and therefore learn, remember, perform, and understand in different ways. In addition to the linguistic mode, the intelligences include: visual-spatial, bodily-kinesthetic, intrapersonal, interpersonal, musical, logical-mathematical, and naturalist intelligences. The objective of this presentation is to demonstrate how the multiple intelligences are affectively employed in both the ‘Cavern Studies’ and ‘Bahamas Field Experience’ courses to reach students of different ‘minds’, and to reinforce concepts in different ways.

Wieczerak, Taylor (Montclair State University), *An Economic Valuation of Combined Sewer Overflows and Green Infrastructure in Northern New Jersey*

Significant water pollution caused by flooding due to heavy precipitation and extreme weather events such as Hurricane Sandy and similar storms of the past have become a considerable problem. The combined stormwater and untreated sewage is diverted to adjacent water bodies during heavy downpour resulting in contamination and water pollution. This contamination, especially in urbanized areas of northern New Jersey, is largely a product of discharge events from combined sewer overflows (CSOs). Though the effects of the contamination caused by polluted water discharge through CSO has been studied by some researchers, the socio-economic aspect of these issues has not received much scientific attention. This study seeks to understand the socio-economic facets arising due to of the continued use of CSOs in Elizabeth, Newark, and Paterson. A hedonic analysis of homes near CSOs is used to evaluate the disamenity effect on the price of homes near discharge sites. Furthermore, a willingness to pay study is carried out in order to analyze the willingness of residents to pay for improvements to CSO infrastructure through the assimilation of green infrastructure such as bioretention gardens, rain barrels, and green roofs.

Ziolkowski, Michael (The College at Brockport – SUNY), **Zamparini, Luca** (Università del Salento) and **Reniers, Genserik** (Delft University of Technology), *Air, Marine and Rail Hazmat Accidents over Two Decades in USA: Comparative Analysis and Safety Policy Recommendations*

This paper analyzes 21 years of data related to unintentional hazardous materials (hazmat) releases on air, marine, and rail transportation modes reported in the United States (U.S.) – although their origins and destinations may be outside the U.S. Our analysis reveals thousands of cases have occurred and their impacts vary by mode. These impacts include material losses, carrier damages, property damages, response costs, and remediation and clean-up costs. There appears to be some reduction in the frequency of incidents and accidents as regulations have been promulgated, although we cannot attribute causation. Our review suggests that enhanced regulations and attentiveness have probably led to better reporting of hazmat occurrences. Moreover, developing and maintaining safer processes and designing safer products, containers, and systems can play an important role in minimizing hazmat releases.

POSTER ABSTRACTS

Chitiyo, Plaxedes (Duquesne University) and **Duram, Leslie** (Southern Illinois University), *The Key Characteristics of Alternative Agriculture in Zimbabwe*

Policy makers, Non-Governmental Organizations, and environmental experts advocate for alternative agriculture to revive the agricultural sector in Zimbabwe and address climate change and environmental degradation in order that the country shifts away donor reliance and foreign assistance. However, alternative agriculture is underdeveloped and the concept itself is not well-defined and lacks clarity within the country's context thereby undermining its expansion. Using qualitative research design comprising of semi-structured interviews with eight experts actively involved in alternative agriculture promotion in Zimbabwe, this study was conducted to identify key attributes of alternative agriculture and the associated activities in the country. Significant findings from the study were that consumer food perceptions and international agencies marginalized alternative agriculture. To counteract marginalization, advocates were actively developing local markets that never existed before. These findings provide vital information that may inform policy and assist further development of alternative agriculture in developing regions.

Cruse, Courtney (University of Pittsburgh at Johnstown), *Applied Drone Technology to Aerial Mapping: Claysburg Park, PA*

Drone technology made it possible for an amateur user to collect aerial imagery. The cameras provided by the drone are not built for photogrammetric aerial reconnaissance. Combined image processing, GPS technology, and Geographic Information Systems made it possible to mosaic and geo-reference collected aerial photography. Available geo-reference aerial photography provided by the Pennsylvania Spatial Data Access (PASDA) made it possible to collect GPS data points that were used to rectify the imagery. Claysburg Park is located in Blair County, Pennsylvania. The park goes through periodic renovation that made it important remap. The area is located in relatively flat topography that made it easier to geo-reference. Some of the difficulties of the process include the decision on the photography over lap and side lap during flight. Low flight of the aircraft is selected for better resolution. At the time of the flight wind speed was minimal for stability of the aircraft. In conclusion, this map project combines drone technology, remote sensing, programming, and the use of map generation as a tool of education to compile high resolution images of Claysburg Park.

Freiman, Benjamin (SUNY Geneseo), *Locating Brownfield Sites Most Suitable for Redevelopment – Erie County, NY*

Brownfields are abandoned or underused properties, most often former industrial or commercial facilities, which possess a real or perceived environmental contamination that hinders possible redevelopment. New York State, along with much of the Rust Belt, possesses a great quantity of brownfield sites. The selective remediation and redevelopment of brownfields is a strategy that can encourage infill development, reduce urban sprawl, limit greenfield development, improve the visual character of an urban space, as well as promote the creation of industrial and trade-based jobs. Brownfield redevelopment is a vital tool in combating the problems faced by many Rust Belt communities. Erie County, NY, home to the City of Buffalo, contains many brownfield sites. The purpose of this study was to locate the brownfields in Erie County which are most suitable for remediation and redevelopment using both a weighted nominal and an unweighted ordinal overlay analysis with a GIS. Four brownfields greater than fifty acres in area were identified as the most

suitable sites. The redevelopment of these sites could reinvigorate nearby communities within the county and help promote an agenda of sustainable development.

Meneely, Doug and Biondi, Cody (West Chester University), *Sustainable Student Well-Being and the Community: Mapping with GIS and Social Media*

Gathered data and research on the campus of West Chester University for sustainable students and food deserts.

Nguyen, Gia and Lal, Pankaj (Montclair State University), *Evaluating Soil Erodibility Parameters with Mini-Jet under Various Soil Moisture Conditions*

Soil erosion has been contemplated as the main reason for losing agricultural land, which is a non-renewable resource since long-lasting geof ormation processes. Furthermore, soil erosion has been considered as a major sediment source in aquatic systems. Soil erosion must be quantified to understand erosion processes better and help developing erosion control strategies. However, the impacts of soil moisture content and its distribution are poorly determined. The primary goal of this study was to quantify two soil erodibility parameters, erodibility coefficient, and critical shear stress, under different soil moisture conditions using a Jet erosion test (JET), was introduced in the 1990s to determine two essential parameters in soil erodibility equation. The JET test uses the apparatus that creates an impinging jet of water into the soil and records the scour depth over time. For this study, the soil samples were collected from two sites in Kansas and prepared to run more than 40 mini-JET tests in the lab. Different moisture infiltration rates were applied to the samples before running tests. As a result, the effects of initial moisture conditions on parameter variability. The critical shear stress decreased, and erodibility coefficient increased with the increase of initial moisture content.

Nomie, Darion and Bodenman, John (Bloomsburg University of Pennsylvania), *An Economic Opportunity Assessment of the Downtown Bloomsburg, PA Region*

My research seeks to discern which business opportunities would thrive in the Downtown Bloomsburg region, given the current outstanding market environment. The objective of this study is to improve the town economy, decrease the number of empty storefronts, and create a model for struggling small towns. Bloomsburg University houses over 12,000 students, many of whom frequent downtown Bloomsburg. Despite this captive market, the downtown sector is littered with empty storefronts, and the existing businesses do not appear to address the needs of students. Creating a link between businesses and students would help grow the town, increase their tax revenue base, improve housing prices, and portray Bloomsburg as a destination. The method of obtaining the data used was an online Qualtrics survey. This survey was designed to discover general feelings about the town itself, and deduce what businesses students prefer to patronize. The survey utilized a step-down questioning technique to provoke thought about what products are not available for purchase downtown, then shaped that response into a conclusion about what businesses would thrive given the market demands.

Penzelik, Erin (University of Pittsburgh at Johnstown), *Ohiopyle State Park – The Largest Land Based State Park in Pennsylvania*

The purpose of this poster is to examine Ohiopyle State Park, a major tourist attraction in Pennsylvania. The park has a total of 19,052 acres and contains 14 miles of the Youghiogheny River. The borough of Ohiopyle, which is located within the park, has a resident population of 62.

The borough of Ohiopyle, which is located within the park, has a resident population of 62. However, between the months of April and October, the park is visited by over 1.5 million people. Tim Palmer, author of the Youghiogheny River, once said “Ohiopyle is like an island, to get there you had to want to get there.” The park is in an isolated area of southwestern Pennsylvania, allowing visitors to feel in concert with nature. However it is close enough to major metropolitan areas like Pittsburgh PA, and Morgantown WV, to attract a large number of people. This poster will explore and explain what is attracting so many people to this area, and what keeps them coming back year after year.

Platania, Emily and Baker, Kevin (University of Pittsburgh at Johnstown), *Drone Assisted Parking Analysis: Collecting Aerial Data with Ease*

With the introduction of camera-drone technology to the field of geography, advancements in the methodology of data collection developed. Drone technology allows the user to capture high-resolution aerial photography, without expensive acquisition by aircraft. For this project, aerial data displaying characteristics of an on-campus parking lot was gathered using a camera-bearing drone. The raw data was organized into attribute sets and then applied to geo-referenced imagery with the aid of GIS. As a means of better analyzing the relationships between a number of observable variables, maps were produced to offer a visual representation of the correlations between data sets. Relationships between variables such as location of parking spaces to building entrance, hourly occupancy rate, utilization of handicap parking, etc., were observed. This project was created as an educational experience, to demonstrate the beneficial capabilities of such technology to the field of geography.

Qira, Arianna (Montclair State University), *New Rock Climbing Recreation Areas: Piecing Together Data to Find New Crag*s

This study uses geospatial data and implements them into Esri’s ArcGIS to make a detailed map of potential rock climbing areas. Geospatial data was collected about: elevation, slope, slope aspect, rock type, and erosion rates. The data was taken from the Esri database, the USGS, Mountain Project, and other rock climbing forums. This data was implemented into ArcGIS, manipulated and used to find new potential climbing areas based on the data. This study takes the Adirondack State Park and uses it as a pilot study. Most climbing areas in this region have been established and frequently climbed. The new climbing areas found by this study will be compared to already existing ones. This will provide valuable information about climbing areas that can be readily available to the public through ArcMap Online such as: safety, access, rock type (with respect to climbing styles), and erosion. This study will also, if effective, be able to find new climbing areas around the world. It will assess the most fit rock faces for climbing to make the sport as safe as possible.

Rose, Shana and Davis, Michael A. (Kutztown University), *Temperature and Precipitation Variability Effects on Texas Agriculture*

The purpose of this study is to observe how climate has adversely affected the annual yield of Texan’s vital cotton production. During the course of this study, climate effects from variables such as temperature, precipitation, soil moisture, and extreme events were examined. The variability of these key climate variables were analyzed for their effects on agricultural production in Texas. Fluctuations in precipitation and temperature impacted the success and longevity of cotton production. An important part of this study was to observe previous climatic events and weather

events and how cotton performed over a period of time and whether they were affected by changes in temperature and precipitation.

Roush, Kaitlyn (Frostburg State University), *A Tourist Map for the Greater Grantsville Business Association*

Tourism is an important component of Garrett County, Maryland's economy. About 1.2 million people travel to the county each year to enjoy the natural geographic landscape, man-made Deep Creek Lake, trails and State Parks. During the winter, the Wisp Ski Resort serves as an excellent destination for urban dwellers. When visiting Garrett County, tourists patronize a variety of businesses. These businesses may include those that are owned, and operated by The Greater Grantsville Business Association (GGBA). To make these businesses more well-known, and accessible to tourists visiting or travelling through Garrett County, GGBA initiated a tourist map making project. The purpose of this project is to use ArcGIS to create a tourist map of the Greater Grantsville area. Two maps, including a street map and a map detailing local businesses within the Grantsville area, have been created for distribution to tourist centers around the county. Businesses that are GGBA members are especially highlighted on the map to encourage their patronage by tourists.

Scarmazzi, Jeffrey, Harris, Daniel and Tomcho, Tom (Salisbury University), *Exploring Social Identity Theory with PostGIS: Spatial SQL in Non-Geographic Problem Solving*

Social psychologists often examine Social Identity Complexity (SIC) with self-report measures, interviews, or card sorts to characterize research participants' SIC. Our research uses a spatial mapping procedure and GIS techniques to quantitatively characterize a sample of individuals' SIC cognitive representations and their persistence across time. We believe that the spatial configurations of our sample can be characterized with a model that determines what identities tend to promote "stability" across time. Participant responses were implemented as a PostgreSQL database and we use the Python module Psycopg2 to calculate geometric parameters of individuals' SIC. Our hypothesis is that "relational" identities, or identities describing interpersonal relationships, tend to provide more cohesion and resistance to change. This work focused largely on developing a methodology and change model that captured four primary SIC attributes: distance to neighbor identity, distance to origin (self), percent surface overlap among identities, and a spatial identity configuration matrix composite-ConfigurationID. We identified ten "unique" configurations enabling the identification of SIC "outlying identities", "bridge identities", and "anchor identities". Our choice in processing languages provides the framework for developing a web application to facilitate future data collection. These findings advance research on "Social Identity Mapping" and SIC (Crywys et. al. 2016; Dommelen et al. 2015).

Simboli, Lorin (University of Pittsburgh at Johnstown), *Bell's Mills Road Ultramafic Body*

The Bell's Mill Road ultramafic body is one of several ultramafic bodies of unknown origin within the Piedmont Province of the Central Appalachian Mountain belt. Preliminary mapping has indicated that the Bell's Mill Road ultramafic body has a concentrically zoned structure, with each zone revealing the increasing hydration from the nominally anhydrous core. Over the summer, numerous samples were collected from the site to recreate the structure. With the use of ArcMap and PASDA imagery, samples were placed on a contour map in their original locations. The samples were matched with others of similar composition to display the zones of alteration within the body; each layer or rock type is visible as a different color. It is now certain that the previous notions of a

concentrically zoned structure are false. According to the map, the zones still progress from hydrous to anhydrous, but the layers form a disorganized arrangement. Understanding the flux of fluids and migration of elements throughout the body is key to deciphering the alteration history and origin of this structure.

Soisson, Kaili A., Davis, Michael A. and Cunningham Kaleigh M. (Kutztown University), *Extreme Temperature and Precipitation Trends in the Commonwealth of Pennsylvania*

This study examines several climate variations from the year 1975 through 2010 across the state of Pennsylvania. The data examined was taken from thirty-four different stations across the state. This data was analyzed by taking into account day with temperatures above 90 and below 0 degrees Fahrenheit, as well as days with over .5 and 1 inch of precipitation. The mean, maximum and minimum temperatures were also recorded. This data was also broken up following meteorological seasons. After analyzing data, it was exciting to find that Pennsylvania follows a unique pattern creating different climate zones throughout the state. This study has shown that temperatures and precipitation is increasing each year. It is striking evidence in support of climate change occurring. It is our conclusion that if trends continue, average temperatures will rise over 5 degrees Fahrenheit by the year 2050.

St. Clair, Katelynn (University of Pittsburgh, Johnstown), *A Focus on AMD: Lancashire Treatment Plant*

Due to the prominence of coal mining, Western Pennsylvania is an area greatly affected by abandoned mine drainage, referred to as AMD. Many organizations work at restoring our streams from the detrimental effects of AMD. One such organization, is the PA Department of Environmental Protection (PA Dep). The PA Dep, specifically BAMR (Bureau of Abandoned Mine Reclamation), constructed and operates an active AMD treatment system named Lancashire. The plant is located in the Carroltown/Indiana area and is estimated at treating approximately 7.4 mgd (million gallons/day) of AMD. The Lancashire treatment system went online in November of 2011. The water treatment process and design of the system is shown on the map through aerial drone photography and the supplemental GIS layers of soil data, historic underground mining shaft records, water pH, and streams. Lancashire is a great display of the positive effect systems like it can have on the poor pH and heavy metal laden waters which are so common in this area. The goals of this project are to display the Lancashire treatment plant in a way that is easy comprehend, distinct, and neatly shows the benefits of such a treatment system on the natural environment and the surrounding communities.

Stanko, Haley (University of Delaware), *Stakeholder Networks That Facilitate Urban Agriculture in Philadelphia*

Cities around the world are changing. In the past decade there has been a push for more sustainable development that will help cities thrive while cutting down on the environmental impacts and social inequities resulting from rapid urbanization. At the same time, deindustrialization and divestment are leaving neighborhoods with an overabundance of vacant land. Urban agriculture is emerging as a way for communities to utilize vacant land while supplying the neighborhood with access to fresh food. Land access is the biggest challenge facing local gardeners who cannot garden with a promise of permanent access, as there is no consistent policy that allows gardeners to legally access land without going through a lengthy legal process. Within the policy framework of Philadelphia, there are various stakeholders that form networks to advocate for the interests of urban gardeners;

individual and community gardeners organized at the grassroots level, professionalized non-profit networks, and city government officials and staffers. Through interviews with several of these stakeholders I have identified several networks that work throughout the city to influence policy and advocate for urban agriculture interests. There is a lack of strategic communication between grassroots gardeners, non-profit professionals, and city officials. An improvement in communication between these networks could facilitate better policy outcomes.

Tang, Tao (State University of New York – Buffalo State), *Student Participated LiDAR and Unmanned Helicopter (UAV) GIS Data Collections and Processing for Environmental Conservation and Economic Development*

LiDAR or laser scan is a new remote sensing technology to collect and processing 3D (three dimensional) GIS data. Through the collaborative demonstration project of LiDAR data collection and processing for the Town of Amherst, Erie County, New York, students in the GIS and Remote Sensing classes creatively conducted 3D visualizations and data processing using the large datasets. 3D visualizations of SUNY – Buffalo State campus created by both the graduate student and the undergraduate student in the classes show the high potential of utilizing 3D digital models to facilitate design and planning for local economic development. Unmanned helicopter or drone is a recently developed platform for remote surveying and data collections in finding the answers of the question: “what is happening in this area?” Two graduate students conducted researches on invasive species of the Japanese Knotweed and Water Chestnut in the Western New York. The results of these experimental researches not only detected the detailed spatial distributions of the invasive species, but also demonstrated the unique capability of drone or UAV (Unmanned Aerial Vehicle) based sensors in detecting time sensitive geographic events, such as blossoming period of invasive plant species and microclimatic habitat conditions of these invasive species at a specific times of the growing seasons.

Trucksess, Victoria (Rider University), **Davis, Michael** and **Chong, Juang**, *Precipitation Variability and Human Population on South Carolina Firefly Populations*

Changes in spring precipitation and urban sprawl have the potential to impact populations of the insect family *lampyridae*, or firefly. Clemson University started the Vanishing Firefly Project in 2013 to observe and track the number of fireflies in volunteer observers’ backyards. Variability in springtime (March, April, and May) precipitation affected by regional climate change can impact the water availability for *lampyridae* to proliferate. Assessment into changes in community populations can provide additional quantitative information as human activity encroaches on the natural habitat of vegetation and wetlands associated with *lampyridae*. This study aims to address the natural and anthropogenic relationships on firefly population and how spring precipitation variability and human population growth can influence firefly populations in the Greenville-Clemson, South Carolina area.

Wade, Jake (State University of New York at Geneseo), *Gentrification and Neighborhood Change in Red Hook, Brooklyn*

Cut off from the rest of Brooklyn by the Gowanus Expressway, Red Hook has historically been a haven for drugs, crime, and prostitution. Since the turn of the century however, people have been attracted to Red Hook for its cheap real estate, proximity to Manhattan, and quiet atmosphere. Indeed, the process of gentrification has begun to spill over the Gowanus. Concerns remain, however, over the equity of this neighborhood change, as gentrification often raises the cost of living in an area and “prices out” its original residents. The goal of this research is to show, through a series

of maps and spatial analyses, how Red Hook differs from the Brooklyn archetype and what changes are currently taking place. I will determine whether or not Red Hook is on a similar trajectory as other heavily gentrified neighborhoods in Brooklyn. Utilizing zoning and land use data from the NYC Department of Planning, demographic and economic data from the US Census, as well as transportation data from NYC's transportation authority, I will show that Red Hook still has a unique character, but that it is also being transformed, and is beginning to resemble the more gentrified neighborhoods that characterize much of Brooklyn.

Wolff, Olivia (University of Pittsburgh at Johnstown), *Applied Drone Technology to Aerial Mapping at Height of 400 Meters: Renfrew Museum and Park, Waynesboro, PA*

Drone technology made it possible for an amateur user to capture aerial photos of the projected region at a height of 400 meters. The camera provided with the drone is not built for photogrammetric aerial reconnaissance. Using GPS technology and Geographic Information Systems (GIS) the collected aerial photos were mosaicked and georeferenced. Infrared aerial photography provided by the Pennsylvania Spatial Data Access (PASDA) allowed for the georeferencing and rectification of the collected aerial images. Renfrew Museum and Park is frequently visited by the surrounding communities and is neighbored by two of Waynesboro's academic buildings, as well as a recreational park maintained by Otterbein Church. Though topography is relatively flat, it is important to note changes as the area contains miles of hiking trails. The region lies in the East Branch Antietam Creek watershed and is situated on the Middle to Late Cambrian age Elbrook Formation, a calcareous shale and silty limestone. This data combines applied drone technology and GIS to create a high resolution map of the Renfrew Museum and Park and surrounding areas.

Ye, Yusheng (Buffalo State College), *Characteristics and Causes of Flood in Historical Beijing*

As a more disastrous natural disaster, Floods has occurred frequently in the history in Beijing. It has affected people's productions and lives, resulting in serious economic losses and threatening the region's sustainable development. Our research attempts to use methods of historical geography to collect flood frequency data and analyze the data qualitatively and semi-quantitatively and draw conclusions about the characteristics and patterns of flood in a more scientific way. It explains the interaction between the flood frequency and other natural geographic factors within the natural geographical complex. This study facilitates more in-depth studies of relevant scientific fields such as historical geography and geographic disaster information system, and is valuable as a reference for future flood regulations in Beijing.

Zhang, Yingyu (Buffalo State College), *Spatial Analysis of Air Particulate Pollution and Its Relations to Distributions of Real Property Value in Beijing, China*

This research provide a study of spatial analysis of air particulate pollution and its relations to distributions of real property value in Beijing, China. Counts and concentrations of air particle pollutants at a total of twenty three points in the urban districts of the city were collected by using the laser particle counters. Geographic Information System (GIS) was used to study the two dimensional spatial distributions of air particulate pollution (PM_{0.3}µm, PM_{0.5} µm, PM_{1.0} µm, PM_{2.5} µm, PM_{5.0} µm, PM_{5.0} µm) in June 2015. A geostatistic and spatial statistic model of kriging were applied to interpolate the spatial distributions of particle pollutions. Geographically Weighted Regression (GWR) were applied to analyze the spatial relationships of air particle pollution and distribution of real estate values. The results show the concentrations of different sizes of air particulate pollutants in urban areas in Beijing City distribute differently on spatial scales. It is clearly to see that real estate

values decrease from the northwest to the southeast of the city. There is no significant regularity of spatial distributions of real estate value and air particle pollution.