

THE PENNSYLVANIA GEOGRAPHICAL SOCIETY

2013 ANNUAL MEETING

OCTOBER 25-26, 2013

HOSTED BY CALIFORNIA UNIVERSITY OF PENNSYLVANIA
PITTSBURGH, PENNSYLVANIA

MEETING PROGRAM





THE PENNSYLVANIA GEOGRAPHICAL SOCIETY

PRESENT THEIR

2013 ANNUAL MEETING

October 25-26, 2013

HOSTED BY CALIFORNIA UNIVERSITY OF PENNSYLVANIA

HELD AT THE DOUBLETREE HILTON, PITTSBURGH, PA

2013 Meeting Arrangements Committee

Chad Kauffman, California University of Pennsylvania

Thomas Mueller, California University of Pennsylvania

Mario Majcen, California University of Pennsylvania

Thomas Wickham, California University of Pennsylvania

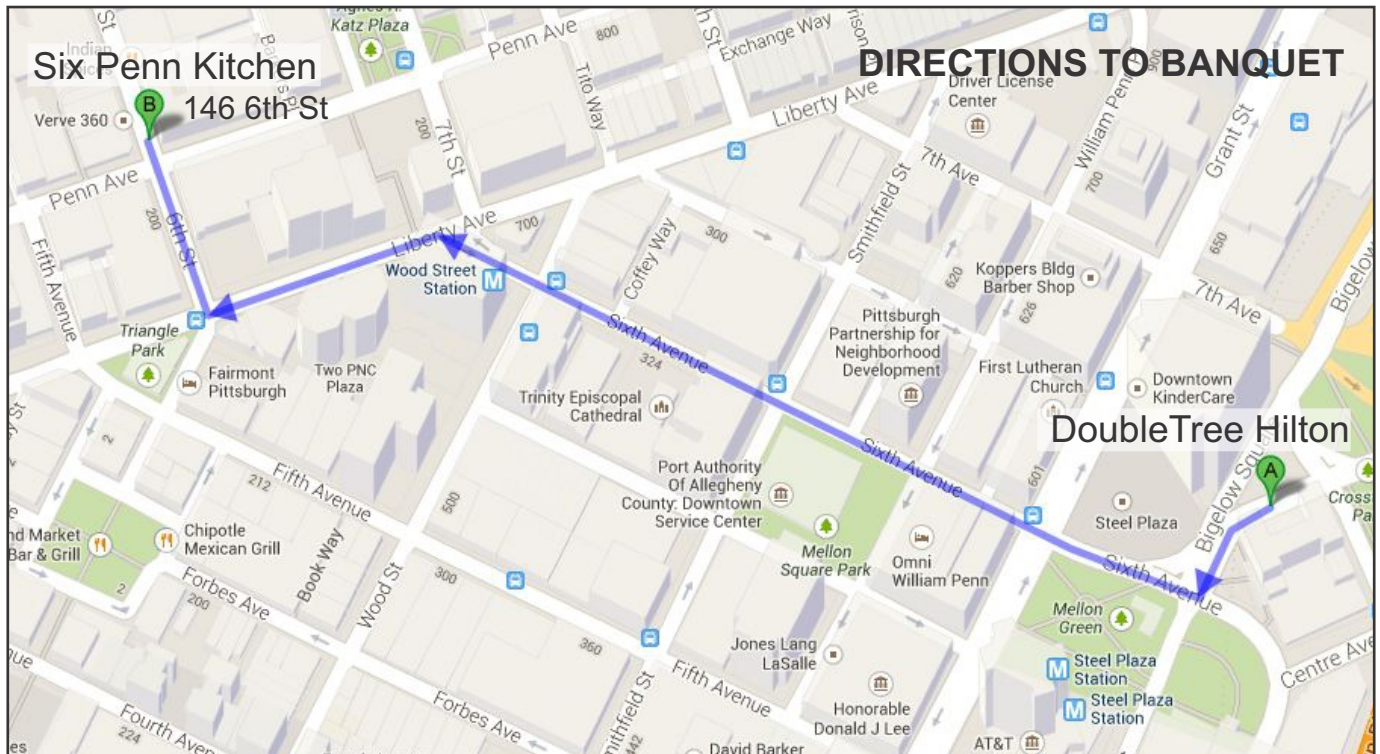
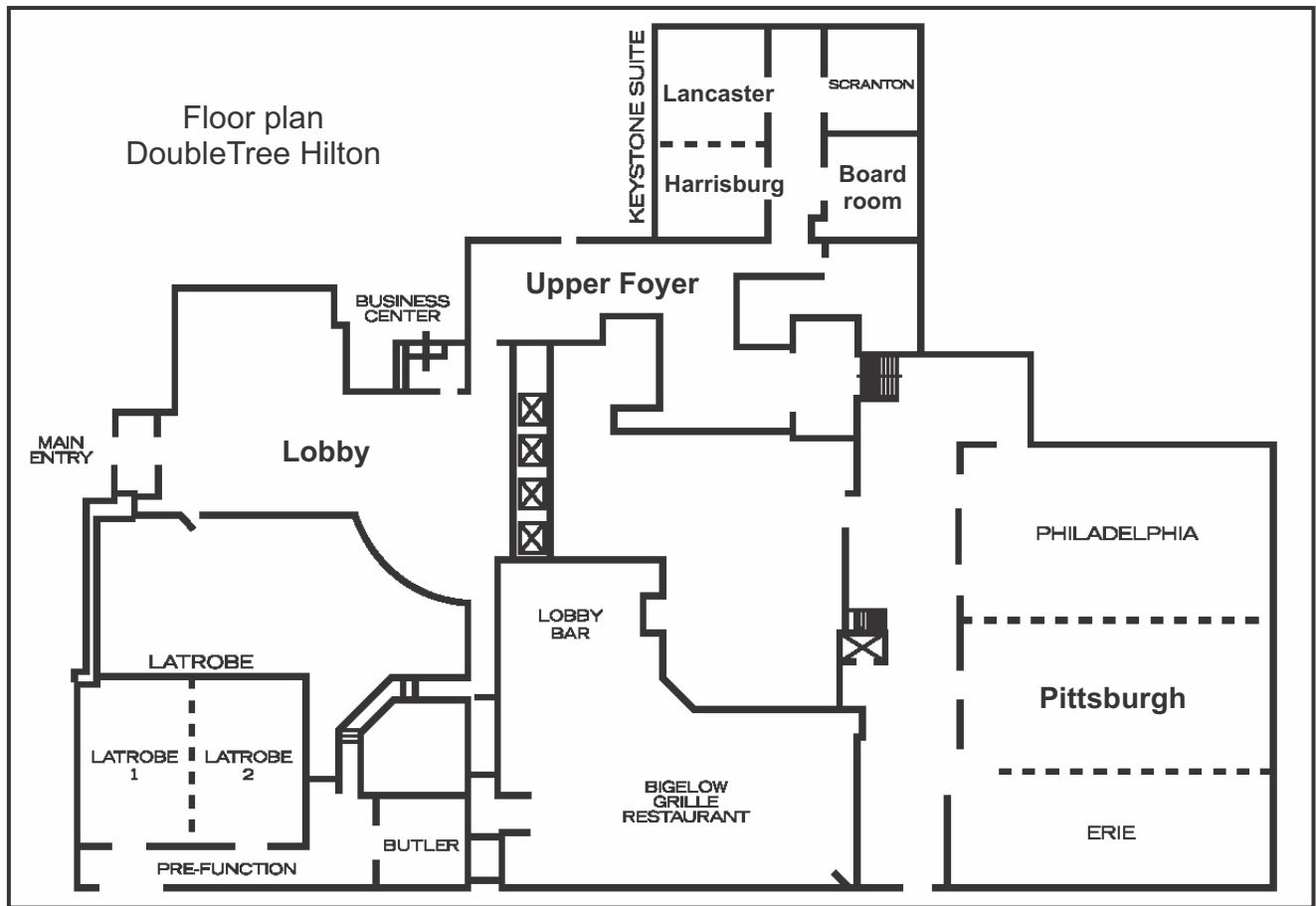
Brent Zaprowski, Salisbury University

Ola Johansson, University of Pittsburgh at Johnstown

Jodi Vender, Penn State University

Tim Dolney, Penn State University at Altoona





2013 ANNUAL MEETING OF THE PGS

SCHEDULE OF EVENTS

Time	Event	Location
Friday, October 25th		
7:45 am-3:00 pm	Registration	Upper Foyer
9:00 am-4:00 pm	Posters and Maps on Display	Upper Foyer
8:00-9:10 am	Paper Session 1 - Cultural and Historical Geography	Lancaster Room
	Paper Session 2 - Weather and Climate I	Harrisburg Room
9:00-11:00 am	Coffee Break	Upper Foyer
9:10-10:20 am	Paper Session 3 - Physical Geography	Lancaster Room
	Paper Session 4 - GIS I	Harrisburg Room
10:20-11:50 am	Paper Session 5 - Human and Economic Geography	Lancaster Room
	Paper Session 6 - Weather and Climate II	Harrisburg Room
12:00-1:15 pm	PGS Luncheon	Pittsburgh Room
12:30-1:15 pm	Luncheon Guest Speaker: Scott Sheridan	Pittsburgh Room
1:20-2:50 pm	Paper Session 7 - GIS II	Lancaster Room
1:20-2:20 pm	Special Session 1 - Guest speakers sponsored by California University's Meteorology Club	Harrisburg Room
2:00-3:00 pm	Map/poster presenters available for questions	Upper Foyer
3:00-4:30 pm	Paper Session 8 - Geography Education	Lancaster Room
2:30-3:30 pm	Round Table Discussion: Networking and Professional Development for Students	Harrisburg Room
3:30-4:30 pm	Panel Presentation: Career Opportunities for Geographers	Harrisburg Room
4:45-5:15 pm	Student Awards Presentation	Harrisburg Room
5:30-8:30 pm	2013 PGS Annual Banquet and Awards Ceremony - Guest Speaker: Dr. Jay Morgan III, 2013 PGS Distinguished Geographer, Towson University	Six Penn Kitchen
Saturday, October 26th		
8:00-9:30 am	Registration	Upper Foyer
8:30-10:00 am	Paper Session 9 - Economic Geography I	Lancaster Room
9:30-10:30 am	Coffee Break	Upper Foyer
10:00 am-12:00 pm	K-12 Teacher's Workshop	Harrisburg Room
10:15-11:45 am	Paper Session 10 - Economic Geography II	Lancaster Room

2013 ANNUAL MEETING OF THE PGS
SUMMARY OF PAPERS AND PRESENTATIONS

Friday, October 25th	
	Lancaster
8:00-9:10 am	<p style="text-align: center;">Session 1 - Cultural and Historical Geography</p> <p><u>Chair:</u> Mary M. Graham</p> <p>8:00 - Clarissa Confer: Shifting Concepts of Border: American Indians and the USA</p> <p>8:20 - Mary M. Graham: Preservation Tells a Story: The Civil War Battlefields at Shiloh, Stone's River, and Vicksburg</p> <p>8:40 - Francis Galgano: Geography, Geology, and the American Civil War</p> <p>9:00-9:10 Questions</p>
9:10-10:20 am	<p style="text-align: center;">Session 3 - Physical Geography</p> <p><u>Chair:</u> Daniel Harris</p> <p>9:10 - Joan Welch: Prescribed Fire and Woodland Canopy Tree Seedling Response</p> <p>* student paper contest entrant 9:30 - Danial Harris and Michael Folkoff: Just How Many Ponds Are There? Small Water Bodies In Wicomico County, Maryland</p> <p>9:50 - Brie Puican,* Brent Zaprowski and Michael Folkoff: A Sedimentological Study of Cores Extracted from an Existing Mill Pond in Wicomico County, MD</p> <p>10:10-10:20 Questions</p>
10:20-11:50	<p style="text-align: center;">Session 5 - Human and Economic Geography</p> <p><u>Chair:</u> Matin Katirai</p> <p>* student paper contest entrant 10:20 - J.T. Bandzuh*: Comparative Healthcare Study: Brussels, Belgium</p> <p>10:40 - Nick Ferenchak*: Commute Mode and Mental Health in Major Metropolitan Areas</p> <p>11:00 - Elizabeth Crager* and Kristen Crossney: Adaptive Reuse in Philadelphia and the Redevelopment of the Naval Yard</p> <p>11:20 - Thomas Green* and Gina Bloodworth: The Human Geography of Assateague Island, MD</p> <p>11:40-11:50 Questions</p>
12:00-1:15 pm	PGS Annual Luncheon in the Pittsburgh Room
12:30-1:15 pm	Guest speaker Scott Sheridan: "The Geography of Heat Vulnerability"

2013 ANNUAL MEETING OF THE PGS
SUMMARY OF PAPERS AND PRESENTATIONS

Friday, October 25th	
	Harrisburg
8:00-9:10 am * student paper contest entrant	<p style="text-align: center;">Session 2 - Weather and Climate I</p> <p><u>Chair:</u> Chad Kauffman</p> <p>8:00 - Elizabeth Smith* and Rob Cox: Investigating the Role of Two Inch Soil Temperatures in Snowfall</p> <p>8:20 - Michael Allen*: Climate Variability: Changes in Seasons across the U.S.</p> <p>8:40 - Damon Matson* and John Troutman: Effects of temperature and precipitation anomalies in a specific winter/summer on the corresponding summer/winter</p> <p>9:00-9:10 Questions</p>
9:10-10:20 am	<p style="text-align: center;">Session 4 - GIS I</p> <p><u>Chair:</u> John Benhart, Jr.</p> <p>9:10 - Nicole Wagner* and Joy Fritschle: Reconstructing Historical Streams and Wetlands in Philadelphia</p> <p>9:30 - Madeline Schueren* and Matin Katirai: Asthma Rates and Air Quality</p> <p>9:50 - John Benhart Jr. and Thomas Simmons: Spatial Analysis of West Nile Virus Occurrence and Human Risk in Pennsylvania</p> <p>10:20-10:30 Questions</p>
10:20-11:30 am	<p style="text-align: center;">Session 6 - Weather and Climate II</p> <p><u>Chair:</u> Darren Parnell</p> <p>10:20 - Gregory E. Faiers: Extreme 10-Day Precipitation Events by Synoptic Weather Type in Texas</p> <p>10:40 - Darren B. Parnell and Wesley Skeeter: A Climatology of Fog Events in Salisbury, Maryland: 1980 – 2010</p> <p>11:00 - Chad Kauffman: Reconstructing Climate Studies Instructional Resources</p> <p>11:20-11:30 Questions</p>

2013 ANNUAL MEETING OF THE PGS
SUMMARY OF PAPERS AND PRESENTATIONS

Friday, October 25th	
	Lancaster
1:20 - 2:50 pm	<p style="text-align: center;">Session 7 - GIS II</p> <p><u>Chair:</u> Thomas R. Mueller</p> <p>1:20 - Ellen Keating* and Kristen B. Crossney: The Role and Potential of Urban Agriculture</p> <p>1:40 - Timothy Dolney: A Case Study of GIS Vehicle Routing for Sustainable Waste Collection in the City of Altoona, Pennsylvania</p> <p>2:00 - Thomas R. Mueller: GIS Education, the Cloud and Baseball: A Triple Play for STEM?</p> <p>2:20 - Guillaume Turcotte: Villanova University and ESRI Community Maps Program</p> <p>2:40-2:50 Questions</p>
3:00-4:30 pm	<p style="text-align: center;">Session 8 - Geography Education</p> <p><u>Chair:</u> Gary Coutu</p> <p>3:00 - Jacob R. Wolff, Ola Johansson and Ahmad Massasati: Entering the Digital Age: The Archive of the Pennsylvania Geographer Goes Online</p> <p>3:20 - Brent Zaprowski: Advances in E-book technology</p> <p>3:40 - Gary Coutu: Building Sensors in Community Education: Field and GIS Activities</p> <p>4:00 - Lisa M. Stanich: Using Field Trips to Promote Student Success and Keep Them Creatively Engaged</p> <p>4:20-4:30 Questions</p>
6:00-9:00 pm	<p style="text-align: center;">2013 PGS Annual Banquet at the Six Penn Kitchen</p> <p>Guest Speaker is 2013 Distinguished Geographer Award Winner Jay Morgan III: "Reflections on the Geospatial Revolution"</p>

2013 ANNUAL MEETING OF THE PGS
SUMMARY OF PAPERS AND PRESENTATIONS

Friday, October 25th	
	Harrisburg
1:20 - 2:20 pm	<p style="text-align: center;">Special Session S1 - Weather and Climate III Sponsored by the CalU Meteorology Club</p> <p style="text-align: center;">Alan Stewart: An Introduction to the Psychology of Weather and Climate</p> <p style="text-align: center;">Grady Dixon: Weather Effects on Suicide: Can we predict changes in suicide rates?</p>
2:30-3:30 pm	<p style="text-align: center;">Round Table Discussion: Networking and Professional Development for Students</p> <p style="text-align: center;">Facilitators: Jodi Vender, Shannon Grumbly, and Kira Smith</p> <p>This session provides an opportunity for students (and faculty) to share academic and co-curricular experiences that have enhanced their preparation for life "beyond college." Come discuss what you're doing inside and outside the classroom to make yourself marketable for grad school or the "real world," and hear strategies from others. All are welcome!</p>
3:30-4:30 pm	<p style="text-align: center;">Panel Presentation: Career Opportunities for Geographers</p> <p style="text-align: center;">William B. Kory and Gregory E. Faiers</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. Geography major graduates work in the private sector, many are employed in local, state and federal governments, others are engaged in the field of education and others serve as consultants. Members of the panel will briefly discuss their experiences in school and on the job and we welcome the members of the audience to share their school and work experience with us. Everybody attending the session is encouraged to participate.</p>
4:45-5:15 pm	STUDENT AWARDS PRESENTATION
5:30-8:30 pm	<p style="text-align: center;">Student Reception in "The View" - Suite 1824</p> <p>Sponsored by the CalU Meteorology Club, the CalU Department of Earth Sciences and PGS. Come mingle with your fellow geography and earth science majors and talk about the day's events! Free appetizers and a cash bar will be available.</p>

2013 ANNUAL MEETING OF THE PGS
SUMMARY OF PAPERS AND PRESENTATIONS

Saturday, October 26th	
	Lancaster
8:30 - 10:00 am	<p style="text-align: center;">Session 9 - Economic Geography I</p> <p><u>Chair:</u> Donald W. Buckwalter</p> <p>8:30 - Christopher Kubiak: Crop Failure, Migration, and Temperance: The Effects of 1816's "Year Without Summer" on Pennsylvania</p> <p>8:50 - Ellen Keating and Kristen B. Crossney: The Role and Potential of Urban Agriculture</p> <p>9:10 - David Wohlwill: Pennsylvania Railroad Main Line in Pittsburgh: Evolution of a Transportation Corridor</p> <p>9:30 - Ola Johansson and Michael Cornebise: Socio-Economic Change in the Pennsylvania Town Rowhouse Districts, 1970-2010</p> <p>9:50-10:00 Questions</p>
10:15 - 11:45 am	<p style="text-align: center;">Session 10 - Economic Geography II</p> <p><u>Chair:</u> Donald W. Buckwalter</p> <p>10:15 - Elizabeth Crager and Kristen B. Crossney: Adaptive Reuse in Philadelphia and the Redevelopment of the Naval Yard</p> <p>10:35 - Sabina Deitrich: Can Shrinking Cities Reverse Course? Demographic Change and Recent Transitions in Pittsburgh, PA</p> <p>10:55 - Michael R. Glass: Does the middle class have rights to the city? Contingent rights and the struggle to inhabit Stuyvesant Town, New York</p> <p>11:15 - Donald W. Buckwalter: Spatial Mismatch in Recent Literature</p> <p>11:35-11:45 Questions</p>

	Harrisburg
10:00 am-12:00 pm	<p style="text-align: center;">K-12 Teacher's Workshop</p> <p style="text-align: center;">Katie Mercadante, Montour High School</p> <p>Teachers: Think outside the box! Infuse geography and geospatial technology into your classes. Find out how to use geography as a cross-curricular catalyst and still adhere to the new PA Common Core Standards</p>

PAPER ABSTRACTS

Allen, Michael (Kent State University), *Climate Variability: Changes in Seasons across the U.S.*

Climate change science continues to investigate the impacts related to an increasingly warm Earth. Changes in the circumpolar vortex, cyclone tracks, and atmospheric characteristics have been found. However, few studies have examined the impact of climate change on seasonal trends. Instead, studies often utilize an arbitrary monthly designation of season without adequate justification or consideration to spatial or temporal variability. For example, variations of December through February are often used to describe winter in the Northern Hemisphere. However, winter is not necessarily the same between two locations with distinctly different climates. The climate of Miami, a warm, subtropical environment, is significantly different from a more northern, continental location such as Minneapolis. This research considers regional variability in the climate system to investigate long term seasonal changes (1948-2012) across the U.S. Various definitions of season were considered including thresholds of apparent temperature and synoptic-scale map patterns. Although distinct regional differences were found, results indicate significant trends associated with seasonal start dates. Summer and spring both begin earlier while autumn and winter begin later in the year. Changes to seasons may impact maturation of agriculture, human health, and various other bioclimatological processes. The presented research serves as a challenge to the traditional use of seasons in climate science. Additionally, the results draws attention to the need for diverse, regional approaches to addressing climate change issues.

Bandzuh, J.T. (University of Pittsburgh at Johnstown), *Comparative Healthcare Study: Brussels, Belgium*

Healthcare is a hotly debated topic in today's society. Around the world, countries have found ways to provide care for their people in a variety of ways. The United States is lauded for its exceptional healthcare system, despite the concerns the American people face on a regular basis; however, times are changing and the Affordable Care Act will alter the American healthcare system. In March 2013, I traveled to the capital of the European Union to study the Belgian healthcare system. This comparative study proved to be a true learning experience on how to craft healthcare systems. There are, however, barriers and challenges that prevent the United States from implementing a Europe-style system (those barriers are discussed within the paper). Through my research and firsthand experience, I was able to draw conclusions about the Belgian healthcare system (among others in Europe) and compare it to the United States. The paper synthesizes my observations from healthcare facilities, interviews, and classroom discussion.

Benhart, Jr., John and Thomas Simmons (Indiana University of Pennsylvania), *Spatial Analysis of West Nile Virus Occurrence and Human Risk in Pennsylvania*

This paper focuses on spatial analysis of the risk factors associated with human occurrence of West Nile Virus (WNV) in the Commonwealth of Pennsylvania. West Nile Virus, which first was detected in North America in 1999, is an arbovirus which in severe forms can cause encephalitis (inflammation of the brain), meningitis (inflammation of the lining of the spinal cord and brain) and febrile illness (fever onset illness). Humans mainly contract WNV by being bitten by infected mosquitos, which serve as disease vectors after feeding on infected birds. The major risk factor for human contraction of WNV is exposure to particular mosquito species which serve as efficient bridge vectors of the disease. This study utilizes mosquito capture data collected by Pennsylvania Department of Environmental Protection (PADEP), to analyze the distribution of positive WNV "hits" in Pennsylvania, create a spatial risk

surface for human exposure to WNV, and explore causal factors of WNV occurrence such as the presence of “artificial containers” where efficient mosquito bridge vector species commonly breed.

Buckwalter, Donald W. (Indiana University of Pennsylvania), *Spatial Mismatch in Recent Literature*

In 1999, Preston and McLafferty summarized existing literature on the spatial mismatch hypothesis and called for a broader conceptualization. That meant expansion of the research theme to include gender, immigrant status, and income level—in addition to race—as social factors that might be sensitive to discrepancies between residence and job location. This paper investigates the paradigm shift described and advocated by Preston and McLafferty. The method of investigation is selective review of recent scholarly articles, with each representing a persistent theme in the spatial mismatch literature. Casello (2007) uses a logical positivist approach to determine how transit systems might be improved to diminish accessibility gaps between auto-oriented and transit-dependent commuters. Boschmann and Kwan (2010) and Grengs (2010) both develop structuralist arguments pertaining to socio-economic class, but they reach far different conclusions regarding remedies. Kim et al. (2012) continue a long chain of research that analyzes gender specific implications of job accessibility. Manaugh et al. use an elaborate methodology to investigate land use/job accessibility relationships. Their conclusions regarding undesirable trip length and land use patterns resemble humanistic attitudes toward urban form even though their methods are be mathematically intense. Preston and McLafferty’s “broader conceptualization” is now the norm.

Confer, Clarissa (California University of Pennsylvania), *Shifting Concepts of Border: American Indians and the USA*

This paper will take a fresh look at the familiar term borders. Borders can be physical or psychological, fixed or fluid. The US government has long honored the concept of borders by creating and defending them. However, other cultures have a different concept of the rigidity and validity of such limits. American Indians have often been caught in difficult positions because of the US focus on geographic boundaries. Example to support this assertion draw on the experiences of American Indians throughout the United States.

Coutu, Gary (West Chester University), *Building Sensors in Community Education: Field and GIS Activities*

The results and activities of a recent National Science Foundation Grant will be discussed. The grant focused on science and technology education (STEM-based) with groups of at-risk middle and high school populations. The program took place in Southern Chester County, within mushroom growing industry, communities. The participants in this program are mainly the children of Mexican migrant workers. The project worked with students to build environmental sensors, write code to run the sensors, and collect and analyze data.

Crager, Elizabeth (West Chester University) and **Kristen B. Crossney** *Adaptive Reuse in Philadelphia and the Redevelopment of the Naval Yard*

The process of adaptive reuse describes the reclamation of an old building or site for a new, contemporary purpose. This is an important tool for reducing suburban sprawl, brownfields, and abandonment. It serves as a catalyst for urban redevelopment and improves the urban landscape. The surrounding neighborhood characteristics change as the built environment adapts to changes through redevelopment and renewal. This study examines changing demographics of neighborhoods surrounding

five adaptive reuse strategies. These results are considered as part of an evaluation of a large scale adaptive reuse project: the Navy Yard in Philadelphia, Pennsylvania. We analyze demographic, socioeconomic, and housing variables collected in the 2000 and 2010 Census. Results vary between the five adaptive reuse projects, however almost all census tracts show a positive percent change in housing value, and moderate changes in all race categories. Based on the changes observed in the case studies, we expect that there will noticeable positive demographic change to the neighborhoods and census tracts closest to the Navy Yard renewal project.

Deitrick, Sabina (University of Pittsburgh), *Can Shrinking Cities Reverse Course? Demographic Change and Recent Transitions in Pittsburgh, PA*

A set of older, industrial cities in the United States has undergone decades of population loss and come under the description of “shrinking cities.” Such population losses present a challenge in understanding urban restructuring and transition, as well as addressing issues associated with population decline. This presentation examines population change in one shrinking city, Pittsburgh, Pennsylvania, USA, through detailed analysis of population changes in the city, home county, and neighborhoods. Pittsburgh’s industrial restructuring and post-industrial transition are key to understanding why Pittsburgh experienced long term population decline. Recent data suggest a possible retrenchment from its past trends.

Dixon, Grady (Mississippi State University), *Weather Effects on Suicide: Can We Predict Changes in Suicide Rates?*

Annual suicide deaths outnumber the total deaths from homicide and war combined. Suicide is a complex behavioral endpoint, and a simple cause-and-effect model seems highly unlikely, but relationships with weather could yield important insight into the biopsychosocial mechanisms involved in suicide deaths. This study has been designed to test for a relationship between primary weather data (e.g., air temperature) and suicide rates that is consistent enough to offer some predictive abilities. Weekly suicide death totals and anomalies from Toronto, Ontario (1985–2009) and Jackson, Mississippi (1980–2006) are analyzed for relationships with air-mass classifications (Spatial Synoptic Classification) and temperature data. The warmest air-mass types are associated with periods of increased suicide rates. Similarly, for select months (Jan, Jul, Aug, and Sep), anomalously cool weeks show low probabilities of experiencing high-end suicide totals while warmer weeks are less likely to experience low-end suicide totals. This result is consistent for Toronto and Jackson. A Distributed Lag Nonlinear Model is used to confirm the relationships and allow some prediction of periods without high-end or low-end suicide totals. While this finding alone is unlikely to have direct clinical implications, these results are an important step toward clarifying the biopsychosocial mechanisms of suicidal behavior through a more nuanced understanding of the relationship between temperature and suicide.

Dolney, Timothy (Penn State Altoona), *A Case Study of GIS Vehicle Routing for Sustainable Waste Collection in the City of Altoona, Pennsylvania*

The management of solid waste in the City of Altoona, Pennsylvania, USA is unique in that a department responsible for the design and collection of solid waste is non-existent. Further, the city does not contract any particular company for collection. Rather, the city utilizes a freedom to choose system where residents can choose from any one of twenty companies for their solid waste collection. The Intermunicipal Relations Committee (IRC) is the local organization responsible for overseeing and enforcing waste and recycling regulations within the city. The freedom to choose system is highly inefficient. The sheer number of companies operating within the city makes it difficult for the IRC to

enforce regulations as each company's customers are scattered throughout the city. On any particular day, several collection trucks could be driving through the same neighborhood. This results in lengthy collection times and unnecessary miles traveled. This research utilizes the GIS spatial analyst vehicle routing problem (VRP) function to model the current freedom to choose collection system and determine total collection times, miles traveled, and number of trips to the transfer station. Two alternative collection scenarios are proposed and modeled. Results indicate the inefficiencies associated with current collection when compared to two alternate scenarios. A controlled collection scenario reduces miles traveled by 70 percent and collection time by 44 percent. Greater savings of 76 and 50 percent occur with the improved efficiency scenario. Results confirm the wasteful miles traveled and man hours worked, thus demonstrating the need for city officials to implement changes that would bring savings to collection companies, customers, and the environment.

Faiers, Gregory E. (University of Pittsburgh at Johnstown), *Extreme 10-Day Precipitation Events by Synoptic Weather Type in Texas*

Extreme 10 day precipitation events from 14 Texas geographically representative locations have been gathered for the period 1948-2010 (the 63 largest 10 day totals at each site). Daily surface and upper air weather maps were used to classify each event by the type of weather causing the event (8,820 maps total). The types identified were (1) Frontal (cold, warm, occluded, stationary fronts and dry lines), (2) Tropical Disturbance (easterly waves, depressions, tropical storms or hurricanes), (3) Air Mass (no surface or upper air feature associated with the event, or (4) upper level low (no surface features, but an upper level disturbance in the vicinity). Not surprisingly, with ten-day durations, many events were caused by more than one weather type. For example, previous research at Corpus Christi indicated that all 1-day events were caused by a single weather type whereas this research has found that 23 of the 10-day events were caused by two different weather types. It was anticipated that there would be more 10-day events caused by upper level lows than there were extreme 1-day storms caused by these features. This is because these systems tend to persist for days and move slowly as they are cut off from the stronger upper level winds. In most sites, this was found to be the case with the exception primarily being a couple of coastal locations where multiple days of air mass storms resulted in extreme 10 day totals. In general, frontal boundaries were responsible for the greatest number of extreme 10 day totals, but the percentage of storms caused by frontal systems at the 10-day duration is less than the percentage caused by frontal systems at the 1-day duration. This is partially the result of multi-causal events (diluting the frontal totals) and an increase in events at the 10-day duration from upper lows and air mass storms.

Ferenchak, Nick (West Chester University), *Commute Mode and Mental Health in Major Metropolitan Areas*

Over the last decade, research has continually pointed to a connection between travel behavior and mental health. This paper aims to further the applicable body of research by exploring the association between commute mode and mental health. Specifically, the effects of commute modes that require physical activity, such as bicycling, walking, and public transportation, will be focused upon for their supposed positive influence on mental health. Data was drawn from the sixty-eight densest substate regions as defined by the National Survey on Drug Use and Health (NSDUH). Data for the independent variable of commute mode was collected from the American Community Survey. Data for the dependent variable of mental health was broken into four separate metrics and was collected from the NSDUH. Analysis was first performed through a Spearman's rank correlation coefficient, and followed by linear regressions in order to factor in socio-demographic variables of race, income, and educational attainment. Both carpooling and public transportation were found to have a strong and statistically

significant positive association with mental health, while driving alone was found to have a strong and statistically significant negative association. Bicycling and walking were not found to have a significant association. These findings will hopefully aid in the pursuit of improving mental health throughout the population.

Galgano, Francis (Villanova University), *Geography, Geology, and the American Civil War*

In the context of military operations, geography has demonstrated – time and again – that human and natural landscapes have had a compelling and direct influence on battles and military campaigns. Hence, there is an immutable link between geography and warfare. Factors of geography such as weather, climate, topography, and the human landscape have had a decisive influence on the outcomes of military conflicts throughout history. Likewise, the important and timeless geographic concepts of location, time, space, and distance have demonstrated that they are as important as tactics and weapons. The pervasive influence of geography on warfare was clearly influential on the ebb and flow of the campaigns and battles of the American Civil War. This paper examines the disparate geographic realities of the landscapes in the Eastern and Western Theaters of the Civil War and how the scale and tempo of the operations in each theater were a function of those factors.

Glass, Michael (University of Pittsburgh), *Does the Middle Class Have Rights to the City? Contingent Rights and the Struggle to Inhabit Stuyvesant Town, New York*

Stuyvesant Town's apartment blocks were occupied for barely a decade when Henri Lefebvre's influential essay *The Right to the City* was published; from the housing project's inception Stuyvesant Town has been an unlikely site for struggles over inhabitation and social justice. Robert Moses used a Public-Private Partnership to displace residents of the Gashouse District for the initially whites-only affordable housing project. Assisted by local rent stabilization legislation, Stuyvesant Town persisted as an affordable housing option until the early 2000s, when the new owners began converting the properties to market-rate rentals. An unlikely coalition of residents mobilized to block the sale, and by the late 2000s rent controls were reestablished. This case links significant themes regarding social justice and housing including rent stabilization, community activism, and neoliberal marketization. We evaluate the utility of the Right to the City perspective for understanding middle-class struggles for affordable housing. We argue that Lefebvre's Right to the City applies to the Stuyvesant Town context, although the movement to protect affordable housing was led by residents who are not the traditional working-class agents associated with his concept. While remaining sympathetic to recent critiques over the vulgarization of Lefebvre's principles, we argue a focus on spatially contingent rights can transcend both a limited "politics of turf" and empty "rights talk" to create space for broadly empowered and inclusive communities.

Graham, Mary M. (York College), *Preservation Tells a Story: The Civil War Battlefields at Shiloh, Stone's River, and Vicksburg*

The story of a war is usually written by the victors in the conflict. It can also be ascertained via the battlefields that have been preserved and the events of the battles that are remembered. This paper considers what has been preserved at Shiloh, Stone's River, and Vicksburg in the Civil War's Western Theater and how it tells the story of the battles. Is it the victor's story that predominates in the commemoration of the three battles or not?

Green, Thomas (Salisbury University), and **Gina Bloodworth**, *The Human Geography of Assateague Island, MD*

The human geography of Assateague Island on the Atlantic Coast presents one of the most dichotomous and uneven patterns of settlement in our region. How is it that Ocean City, Maryland can exist as the regional tourism mecca while just 250 feet away lies the 27 miles of wilderness at Assateague followed by the small town of Chincoteague? What forces and groups have contributed to this barrier island's growth or conversely the blatant lack of growth? In order to answer this multi-faceted question, a mixed method geographical analysis was employed to study the recreational behavior patterns at each location. This included historical analysis of pertinent sources including novels, archival data and historical documents to set a foundation of past development. A sample survey (n=250) was also employed in order to gain inference into the specific factors regarding patronage including home location, recreational preferences, cross patronage and other attributes. The implications of these surveys shows two distinct sets of patrons with diverse recreational habits, home locations, patronage patterns and implied attitudes regarding the island in its entirety. The conclusions of this survey show a deeply entrenched paradox in the minds of the stakeholders of each location regarding the development and usage of such a physically narrow and unstable strip of land. With such radically different groups of individuals inhabiting, patronizing and developing a limited area of land that is generally unsuitable for permanent construction, what does this hold for the island's future?

Harris, Daniel and **Michael Folkoff** (Salisbury University), *Just How Many Ponds Are There? Small Water Bodies in Wicomico County, Maryland*

Government geodatabases identify more the 1800 ponds or small water bodies (SWB) in just one moderately-sized county on Maryland's coastal plain, Wicomico County. Almost all SWB were anthropomorphic in origin and most relatively small: 85% were < 1 acre with 69% less than < 1/8 acre. Most were storm water retention ponds (39%) or used in agriculture/forestry (20%). Storm water SWB were smaller (89% were < 1 acre) which is consistent with use in residential development which explained their concentration in suburbs surrounding the primate city, Salisbury. Former agriculture SWB near Salisbury were in-filled or transformed to residential storm water retention. Although many agricultural SWB still are diffusely located in rural county areas, the neglect and in-filling of farm ponds also explained the large number of very small SWB of dubious functionality. Even large SWB in the county were only modest in size (thirteen >20 acres) and only 63 were > 5 acres. Most were either 19th century mill ponds or were excavated during post-WWII road building. Larger SWB and some smaller ones frequently serve mainly aesthetic purposes although several freshly excavated large SWB were observed with large-scale agricultural operations suggesting a possible new trend.

Johansson, Ola (University of Pittsburgh at Johnstown) and **Michael Cornebise** (Eastern Illinois University), *Socio-Economic Change in the Pennsylvania Town Rowhouse Districts, 1970-2010*

In 1977, Wilbur Zelinsky published the article *The Pennsylvania Town: An Overdue Geographical Account* where he identified a set of morphological traits in the cities and towns of eastern Pennsylvania, which indicated that their historical process of urbanization was different compared to places elsewhere in the United States. Since the publication of Zelinsky's article in the 1970s, however, many new social, spatial, and economic processes have affected the pattern of urbanization. Some of these trends include disinvestment, gentrification, deindustrialization, and new ethnic settlement patterns. In this paper, we investigate how these processes have affected the historic centers of four Pennsylvania Towns – Lancaster, York, Reading, and Harrisburg. Using historical maps, field observations, and census data on the block group level from 1970 to 2010, we have created two spatial categories – “inner” rowhouse

districts and “outer” rowhouse districts – and conducted a comparative analysis of the four cities based on per capita income, population (total population and ethnicity), and housing (owner occupancy, vacancies, and housing values) in the rowhouse districts. Pockets of prosperity and economic progress exist (e.g., in Lancaster and Harrisburg) while much of the Pennsylvania Town show signs of economic distress (especially in Reading).

Kauffman, Chad (California University of Pennsylvania), *Reconstructing Climate Studies Instructional Resources*

The American Meteorological Society (AMS) is set to undergo a major revision of the textbook used within the “AMS Climate Studies” course. Changes include a substantial shift in focus for the topics presented, relative to traditional climatology textbooks and transition into an eBook. Most notably, the text will shift significantly toward a detailed discussion of the unequivocal climate change that the climate system is currently undergoing. Much of this discussion will draw from the latest IPCC Fifth Assessment Report (AR5) released during the 2013-2014 calendar year. The presenter has become a major contributor in the reconstruction of this AMS text and will relay some of the challenges and motivations in moving to a digital delivery platform. Moreover, some other changes and new materials incorporated into the next revision will be uncovered during the presentation. Some new climate-relevant topics are exclusively germane to geography (e.g., climate-induced ecosystem changes, GIS, etc.). Examples of other AMS-related pedagogical resources will be conveyed during the presentation as well as instructions on how to adopt course materials.

Keating, Ellen (West Chester University) and **Kristen B. Crossney** *The Role and Potential of Urban Agriculture*

This presentation describes the role and potential of urban agriculture, and how it may impact local economies. The feasibility and potential impacts are discussed in terms of large versus small scale farms. Potential benefits such as job creation and improvements in neighborhood socioeconomic characteristics are explored within the context of Philadelphia and the surrounding metropolitan area. In recent years, attention has turned to urban agriculture for improving food security and access to food on a local and global scale. Community gardens in particular have been cited as way to increase local residents’ access to affordable and fresh produce. While the relationship between access to food and community gardens has been explored, the potential impact of urban agriculture on neighborhood characteristics and the local economy is less understood.

Matson, Damon (California University of Pennsylvania) and **John Troutman** *Effects of Temperature and Precipitation Anomalies in a Specific Winter/Summer on the Corresponding Summer/Winter*

In day-to-day conversations on this topic it has been said that there may be a relationship between the temperature/precipitation in a winter/summer and temperature/precipitation in the corresponding summer/winter. There has even been some support in the literature such as *The International Journal of Climatology* (1999) and *The AMS Journal* (2009). This study investigates whether a particular meteorological winter season temperature/precipitation anomaly portend a unique seasonal change in temperature/precipitation amounts in the meteorological summer (and vice versa). From 30 years of temperature and precipitation records that we gathered, the average temperature and precipitation in each season was calculated as was the linear correlation coefficient. All data was then combined and probability was used to find if a certain season (winter/summer) correlated with the following season (summer/winter). To validate these findings, we incorporated ENSO and NAO values as well. After analyzing all of the data gathered, a significant correlation with most of the temperature/precipitation

anomalies during the winters and summers between 1981 and 2013 was not found. Only a slight correlation was found between warm/wet winters and warm/dry summers. Since no significant correlation was found, our research is ongoing.

Mueller, Thomas R. (California University of Pennsylvania), *GIS Education, the Cloud and Baseball: A Triple Play for STEM?*

Once a month or more the media discusses the importance of STEM education, for example, students in the science and math will find more job opportunities than students in other fields. This presentation will address two key issues in the intersection of STEM and GIS education. 1) How do we get the technology into teachers' hands with the battle over software compatibility issues? 2) How do we get students interested in STEM and GIS? The presentation will illustrate these issues utilizing a baseball discussion with ArcGIS On-line. This software addresses the first issue by using the cloud to complete GIS analysis. Therefore it is not tied to Mac or PC and allows students to work on homework at home. Second, baseball is a very popular sport and by integrating it into STEM lessons, students might see the fun in STEM. The presenter became interested in ratios only when his 7th grade teacher used horse racing as an example.

Parnell, Darren B. and Wesley R. Skeeter (Salisbury University), *A Climatology of Fog Events in Salisbury, Maryland: 1980–2010*

This study investigates the characteristics of fog events across Salisbury, Maryland for the period 1980–2010. Hourly surface observations were collected from the National Climatic Data Center to examine the intensity, temporal distribution, frequency and duration of fog events. A fog event was defined as having observed visibilities below one mile for at least three consecutive hours. Events were then grouped into normal and dense fogs based on visibility. Results show that fog frequency peaks during the late summer and fall and is less common during the cooler months of the year. The number of fog events across Salisbury is highly variable from year to year with no obvious trends. Dense fog events are at a maximum during September and October while the duration of fog events is relatively consistent throughout the year. Radiation fogs were found to be the most common type and extreme fog events were primarily due to frontal fog. These findings can be used by transportation officials to understand how the likelihood of hazardous driving conditions due to fog varies throughout the year. This study could also help local school districts better anticipate and prepare for school delays due to fog.

Puican, Brie, Brent Zaprowski and Michael Folkoff (Salisbury University), *A Sedimentological Study of Cores Extracted from an Existing Mill Pond in Wicomico County, MD*

The environmental history of mill ponds has had important implications for the fluvial geomorphology, wetland ecology, and estuarine biology of the Chesapeake Bay region. The goal of this research was to analyze sediment cores from an existing mill pond to determine the stratigraphy by describing and measuring the texture, thickness, color, and facies of the sediment within the cores. A total of four cores were taken from Adkins Mill Pond; two were extracted from the lower part of the pond near the dam and the two cores were taken from the cypress bogs near the head of the pond. The two cores were continuously subsampled for further sedimentological analyses. Overall, the descriptive and lab analyses were consistent with alternating layers of sand and peat observed in the lower pond and peats with limonite layers in the upper pond. The sedimentological evidence shows that this pond has gone through numerous periods of activity and inactivity. The upstream part of the pond reacted slowly and conservatively to the pond water level changes as compared to the downstream part of the pond which had several minor fluctuations in water levels.

Schueren, Madeline and Matin Katirai (West Chester University), *Asthma Rates and Air Quality*

The purpose of this research is to identify a correlation between asthma rates in young children and roads with high density traffic in areas with the poorest air quality. Asthma, the most common chronic disease in children, is a chronic inflammatory condition where the airway to the lungs narrows, causing breathing issues. The first part of the research involved identifying spatial clusters of asthma data over a period of four years, using the GIS and asthma data at the county level in Pennsylvania. The second part of the project was to determine the most polluted counties in PA by using air quality grades of each county and identifying the highest traffic volume roads, comparing this data with the asthma findings to see if there is a correlation. By identifying the spatial clusters of asthma and the most polluted areas in PA, we can see a positive correlation between the two. The closer one resides to a major road, city, or county with poor air quality, the more likely they are to have/develop asthma or respiratory problems. It would be within our best interest to tighten up pollution control, to lessen the rate of asthma in our children.

Smith, Elizabeth (California University of Pennsylvania) and **Rob Cox** (NOAA/NWS Cheyenne, Wyoming), *Investigating the Role of Two Inch Soil Temperatures in Snowfall*

This project is set out to investigate the impact two-inch soil temperatures have on snowfall accumulation as well as the impact snowfall rates and accumulation have on soil temperatures. In operational forecasting, there is an assumption that soil temperatures play a vital role in whether or not significant snowfall accumulations are possible. Although this supposed relationship has been used by many forecasters in their decision process, research to support this assumption is sparse. After a thorough literature search, only three cases of this soil temperature-snowfall relationship were found, none of which were peer-reviewed. The project specifically examined a main question with two supporting questions. The main question: what role do soil temperatures play in snowfall? The supporting questions: is there a threshold value of two-inch soil temperature at which accumulation is possible? What role does snowfall rate play in this relationship? This project utilizes direct observations and examination of individual cases of snowfall to answer these questions. The results of this project show the relationship between soil temperature and snowfall and how these results can impact forecaster ability to predict accumulations. This project was carried out at the National Weather Service Weather Forecast Office in Cheyenne, Wyoming.

Stanich, Lisa (Lakeland Community College), *Using Field Trips to Promote Student Success and Keep Them Creatively Engaged*

During the past academic year, geography and geospatial technology courses went on five field studies that tied in with the objectives of their courses. Field trips and the time spent together on them are another pathway for student success. The presentation will show some of the challenges in making the arrangements for such activities, present some of the best techniques for student learning on the field trip based on our experiences, and some of the long standing benefits for taking the students outside of the classroom. These activities are what students remember from the courses they take and go a long way in promoting student success. These experiences allow instructors to engage with their students in a different setting and get to know them on another level. When they know you have invested your time in them, they will invest their time in your course and go on to complete successfully. The presentation will include pictures and descriptions of the field trips taken and will allow time for the group to brainstorm on ways they can implement these techniques in their courses.

Stewart, Alan (University of Georgia), *An Introduction to the Psychology of Weather and Climate*

The psychology of weather and climate spans the domains of human geography and environmental psychology. Although research into the psychological and behavioral effects of ambient weather date to 1899, several forces have come together to make the conditions optimal for the emergence of this multidisciplinary area at current time: global climate change, greater numbers of people in the way of extreme weather, and the need for various publics to make better use of available weather data and forecast information. In this presentation the author, both a psychologist and atmospheric scientist details several of the empirical research projects he has undertaken to examine peoples' psychological and behavioral relationships with the atmosphere. These topics include those with a basic research focus such as weather salience, weather-emotion reactions, and linguistic dimensions of climate perception. Applied projects include research assessing fear of weather, weather-related risk-taking, and a five-year program to teach teachers about weather science and safety so that they can convey this knowledge to their students and the students' families.

Turcotte, Guillaume (Villanova University), *Villanova University & ESRI Community Maps Program*

Villanova University's Department of Geography & the Environment launched ArcGIS Server in 2010. As a component of the new geo-enabled web GIS, the Villanova Community Map Project aspires to enhance the geographically enabled technological capabilities of Villanova University's community. The deployment of an enterprise server supported Geographic Information System (GIS) infrastructure supports the development of numerous geospatial applications relevant to Villanova University, including: a web based interactive campus mapping application; a mobile mapping application for smart phones derived from the interactive campus mapping application; and research support mapping in a web based mapping service. The campus map was created with ESRI's Community Maps standards and will be submitted upon completion to be merged with ESRI's World Topographic Map. This paper underlines the processes for the deployment of Villanova Community Map and the editing process involved.

Wagner, Nicole and Joy Fritschle (West Chester University), *Reconstructing Historical Streams and Wetlands in Philadelphia*

The hydrologic landscape of Philadelphia underwent significant changes in the nineteenth century. Wetlands and stream channels were often buried or extensively modified for use in industry. At one point the city was crisscrossed by at least forty streams, along with the two major rivers, the Delaware and Schuylkill. Today, only twenty-two streams remain. As part of the city's new sustainability plan, the city seeks to reduce stormwater runoff in a number of ways, including the creation of new tidal and non-tidal wetlands, the restoration of waterways, and the creation of new public green spaces and corridors. Successful restoration of an ecosystem requires knowledge of "reference conditions;" in other words, what environmental conditions have worked in the past at this site or are currently working at a site similar to this site? To this end, this on-going study seeks to reconstruct the nineteenth century streams and wetlands in Philadelphia. One source of evidence useful in this task lies with herbarium data from the Academy of Natural Sciences in Philadelphia. In this paper we will discuss our methodology for georeferencing herbarium records of wetland-obligate plants using Google Earth™, maximum extent calculators to create buffers of uncertainty, and historical archives and maps to pinpoint specific spots that were once wetlands. Georeferencing the historical wetlands with present-day imagery will provide planners, city managers, and interested citizens a better understanding of what sites might be well suited to wetland reconstruction.

Welch, Joan (West Chester University), *Prescribed Fire and Woodland Canopy Tree Seedling Response*

The research site, Hibernia County Park in southeastern Pennsylvania, has white, chestnut, black and red oak trees in a red maple-tulip poplar forest. In February 2005 fifteen forest plots were randomly located within in a 14.5 acre woodland. A prescribed fire management plan was implemented to control invasive species, promote restoration of native habitat, and initiate oak regeneration with the first prescribed fire in April of 2006. A baseline vegetation survey was conducted in May-June 2005 with post-burn assessments carried out in May-June 2006, 2007, 2008, 2010 and 2011. The goal of this research is evaluate tree canopy species response to fire through regeneration of seedlings in the woody species transects. I hypothesize that prescribed fire promotes regeneration of native tree species, while it inhibits nonnative tree species. Results show that only two nonnative tree species have been found in the 15 shrub layer transects: *Ailanthus altissima* (tree of heaven), and *Acer platanoides* (Norway maple). There are at least 25 species of native tree seedlings which include *Fraxinus* spp. (ash), *Acer* spp. (maple), *Quercus* spp. (oak), *Carya* spp. (hickory), and *Liriodendron tulipifera* (tulip poplar). Response to prescribed fire varied amongst the native species but has promoted native canopy trees, and inhibited nonnative ones.

Wohlwill, David (Port Authority of Allegheny County), *Pennsylvania Railroad Main Line in Pittsburgh: Evolution of a Transportation Corridor*

In 1854, the Pennsylvania Railroad (PRR) completed its line across Pennsylvania linking Pittsburgh with Harrisburg and Philadelphia. The line became PRR's key freight and passenger route from the east into Pittsburgh. This line played a major role in the development of Pittsburgh and communities to the east. By the 1960s, the PRR had eliminated all Pittsburgh area commuter rail service and had reduced long-distance passenger trains and local freight traffic. Eventually, facilities and operations were consolidated and right-of-way became available for the Martin Luther King, Jr. East Busway, a rapid transit guideway linking downtown Pittsburgh with communities to the east. This study documents an interesting bidirectional dynamic. Changes in corridor land uses (decline of industry) negatively impacted the railroad. The railroad's deterioration limited the desirability of the adjacent communities for residents and investors. The East Busway was a major investment which added new infrastructure, lighting, and landscaping and helped to create the climate for revitalization. This investment, in turn, has generated more ridership for the transit system. The railroad also benefits from the project with upgraded signals. Although local and national technological and economic trends have changed the nature of railroads and their operations in Pittsburgh, the corridor continues to function as an important artery for freight.

Wolff, Jacob R., Ola Johansson, and Ahmad Massasati (University of Pittsburgh at Johnstown), *Entering the Digital Age: The Archive of the Pennsylvania Geographer Goes Online*

Encouraged by the growth of online scholarship archiving, the Pennsylvania Geographical Society has built a web-based archive to house old issues of the journal, dating back to 1963. In addition to the full text of journals, available to all PGS members, titles and abstracts are accessible to all PGS website visitors. Work was done through the summer and fall of 2013 at the University of Pittsburgh at Johnstown Geography Department.

Zaprowski, Brent (Salisbury University), *Advances in E-book Technology*

Digital books continue to revolutionize the textbook industry. In this talk I will discuss my experiences with e-books and some exciting new ways that instructors can provide content to their students via the web.

POSTER ABSTRACTS

Bencloski, Joseph W. (Indiana University of Pennsylvania), *Ocean Surface Temperatures and the Life Cycle of Tropical Cyclones: The Case of Hurricane Isis, August 4-10, 1980*

Over the past several decades satellite imagery has proven to be a valuable tool in tracking and analyzing weather systems especially over the tropical oceans where surface weather data is often difficult to obtain. This descriptive study uses GOES 2 satellite images along with some data, to examine the relationship between ocean surface temperature variations and the changing intensity of tropical cyclones. The satellite images show the life cycle of an Eastern North Pacific hurricane named Isis from its birth, growth in intensity, and decline over a period of seven days. In addition to pressure and temperature readings, the intensity of Isis was inferred using the Dvorak technique of satellite image analysis in which the visible shape of a tropical cyclone is an indicator of its strength.

Benzio, Dominique (University of Pittsburgh), *Geographies of Exclusion: Homeless LGBTQ Youth in Public and Private Space*

The ways that vulnerable minority groups interact with both public and private spaces is a cornerstone of research in social geography. Due to popular media influences, LGBTQ youth are coming out to their families and peers at younger ages, and often face harassment, abuse, and expulsion from their own homes, rendering many of them homeless. Because of this, a disproportionate number (30-40%) of homeless youth identify as members of the LGBTQ population. Additionally, 70% of homeless youth who identify as gay are minorities. Once homeless, these youth are left with three options: to sleep in public spaces, to exchange sex for housing, or to sleep at a youth shelter. In all three of these options, LGBTQ youth encounter further discrimination, ensuring that they face greater risks and poorer outcomes than heterosexual homeless youth. Using case studies, this research project describes the challenges of homeless LGBTQ youth, and explains how public and private spaces can incorporate the needs of this community. Through the lens of social justice, I argue that the intersectional identity of these youth demonstrates that programs and policies designed to help youth and build stronger cities can still be highly exclusive.

Blough, Adam (West Chester University), *Coastal Lighting and Sea Turtles in Jekyll Island, Georgia*

An increasing awareness of the oceans sea turtles has sparked a great deal of research that has influenced new laws. This project examines future local laws and regulations on Jekyll Island, Georgia, using laws that have been previously implemented in other US states. This is a study of the buildings and coastal structures that face the nesting beaches and how they will be impacted by these laws. These buildings would not be in compliance with new regulations and would need to implement special products to limit their impact on the nesting sea turtles. This map can be used to inform the public and building owners of their coastal impact.

Blough, Adam (West Chester University), *Homefront: The Violent War Zone of Chicago, Illinois*

The politicians and mass media have shown no interest in the violence in Chicago, Illinois. Just shy of a war zone, Chicago is the murder capital of the U.S. with more homicides than any city in the nation in 2012. This project uses a series of maps and statistics that examine the gun violence and gang activity in Chicago, exposing the failure of gun control laws and counter gang police in both Chicago and the United States.

Clausen, Eric *Origin of Allegheny, Genesee, and Susquehanna River Drainage Divides*

The Allegheny, Genesee, and Susquehanna drainage basins meet at a triple drainage divide between the larger Saint Lawrence, Mississippi, and Atlantic drainage basins. Numerous low points (through valleys, wind gaps, saddles, etc.) cross drainage divides within and surrounding the Allegheny, Genesee, and Susquehanna drainage basins and provide evidence of large-scale anastomosing channel complexes eroded by immense melt water floods from an unrecognized thick ice sheet, which created an unrecognized deep “hole” in the North American continent (the ice sheet and deep “hole” are not recognized because as presently interpreted Cenozoic geologic histories do not permit an ice sheet created deep “hole”). Examples of anastomosing channel evidence along drainage divides are illustrated and explained. Drainage divides and some north oriented drainage routes formed by multiple and complex capture events as gigantic melt water floods eroded deep valley complexes headward along and across shallower anastomosing flood flow channel complexes. North-oriented drainage basins were also initiated when ice sheet melting opened up deep “hole” space to cause massive flood flow reversals. Ohio and other deep valley headward erosion along the deep “hole’s” southeast margin further altered flood flow routes.

Grumbly, Shannon (Penn State University) and **Eric Tate**, *Mapping Social Vulnerability: A Case Study of Iowa*

Disaster vulnerability is typically assessed in physical and economic terms, with social dimensions largely ignored. However, there has been growing demand among disaster planners and stakeholders to incorporate social vulnerability, which measures the sensitivity of population groups to hazard impacts. The dominant approaches for measuring social vulnerability generalize it across all environmental hazards, but there also is a need for hazard-specific indicators. This research synthesizes the social vulnerability literature to identify which social dimensions are relevant to flood hazards. Socio-demographic indicators representing these dimensions are collected and processed into a social vulnerability index using factor analysis. The index is mapped and compared to the all-hazards index to assess the differences.

Kusniar, Brittany (California University of Pennsylvania), **Thomas A. Green, Jr.**, **Michael J. Fries** and **Matthew R. Kramar** (NOAA/NWS Pittsburgh, Pennsylvania), *Common Meteorological Features of Mid-Atlantic and Ohio Valley Synoptic High Wind Events*

In the hilly terrain of western Pennsylvania, northern West Virginia and western Maryland, high wind events (characterized by wind gusts in excess of 50 knots or sustained wind of 35 knots for at least one hour duration) can have significant impacts on public safety and commerce, thus making their accurate predictability vital. High wind events (HWEs) over a multi-decadal period in the Mid-Atlantic and Ohio Valley regions were collected and stratified by geography and terrain impacts. Composite maps were constructed to highlight common synoptic features of the HWEs studied. It is expected that the results of this analysis will distinguish between elevation-dependent events versus more widespread impact

events. By understanding the important synoptic ingredients of HWEs in the Mid-Atlantic and Ohio Valley regions, it is hoped that these results will offer forecasters an increased awareness of potential events and a heightened confidence in the scope and severity of future occurrences.

Melzer, Jamie (California University of Pennsylvania), **Alicia A. Smith, Rihaan Gangat and Matthew R. Kramar** (NOAA/NWS WFO Pittsburgh, Pennsylvania), *Enhancing Flash Flood Warnings in Flood Prone Areas of the Pittsburgh CWA*

The National Weather Service Forecast Office (NWS WFO) in Pittsburgh, Pennsylvania (PBZ) issues flash flood warnings for the purpose of saving lives and property. Flash flooding kills more people in the United States than any other type of severe weather. The WFO PBZ forecast region is exceptionally prone to flash flooding primarily because of our topography. Due to limitations with radar sampling of flash-flood producing storms, flash flood prediction and detection can be challenging in certain areas. To help counteract the limitations of radar and issue more timely and precise warnings, a survey of past flash flood events was conducted, and a detailed survey was sent to emergency managers within the WFO PBZ Warning Area following similar methods of Hennecke et al. (2007). The information solicited consisted of maps of flood prone areas, the impacts of flooding in those areas, the frequency of flooding and any specific concerns in the areas outlined. This information will be integrated into local flash flood warning operations to better inform warning decisions and to enhance threat areas disseminated to the public in flash flood warnings.

Park, Jonghyun (Hosei University), *The International Urban System between Korea and Japan in Terms of Interfirm Alliances*

The research purpose of this study is to clarify the spatial structure of the international urban system in terms of enterprises alliance based on Korea and Japan during 1990-1995. In this analysis, the data used in this study were obtained from the three major economic newspapers in Japan. The study aims to demonstrate the following two viewpoints: (1) The characteristics of the rank and size distribution of major Korean and Japanese cities; (2) The spatial structure of international urban system between Japan and Korea. The results are summarized as follows: 1. According to the indices by the Murayama model, the overall pattern of development of interfirm alliances suggests that: (1) enterprises based in the world cities (Tokyo, Osaka, and Seoul) play the most important role; (2) the linkages among the other cities are still weak; and (3) the alliances associated with the enterprises based in Tokyo and Seoul has particularly developed. (3) Various factors have brought about concentration of the alliances among the world cities in Korea and Japan, especially, among the big business groups (*Kigyoshudan*) located in Tokyo and Seoul, with their strong networks with subsidiary and affiliated firms.

Rodriguez, Robert and Matin Katirai (West Chester University), *Access to Hospitals in Haiti*

January 12, 2010 marked a day of tragedy for Haiti. An earthquake with a magnitude of 7.0 hit Haiti, devastating the already struggling country. By 24 January, at least 52 aftershocks measuring 4.5 or greater had been recorded. An estimated three million people were affected by the earthquake. This research is centered on the access to critical medical care during an emergency situation. This topic is especially important because it demonstrates how people's lives can be saved with the power of Geographic Information Systems (GIS).

Vender, Jodi (Penn State University), *Advanced Placement Human Geography Enrollment Trends at a Research I University, 2001-2012*

AP Human Geography (APHG) has been among the fast-growing subjects offered by the College Board. This study examines institutional data on students who applied to Penn State and reported APHG scores between 2001 and 2012. Penn State applicants scored well on the APHG exam when compared with national averages. 78% of both applicants and matriculated students received a score of 3 or higher, with the latter earning credit for the university's equivalent course. Among the 625 students who reported APHG scores and matriculated at Penn State during 2001-2012, 18% went on to take at least 1 additional college geography course. So far, 12 of these students have majored in geography and 6 have pursued geography minors. 13% who did not earn APHG credit took 1 or 2 additional geography courses. This preliminary analysis demonstrates how geography programs can examine institutional data to determine enrollment trends and patterns that can be used to target high schools for recruitment and outreach activities. In addition, programs can use data on matriculated students to advertise course offerings of potential interest, particularly general education courses. Geographic alliances can use these data to target schools for teacher professional development opportunities and outreach activities for students.

Wentz, Alyssa (Shippensburg University), *Examining the long-term variability of temperature and precipitation in Shippensburg, PA*

Of the various elements of weather and climate, temperature and precipitation more directly impact human livelihoods and the ecosystems that humans depend on. For example, agricultural activity depends largely on these two important climatic variables. Whereas every crop has a base temperature below which it cannot grow, precipitation provides the moisture needed to satisfy crop demand. Beyond agriculture, temperature controls nearly every other climatic variable, while precipitation is the major input to all hydrologic systems, recharging both surface and ground water sources. Sustained trends in both temperature and precipitation can have significant implications for human systems. Therefore, understanding the long-term variability in these parameters can help both agricultural and water resources planning and management decisions. This study analyzes long-term temperature and precipitation data (1933 – 2012) from the Shippensburg University weather for patterns and trends. Maximum and minimum temperatures are analyzed at the daily, monthly, and annual time scales, while precipitation is examined at the monthly and annual time scales. The Mann-Kendall trend statistic is used for the trend analysis. Following results of preliminary analysis, the data were divided into two periods; 1933-1970 and 1971-2012. Preliminary results indicate that minimum temperatures have been increasing in Shippensburg since 1970.

Evaluation form for the
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ANNUAL MEETING
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1. How would you rate this meeting?	Poor		Neutral		Excellent
	1	2	3	4	5
a. Overall	()	()	()	()	()
b. Site/Location of Meeting	()	()	()	()	()
c. Meeting Program	()	()	()	()	()
d. Hotel Accommodations	()	()	()	()	()
e. Meeting Rooms	()	()	()	()	()
 2. Presentations:	Poor		Neutral		Excellent
	1	2	3	4	5
a. Friday AM	()	()	()	()	()
b. Friday PM	()	()	()	()	()
c. Saturday AM	()	()	()	()	()
d. Maps and Posters	()	()	()	()	()
e. Special Sessions	()	()	()	()	()
f. Special Presentations/panels	()	()	()	()	()
 3. PGS Luncheon	()	()	()	()	()
Luncheon Speaker	()	()	()	()	()
 4. PGS Annual Banquet	()	()	()	()	()
Banquet Speaker	()	()	()	()	()
 5. My expectations of the meeting were:	Unmet		Neutral		Met
	1	2	3	4	5
	()	()	()	()	()

Why?

6. What would make the Annual Meeting more valuable to you?