



Association of American Geographers

**Middle States Division
Annual Meeting
November 2-3, 2012**

**Shippensburg University
Shippensburg, Pennsylvania**

**2012 Middle States Annual Meeting
Anthony F. Ceddia Union Building (CUB)
Shippensburg University**

Organization and Arrangements

Local Arrangements

Paul Marr, *Shippensburg University*

Geography Bowl

Kelly Frothingham, *Buffalo State College*

Student Paper Competition

David Fyfe, *York College of Pennsylvania*

Budget and Planning

Jo Margaret Mano, *SUNY New Paltz*

MSD Website

Grant Saff, *Hofstra University*

Middle States Division Website

<http://www.msaag.org>

Middle States Division Executive Board

President:	Paul Marr, <i>Shippensburg University</i>
Vice President:	Kelly Frothingham, <i>Buffalo State College</i>
Secretary:	David Fyfe, <i>York College of Pennsylvania</i>
Executive Director:	Jo Margaret Mano, <i>SUNY New Paltz</i>
Regional Council:	Grant Saff, <i>Hofstra University</i>
Past Presidents:	John Dobosiewicz, <i>Kean University</i> Amy Richmond Krakowka, <i>USMA West Point</i> Lawrence McGlinn, <i>SUNY New Paltz</i>
Middle States Geographer Editors:	Adam Kalkstein, <i>USMA West Point</i> Paul Marr, <i>Shippensburg University</i>

Sponsored by Shippensburg University Department of Geography-Earth Science and the Shippensburg University chapter of Gamma Theta Upsilon



Restaurants / Hotels

- 1 Mei Lin's Chinese and Sushi (b,c,2)
- 2 Pizza Hut (b,c,1)
- 3 Ship Wreck Pub (b,c,1)
- 4 Subway Sandwich (a,b,c)
- 5 Pizza 'n' Stuff (b,c)
- 6 Maxie's Bar (d,1)
- 7 Knute's Pub (b,c,2)
- 8 Shippensburg Diner (a,b,c)
- 9 **Shipp Place Hotel (a,b,c,1)**
- 10 Orkey's Bar (d,1)

- 11 Pizza Man (b,c)
- 12 Biscotti's (a,b,c,2)
- 13 Before & After Café (a,b,c)
- 14 McDonalds (a,b,c)
- 15 Toll Gate Restaurant (b,c,1)
- 16 Domino's Pizza (b,c)
- 17 Wib's Bar (d,1)
- 18 Burger King (a,b,c)
- 19 Brother's Pizza (b,c)
- 20 Taco Bell / KFC (b,c)

- 21 Wendy's (a,b,c)
- 22 China House (b,c)
- 23 Blimpie's (b,c)
- 24 **Best Western Hotel (a)**

Key:

- | | |
|---|----------------|
| a | Breakfast |
| b | Lunch |
| c | Dinner |
| d | Bar snacks |
| 1 | Serves alcohol |
| 2 | Allows BYO |



SHIPPENSBURG
UNIVERSITY

Campus Map

- Visitor Parking located between Old Main (1) and Horton Hall (2)
- Emergency Phones
- Disability Parking



Numerical Key

- | | | | |
|----------------------------|----------------------------------|---|--|
| 1. Old Main | 15. McCune Hall | 28. Anthony F. Caddia Union Building (CUB) | 39. Cora I. Grove Spiritual Center |
| 2. Horton Hall | 16. Kieffer Hall | 29. Mowrey Hall | 40. Warehouse |
| 3. Gilbert Hall | 17. Lackhove Hall | 30. Heiges Field House | 41. Stone Ridge Commons |
| 4. Stewart Hall | 18. Wright Hall | 31. Seth Grove Stadium | 42. Little Red Schoolhouse |
| 5. Henderson Gymnasium | 19. Naugle Hall | 32. Faculty Office Building | 43. Davis House |
| 6. Shearer Hall | 20. McLean Hall | 33. Seavers Complex | 44. Robb Sports Complex |
| 7. Rowland Hall | 21. Reiser Dining Hall | 34. Etter Health Center | 45. Eckels Field |
| 8. Memorial Auditorium | 22. Ezra Lehman Memorial Library | 35. Mathematics and Computing Technologies Center | 46. Reed Annex |
| 9. Shippen Hall | 23. Martin House | 36. John L. Grove Hall | 47. Student Recreation Complex |
| 10. Huber Art Center | 24. Reisinger House | 37. Richard D. Rife Alumni House | 48. H. Ric Luhrs Performing Arts Center |
| 11. Huber Annex | 25. Steam Plant | 38. Grace B. Luhrs University | 49. Conference Center/Shippensburg University Foundation |
| 12. Kriner Dining Hall | 26. Franklin Science Center | 50. ShipRec | |
| 13. Reed Operations Center | 27. Dauphin Humanities Center | | |
| 14. Harley Hall | | | |

Ceddia Union Building (CUB) Second Floor



Cumberland Drive

The Meeting at a Glance

Friday, November 2nd

11:30am – 1:00pm	Executive Board Meeting
12:00pm –	Registration, 2 nd Floor Entrance, Ceddia Union Building (CUB) (<i>See map on pg. 3</i>)
1:15pm – 1:50pm	Keynote Speaker : Dr. Eric Sheppard, AAG President, Orndorff Theater
2:00pm – 3:20pm	Session 1
3:20pm – 4:00pm	Break, Raider Lounge 5
4:00pm – 5:40pm	Session 2
6:00pm – 7:30pm	Dinner: Tuscarora Room, Reisner Hall (<i>See #21 on map pg. 2</i>)
7:30pm – 9:00pm	Geography Bowl: Tuscarora Room, Reisner Hall (<i>See #21 on map pg. 2</i>)
9:30pm – 11:30pm	After-burn Social Gathering: Ship Wreck Tavern (<i>See #3 on map pg. 1</i>)

Saturday, November 3rd

8:20am –	Registration
8:20am – 9:40am	Session 3
9:20am – 10:20am	Poster Session and Break, Raider Lounge 5
10:20am – 12:00pm	Session 4
12:15pm	Awards Luncheon: Tuscarora Room, Reisner Hall (<i>See #21 on map pg. 2</i>)

Friday November 2nd

Keynote Speaker

Orndorff Theater

1:15-1:50pm

Dr. Eric Sheppard

President, Association of American Geographers

Eco-state restructuring with Chinese characteristics--A study of eco-city development in China.

Dr. Sheppard is the Regents Professor of Geography, and co-director of the Interdisciplinary Center for the Study of Global Change at the University of Minnesota. He is the current president of the Association of American Geographers and has served the organization in a variety of capacities since 1980. He has been the editor of a variety of journals, including Human Geography, Economic Geography, and Geographical Analysis. He has been the recipient of numerous fellowships and awards, including the AAG's Distinguished Scholarship Award. He has authored or co-authored over 150 refereed articles and book chapters, and co-authored or edited ten books. His research interests include geographical political economy, the uneven geographies of globalization, urban politics and policy, environmental justice, and social movements.

Friday November 2nd

Session 1 2:00pm – 3:20pm

Session 1A: HISTORICAL GEOGRAPHY I

Room: Anchor Meeting Room 1 (CUB 103)

Chair: Darrell Norris, SUNY – Geneseo

2:00-2:20 Robert Briwa, SUNY – Geneseo

In the Age of Cannon and Musket: Sackets Harbor's Military Geography During the War of 1812

2:20-2:40 Alison Feeney and Brandon Snyder, Shippensburg University

Spring Houses of Montgomery Township, Pennsylvania: Historical, Locational, and Architectural Patterns of an Early Settlement Cultural Artifact

2:40-3:00 Bridget Kelly, SUNY – Geneseo

Legacies of Colonialism: Retrospect and Prospect in Namibia's Ghost Town Mining Landscape

3:00-3:20 Darrell Norris, SUNY – Geneseo

From Innovation to Impasse: The Geography of the Naval Arms Race, 1906-1916s

Session 1B: TRANSPORTATION ISSUES

Room: Anchor Meeting Room 2 (CUB 104)

Chair: Jo Margaret Mano, SUNY – New Paltz

2:00-2:20 Gina Butrico, Kent State University

Developing a Bike Sharing Program in a University Town: What Could Work

2:20-2:40 Angela Ficco, Temple University

Does Septa Regional Rail and Subway Provide Walkable Accessibility to Specific Demographic Groups?

2:40-3:00 Brandon Duxbury, Shippensburg University

Transportation Policy Change in Olympic Host Cities: A Case Study of Vancouver's Transportation System in Preparation for the 2010 Winter Olympics

Friday November 2nd

Session 1C: FORESTS AND FIRES

Room: Anchor Meeting Room 3 (CUB 105)

Chair: Gregory Pope, Montclair State University

2:00-2:20 James Kernan, SUNY – Geneseo

*Battling the Beetle: The Emerald Ash Borer (*Agrilus alanipenis*) Invasion in Western New York*

2:20-2:40 Diana McGrath and Brian Wolff, SUNY – Geneseo

An Analysis of Plant Community Structure and Growth After a Prescribed Burn Event in Rush Oak Openings, New York

2:40-3:00 Joan M. Welch, West Chester University

Fire in the Woods: Invasive Plants Six Years Later

3:00-3:20 Gregory A. Pope, Montclair State University

A Reassessment of Soil Chemistry and Pedogenesis Following Intense Forest Fires

Session 1D: MAPPING PROCESSES AND PHENOMENON

Room: Anchor Meeting Room 4 (CUB 119)

Chair: Denyse Lemaire, Rowan University

2:00-2:20 Andrew Mowrer, SUNY – Geneseo

The Geography of Bigfoot Sightings

2:20-2:40 Dorothy Ives-Dewey, West Chester University

Spatial Patterns of Road Mortality: Using GIS to Assess Turtle Barrier Conservation Strategies

2:40-3:00 Marija Skoog, West Chester University

Ingredients for Success: The Correlation between Demographics and Craft Brewing in the United States

3:00-3:20 Denyse Lemaire, Rowan University

Wine Production and Development near Cape Town, South Africa

3:20pm – 4:00pm

BREAK – Raider Lounge 5

Friday November 2nd

Session 2 4:00pm – 5:40pm

Session 2A: MAPS AND MAPPING

Room: Anchor Meeting Room 1 (CUB 103)

Chair: Charles Geiger, Millersville University

4:00-4:20 Douglas Batson, Department of Defense
Foreign Geographic Names for U.S. Defense, Diplomacy, and Development

4:20-4:40 Richard A. Russo, Frostburg State University
Mapping the Maintenance of Pennsylvania German: It's All Verhoodled!

4:40-5:00 Raechel Bianchetti, Pennsylvania State University
The Effect of Symbol Abstraction on Map Reader Conception

5:00-5:20 Tobias Scott-Killian, SUNY – Geneseo
Hutterite Home-Range: Spatial Analysis of the Schmiedeleut Sect on the North American Plains

5:20-5:40 Charles Geiger, Millersville University
Programming Needs for an Interactive On-line Map

Session 2B: HISTORICAL GEOGRAPHY II

Room: Anchor Meeting Room 2 (CUB 104)

Chair: Wayne Brew, Montgomery County Community College

4:00-4:20 Jaime McKay, University at Albany
A Study in Contradictions: The Inclusive, yet Exclusive, Nature of the Albany Rural Cemetery, Present through Fitzgerald's guide

4:20-4:40 Nicholas Strayer, York College of Pennsylvania
The Role of Fallow Land in the Advent of the Dust Bowl

4:40-5:00 Grace Trompeter, SUNY – Geneseo
New York's Craig Colony for Epileptics: Tracing the Deepest Roots of Deinstitutionalization

5:00-5:20 Wayne Brew, Montgomery County Community College
The Hole in the Map: Letterkenny Army Depot, Historic Preservation, and Base Realignment and Closure (BRAC)

Friday November 2nd

Session 2C: TOURISTS AND TOURISM

Room: Anchor Meeting Room 3 (CUB 105)

Chair: John S. Pipkin, University at Albany

4:00-4:20 Melanie Martha, Hofstra University

Tourism and the Galapagos Islands: Examining the Relationship Between Ecotourism and the Local Population

4:20-4:40 James Wiley, Hofstra University

Can Linguistic Tourism Contribute to Development? The case of Guatemala's Western Highlands

4:40-5:00 Tara Keir, SUNY – Geneseo

Hunting Hunters: U.S. Origins for Alaska Big Game

5:00-5:20 John S. Pipkin, University at Albany

Misbehaving Landscapes, Performativity, and Henry Thoreau as Tourist in Quebec

Session 2D: WEATHER AND WATER

Room: Anchor Meeting Room 4 (CUB 119)

Chair: Tim Hawkins, Shippensburg University

4:00-4:20 Jase Bernhardt, Pennsylvania State University

Determining Weather and Climate Patterns from an Historical Diary

4:20-4:40 Calen Daughtery, West Chester University

Modeling the Relationship Between Daily Temperature Range and Urban Land Cover: A Geographically Weighted Regression Approach

4:40-5:00 Jessica Kelly, Millersville University

The Politics of Stormwater Management in Lancaster, PA

5:00 – 5:20 Tim Hawkins, Shippensburg University

Assessing the Impact of Climate Change on Streamflow at Multiple Scales for the Chesapeake Bay Watershed

Friday November 2nd

6:00pm

**Dinner – Tuscarora Dining Room
Reisner Dining Hall**

7:30pm – 9:00pm

**Geography Bowl
Reisner Dining Hall**

9:30 – 11:30

AFTER-BURN Social Gathering

ShipWreck Tavern (See #3 on map pg. 3)

Sponsored by the Shippensburg University Department of Geography-Earth Science

The After-burn social gathering is an opportunity for all conference participants (faculty, students, and others) to meet and socialize outside of the conference setting. Hors d'oeuvres will be provided. Cash bar.

Saturday November 3rd

Session 3 8:20am – 9:40am

Session 3A: SOCIETAL ISSUES

Room: Anchor Meeting Room 1 (CUB 103)

Chair: Lawrence McGlinn

8:20-8:40 Marissa Bell, SUNY – Buffalo

Croatia's Neoliberal Trajectory: The Applicability of Variegated Neoliberalism in the Croatian Postsocialist Context

8:40-9:00 Kari Jensen, Hofstra University

Discourses of Skin Color Among Bangladeshi People: An Analysis of Social Dimensions of Physical Appearance

9:00-9:20 Sarah Stinard-Kiel, Rutgers University

Radical Childcare Collectives: Transforming Space, Transforming Movements

9:20-9:40 Lawrence McGlinn, SUNY – New Paltz

Epigenetics, Environment and Health: Working Across Boundaries

Session 3B: MARKETS AND MEDIA

Room: Anchor Meeting Room 2 (CUB 104)

Chair: Mark Blumler, SUNY – Binghamton

8:20-8:40 Ekaterina Bezborodko, Rutgers University

U.S. Blood Banks 1950-1980: Navigating the Market and Gift Economy

8:40-9:00 Ian Dunham, Temple University

Proximate Geographical Questions Related to the Interpretation and Implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010

9:00-9:20 Cadey Korson, Kent State University

Media Portrayals of United Nations Peacekeeping Operations in Haiti and Côte d'Ivoire

9:20-9:40 Mark Blumler, SUNY-Binghamton

Ethnicity of the Super-Rich: the Forbes 400 List

Session 3C: URBAN PROCESSES

Room: Anchor Meeting Room 3 (CUB 105)

Chair: William Kory, University of Pittsburgh at Johnstown

8:20-8:40 Shawn Dacey, SUNY – Oneonta

The Urban Character of Pyongyang: A Distinct City for a Distinct Country

8:40-9:00 Roy ter Steeg and Joost Sonsma, SUNY – Geneseo

In Search of the Creative Class and its Urban Milieux: An Appraisal of Second Tier Cities and their Prospects

9:00-9:20 Caryn Sobel, SUNY – New Paltz

Community Preservation Planning in Warwick, New York

9:20-9:40 William Kory, University of Pittsburgh at Johnstown

Johnstown, Pennsylvania: Consolidation Issue Revisited

Session 3D: WATER RESOURCES

Room: Anchor Meeting Room 4 (CUB 119)

Chair: Luc Claessens, University of Delaware

8:20-8:40 Asia Dowtin, University of Delaware

Securing Clean Drinking Water for Cities, Using Urban Greening and Headwaters Conservation: A Wilmington Delaware Case Study

8:40-9:00 Rachel Will, Kent State University

Developing Sustainable Water Management in Peru: Incorporating Traditional Methods into National Water Management Reform

9:00-9:20 Luc Claessens, University of Delaware

The Role of Spatially Variable Hydro-ecology in Watershed Nitrogen Removal

Saturday November 3rd

POSTER SESSION AND BREAK (Raider Lounge 5)

9:20am – 10:20am

Adam Paul Blough, University of Pittsburgh Johnstown

Impact of Coastal Lighting on Nesting Sea Turtles

Department of Geography, SUNY – Geneseo

Building Alumni Outreach with a Facebook Page: The Geneseo Experience

Brianna N Hensel, Millersville University

Green Infrastructure in Lancaster, PA

Megan Kelsall, Shippensburg University

Analyzing Nutrient Load and Stream Discharge Time Series of Three Major Rivers Draining into the Chesapeake Bay

Richard Kaiser and Thomas Feeney, Shippensburg University

Sustained Baseflow Discharge at a Conduit-Flow Carbonate Spring

Wendy A. Mitteager and Shawn Dacey, SUNY – Oneonta

Name that State: Introductory Geography Students' Performance on Map Quizzes

Marius Paulikas, Kent State University

Employing Geocoded Survey Data from the Joplin, MO Tornado Event to Project Future Potential Tornado Wind Damage Patterns and Fatality Probabilities

Jennifer Ruper, Kent State University

The Effect of Climate Change on Natural Disasters: A College Student Perspective

Session 4

10:20am – 12:00pm

Session 4A: APPLIED GIS

Room: Anchor Meeting Room 1 (CUB 103)

Chair: Scott Drzyzga, Shippensburg University

10:20-10:40 Scott Drzyzga, Shippensburg University

The Shippensburg University Address Referencing System Project: Part I

10:40-11:00 Samuel Finn, Will Davis, and Scott Drzyzga, Shippensburg University

The Shippensburg University Address Referencing System Project: Part II

11:00-11:20 Morteza Karimzadeh, Pennsylvania State University

Interoperability in the Geographic World: Past, Present and the Future!

Saturday November 3rd

11:20-11:40 Tao Tang, SUNY – Buffalo

Three Dimensional Geographic Information Service for Local Economic Activities – a Case of Applied Research of LiDAR

11:40-12:00 Christopher Hewes, University of Massachusetts - Amherst

Historical 3D Modeling of Erosion in Stony Clove Creek, NY For Sediment Volume Analysis Using GIS

Session 4B: WATER RESOURCES II

Room: Anchor Meeting Room 2 (CUB 104)

Chair: Kelly Frothingham, Buffalo State College

10:20-10:40 Francis A. Galgano, Villanova University

Water and Conflict: The Evolving Environmental Security Landscape

10:40-11:00 Aryanne Ferguson, Joy Fritschle, and Kristen Crossney, West Chester University

Evaluating the Effectiveness of the National Wild and Scenic Rivers Act

11:00-11:20 Michael Commons, Syracuse University

Spatial Patterns of Riparian Vegetation throughout the Stream Network in the South Fork of the Trinity River Watershed, northern California

11:20-11:40 Kelly Frothingham, Buffalo State College

Evaluation of the Stream Visual Assessment Protocol (SVAP) as a Tool to Monitor Stream Corridor Conditions Over Time

Session 4C: LAND USE CHANGE

Room: Anchor Meeting Room 3 (CUB 105)

Chair: Claire Jantz, Shippensburg University

10:20-10:40 Joseph Guttman, University of Tennessee

Saving the Farm through Innovation: A Look at the Adams County and Cumberland Valley Fruit Industry

10:40-11:00 Trent Otis and Claire Jantz, Shippensburg University

Evaluating SLEUTH Model Accuracy at Different Geographic Scales Around Two National Parks

11:00-11:20 Russell Weaver and Jason Knight, SUNY – Buffalo

Political Competition in the Model of Land Use and Society: A Case Study of the Buffalo, NY Outer Harbor Parkway Project

11:20-11:40 Hannah Lash, Shippensburg University

Georeferencing, Digitizing and Hot Linking

Saturday November 3rd

11:40-12:00 Luke Hershey, Shippensburg University

Combustible Gas Concentrations in Soil at Natural Gas Extraction Sites in North Central Pennsylvania: Before and After Drilling

Session 4D: MAPPING HERE AND ABROAD

Room: Anchor Meeting Room 4 (CUB 119)

Chair: Cynthia Brewer, Pennsylvania State University

10:20-10:40 Rachel Passmore, Pennsylvania State University

Looking at Japanese Residential Food Access Using U.S. Food Desert Criteria

10:40-11:00 Shannon Grumbly, Yiting Ju, and Shang Liu, Pennsylvania State University

Traveling Around the World to Study GIS and Mapping

11:00-11:20 Cynthia Brewer and Paulo Raposo, Pennsylvania State University

Multiscale Design for 'The National Map' of the United States

12:15pm

Awards Luncheon

Tuscarora Dining Room

Reisner Dining Hall

Student Paper Competition: David Fyfe
Geography Bowl Winners: Kelly Frothingham

FIELD TRIP: GETTYSBURG BATTLEFIELD

Departing SU at 1:30. Reservations required, please check with Dr. Claire Jantz (cajant@ship.edu) to see if space is available. Fee is \$8.00.

Paper Abstracts

Douglas Batson, Department of Defense

Foreign Geographic Names for U.S. Defense, Diplomacy, and Development

After 13 months in Iraq, soldiers of A Company, 1/6 Infantry, knew the dangers of the “Hajji Beyli” neighborhood all too well. Oddly, two years later, after repeated tips from informants that a violent incident would occur there, the location of “Hajji Beyli” remained a mystery to senior intelligence and operations officers. This paper shows how place name institutional knowledge from extended humanitarian, peacebuilding or combat missions might be retained. The National Geospatial-Intelligence Agency (NGA) publishes weekly updates to its foreign toponymic database of 8.5 million geographic names for 5.5 million features. The GEOnet Names Server (GNS) at <http://earth-info.nga.mil/gns/html/> already receives over 17 million visits annually. Even so, the GNS data warehouse could become more valuable, indeed a treasure trove of human geography information, if individuals could submit comments, historical insights, audio files with pronunciation, and ground photos of named geographic features. The session includes the history of the United States Board on Geographic Names from its founding in 1890 to an ever expanding, and now digitally searchable gazetteer of foreign place names; and efforts underway to enable customer interface.

Keywords: toponomy, place names, gazetteer

Marissa Bell, SUNY – Buffalo

Croatia's Neoliberal Trajectory: The Applicability of Variegated Neoliberalism in the Croatian Postsocialist Context

There has been a great deal of work that has covered the concepts associated with neoliberalism, authors have attempted to conceptualize constructions of neoliberalism (Peck, 2004), and the operations of neoliberalism in developed countries (USA, UK), developing countries (BRIC, SE Asia; Amsden, 1990; Ong, 1991) and less developed nations (Ferguson & Gupta, 2002). Further works have been written on the significance of capitalist changes in the postsocialist countries after the collapse of socialism in 1989, including the ways in which state socialism has created a distinctive space for neoliberal reform (Pickles, 2010; Smith and Timar, 2010). I take these concepts further to investigate the ways in which the rise of neoliberalism has been characterized and shaped by the existing social setting in postsocialist Croatia, a country that has recently undergone serious social, economic and political transformation following the disintegration of the Federal Socialist Republic of Yugoslavia. Associated and integrated with this transformation has arguably been a rise of what could be characterized as neoliberal reform: marketization, market-oriented privatization and deregulation (or reregulation). Simultaneous to this process of postsocialist transformation, there has been an ongoing preparation for European Union (EU) accession. In this paper, using a loose theoretical framework of variegated neoliberalism (Peck, 2004), I will attempt to conceptualize the applicability of neoliberalism to a postsocialist context, focusing on the case study of Croatia as presented by existing literature and empirical studies, with an emphasis on evaluating success of the application of neoliberalism, in the form of variegated process.

Keywords: neoliberalism, postsocialism, Croatia

Paper Abstracts

Jase Bernhardt, Pennsylvania State University

Determining Weather and Climate Patterns from an Historical Diary

Prior to the 20th century, there was a dearth of official local weather and climate observations for much of the United States outside of major cities. Useful information can be gleaned, however, from primary accounts, such as historical diaries. Herman Smith kept a detailed record of daily life, including weather characteristics such as temperature, precipitation, and wind direction, for his farm near Covert in west-central New York during the year 1884. Although these were not numeric data, the lexicon used to describe relative heat and cold allow Smith's observations to be analyzed to determine the typical weather experienced during that year, especially the factors affecting the growing season, as well as significant storm events. The impact that the year-round climate had on Smith's farm and travel habits, is discussed, and compared to more recent climate information.

Keywords: climatology, historical geography, human- environment interaction

Ekaterina Bezborodko, Rutgers University

U.S. Blood Banks 1950-1980: Navigating the Market and Gift Economy

This paper will examine U.S. Senate hearings and policy documents from the 1960's and 1970's to help answer the question: How do non-profit blood banks navigate the market economy of medical care while providing human blood products that are defined as gifts rather than commodities? The current system of human blood provision in the U.S. relies mainly on donated whole blood, but in the 1950's and 1960's, commercial blood banks that paid people to give blood were growing in number. A series of actions by the Federal Trade Commission and the U.S. Senate to mediate conflicts between commercial and non-profit community blood banks resulted in very public debates on the disputed status of blood as a gift or as a commodity. Using Michel Callon's ideas of framing and overflowing as market-making activities, I argue that de-commodification of blood was a necessary and logical outcome of competing attempts to frame exchanges in blood at the time. This outcome ushered in the current system of human blood provision in the U.S. This work is part of a broader project to examine how contemporary blood bank staff navigate the gift and market economies of blood and medical care.

Keywords: blood banks, commodification, Callon, gift economy

Raechel Bianchetti, Pennsylvania State University

The Effect of Symbol Abstraction on Map Reader Conception

Map symbols are often described using terms such as pictorial and geometric. These terms describe the symbol's relationship to the physical features that they represent. In a recent free classification study conducted to examine map reader understanding of emergency management symbols from the United States (ANSI) and Canada (EMS), it was found that participants grouping both sets of symbols consistently grouped together weather symbols despite the differences in the level of graphical abstraction. The work presented here investigates participant descriptions of these two groups of weather symbols in an effort to understand what role graphical abstraction played in participants' grouping strategies. Understanding the reasoning participant's used to group these weather symbols can help identify what features map symbol designers should be using to show that groups of map symbols are related to one another, making it easier for map readers to quickly assess the map content.

Paper Abstracts

This is especially important in the emergency management context where situation awareness must be achieved quickly in order to adequately respond to dynamic disaster events.

Keywords: map symbols, design, cognitive

Mark A. Blumler, SUNY-Binghamton

Ethnicity of the Super-Rich: the Forbes 400 List

Forbes magazine and associates have published numerous analyses of characteristics of the American super-rich, based on the Forbes 400 lists. But they seem never to have analyzed ethnicity, other than to report (and overstate) the diversified origins of those immigrants who have become super-rich. Here I present preliminary results of my analysis of Forbes 400 ethnicity. Forbes has collected and reported good information on the nationality of many 400 list members, but very little information on religion. Hence, it is difficult to identify all Jews, and to distinguish Anglo-Saxon Catholics from WASPs. Despite these and other sources of uncertainty, some patterns are clear: 1) The proportion of Jews on the 400 lists is an order of magnitude greater than their proportion in the US population. 2) Much of this spectacular success was already achieved by 1982, the year of the first 400 list. 3) No other minority is significantly over-represented, though several groups do appear to be gaining in importance. 4) WASPs are only slightly over-represented on the 400 lists vs. their proportion in the population. Finally, I discuss the influences of geographical locations of opportunities, and of differences in ethnic “styles” of money-making, as well as some implications for future ethnic power and politics.

Keywords: Forbes magazine, wealth, ethnicity

Cynthia Brewer and Paulo Raposo, Pennsylvania State University

Multiscale Design for ‘The National Map’ of the United States

We have been working on design, generalization, and selective feature removal for a subset of fundamental base map layers that enable competent topographic mapping through scales ranging from 1:24,000 to 1:1,000,000. The work is funded by the U. S. Geological Survey’s Center of Excellence for Geospatial Information Science <cegis.usgs.gov>. Color contrasts and label specifications are designed for readable maps with varied background combinations that include shaded relief, land cover, orthoimagery, transparent combinations of these, and a plain white base proposed for inclusion among the GeoPDF layers distributed for the *US Topo* product that has replaced the topographic quadrangle map series. We are working on processing roads with the thin road network tool in ArcGIS to remove features through scale using hierarchy and network connectivity. We also use thinning to guide placement of labels for more through streets than minor local roads. The land-cover layer we use includes percent impervious surface, percent canopy, and three other aggregate classes from the National Land Cover Dataset (NLCD). Pruned and generalized hydrography, contours, hillshading, and DEM-based curvature layers underpin the proposed multiscale product. Graphic results of these treatments are combined with other themes to establish parameters for automated processing that suit complete base map design for U.S. topographic mapping for *The National Map*.

Keywords: topographic map, USGS, map design

Paper Abstracts

Robert M. Briwa, SUNY – Geneseo

In the Age of Cannon and Musket: Sackets Harbor's Military Geography During the War of 1812

During the War of 1812 the naval base at Sackets Harbor became a site of military significance. Naval control of the Great Lakes determined the success or failure of military operations and settlements with good anchorages were the focal points of military conflict. Sackets Harbor's strategic position relative to British lines of communications made it a target of British military action. The site came under direct assault by British forces on two occasions. Each outcome hinged upon the defenses of the harbor and contemporary military technology and tactics. This paper examines the military significance of Sackets Harbor during the War of 1812. We will examine this significance through a geographic lens that identifies the relationship between geography and military technology and tactics so vital to waging effective warfare during the early nineteenth century. The tactics were fundamentally rooted in time and space, specifically the phased advance of densely packed infantry on a prepared defensive position. Sources include scholarly treatment of Napoleonic warfare, sources focused on Sackets Harbor, military databases, and an examination of the local topography and ground conditions.

Keywords: military, time/space relationships

Wayne Brew, Montgomery County Community College

The Hole in the Map: Letterkenny Army Depot, Historic Preservation, and Base Realignment and Closure (BRAC)

Letterkenny Army Depot (LEAD) is located in south-central Pennsylvania in Franklin County, 5 miles north of the Borough of Chambersburg, Pennsylvania. LEAD was established in January 1942 as an ammunition storage facility. Prior to the establishment of LEAD, the area consisted of agricultural and forest lands. The area was predominantly single-family farms used for both subsistence and commercial purposes. The Depot covers a large area (19,243 acres), most of which is devoted to ammunition storage (16,614 acres) and industrial areas (approximately 2,500 acres). This large area puts a "hole" in many road maps that do not show the road network in the Ammo Storage Area. In 1995, the industrial area of LEAD was chosen to be partially closed down under the Base Realignment and Closure (BRAC) Act. This presentation will cover historic preservation and reuse issues associated with the BRAC closure. There are several older homes (both stone and log) and barns (brick and wood) associated with the agricultural use prior to establishment of the base that will be discussed. There are also re-use issues associated with brick warehouses and an interesting bell tower that was constructed by Italian prisoners of war.

Keywords: historical geography

Gina Butrico, Kent State University

Developing a Bike Sharing Program in a University Town: What Could Work

Many university campuses, like communities in general, are seeking ways to reduce the demand for roads and parking spaces brought about by an exclusive reliance on automobiles. Bicycle usage is an important part of that strategy but carrying around bikes can be cumbersome and not everybody owns one. Bike sharing can be an effective way of providing access to bicycles and moving people from one place to another. Kent State University initiated a bike-sharing program in Fall 2010, and by all accounts it has been a great success. This presentation reports on the viability of expanding this bike sharing program based on existing and future transportation demands and determining the potential to widen its scope. First, we examine the nature of potential demand for bike-sharing, based around survey and

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focus group information. Then, we use surveys taken by existing users to analyze their behaviors and experiences with the program. Finally, we assess the state of bike-sharing programs in campuses across the country as a way to determine the best method of expanding this bike sharing program at the lowest cost.

Keywords: transportation, campus, town-gown relationships, sustainability, bicycles

Luc Claessens, University of Delaware

The Role of Spatially Variable Hydro-ecology in Watershed Nitrogen Removal

Nitrogen (N) removal in watersheds is largely controlled by spatio-temporal linkages between hydrology and ecosystem processes. These processes are highly non-linear and spatially variable. Understanding the effect of this spatial variability is critical for quantifying the N removal functions of forests, riparian buffers and other landscape features. I will examine the role of spatially variable hydro-ecology and will address three questions by means of case studies: (1) What is the effect of land-use on N concentration? (2) How does spatial organization of land cover affect N concentration? (3) How can we quantify the effect of landscape features on N removal? The effect of land-use was examined in the 280 km² White Clay Creek watershed of PA and DE. Results from synoptic sampling illustrate that examining land-use effects is critical for prioritizing N reduction efforts. The effect of spatial organization was examined in the 890 km² Opequon Creek watershed of VA and WV. Results from synoptic sampling illustrate that lumped land-use categorization of agricultural and forested land might not capture relevant N removal processes. 'Effective' land-use is introduced, which weights land-use using spatial metrics of hydrologic connectivity. To quantify the effect of landscape features I will discuss spatial process-based modeling using the RHESSys hydro-ecological watershed model. RHESSys couples spatial variable hydrology with carbon and nitrogen cycling and is well suited for quantifying watershed N removal.

Keywords: watershed, hydrology, biogeochemistry, land-use

Michael Commons, Syracuse University

Spatial Patterns of Riparian Vegetation throughout the Stream Network in the South Fork of the Trinity River Watershed, northern California

Riparian vegetation exists at the intersection of upland and in-stream ecosystems and plays a significant role in connecting the two systems. This study investigates dynamic linkages between stream network geometries and the richness and diversity of woody riparian plants along the South Fork of the Trinity River, northern California. A thirty-two kilometer segment of the stream was classified into reaches of three basic structures: straight, bend and tributary confluence. The stream network geometries were digitized and calculated with GIS based on fundamental hydraulic characteristics. Next, twenty-seven stream reaches were sampled with a stratified simple random design. The vegetation was quantified in nested belt transects measuring 100 meters by 30 meters and containing thirty subplots, aligned in three rows parallel to the stream. The sampling design was scaled according to the biological and fluvial systems present along the stream. The results of this research demonstrate the influence of different stream network geometries on the riparian habitat at the reach and sub-basin scales. This study also identified fine-scale patterns of riparian richness and diversity surrounding tributary confluences. These results support the need for scale- and strata-dependent sampling and strong consideration of the concept of river discontinuum when quantifying riparian vegetation.

Keywords: riparian, fluvial, vegetation, stream network

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Shawn Dacey, SUNY – Oneonta

The Urban Character of Pyongyang: A Distinct City for a Distinct Country

One of the primary focuses of urban geography is to study the distinct features of particular cities. The way to keep track of these traits is to use idea of urban character. By analyzing the physical environment, population, organizational structure, technology, and finally the social psychology of a certain urban area, one can draw conclusions about the character of a city. For the most part, many cities share regularities; however, 130 miles north of the 38th parallel lies a city whose urban character is so distinct it is almost impossible to find a another city that shares any similarities to it. The city described is Pyongyang, the capital of the Democratic People’s Republic of Korea (North Korea or DPRK). Pyongyang is a city that mixes socialist equality with opulent grandeur which is found no where else on the globe (Cummings, 2004). By understanding the distinctiveness of Pyongyang’s urban character, one can soon realize how the North Korean government has been able to preserve their authoritarian hierarchy over the citizens of both Pyongyang and the DPRK.

Keywords: Pyongyang, urban, cultural

Calen Daugherty, West Chester University

Modeling the Relationship Between Daily Temperature Range and Urban Land Cover: A Geographically Weighted Regression Approach

This study modeled the effects of local urban land cover on temperature observations at 92 United States Historical Climate Network weather stations in the Northeast and Middle Atlantic United States during the summer of 2001 and the winter of 2001-2002. GIS operations were performed on National Land Cover Database 2001 Land Cover raster data in order to determine the volume of urban land within 1000m of each analyzed weather station. The volume of urban land near a station was compared to the mean daily temperature range observed at that station for both the winter and summer time periods using a global Ordinary Least Squares (OLS) regression and a Geographically Weighted Regression (GWR). Both the OLS and GWR techniques showed an inverse relationship between the volume of local urban land cover around a station and the mean observed daily temperature range. However, the OLS results are shown to be significantly affected by spatial autocorrelation. Also, using the Akaike’s Information Criterion, it is shown that for the winter time period, the GWR model is significantly better than the OLS model, indicating the importance of local analysis. Mapping the residuals of both regression methods illuminated some of regional trends.

Keywords: spatial statistics, climatology, urban heat islands

Asia Downtin, University of Delaware

Securing Clean Drinking Water for Cities, Using Urban Greening and Headwaters Conservation: A Wilmington Delaware Case Study

In recent years, the unprecedented growth of the global population has occurred concurrently with greater settlement in urban areas than has ever been seen before. Greater demand is placed on natural resources in attempts to meet the needs of a growing population, which often occurs at the expense of the quantity and quality of the resources being used. Urban conservation efforts have been made – both in the form of measures within cities (e.g., increased green infrastructure) or just beyond their limits

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(e.g., headwaters conservation) – to ensure high quality natural resources remain adequately available for urban dwellers. Here we present a case study of the City of Wilmington, DE (population 70,000). We assessed the potential for future projects that would effectively secure and improve the quality of the City's drinking water supply (source: the Brandywine Creek). We found that increased land conservation and agricultural BMPs in the headwater regions of the Brandywine Creek could significantly improve water quality. Suggestions for new methods for detecting optimal locations for BMP implementation are discussed.

Keywords: urban conservation, Wilmington, BMPs

Scott Drzyzga, Shippensburg University

The Shippensburg University Address Referencing System Project: Part I

The Shippensburg University Address Referencing System (SUARS) project was developed to manage issues with an outdated state of addressing campus entities and events. To date, every building, event, or parcel of mail, regardless of location, is effectively tied to a single and common street address, "1871 Old Main Drive", which served as the only situs address and the only postal address on and for campus. Consequently, the map databases and navigation applications employed by 911 dispatchers, emergency responders, and campus visitors could be 'aware' of one destination only and, hence, map users always followed directions that terminated at the front door of Old Main. This paper, part 1 of 2, presents: a) the need for establishing a new system for campus addressing that better supports emergency responders, campus planners, and campus visitors; and b) the central roles that geospatial technologies (e.g., GIS and GNSS) played while developing consensus agreements among many stakeholders and modernizing the state of situs addressing on the Shippensburg University campus.

Keywords: addressing, geocoding, GIS, planning

Ian M. Dunham, Temple University

Proximate Geographical Questions Related to the Interpretation and Implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010

The financial crisis that began in 2008, and the global credit crisis that followed, gave rise to the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank), which establishes significant changes to the federal banking regulatory system. Using examples of current data sets, this paper addresses a number of geographical considerations, methods, applications of geographic principles, and themes in economic geography that are useful in interpreting and implementing the many new reforms included in Dodd-Frank. The paper also discusses how new data presents new research opportunities. Two areas of reform are primarily discussed: issues related to changes to the Home Mortgage Disclosure Act (HMDA) and issues related to the supervision of non-bank financial service providers. Dodd-Frank transferred a number of existing rule-making, supervisory, and enforcement responsibilities from other government agencies to the newly-created Consumer Financial Protection Bureau (CFPB). As of July 21, 2011, the rule-writing authority of Regulation C, the regulation that implements the Home Mortgage Disclosure Act (HMDA), was transferred from the Federal Reserve Board to the CFPB. Dodd-Frank requires that the CFPB amend Regulation C to make rules for the reporting of additional data fields and to establish other reporting guidelines related to geography. Additionally, Dodd-Frank extends federal banking supervision to payday lenders. Inherent in these activities are opportunities for geographers to conduct research relating to the spatial distribution of

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lenders and lending activity, risk analysis, and identifying possible geographic areas where public and private-sector investments are needed.

Keywords: banking, financial regulation, geographic information systems (GIS), spatial analysis

Brandon Duxbury, Shippensburg University

Transportation Policy Change in Olympic Host Cities: A Case Study of Vancouver's Transportation System in Preparation for the 2010 Winter Olympics

Cities in today's global economy compete to attract businesses and visitors. They look for unique ways to showcase their city and region to the world. Hosting a mega-event such as the Olympic Games has become a popular approach to attract global attention. Due to Olympic-specific standards required by the International Olympic Committee as well as the need for alterations to be useful to the city after the Games have been hosted, the planning stages of the event can drastically affect a host city's plans and policies. This study uses the 2010 Vancouver Olympics as a case study to determine how they affected the city's transportation visions and policies. Vancouver's transportation documents from 1991-2012 were divided into three groups: pre-Olympics (prior to 1998), the Olympic planning process (1998-2010), and post-Olympics (after 2010) and then qualitatively assessed. Visions and specific policies within each stage were noted and then compared to determine how they changed throughout the process. Visions prior to receiving the Olympic bid were more ideal than practical, focusing on how the city should grow rather than specific processes to make it happen. The city took on a more proactive approach after receiving the bid, developing planning policies that combined IOC requirements with the city's goal of expanding its public transportation system. While the changes made to the system have been successful and the Vancouver planning model could be applied to future host cities, Vancouver has transitioned from expanding the system to maintaining what is currently in place.

Keywords: transportation, Olympics, Vancouver

Alison E. Feeney and Brandon Snyder, Shippensburg University

Spring Houses of Montgomery Township, Pennsylvania: Historical, Locational, and Architectural Patterns of an Early Settlement Cultural Artifact

Pennsylvania's key location of initial European settlement has helped to develop it as a vernacular geographic region with a rich historic landscape. Historical sites such as battlegrounds, political speeches, and forts have been well mapped and documented and many geographic studies have inventoried and categorized the cultural characteristics of features such as barns and covered bridges. However, one unique type of structure, spring houses, were vitally important to early pioneers yet has been overlooked in research. This study utilized GIS and field research to identify, map, inventory, and describe the architectural characteristic of thirty-three spring houses in Montgomery Township, Pennsylvania and determine if their locations are correlated to historical land settlement patterns or environmental factors. Montgomery Township was selected for this study as it maintains much of its rural characteristics that have not succumbed to the pressures of current development, and during initial driving of the area, it appears that a large number of spring houses have survived in comparison to some of the neighboring areas. By gaining a better understanding of their location, current condition, and their connection to historical ethnic patterns and environmental factors, this study aims to increase awareness of their existence, lay the foundation of their importance during eighteenth and nineteenth century, and promote their preservation.

Keywords: historical settlement, GIS

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Angela Ficco, Temple University

Does Septa Regional Rail and Subway Provide Walkable Accessibility to Specific Demographic Groups?

This paper utilizes a series of GIS maps, analyzing census data, to recover which demographic groups are provided walkable accessibility to Southeastern Pennsylvania Rail Transportation: SEPTA Regional Rail and Subway. The data examines age, race and socio-economic status to determine populations with access to SEPTA subway and regional rail line, by foot. Walkable accessibility to transportation is essential for individuals to reach life's necessities. Although minorities and low income individuals experience the greatest need for public transportation accessible by foot, the analysis concludes that 34 year old White individuals are offered the most walkable access to SEPTA rail transportation.

Keywords: accessibility, Philadelphia, SEPTA, public transportation

Samuel Finn, Will Davis, and Scott Drzyzga, Shippensburg University

The Shippensburg University Address Referencing System Project: Part II

First-time visitors, potential students, current students and alumni are using location aware devices and software applications to navigate to campus and to wayfind on campus. Unfortunately, none of the major geographic content providers (Google, Bing, TeleAtlas, OSM, etc.) maintain an accurate map database of our campus features, so alumni, students and visitors must often resolve conflicts between: a) what they are experiencing while wayfinding; and b) what they are seeing on their navigation devices. The Shippensburg University Address Referencing System (SUARS) project was developed to manage issues with the outdated state of addressing campus entities and events. This paper, part 2 of 2, presents our new partnership with Google Maps and explains the geotechnology and workflow we are using to make our local map content visible to millions of Google's users. We will share details about how we build and share vector place and road data, and our first attempts to enhance our underused public transit system.

Keywords: Google, GPS, Google maps, reverse geocoding, navigation

Aryanne Ferguson, Joy Fritschle, and Kristen Crossney, West Chester University

Evaluating the Effectiveness of the National Wild and Scenic Rivers Act

This study evaluated the effectiveness of National Wild and Scenic Rivers Act federal designation. To assess the effectiveness of designation, the White Clay Creek watershed in southeastern Pennsylvania was compared with an adjacent similar watershed, the Red Clay Creek, which received no federal designation. Significance testing was conducted on water quality parameters (temperature, dissolved oxygen, pH, specific conductance, and total dissolved solids) pre- and post- designation. Results showed a significant decline in water quality in both watersheds over time. This underscores the importance of local watershed management organizations, especially in light of the failure to improve water quality conditions through federal designation alone. When interviewed, local organizations were aware of the White Clay Creek's NSWRA designation, but stated that the designation did not greatly impact plans for water quality improvement activities

Keywords: watershed management, White Clay Creek Wild and Scenic River

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Kelly Frothingham, Buffalo State College

Evaluation of the Stream Visual Assessment Protocol (SVAP) as a Tool to Monitor Stream Corridor Conditions Over Time

A variety of stream assessment methods are available to assess and monitor stream corridor conditions throughout all phases of the watershed management process. Knowing the focus of a particular watershed management plan is critical when determining which assessment type to use. The Stream Visual Assessment Protocol (SVAP) is a qualitative multidisciplinary stream assessment method used to perform rapid visual assessment of several elements of overall stream corridor conditions. In this study, the SVAP was used in 2004 and 2008 on the same stream to document stream conditions over time in a watershed where there was an absence of major watershed changes. The following SVAP elements were assessed during both field campaigns: channel condition, riparian zone, bank stability, and water appearance. The objective of this study was to compare SVAP scores at multiple sites within one watershed over time to evaluate using the SVAP as a monitoring tool. Both overall and individual element SVAP scores were compared because while the overall score provides a measure of stream corridor conditions that considers biological, physical, and chemical stream characteristics, the individual element scores could be linked to specific watershed management plan goals. Results showed that overall SVAP scores were not significantly different over the four-year period. Analysis of individual SVAP element scores showed that the riparian zone and water appearance element scores were consistent over time, but channel condition and bank stability element scores were significantly different. Results of the analysis comparing overall SVAP scores over time indicate that the SVAP is a useful tool for watershed management plans that call for a cost-effective method of monitoring stream corridor conditions over time, including assessing the effects of stream restoration project implementation. However, the analysis of the individual SVAP elements yielded mixed results, indicating that linking individual element scores to specific watershed management plan goals may not be advisable.

Keywords: stream assessment, environmental monitoring, watershed management, stream restoration

Francis A. Galgano, Villanova University

Water and Conflict: The Evolving Environmental Security Landscape

Environmental security refers to a range of security issues triggered by environmental factors such as climate change, resource shortages, and demographic factors. Water is particularly problematic because it is an essential resource for which there is no substitute, and the amount of fresh water is finite and not equitably distributed in a spatial sense. Historically, conflicts triggered by water shortages have been resolved by cooperative means and states have relied on technology, trade, and diplomatic solutions. However, I argue that the security landscape has changed profoundly, and the history of cooperative water-conflict resolution may no longer a reliable guide to the future. This paper suggests that continued peaceful resolution of interstate water conflicts is not consistent with the realities of the emerging national security landscape: climate change is already affecting the distribution of water in many critical water basins, and the proliferation of failing states has reduced the potential for diplomatic resolutions. This paper examines linkages between environmental stress, regional instability, water availability, and conflict and uses the Jordan River Valley as a case study to highlight these points. The analysis suggests that the region is now more vulnerable to environmental stress and water-related conflict. Given these circumstances, it is plausible that we will witness a surge in three modes of conflict, driven by water demand: ethnic/racial warfare enabled by environmental stress and demographic

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trends; civil warfare prompted by environmental stress and economic collapse; and limited-scale interstate wars.

Keywords: environmental security, water resources, watersheds, military geography

Charles Geiger, Millersville University

Programming Needs for an Interactive On-line Map

The Federal Clery Act requires university campuses to publicly report on-campus crimes. A recent amendment added the obligation for each campus to post a map on the campus website showing the locations of emergency phones, including the ability to click on each phone's map symbol to view a photo of the phone. This is a natural application for GIS, but one that is not easily accomplished. The Millersville University's on-line map is accessed from the university police department's on-line annual report in .pdf format. The map was constructed in ArcGIS Desktop 10 ArcMap software. The geodatabase containing the emergency phones feature class was set up to receive the photos of the phones as "attachments." The geodatabase and map document were saved to a public access server running ArcGIS Server 10, and were published as a "map service." Finally, the map webpage was created using a combination of HTML, CSS and JavaScript code.

Keywords: Clery Act, attachments, map service, JavaScript

Shannon Grumbly, Yiting Ju, and Shang Liu, Pennsylvania State University

Traveling Around the World to Study GIS and Mapping

While global experiences for university students are common, there are few examples of cartography or GIS-focused study for undergraduates. The program we participated in was an around-the-world trip with twelve students studying topographic and other base mapping at multiple scales. We combined key elements of real-world business travel with visits to regional and/or national mapping agencies in Germany, United Arab Emirates, and Japan, exposing ourselves to a wide range of mapping practices and map use. In addition, each student completed individual projects in one country to delve into a specific subtopic such as energy, food access, water, and transit. We planned the trip during the 2012 spring semester and traveled for three weeks in June. During the fall, we will present our projects at the USGS headquarters, bringing national mapping ideas home to the United States to inform the next generation of The National Map Viewer.

Keywords: world travel, GIS

Joseph Guttman, University of Tennessee

Saving the Farm through Innovation: A Look at the Adams County and Cumberland Valley Fruit Industry

Macro-scale factors such as foreign and domestic competition, combined with regional-scale urban development pressures, have contributed to the loss of orchard land in the Cumberland Valley and Adams County, Pennsylvania. Using a mail survey and personal interviews from the apple industry, this paper discusses the adaptations that the remaining growers have made to ensure the future viability of their operations. Adaptations that parallel national trends include increasing tree densities per acre, attempting to mechanize labor-intensive orchard tasks, and shifting production from the processing market to the higher value fresh wholesale and direct-to-consumer markets. Adaptations deriving from local innovations include the formation of the Young Growers Alliance and the grassroots Adams County

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Ag Innovations, a project that seeks to implement new approaches to land-use planning, marketing, and field production.

Keywords: agriculture, farmer adaptation, land use

Tim Hawkins, Shippensburg University

Assessing the Impact of Climate Change on Streamflow at Multiple Scales for the Chesapeake Bay Watershed

A hydrologic model was developed for the Savage River watershed in western Maryland as a pilot study for a larger study of the entire Chesapeake Bay Watershed. The Savage River and its associated reservoir and watershed serves many purposes including recreation, drinking water supply, and auxiliary water supply for Washington DC. Streamflow on the Savage River was modeled using a simple hydrologic model and validated with historical streamflow observations. Future projected climate data were used to drive the model to assess the impact of temperature and precipitation changes on future streamflow. Winter streamflow is projected to increase, while spring, summer, and fall streamflow are projected to decrease. Annual streamflow totals show a slight negative trend over the coming century. Future changes in precipitation are more influential on future streamflow during the winter while temperature may be more important during the summer and fall. On an annual basis, by the year 2098, the impacts of temperature and precipitation will essentially cancel each other out resulting in only a small negative trend in annual streamflow. Increased streamflow during the winter months may not be able to compensate for decreased flow during the remainder of the year which raises concerns about the ability of the reservoir to supply water during future droughts. Based on these results, a gridded hydrologic model for the entire Chesapeake Bay Watershed has been developed and initial results will be presented.

Keywords: hydrologic model, streamflow, Chesapeake Bay Watershed, climate change

Luke T. Hershey, Shippensburg University

Combustible Gas Concentrations in Soil at Natural Gas Extraction Sites in North Central Pennsylvania: Before and After Drilling

In recent years there has been increased interest in natural gas drilling in Pennsylvania; this is because new findings show that the Marcellus Shale is a much larger reservoir of natural gas than previous estimates showed. Although the positive economic impacts of harvesting this resource will provide an economic boom for the state, there are also environmental concerns that need to be examined so that the negative impacts of mass drilling can be reduced. Most current research on the environmental effects of drilling only investigates the negative impacts of the chemicals used for hydro-fracturing. There are only a handful of studies that address stray gas caused by drilling activities and the majority of these studies focus on the migration patterns and isotopic composition of stray gas that has migrated into water wells. When considering stray gas, the foremost concern is its potential to enter a confined space, such as a well or a home, and cause an explosion. This study measures concentrations of soil gas near drilling sites because soil is often the final pathway stray gas takes before it enters a home. A combustible gas indicator will be used to take soil gas samples at wells sites and control sites before and after drilling. If gas concentrations are found, sampled values will be interpolated using GIS to map the change in gas concentrations from one sampling period to the next.

Keywords: gas, combustible, drilling, geospatial

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Christopher J. Hewes, University of Massachusetts - Amherst

Historical 3D Modeling of Erosion in Stony Clove Creek, NY For Sediment Volume Analysis Using GIS

The New York City Department of Environmental Protection identifies Stony Clove Creek as a chronic supplier of suspended sediment to the city's water system. This tributary of Esopus Creek raises concerns because it feeds the Ashokan Reservoir, a major supplier of NYC drinking water with no filtration system. In Stony Clove, there is a bowl-shaped erosional feature called "Stony Clove Creek at Chichester Site 2" which began forming around 1970 after anthropogenic straightening of the creek downstream. The erosion of Site 2 is occurring from a combination of: (1) high-energy flow at the cutbank and (2) slumping due to groundwater flow through exposed fine-sediment glacio-lacustrine clays and clay-rich tills. Understanding how this feature grew, how quickly it grew, and how much sediment it has contributed will give insight into further management of the watershed, particularly projects that alter stream morphology. This feature was 3D modeled in ArcGIS using aerial photos from 1959 to present as well as field-based GPS and elevation measurements. Seven triangulated irregular networks (TIN) of Site 2 were created. Analysis was done through methods including on-screen digitizing of aerial photos, mapping GPS points, interpreting LiDAR data, compiling precipitation and discharge measurements, and collecting historical information from library resources. From 1970 to present, approximately 2.4 million cubic feet of sediment have entered the creek and traveled downstream, and the rate of erosion is increasing. This significant contribution of sediment poses a threat to NYC drinking water and to lower Esopus Creek; sites with similar erosional features should be identified and mitigated against further erosion.

Keywords: geomorphology, gis, 3D model

Dorothy Ives-Dewey, West Chester University

Spatial Patterns of Road Mortality: Using GIS to Assess Turtle Barrier Conservation Strategies

Road mortality is one of the greatest threats for the diamondback terrapin (*Malaclemys terrapin*). Reducing the risk of road mortality is a common element of many conservation strategies. This research investigates the spatial variation of road mortality for the diamondback terrapin in Cape May County, New Jersey. Diamondback terrapins in the northeastern United States are especially susceptible to road mortality due to life history and habitat traits that increase their contact and vulnerability to human populations. This research examines the spatial distribution of roadkill for the diamondback terrapin in an area where barrier strategies are employed as part of a diamondback terrapin conservation program. The primary purpose of the research is to assess the effectiveness of a barrier strategy in conservation programs to protect diamondback terrapins. Turtle kill data was collected during high nesting season and mapped in relation to a number of environmental features and human-made barriers. Spatial analyses of the data reveal important insights on the effectiveness of barrier strategies to protect turtles.

Keywords: wildlife conservation, GIS, mitigation

Kari Jensen, Hofstra University

Discourses of Skin Color Among Bangladeshi People: An Analysis of Social Dimensions of Physical Appearance

In Bangladesh, light skin is considered more attractive, and skin color is often an important factor in the choice of a spouse. Pharmaceutical skin products such as the skin lightening cream called "Fair and lovely" are immensely popular and are advertised everywhere, including on huge posters in the streets

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of cities and rural towns. Girls and boys who are darker than the average are exposed to discrimination from early childhood. Qualitative research with women and men of different skin tones both in Bangladesh and among Bangladeshis living in North America revealed that geographical variation of discrimination intersects with gender and social status. Personal stories of identity formation, identity negotiation, and discrimination based on skin tone reveal a problem which is made even worse by the fact that there seems to be a taboo connected to such issues. A participant who grew up thinking she would always be perceived as unattractive because of her dark complexion, told me that she had never before talked openly and in-depth about these issues with anyone. Several young, dark women had experienced less discrimination in a diasporic setting in North America than in their home country, and some even said that they had been made to feel content about their own looks while staying here. The paper examines this interesting twist of place-logic and the interaction between geography of place and social psychology.

Keywords: skin color, discrimination, identity formation

Morteza Karimzadeh, Pennsylvania State University

Interoperability in the Geographic World: Past, Present and the Future!

With the rise of decentralized computing, the need for interoperable systems has intensified. The geospatial community especially, cannot afford to fall behind this trend, because not only does geographic data come from multiple heterogeneous sources, but there is also an increasing need to divide the processing load among multiple machines. The main obstacle in exploiting dispersed data and processing recourses is that they are usually built on different technologies, making data conversion a tedious and costly procedure. To clear this hurdle, several solutions have been implemented over time in order to make geospatial systems interoperable to facilitate combining and reusing diverse data and processing recourses. In this presentation, I will first review the historical solutions to build interoperable geospatial systems at different levels. Moving forward, I will discuss the current situation and the state of the art technologies in the geospatial world, namely Open Geospatial Consortium (OGC) compliant Geospatial Web Services, with a brief comparison to the mainstream trend in the Information Technology world. I will then examine whether the current solutions are really put into practice, concluding with the possible future trends for interoperable geospatial services that facilitate building comprehensive Spatial Data Infrastructures.

Keywords: interoperability, OGC, geospatial web services

Tara Keir, SUNY – Geneseo

Hunting Hunters: U.S. Origins for Alaska Big Game

The state of Alaska proves to be a large draw for big game hunters. These hunters fly in from all over the United States in order to drop ten to fourteen thousand dollars on a seven to ten day big game hunt at an outfitter or hunting lodge located in the remote Alaskan wilderness. After collecting data on the origins of these big game hunters in Alaska and ranking the states in order of hunters per million according to corresponding state populations, I plotted the data along with state distance from Alaska. Analyzing the resulting scatterplot it became evident that there was in fact a distance-decay effect for the origins of Alaska big game hunters. This distance decay does vary based on other factors, including the geography of hunting-culture pockets among parts of the United States, namely the Midwest and northwestern states. I proceed to take a look at general Alaska tourist origins in comparison to the

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origins of Alaska hunters and the comparison of Alaskan outfitters to similar outfitters throughout the U.S., all with the potential to draw in unexpected participants.

Key words: Big game, hunting, distance decay, Alaska

Bridget Kelly, SUNY – Geneseo

Legacies of Colonialism: Retrospect and Prospect in Namibia's Ghost Town Mining Landscape

Post-colonial scholarship conventionally focuses on the persistence of systems of economic activity, power structures, social frameworks and cultural norms, including language. In large part, while important, these systems lack material expression in the landscape. Economic exploitation through mining activity, however, has always been accompanied by striking landscape modification, often subsequently abandoned owing to factors such as depletion, technology, outside competition and fluctuations in market prices. Coastal Namibia, formerly German Southwest Africa, is one such landscape. My presentation focuses on the human landscape infrastructure of diamond mining by German interests in the early 20th century and the subsequent decline of the industry by 1950, leaving ghost and near-ghost towns scattered throughout the Namib Desert. I also examine the neoliberal legacy of early European exploitation evident in the re-visioning of the ghost town landscape as a high-end international tourist experience and the revival of the diamond industry through increased offshore activity.

Keywords: mining, Namibia, ghost town, colonialism

Jessica Kelly, Millersville University

The Politics of Stormwater Management in Lancaster, PA

Stormwater runoff is the primary source of many pollutants in major rivers and estuaries in the United States and managing stormwater inputs to these waterbodies has become the primary objective of new regulatory efforts (see Section 438 of the Energy Independence and Security Act of 2007). “Green infrastructure,” or the reduction of impervious surfaces in favor of porous pavements, vegetation, cisterns and green roofs, is being promoted as the new means to deal with stormwater runoff locally, effectively reducing the distance between society and stormwater while reducing the pollutant load to surface waters of the United States. The economic, political, and cultural processes that shape the decisions to manage stormwater bring about uneven environmental consequences at different scales. The intersections at play between federal, state, regional and local governments, and society, and how these interactions influence the construction of stormwater and the means in which it is managed become the focus of inquiry in this research. Central Lancaster County, Pennsylvania serves as a case study, as the EPA focuses stormwater management efforts there and as the region contains mixed governance scenarios.

Keywords: green infrastructure, environmental justice

James Kernan, SUNY – Geneseo

*Battling the Beetle: The Emerald Ash Borer (*Agrilus alanipenis*) Invasion in Western New York*

The emerald ash borer (EAB) is an invasive species that is spreading rapidly through the Eastern United States. EAB preys on ash (*Fraxinus* spp.) trees, producing extremely high mortality rates. As ash trees are attractive, robust, and grow rapidly, they were commonly planted in parks, along streets, and in other public open spaces. Many ash trees were planted on public land in the wake of Dutch elm disease,

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exacerbating the current crisis with EAB. When an ash tree is killed by the ash borer, there is an immediate safety risk from falling branches and eventual toppling. Therefore, widespread ash mortality presents a considerable financial burden in areas that have large numbers of ash trees. Ash trees are also common in forests, particularly in Western New York. There are significant economic, ecological, and environmental problems associated with forest ash mortality. The response to the EAB invasion has faced many challenges due to the current economic downturn, and a consequent shortage of resources. This paper addresses the economic, ecological, and organizational issues associated with EAB and presents the role of geotechnology in EAB research and management. The response models for the urban setting of Rochester, New York, and rural Livingston County, New York are compared to illustrate various approaches for studying and managing the invasion, and a basic geographic information system (GIS) cost estimate model is described.

Keywords: emerald ash borer, invasive species, GIS

Cadey Korson, Kent State University

Media Portrayals of United Nations Peacekeeping Operations in Haiti and Côte d'Ivoire

Since 1948, and the authorization of the deployment of military observers to the Middle East by the Security Council, peacekeeping has played a significant role in the United Nations mission. The relationship between the news media and its audience via the flow of information requires a critical examination, for the impact of the media on peacekeeping missions presents far-reaching ramifications. Perpetuated by the news media, globalized political discourses have become a mechanism that both constrains and directs peacekeeping. Certainly, radio and television broadcasts, as well as newspaper stories, have created a collection of voices that have shaped public views; however, despite the debate that has occurred concerning the media as a manipulator of public perceptions, much remains to be explored. Contemporary scholarship (e.g., the manufacturing consent model; the political consent model) focuses primarily on the interactions between government, media, and the public over the control and flow of information between those bodies. The goal of my research is neither to prove nor disprove these arguments, but rather to examine the ideologies and potential patterns of discourse among news sources. This paper intends to identify meaningful grounded theories by comparing different levels of media and their portrayals, perceptions, and discourses of current United Nations peacekeeping operations and peacekeepers in two former French colonies: Haiti and Côte d'Ivoire.

Keywords: media, peacekeeping, Haiti, Côte d'Ivoire

William Kory, University of Pittsburgh at Johnstown

Johnstown, Pennsylvania: Consolidation Issue Revisited

The city of Johnstown, located in the south-west corner of Cambria County, Pennsylvania, has experienced dramatic population losses in the past half century. The city reached its highest number (67,327) in 1920, but by 2010 the population was less than a third of that total (20,978). Over the past fifty years, the city lost an average of 17.5% of its population each decade. One of the consequences of these drastic losses was the changing age composition of the city's residents. As the younger age groups moved out, the proportion of the elderly in the city's total population increased. In 2010, nearly one-fourth of Johnstown's population was 65 years old or older, and two-thirds of the population in the city's Central Business District was of that age group. Surrounding the city are 19 townships and boroughs with a total population of nearly 50,000 residents. The consolidation of these municipalities with Johnstown would give the new city a combined population of over 70,000, making it the eighth

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largest in Pennsylvania ! Since a great majority of the 19 municipalities also had population losses between 2000 and 2010, combining the municipalities into an expanded Johnstown would give the region more political clout, make it attractive for new developers and businesses, bring more federal and state funding to the region and create savings by buying material and supplies in bulk for the whole region. The presentation will focus on these and other issues, including the future demographic portrait of the Greater Johnstown area.

Keywords: Johnstown, consolidation

Hannah Lash, Shippensburg University

Geo-referencing, Digitizing and Hot Linking

I geo-referenced old historic hand drawn farm maps to geographically referenced topographic maps and then digitized over 10,000 wells to the correct geographic locations. I also performed QC using a light table to ensure that the wells were located on the correct parcels and also the correct side of roads and streams. It is important for the company to know where the old wells are located for anti-collision purposes. When hydraulic fracturing a well, the petroleum engineer wants to be sure there will not be communication with an old, abandoned well. Accurate geographic data leads to informed business decisions. I then worked on a smaller scale hot linking project, linking documents to wellbores located within ArcGIS.

Keywords: geo-referencing, digitizing, hot linking

Denyse Lemaire, Rowan University

Wine Production and Development near Cape Town, South Africa

Vineyards have covered the slopes in Franschhoek Valley near Cape Town, South Africa, since Huguenot settlers began producing wine according to their traditions and expert winemaking techniques. Today many of these estates continue the traditions of their ancestors but with a modern twist. This presentation will examine three of these estates.

Keywords: wine, South Africa

Melanie Martha, Hofstra University

Tourism and the Galapagos Islands: Examining the Relationship Between Ecotourism and the Local Population

The Galapagos Islands are a volcanic archipelago located in the Pacific Ocean, acclaimed worldwide for their unique wildlife and biodiversity. The islands have fascinated humans for centuries; they have been a hub for important biological and geological research since as early as the 19th century. Various waves of humans have migrated to the islands throughout the years in order to pursue lucrative markets like whaling and fishing. The tourism industry is the most recent moneymaking industry that has emerged in the Galapagos. Since the natural environment in Galapagos is what draws the majority of tourists to the islands it is crucial to the tourism industry to protect it. The Galapagos Islands are often recognized as the first place on earth to embrace a relatively new form of tourism known as ecotourism. Ecotourism attempts to showcase the natural environment of a given location while actively promoting sustainability on both the environmental and social fronts. Findings from a study of prior research as well as a qualitative survey conducted on the Island of San Cristóbal will be presented. An argument will be made that ecotourism is no longer being practiced in the Galapagos Islands. Results of the impact

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that humans have had on the natural environment as well as the opinions of the local population regarding life on such an ecologically delicate, tourism dependent island will be presented.

Keywords: ecotourism, Galapagos Islands

Lawrence McGlinn, SUNY – New Paltz

Epigenetics, Environment and Health: Working Across Boundaries

The term epigenetics (“over-genetics”) has moved from the pages of obscure biology journals into the educated mainstream over the past few years. Epigenetics refers to the “expression” of genes without changes in the fundamental genetic sequence. These expressions, responsible for everything from differentiated cell structures in different parts of organisms, to physical differences in identical twins, to disease, can be due to external stimuli, and they can be carried through generations. Thus, the role of environment in genetics, and potentially in disease, is far more subtle and profound than simply as a cause of mutation. In short, environmental exposures have more influence on health than was ever imagined in the days of the “Nature vs Nurture” debates. While the evidence of environmental influences on health grows, tracing the impact of exposures or behaviors becomes more challenging. Minor encounters with epigenetic agents, or even the lifestyles of ancestors may tilt the scales toward health or disease. In this paper I identify directions in which medical geography can take epigenetics to improve public health. The synthesis of knowledge of genetics, environmental process and Geographic Information Systems can bring epigenetics to a place where it can directly inform policy and planning.

Keywords: epigenetics, health, environment

Diana McGrath and Brian Wolff, SUNY – Geneseo

An Analysis of Plant Community Structure and Growth After a Prescribed Burn Event in Rush Oak Openings, New York

Oak openings are a diverse and rare ecosystem offering a variety of savannah-like conditions. While oak openings were once widespread, today Rush Oak Openings is the only oak opening in New York State. This ecosystem is dependent on fire as a natural disturbance to allow for new growth and prevent woody encroachment. The Rush Oak Openings are managed by the New York State Department of Conservation through a periodic prescribed burn management policy. This study examines the effectiveness of the management system through conducting an overall analysis of plant community composition and the growth of new grasses after the prescribed burn event of March 23rd 2012. We used a transect micro-plot sampling method in which shoots were measured for an estimate of growth rate and burn markings were recorded for an estimation of burn intensity. Ocular and auditory surveys were used in order to understand plant and wildlife diversity within the ecosystem. Our study found that growth of new shoots as well as burn intensity varied significantly among transects. This can potentially be attributed to the fragmentation of habitat by burning relatively small burn plots. Our study found evidence of invasive species being eradicated from the prescribed fire, such as mullein. A wide array of wildlife was noted via surveys, which show the importance of the ecosystem for conservation efforts. Our study concludes that prescribed burning is a necessary part for managing the Rush Oak Openings and should be a carefully planned and continued process.

Keywords: oak opening, prescribed burn, management

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Jaime McKay, University at Albany

A Study in Contradictions: The Inclusive, yet Exclusive, Nature of the Albany Rural Cemetery, Present through Fitzgerald's guide

Picture early 19th century Albany. Upon the hill where State Street now runs, the landscape revealed the very beginnings of what is now the state capital. Like burgeoning cities up and down the East Coast, Albany was expanding and industrializing at unprecedented rates. Also like these cities, the Capital city faced a unique challenge. Growth was impeded, not by what was above the ground, but rather by what lay beneath it. The Albany Rural Cemetery, first accepting interments in 1845, sought to establish a more peaceful repose for the city's former residents, including today many Senators, businessmen, and Chester A. Arthur, the 21st President. Journalists sought to celebrate the Rural Cemetery by creating guides, documenting the ideal path to wander along; passing notable graves and beautiful streams, lakes and pastures. Edward Fitzgerald's prolific 1871 "A Hand Book For The Albany Rural Cemetery, with an Appendix on Emblems" aimed to set the standard for guides in what was once one of Albany's most visited attractions. Through studying the guide, one is able to glean a sense of the socioeconomic audience that the author targeted with his work. However, upon closer examination, the surprising "inside" invitation to judge the higher classes alongside its members affords Albanians a unique position in the mid-19th century as the middle class grew and societal stratification begins to shift. The cemetery and its guide allow a timely look into this trend, present both within the city of Albany and its city of the dead.

Keywords: rural cemetery, social status, historical geography

Andrew Mowrer, SUNY – Geneseo

The Geography of Bigfoot Sightings

Claimed North American sightings of the Sasquatch ("Bigfoot") can be traced as far back as 1900 and have proliferated in the Internet Era. My paper explores the pattern and typology of these sightings. The latter are of course questionable owing to problems of eyewitness reliability, lack of physical evidence, and outright fabrication. Nonetheless, the sightings are open to categorization by type, chronology, and location. Analysis based on 4000 claimed sightings reveals distinct clusters in space and time. Are such clusters "real" (based for example on ecological niches and spiking populations) or are they driven exclusively by the magnetism of local lore and the coverage of the myth by mass media? The geography of more "substantive" evidence such as claimed footprints and droppings is compared with that of the record as a whole. The most improbable sighting concentrations, in Ohio and Florida, appear to rest primarily on the power of local lore. Some county-level sighting clusters in the Pacific Northwest and California are certainly suggestive of observer geography, but other clusters do suggest something of a Bigfoot ecological norm worthy of further investigation.

Keywords: Bigfoot, sightings, patterns, geography

Darrell A. Norris, SUNY – Geneseo

From Innovation to Impasse: The Geography of the Naval Arms Race, 1906-1916s

Weapons systems' common blend of offensive power, defensive protection, and mobility was expressed as an overnight sensation in naval architecture with the completion of HMS Dreadnought in 1906, a design so innovative that three prior decades worth of armored ship construction were instantly rendered nearly useless. Given contemporary Great Power rivalry, Dreadnought's completion

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guaranteed an ensuing arms race. The latter entailed steady improvements in power, protection, and propulsion, each requiring a larger and more costly platform to incorporate even slight improvements. Resulting tactical adaptations tended to perpetuate eighteenth century rigidity of line and stifle scope for initiative, while pushing firing ranges well beyond much hope of actual hits, with 97 percent or more of shots missing their targets. Impasse ensued, save for the elimination of hybrids that sacrificed protection for speed. Rising scale, escalating cost, diminishing usefulness, and eventual stalemate seem to typify weapon systems' evolution until their obsolescence is exposed by asymmetrical counter-measures. Just as Dreadnought battleships echoed the denouement of French knights by English archers at Agincourt, the battleship's path to impasse and asymmetrical vulnerability would be repeated by the battle tank, high-speed jet fighter, and aircraft carrier.

Keywords: arms race, military geography, naval history

Rachel Passmore, Pennsylvania State University

Looking at Japanese Residential Food Access Using U.S. Food Desert Criteria

In the year 2009, the United States Department of Agriculture (USDA) created a "Food Desert Locator" to map areas of low-access to inexpensive, healthy food, with low access defined as 33 percent of an area's population residing more than one mile from a supermarket. Out of all food stores, supermarkets are considered to have the greatest variety of food and to be the most reliable source of inexpensive and healthy foods. During a research excursion to Japan, I studied the connection between the Japanese and their access to healthy foods despite the low prevalence of supermarkets. In Nakano, Tokyo, I walked a section of a neighborhood and documented the presence of food stores within the set North American Industry Classification System (NAICS) categories and took inventory of selected food items available for purchase. Both American and Japanese dietary guidelines have similar recommendations for healthy foods, and the foods inventoried are representative of a range of healthy choices. Despite difficulty understanding Japanese food prices, I was able to conclude that altering the definition of "food deserts" to have more of an emphasis on food specialty stores would be beneficial, because a variety of food specialty stores within close proximity to each other can provide a sufficient amount of healthy food for a person's diet.

Keywords: food access, Japan

Trent Otis and Claire Jantz, Shippensburg University

Evaluating SLEUTH Model Accuracy at Different Geographic Scales Around Two National Parks

Protected areas such as national parks are attractive areas to live around, and may attract urban development near their borders. In the United States, National Park officials often need some knowledge of the future characteristics of changes near their borders as well as broader, regional changes. The SLEUTH urban land use model is one widely used tool to estimate future land use changes at regional scale. Because of this use, National Park officials may be interested in parcel level changes for more focused land management around their parks than the regional scale. At this time, the SLEUTH model had not yet been rigorously evaluated for its effectiveness at modeling parcel-scale changes that would be relevant to National Park officials. This study evaluates the SLEUTH urban land use model for its effectiveness at predicting land use changes at local scales. The study is focused on the Chesapeake and Ohio Canal National Historic Park and the Antietam National Battlefield and evaluates the model's performance at multiple scales: 150m, 300m, and 600m grid sizes. These results suggest that the SLEUTH model is more effective at broader scales and has difficulty accurately simulating parcel-level

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changes. Thus, the SLEUTH model is more effective at predicting regional land use changes than local land use changes. While SLEUTH may not be optimal for local-scale predictions, land use managers can nevertheless benefit from knowledge gained regarding spatial patterns of regional growth pressure.

Keywords: scale, SLEUTH urban land use model, protected areas

John S. Pipkin, University at Albany

Misbehaving Landscapes, Performativity, and Henry Thoreau as Tourist in Quebec

In autumn 1850 Henry Thoreau made his only foreign excursion. His account was serialized in 1853 and published posthumously as *A Yankee in Canada*. He counted both the trip and the text as failures. Critics have generally concurred. In his “thin,” “cranky,” and “jingoistic” account Thoreau’s voice, usually so unerring and self-sufficient in its resources of perception, aesthetics and history, falters. He is at a loss before the unexpected in landscape and culture, in a place that resists his ingrained habits of seeing and writing landscapes (to say nothing of his attempts to speak French, eat, and find shelter). These contingencies of the moment were compounded, perhaps, by the crisis in Thoreau’s creative development critics detect around 1850, and by the contemporary cultural instability of the idea of tourism itself. Considering Thoreau’s stature as an observer of landscapes these “failures” are relevant to geographical understandings of landscape perception and recreational travel before the Civil War. This paper explores some aspects of Thoreau’s trip from the perspective of performativity, in which citation of prior yet potentially modifiable norms is constitutive of behavior and discourse, and is a condition of their cultural intelligibility. Thus we look at how Thoreau simultaneously enacted and resisted “tourism,” what he tried to do, what he did without thinking, what he thought he did, and what he said about it.

Keywords: Thoreau, Quebec, tourism, performativity

Gregory A. Pope, Montclair State University and **Jenn Callanan**, William Paterson University

A Reassessment of Soil Chemistry and Pedogenesis Following Intense Forest Fires

Studies of fire impacts on soils primarily concern nutrient fluxes and erosion. Less recognized are the short- and long-term impacts on the suite of mineral elements of the soil, and the pedogenic chemistry following fires. Our previous studies recognized alterations to clay mineralogy near the soil surface, and field observation of temperature-related profile alterations (such as oxidation). With newfound data on ash chemistry, we re-assessed soil data from within and surrounding the 2002 Hayman, Colorado, forest fire. All samples were from similar granitic parent material in a montane to subalpine conifer biome. Wood ash contributed heavily to base cations of Ca, P, K, and Mg. Though also common in parent material minerals, these ash elements overwhelm the mineral chemistry, and can be used as proxy indicators to the contribution of ash and the completeness and intensity of burning. With ICP spectroscopy, Si, Al, Ti, and Fe were determined to be most important to the soil analysis based on their relative lack of abundance in wood ash. The relative persistence of Ti and Al in soils allowed calculation of leaching (or accumulation) ratios of Si and Fe. In soil A horizons, increase in ash bases correlated to a relative abundance of Si, or lack of Si leaching, most apparent in the very recent hot fires. Iron abundance in A horizons was weakly and inversely related to ash base cation abundance. Subsoil evidence of pedogenic impact was unclear, though there were slight differences between the very recent and more historic burns.

Keywords: soil, forest fires, pedogenesis, geomorphology

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Richard A. Russo, Frostburg State University

Mapping the Maintenance of Pennsylvania German: It's All Verhoodled!

In the past decade the public has received mixed messages about the fate of the Pennsylvania German language. In the June 2002 issue of Time, readers were told that Pennsylvania (PA) German is an endangered language which is "on the wane." Yet, at the same time, other media outlets have reported on the burgeoning population of Amish in North America, most of whom speak PA German as a mother tongue. There are two primary reasons for this confusion. One reason pertains to the sociolinguistic dynamics of Pennsylvania German itself. The other reason stems from the difficulty in using U.S. Census data to determine how many people speak PA German and where exactly they live. This paper explores these two issues from the perspective and interests of a geographer. Where is the language being spoken? How does religious affiliation play a role in the geography of the language? How can the maintenance of PA German be mapped in these confusing data and sociolinguistic environments? The study focuses primarily on PA German language use in Pennsylvania.

Keywords: Pennsylvania German, language

Tobias Scott-Killian, SUNY – Geneseo

Hutterite Home-Range: Spatial Analysis of the Schmiedeleut Sect on the North American Plains

The Hutterites are a communal branch of Anabaptists who settled in the Northern Great Plains beginning in the late 19th century. Once numbering as few as a few hundred, their population has grown one hundred fold in the last century. There are three sects of Hutterites occupying close to five hundred colonies. Hutterites are particularly interesting because of their continued unusually high population growth even as they are mostly ignored in cultural references of Anabaptist groups. In addition, they are easily mapped as each colony is a cohesive spatial unit unlike the individual family plots of the Amish farmer. The Schmiedeleut homeland is centered in Eastern South Dakota and Southern Manitoba, making them the easternmost sect in the Hutterite diaspora. Using available databases, information was collected on each Schmiedeleut colony and mapped in a GIS. Spatial patterns are analyzed not only in terms of colony branching and expansion overtime but also in relation to physical and human variables.

Keywords: GIS, religion, colony, hutterite

Marija Skoog, West Chester University

Ingredients for Success: The Correlation between Demographics and Craft Brewing in the United States

Abstract The objective of this research is to investigate the demographic conditions related to the microbrewery and brewpub phenomenon in major metropolitan areas of the United States. With the overwhelming growth of this industry over the past 15 years it is important to look at the factors, in this case demographic characteristics, that have contributed to its success. The hypothesis is that there is a positive correlation between the number of people in the millenials age group, average income and the number of brewpubs and microbreweries located within each city. In order to test this hypothesis, demographic characteristics and population data for 49 cities in the continental U.S. with greater than 300,000 people are correlated with the number of microbreweries and brewpubs found within each city. As the data are not all normally distributed, demographic and population variables are correlated with the number of brewpubs and microbreweries using a Spearman Rank Order correlation. The spatial

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pattern of brewpubs and microbreweries shows a high concentration of activity in the Pacific Northwest. The results corroborate the hypothesis and there is a statistically significant relationship between the number of brewpubs and microbreweries and the number of people in the millenials age group. Surprisingly, there is also a significant correlation with the baby boomers, as well. The relationship with income is not strong. Future research questions include the relationship between the local foods movement, home brewing, and brewpubs and microbreweries, and a resurgence of the importance of place.

Keywords: microbreweries, demographics, regionality

Caryn Sobel, SUNY – New Paltz

Community Preservation Planning in Warwick, New York

American communities have struggled to manage urban sprawl through traditional zoning. In recent decades, innovative techniques have been developed to give local governments more tools to shape land use. In New York State, the Town of Warwick, on the northwestern fringe of the NY-NJ metropolitan area, adopted a highly regarded comprehensive plan designed to protect its rural and agricultural character in 1999. New zoning regulations based on the plan were introduced in 2002, and the plan was updated in 2008. The Town of Warwick includes three incorporated villages, and the plan uses this structure and Smart Growth principles to steer development into places which have existing infrastructure. The plan incorporates an inter-jurisdictional agreement between the Town and Villages of Warwick, and Florida, methods for purchasing and transferring development rights (PDR and TDR) and funding these from a real estate transfer tax. These innovative approaches enable preservation of rural and agricultural lands. This paper examines the background and history of Warwick's widely acclaimed plan and assesses the benefits and drawbacks involved in inter-jurisdictional arrangements, and purchase and transfer of development rights. It concludes that Warwick has achieved considerable success in protecting farms and open space, but has encountered obstacles to some techniques. The economic downturn since 2008 complicates the analysis, so the impact of these innovative techniques will be more fully realized when development pressures return.

Keywords: smart growth, innovative zoning, purchase of development rights (PDR), farmland protection

Sarah Stinard-Kiel, Rutgers University

Radical Childcare Collectives: Transforming Space, Transforming Movements

Radical childcare collectives organize in most major US cities and partner with a wide range of social justice and community based organizations. Although they vary geographically, the collectives share a set of values and assumptions about the vital role of carework in political organizing. They provide childcare at meetings and events which makes local politics and organizing more accessible for parents and primary caregivers. Besides providing this practical and necessary service, radical childcare collectives also do the work of turning childcare into a collective, rather than individual, responsibility. Moreover, the collectives believe that the presence of children in a meeting room or conference center can transform the space from being combative and tense to being a space of playful, creative and convivial political relations. Radical childcare collectives seek to transform their communities, and political movements more broadly, by making them more caring, inclusive, and therefore more sustainable. Their works seeks to create "self-reproducing movements" (Federici 2010).

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Reference: Federici, Silvia. (2010) "Feminism And the Politics of the Commons." In C. Hughes, S. Peace, and K. Van Meter for the Team Colors Collective (Eds.), Uses of a Whirlwind: Movement, and Contemporary Radical Currents in the United States (pp 283-294). Oakland, California: AK Press.

Keywords: carework, feminism, political organizing

Nicholas Strayer, York College of Pennsylvania

The Role of Fallow Land in the Advent of the Dust Bowl

This paper surveys the events and agricultural practices that took place in the coming of the Dust Bowl through the lens of two dominant and conflicting narratives regarding the causes of the ecological disaster. The study chiefly aims to highlight, through the use of Geographic Information Systems (GIS), the crucial role that fallow land played in the onset of the Dust Bowl by spatially analyzing data that has been overlooked in former studies. This fresh approach to an old story unearths insightful results, ultimately leading to a new and greater understanding of the relationships between the man-made and ecological factors that triggered the Dust Bowl.

Keywords: Dust Bowl, historical geography, GIS, environmental history

Roy ter Steeg and Joost Sonsma, SUNY – Geneseo

In Search of the Creative Class and its Urban Milieux: An Appraisal of Second Tier Cities and their Prospects

Richard Florida's celebration of the dynamics of creative class clustering in a small range of 21st century cities has generally been conceptually underscored by identifying attributes one associates with young, well-educated, singles and sophisticated lifestyle. A drawback of his approach is its scattered imagery, striking lack of holistic treatment, and weak theoretical underpinning. A second and serious limitation of the approach is the inherent confusion of central cities and their overall metropolitan areas. Our paper attempts to resolve some aspects of this confusion by blending a wide variety of purposed measures of creative class presence, and augmenting the database with additional measures appropriate to tracing these clusters and their impact on urban vitality. The analysis identifies 'second tier' urban settings which exhibit some but not all creative class traits. One such city is Rochester, NY and we assess its prospects in the light of Richard Florida's reasoning.

Keywords: creative class, growth, decline, Rochester

Tao Tang, SUNY – Buffalo

Three Dimensional Geographic Information Service for Local Economic Activities – a Case of Applied Research of LiDAR

What is geography? What geography can do for us? These are the questions people may ask from time to time. This research demonstrates that geographic information and knowledge can be used effectively in service to our local communities or societal needs. This research applied 3D LiDAR GIS and remote sensing technology in surveying the New York State thruway sections and sections of the Lake Erie shoreline. The geographic data and analysis were not only useful to fulfill the interests of geographic researches, but also critically useful for non-geography activities, such as highway management and repair, environmental pollution prevention, etc. Geography is large and broad. Combining the strength of our research interests and the needs of non-geographic sectors is very important for geographic

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researches and applications. Theoretically speaking, students of geography should provide themselves available to non-geography fields and sectors as “instrumental”, or “useful”, or “helpful” in order to enrich their own knowledge, research, and discovery.

Keywords: LiDAR, GIS, remote sensing, geographic service

Grace Trompeter, SUNY – Geneseo

New York's Craig Colony for Epileptics: Tracing the Deepest Roots of Deinstitutionalization

Under the encouragement and guidance of William Prior Letchworth, the Craig Colony for Epileptics was established by the State Board of Charities on the site of a former Shaker colony in Sonyea, NY in 1894. Following an idealistic model of colony life popular in Europe, the Craig Colony was the first and only New York State institution specifically designed “to secure the human, curative, scientific, and economical care and treatment of epileptics, exclusive of insane epileptics.” Originally built to house 800 patients, the colony was home to nearly 2,600 epileptics at its peak in 1939. The Colony’s goal was to serve the State’s epileptic population without regard to distance from the facility, but distance decay was in fact a factor in Craig’s catchment. Eventually, an aging population, and a therefore less productive and increasingly dependent workforce, exposed the problems of institutionalization and the flaws of the State’s mission. Using data from the Colony’s detailed annual reports, as well as the Colony Daybook, this paper explores the challenges of demographic management and the ultimate failures of institutionalization experienced in Sonyea, “the Valley of the Eternal Sun”.

Keywords: Craig Colony, epileptics, deinstitutionalization

Russell C. Weaver and Jason Knight, SUNY – Buffalo

Political Competition in the Model of Land Use and Society: A Case Study of the Buffalo, NY Outer Harbor Parkway Project

The model of Land Use and Society suggests that local land use decisions are made where three layers of spatial data intersect. Namely, actions taken in (i) the human landscape, which are regulated by (ii) the institutional landscape, transform (iii) the physical landscape within a given geographic territory. When human impacts on the physical landscape create new conflicts over land use, local institutions establish additional policies or regulations to manage the problems. This paper applies the above logic to the recent Buffalo, NY “outer harbor parkway” project. The project was initiated to increase access to Buffalo’s waterfront, which is largely cut off from the city by old infrastructure designed to accommodate high volumes of bygone industrial ground and water traffic. However, following the collapse of the city’s manufacturing sector, local stakeholders called on elected officials to reconfigure the infrastructural geographies in order to enhance nonindustrial access to the outer harbor. Yet whereas nearly all stakeholders favored more waterfront access, the preferred strategy for achieving this end was fiercely debated. Two vastly different alternatives each garnered formidable support. In the end, one was selected despite empirical evidence suggesting the other was somewhat better for long-run economic development. This observation adds a wrinkle to the standard model of land use policy. Explicitly, inter-group competition over land use alternatives creates an environment in which the political strength of coalitions significantly influences land use outcomes. Accordingly, we outline an agenda for extending the conventional model of Land Use and Society to incorporate political behavior.

Keywords: land use, politics, policy

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Joan M. Welch, West Chester University

Fire in the Woods: Invasive Plants Six Years Later

After collecting baseline herbaceous and woody plant data in 2005, county park staff carried out a prescribed burn on a 6-hectare woodland. The research site, Hibernia County Park, is located in southeastern Pennsylvania. Park managers implemented a prescribed fire management plan to evaluate its effectiveness as a tool for controlling invasive plants in a disturbed woodland. For purposes of fire management, there are five burn units each with three randomly located transects for a total of 15 study plots. Each plot consists of a 30m transect to collect herbaceous point data, a 30m by 5m area for woody stems, and a 30m by 10m area for tree species and vines. Post-burn data were collected in 2006, 2007, 2008, 2010 and 2011. Baseline data identified the two dominant invasive plants as Japanese honeysuckle (*Lonicera japonica*) and Multiflora rose (*Rosa multiflora*). Due to dense patches of invasive shrubs and vines, herbaceous diversity was low for an upland forest habitat. Native plants of the woody understory include spice bush (*Lindera benzoin*), black cherry (*Prunus serotina*), and blackhaw (*Viburnum prunifolium*). Most trees were impacted by at least one vine growing up the trunk. Immediately after the prescribed burn, counts declined for native and invasive herbaceous and woody plants, and vines on trees were destroyed. The trend has been recovery for both invasive and native plants, and some vines have returned to tree trunks. Point data for Japanese honeysuckle and Multiflora rose are statistically significantly lower six years after the prescribed burn.

Keywords: prescribed fire, Pennsylvania-southeast, invasive plants, eastern deciduous forest

James Wiley, Hofstra University

Can Linguistic Tourism Contribute to Development? The case of Guatemala's Western Highlands

Since the late 1980s, more than 35 language schools have opened in Quetzaltenango, known locally as Xela, the largest city of Guatemala's western highlands. The schools attract foreigners from all corners of the globe who wish to learn Spanish, many doing so during vacation periods as a form of educational tourism. This paper analyzes Xela's linguistic tourism industry, its origins and growth to determine its impacts on the city and the heavily Maya-populated surrounding region. Specifically, it examines the Xela "model" of Spanish language instruction that has emerged, characterized predominantly by local ownership, to gauge its affects upon employment creation and multiplier effect generation in a region that has lagged behind other parts of the country. The paper also considers if/how linguistic tourism has stimulated the growth of the area's tourism industry more generally and possible future developments in that industry before concluding with an assessment of the overall development outcomes of linguistic tourism in Xela.

Keywords: Guatemala's western highlands, tourism, linguistic tourism

Rachel Will, Kent State University

Developing Sustainable Water Management in Peru: Incorporating Traditional Methods into National Water Management Reform

Due to increasing urban densification and population growth in desert areas, climate change, various teleconnections, and an inadequately managed water system, Peru often experiences periods of water shortages and faces an uncertain future in terms of water security. In this research proposal, it is suggested how water resource management reform could be enacted across the country spanning from national to local government sectors including representatives from domestic, industrial, and

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agricultural sectors consisting of urban, rural, and traditional citizens to ensure that water is being fairly distributed and that all sectors and cultural groups are fairly represented. Proposed is the use of Integrated Water Resource Management (IWRM), a process that provides the basis for a holistic, coordinated framework for sustainable management and equitable distribution of water. Incorporated into the IWRM proposal are the core water management methods of the Huaynacotas, a traditional and sustainable Andean group. Though often marginalized, traditional groups such as the Huaynacotas often create effective and sustainable solutions to water management. Through the use of Participatory Action Research, which facilitates fair representation of all population groups at the management level and emphasizes the importance of the methods and ideas of traditional groups as well as incorporation of the Huaynacotas core water management methods, the use of IWRM in Peru could be an effective, sustainable, and equitable solution to the current water crisis and help ensure future water security.

Keywords: Peru, water management, resource management, participatory action research

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Adam Paul Blough, University of Pittsburgh Johnstown

Impact of Coastal Lighting on Nesting Sea Turtles

An increasing awareness of the ocean's sea turtles has sparked increased amounts of research to protect these reptiles. In Georgia, coastal protection laws now regulate coastal lighting. The purpose of this project is to examine these impacts on Jekyll Island, GA. Coastal Lighting Protection is a study of the buildings and coastal structures that impact their adjacent beaches. If the buildings are not compliant with these new laws, they must implement special products to limit their detrimental impact of the nesting sea turtles on the nearby beaches. This map can now be used to inform the public and building owners of their coastal impact.

Keywords: artificial lighting, sea turtles, coastal issues, coastal development

Department of Geography, SUNY – Geneseo

Building Alumni Outreach with a Facebook Page: The Geneseo Experience

The community 'Alumni Geographers of Geneseo' (AGOG) was founded in 1984 and relied for a quarter-century on an increasingly expensive annual newsletter. In 2009, budget cutbacks were the stimulus for the creation of a Facebook page. The page has since grown to embrace over 320 members and close to half our alumni. Although solicitation of financial support never occurs on the page, alumni giving has more than doubled since its inception. The page is updated daily and stresses visual impact based primarily on alumni news and travel. Dozens of albums form a permanent record of class years, conferences, field trips, ceremonies, and social events. Current students access the page to explore careers and graduate program attendance. We have found that the page functions best with a 'shadow' conventional page as an information source. We recommend this experiment to other Programs in our Division.

Keywords: alumni, Facebook

Brianna N Hensel, Millersville University

Green Infrastructure in Lancaster, PA

Green Infrastructure in Lancaster, PA: Each year, approximately 1 billion gallons of combined sewer overflow (CSO) from Lancaster City are released into the Conestoga River. This is due to Lancaster City's combined sewer system, an old type of sewer system popular during the early 1800s (the City of Lancaster was incorporated in 1818) which combines domestic wastewater and stormwater into the same pipe system. When the amount of water entering the system exceeds the capacity, the excess is released straight into the nearest river. At the time, the effects of the combined sewer were unknown; the cities were small in size and population and the demands on the system were small. Additionally, the environmental impacts on the river and water were also relatively unknown (at least to the standards of today). But now, during heavy precipitation events, the treatment plants become overwhelmed by the volume of water and have no choice but to release the untreated sewage into the river. The City of Lancaster, like many other older cities in the Northeast facing similar problems with combined sewers, is searching for a solution that is low-cost and efficient. Therefore, the City of Lancaster, like many others, has taken on the responsibility to alleviate the situation by turning to environmentally-friendly practices to divert the extra water in the form of green infrastructure. Using GIS, a spatial analysis will be

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performed to show the relationship between the location of green infrastructure and socioeconomic characteristics of residents of the City of Lancaster.

Keywords: green infrastructure; stormwater; combined sewer overflow (CSO); local government

Megan Kelsall, Shippensburg University

Analyzing Nutrient Load and Stream Discharge Time Series of Three Major Rivers Draining into the Chesapeake Bay

This study performs trend analysis on stream flow, nutrients, and sediment load time series data for three of the major rivers that drain into the Chesapeake Bay. The data were obtained from the USGS' River Input Monitoring Program (RIM) for the Chesapeake Bay. The measuring stations used are the Susquehanna River at Conowingo (MD), the Potomac at Chain Bridge (D.C.), and the James River at Cartersville (VA). For each variable, trend analysis was performed on both annual and seasonal (spring and summer) time scales. Detecting trends in nutrient and sediment delivery to the Chesapeake Bay can assist decision making regarding Bay restoration efforts. A rising trend in nutrient concentration, for example, can cause excessive algae growth which decreases the amount of dissolved oxygen as well as sunlight that reaches the aquatic vegetation that provides important habitat and food for fish and wildlife. Thus, establishing positive or negative trends in effluents can help inform Bay restoration decisions.

Keywords: nutrients loads, Chesapeake Bay, trends, time series

Richard Kaiser and Thomas Feeney, Shippensburg University

Sustained Baseflow Discharge at a Conduit-Flow Carbonate Spring

Many of Pennsylvania's fish hatcheries are situated on springs that flow from carbonate rock. These springs offer a consistent flow of generally clean, cold, water year-round without the need for major pumps that a well would require: all ideal for trout propagation. One such hatchery is situated on Green Spring in Pennsylvania's Cumberland Valley. Green Spring is a contact spring that occurs along the major lithologic boundary of the Cumberland Valley carbonates and the Martinsburg Shale. Qualitative observation of the spring during its years of operation reveal that the spring flow can peak quickly, can become quite turbid, and flow can become dangerously low during drought periods. This study investigated the time necessary to reach low-flow conditions that would jeopardize the hatchery's operation. Continuous flow at Green Spring has been accomplished through the development of a rating curve and the use of an InSitu-brand pressure transducer. Resulting hydrographs resemble that of a surface stream (suggesting that Green Spring is fed by a conduit system), and flashy storm-event responses are interrupted by periods of sustained low-flow (baseflow) decay. Baseflow recession coefficients derived from analysis of 15 baseflow periods indicate that this spring will reach a minimum operational flow of ½-million gallons per day in approximately 4 weeks (28 days) without a substantial recharge event.

Keywords: Hydrology, Karst, Pennsylvania

Wendy A. Mitteager and Shawn Dacey, SUNY – Oneonta

Name that State: Introductory Geography Students' Performance on Map Quizzes

Over the period of 16 semesters, Introductory Geography students were tested on basic geographic knowledge on the first day of class. The majority of the students were freshman, just out of high school. Blank maps with state outlines were handed out and they were instructed to label the 50 states within a

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time limit of 15 minutes. The analysis of data shows that basic USA geographic knowledge is lacking in young college students taking Introductory Geography. In this paper, we analyze the data, seeking out any patterns in the data and investigate the results.

Keywords: geographic knowledge, geographic education

Marius Paulikas, Kent State University

Employing Geocoded Survey Data from the Joplin, MO Tornado Event to Project Future Potential Tornado Wind Damage Patterns and Fatality Probabilities

The 2011 Joplin, MO tornado was a devastating event that killed over 150 and destroyed 8,000 structures altogether. The tornado was ranked as an EF5 on the Enhanced Fujita intensity scale as a result of the estimated 200+ mph wind speeds that comprised a portion of its damage path. Graphic displays of the Joplin tornado damage path released by NOAA are characterized by smoothed polygons generalizing the boundaries of various tornado intensity wind speeds. These damage path swaths, however, typically aggregate pockets of tornado wind speed damage under the assumption that wind speed damage characteristics are relatively constant within the enclosed polygons; more realistically, tornado damage varies from one structure to the next. Damage surveys recently conducted in Joplin include geocoded locations of every impacted residential structure as well as fatalities located within the impacted structures. In addition, every impacted structure has an individually assigned damage intensity rating from the tornado event. This study seeks to recreate the Joplin event over a major metropolitan region and incorporate this geocoded survey data to project a hypothetical fatality count. The approach of incorporating wind speed damage on the individual structure level could potentially allow for a more accurate prediction of catastrophic wind speed damage patterns to be derived from a hypothetical violent tornado event, and may likewise allow for better potential casualty estimates to be calculated that may result from such an event.

Keywords: tornado, vulnerability, fatalities

Jennifer Ruper, Kent State University

The Effect of Climate Change on Natural Disasters: A College Student Perspective

Climate change is currently a topic of debate, which is discussed not only within the physical science community, but also by those in policy. Outside of these informed communities lies the American public, often not seeking out climate change research, but rather ingesting information interpreted by a third-party, most likely through a political lens. Given the increased attention to natural disasters, one area of concern is the relationship between climate change and natural disasters. An assessment of the public's opinion on this relationship has seen minimal research, and none regarding college students. College students are a unique subset of the populace for their age and possible future in policy or research. This study surveyed college students in geography courses at Kent State University regarding their opinion of the effect of climate change on various natural disasters, while given examples of recently occurring natural disasters. The disasters included both atmospheric-related and non-atmospheric related phenomena. The results show similar responses for those disasters that are atmospheric-related. However, disparities exist between atmospheric-related and non-atmospheric related natural disasters, illustrating a lack of knowledge between climate change and non-atmospheric natural disasters, especially tsunamis. Finally, females were found more likely to agree with the effect of climate change on natural disasters, while males were found more likely to disagree.

Keywords: climate change, natural hazards, disasters, perspective

