

# THE PENNSYLVANIA GEOGRAPHICAL SOCIETY

2011 ANNUAL MEETING

NOVEMBER 4 and 5, 2011

HOSTED BY INDIANA UNIVERSITY OF PENNSYLVANIA  
INDIANA, PENNSYLVANIA



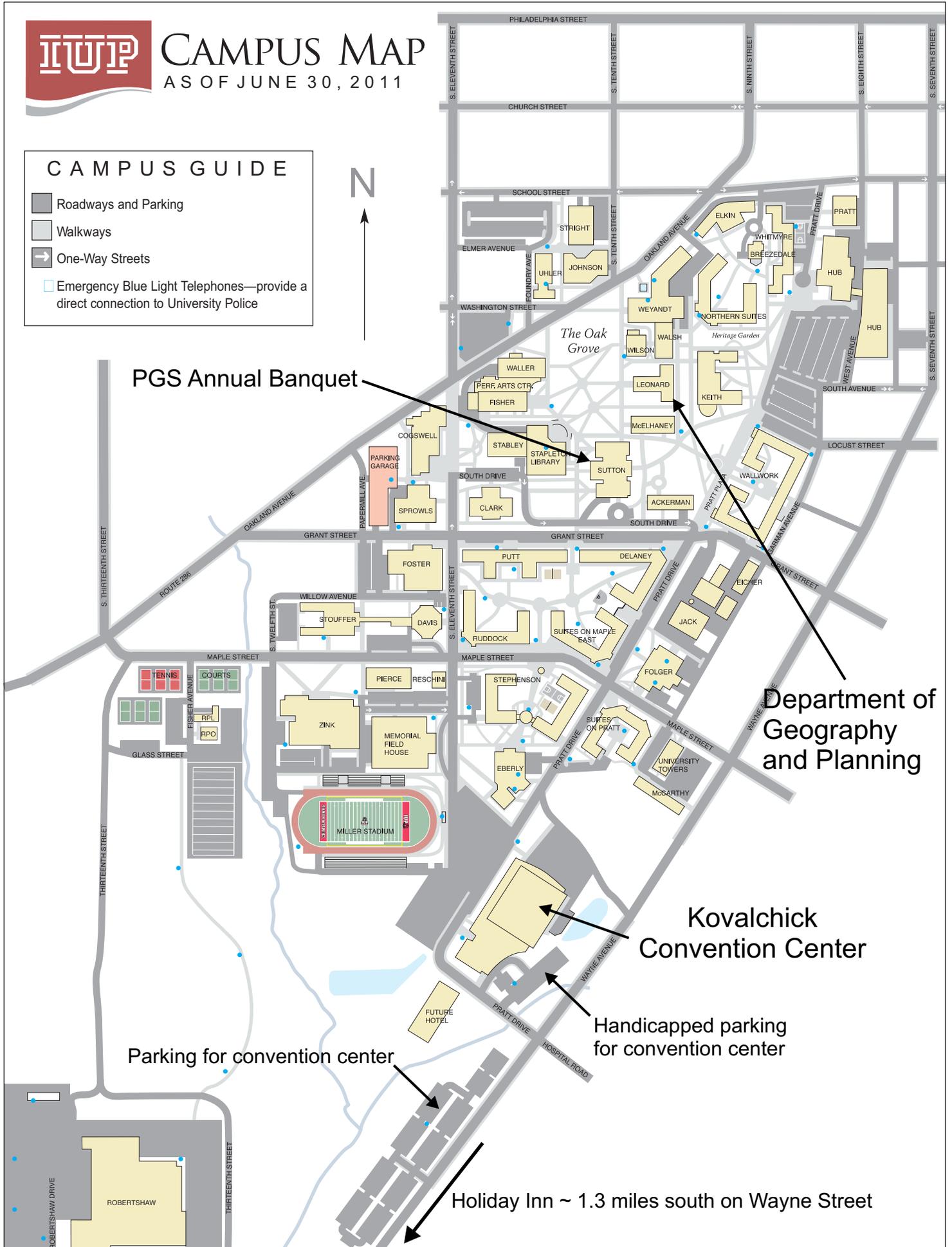


# CAMPUS MAP

AS OF JUNE 30, 2011

## CAMPUS GUIDE

- Roadways and Parking
- Walkways
- One-Way Streets
- Emergency Blue Light Telephones—provide a direct connection to University Police



PGS Annual Banquet

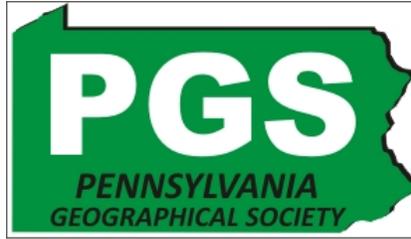
Department of Geography and Planning

Kovalchick Convention Center

Handicapped parking for convention center

Parking for convention center

Holiday Inn ~ 1.3 miles south on Wayne Street



# THE PENNSYLVANIA GEOGRAPHICAL SOCIETY

PRESENT THEIR

2011 ANNUAL MEETING

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HOSTED BY INDIANA UNIVERSITY OF PENNSYLVANIA

INDIANA, PENNSYLVANIA

## 2011 Meeting Arrangements Committee

John Benhart, Jr., Indiana University of Pennsylvania

Brent Zaprowski, Salisbury University

Ola Johansson, University of Pittsburgh at Johnstown

Jodi Vender, Penn State University

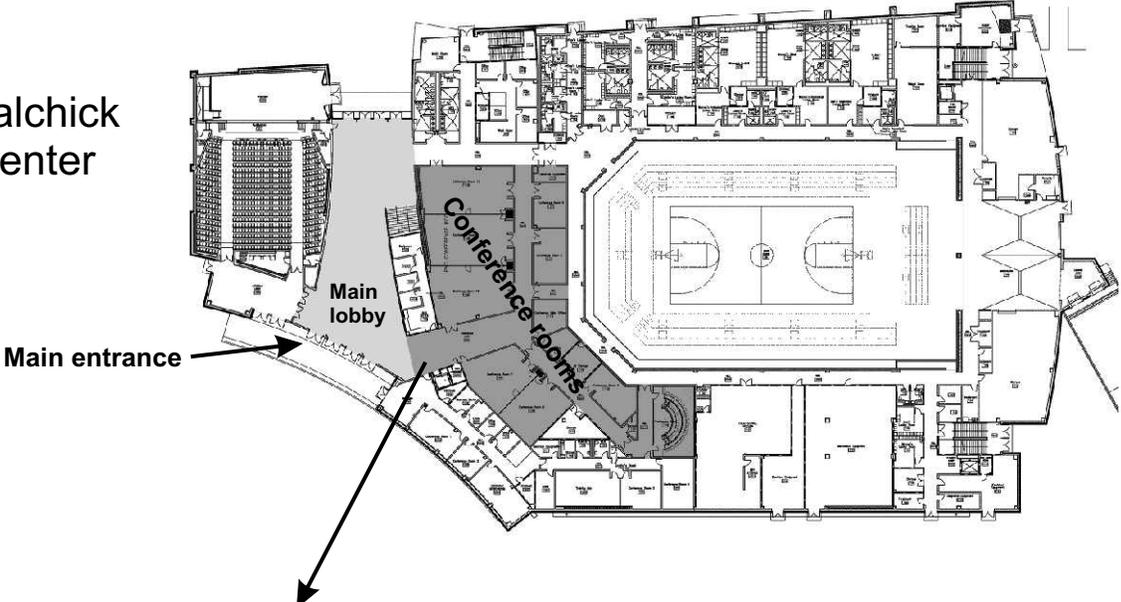
Tim Dolney, Penn State University at Altoona

Welcome to Indiana, Pennsylvania! We are grateful that many of you took the time to make the drive and attend the conference. This year's meeting has a diverse range of topics from transportation geography and planning to meteorology and GIS. We are pleased to be hosting the PASSHE GIS Consortium on Friday afternoon and the Pennsylvania Alliance for Geographic Education on Saturday morning. There are also a number of special sessions and panel presentations this year. The luncheon guest speaker is Kevin Patrick from Indiana University and his talk is titled "Iconography and the Ideal Shape of Place." The Friday evening banquet and awards ceremony features 2011 PGS Distinguished Geographer Award Winner Dr. Ted Muller from the University of Pittsburgh with a talk titled "Planning Urban Blueways: Landscape Architecture, History, and Geography."

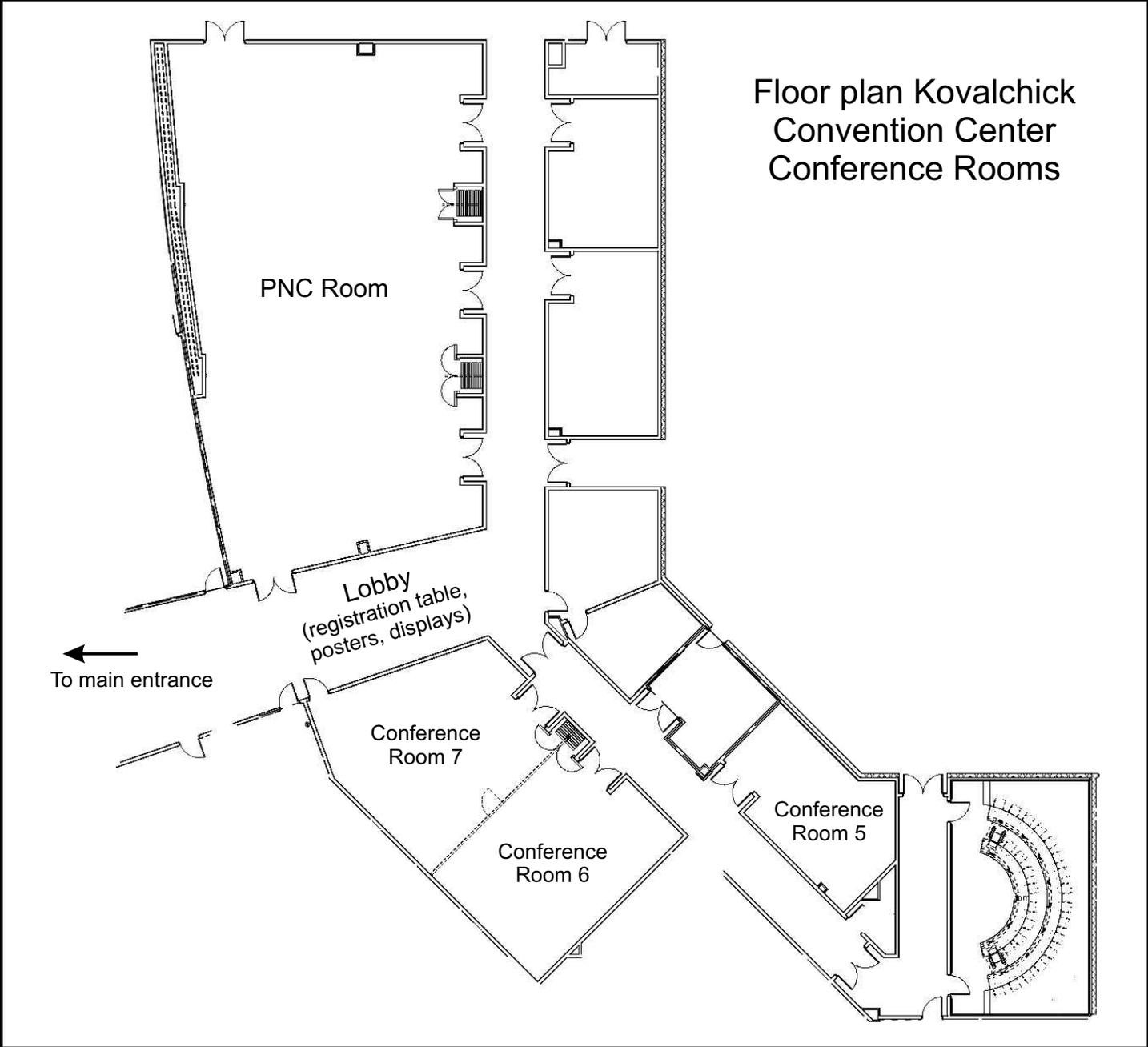
The meeting arrangement committee hopes that this year's conference will be both educational and enjoyable. If there is anything that we forgot, or if you have any questions about PGS, Indiana University or the area, please ask us for assistance. We look forward to an exciting meeting!

Thanks again for attending.

# Floor plan Kovalchick Convention Center



# Floor plan Kovalchick Convention Center Conference Rooms



**2011 ANNUAL MEETING OF THE PENNSYLVANIA GEOGRAPHICAL SOCIETY  
SCHEDULE OF EVENTS**

<b>Time</b>	<b>Event</b>	<b>Location</b>
<b>Friday, November 4th</b>		
8:00 am-4:00 pm	Registration	Front Lobby
8:30 am-5:30 pm	Posters and Maps on Display	Lobby
8:10-9:40 am	Paper Session 1 - Physical Geography I	Conference Room 6
8:30-9:40 am	Paper Session 2 - Human Geography I	Conference Room 7
9:30-10:30 am	Coffee Break	Lobby
9:50-11:20 am	Paper Session 3 - Human Geography II	Conference Room 6
	Special Paper Session S1 - Energy Landscapes	Conference Room 7
9:50-11:20 am	Presentations - "School Community Projects, Geography and Sports"	Conference Room 5
11:30 am-1:00 pm	PGS Luncheon	PNC room
12:00-12:45 pm	Guest speaker: Kevin Patrick - "Iconography and the Ideal Shape of Place"	
12:45-1:00 pm	Awards presentation - John Katana	
1:00-1:15 pm	PGS business meeting	PNC room
1:15-2:25 pm	Paper Session 4 - Environmental Geography	Conference Room 6
	Special Paper Session S2 - GIS and Watershed Management/Planning	Conference Room 7
1:30-2:30 pm	Student map/poster presenters available for questions	Lobby
2:35-4:05 pm	Paper Session 5 - Geography Education	Conference Room 6
	Special Paper Session S3 - Plans and the Planning Process: A Review of Planning Activities in Franklin County, Pennsylvania	Conference Room 7
2:15-3:15 pm	Presentation - "China VIII: Building Bridges-Teaching Opportunities in China"	Conference Room 5
3:15-4:15 pm	Interactive Roundtable Session - "Doing Geography: Undergraduate Perspectives and Experiences"	Conference Room 5
4:15-5:15 pm	Panel Presentation - "Opportunities for Geographers"	Conference Room 5
4:15-5:25 pm	Panel presentation - "Terms of Engagement: Host Communities and Institutions of Higher Learning"	Conference Room 6
4:15-5:25 pm	Special Paper Session S4 - PASSHE GIS	Conference Room 7
5:15-5:45 pm	Student Awards Presentation	Conference Room 5
5:25-6:15 pm	PASSHE board meeting	Conference Room 7
6:15-9:00 pm	PGS Annual Banquet and Awards Ceremony - Guest Speaker: Dr. Ted Muller from the University of Pittsburgh - "Planning Urban Blueways: Landscape Architecture, History, and Geography"	Blue Room, Sutton Hall, IUP campus
<b>Saturday, November 5th</b>		
8:30 am-10:00 am	Registration	Front Lobby
8:30 am-12:00 pm	Teaching Geography Workshop - sponsored by PAGE	Conference Room 7
9:00-10:10 am	Special Paper Session S5 - Transportation Geography I	Conference Room 6
10:20-11:30 am	Special Paper Session S6 - Transportation Geography II	Conference Room 6
11:40 am-12:30 pm	Paper Session 6 - Physical Geography II	Conference Room 6

## **DISPLAYS AND POSTERS IN THE LOBBY**

Frank P. Yelenic, Sr. Publishers Representative  
John Wiley & Sons, Inc.  
fyelenic@wiley.com

Jon S. Critchfield  
BAE Systems  
cfieldj@yahoo.com

### **POSTERS**

*\*Poster presenters will be available for questions from 1:30-2:30 pm on Friday.*

Nick A. Angelo, Indiana University of Pennsylvania  
*White Township Road Sign Inventory*†

Joseph W. Bencloski, Indiana University of Pennsylvania  
*A Landsat Digital Image Analysis of Urban Sprawl in Southern Butler County, Pennsylvania*

Mallory R. Henig, The Pennsylvania State University  
*Geography 493: Environmental Issues across the Americas*†

Joshua M. Krug, Indiana University of Pennsylvania  
*Marcellus Shale Development in PA: A Socio-Demographic and Economic Analysis*†

Michael R. Muder and Ellen Lamont, Indiana University of Pennsylvania  
*Assessing Horizontal Accuracy of Mine Maps Using GIS and GPS: The Rochester and Pittsburgh Underground Mine Map Collection*†

Stephanie J. Sanner, James V. Whitacre, and John W. Wenzel, Carnegie Museum of Natural History, Powdermill Nature Reserve  
*Map Service Tool for Monitoring Water Quality on a Landscape Level*

Erik Scrivener, Indiana University of Pennsylvania  
*Improving Visibility and Awareness of Traffic Control Devices Using GIS in Binghamton, New York*†

Dana A. Turgeon and Robert Cerrato, Indiana University of Pennsylvania  
*Indiana Borough Zoning Ordinance Restructuring Project*†

John W. Wenzel and James V. Whitacre, Carnegie Museum of Natural History, Powdermill Nature Reserve  
*Comparing Ground Surveys with Remotely Sensed Data to Measure Forest Succession*

James V. Whitacre and John W. Wenzel, Carnegie Museum of Natural History, Powdermill Nature Reserve  
*Publicly Available Records Do Not Indicate Marcellus Wells Reliably*

† Elaine Bosowski Student Map/Poster Contest entrant

### **The Pennsylvania Alliance for Geographic Education presents: "Pennsylvania Geography --The Adventure in My Community"**

**November 13-19, 2011** has been designated as **National Geography Awareness Week**. Geography Awareness Week highlights the National Geographic Society's annual Geography Action! conservation and awareness program, a public outreach series designed to educate and excite people about our natural, cultural, and historic treasures. The Pennsylvania Alliance for Geographic Education has sponsored an inaugural poster contest based on this year's Geography Awareness Week theme: "The Adventure in Your Community." Nearly 550 K-12 students from more than 50 classrooms across the state submitted poster designs on "Pennsylvania Geography: The Adventure in My Community." Winners and Honorable Mentions are on display in the lobby.

# 2011 ANNUAL MEETING OF THE PENNSYLVANIA GEOGRAPHICAL SOCIETY

## SUMMARY OF PAPERS AND PRESENTATIONS

<b>Friday, November 4th</b>	
	<b>Conference Room 5</b>
9:50-11:20 am	<p style="text-align: center;"><b>Presentations - School Community Projects, Geography and Sports</b></p> <p style="text-align: center;">John Katana, chair</p> <p><b>Synergy: Jewish Synagogue Revisited</b> - Ms Karen Bowman and students of Northern Cambria High School - This workshop will present an overview of a on going series "Cambria Re-coal-lections." The main focus will be on the Jewish Synagogue in the community of Northern Cambria. Ms. Bowman and the students will discuss the project, research, outcomes and the role of the synagogue in the community.</p> <p><b>Geography Curriculum: A Geo-historical Perspective</b> - Dr. Susan Sibert - Why do we teach what we teach in today's geography curriculum? This introspective session includes a peek at some antique textbooks and how their content has helped to shape geographical curriculum today.</p> <p><b>Geography of Sports</b> - John Katana - This session will be a brief overview of the class - Geography of Sports. Topics will include NFL Geography, NCAA Geography and Geography of Footwear. Door prizes will be given.</p>
2:15-3:15 pm	<p style="text-align: center;"><b>Presentation - Teaching Opportunities in China</b></p> <p style="text-align: center;">John Katana, presenter</p> <p>The presenter will discuss opportunities both at the undergraduate and graduate level, classroom teachers and retired teachers to teach in China as part of a new program sponsored by the Chinese government. Trip includes flight, room and board plus some side trips. Door prizes will be given.</p>
3:15-4:15 pm	<p style="text-align: center;"><b>Interactive Roundtable Session - Doing Geography: Undergraduate Perspectives and Experiences</b></p> <p style="text-align: center;">Jodi Vender, chair</p> <p style="text-align: center;">Branden Belajac, Emily Connor, Brian Hall, Michael Karalewich, Victoria Wilds, presenters</p> <p>In an increasingly globalized world, it is no longer sufficient to turn out baccalaureate graduates whose academic preparation consists entirely in the successful completion of a prescribed sequence of coursework. To be competitive in future endeavors--whether job or graduate school--students need to engage in meaningful co-curricular activities that provide real-world experience. In this session, undergraduate students report on activities including student-run organizations, fieldwork, research, internships, and service-learning projects, and invite others to join the conversation on ways to enrich the undergraduate experience.</p>
4:15-5:15 pm	<p style="text-align: center;"><b>Panel Presentation: Opportunities for Geographers</b></p> <p style="text-align: center;">William B. Kory, chair</p> <p style="text-align: center;">Ola Johansson, William Simmons, Kimberly Thompson, George Wolfe and John Critchfield, panelists</p> <p>The panel will address the topic of job opportunities for geography graduates and focus on the current status of the field of geography in the country. Geography major graduates work in the private sector, many are employed in local, state and federal governments, others are engaged in the field of education and others serve as consultants. Members of the panel will briefly discuss their experiences in school and on the job and we welcome the members of the audience to share their school and work experience with us. Everybody attending the session is encouraged to participate.</p>
5:15-5:45 pm	<p style="text-align: center;"><b>Student Awards Presentation</b></p> <p>Please join us as we present awards to the winners of the student paper and the Elaine Bosowski map/poster contests</p>

**2011 ANNUAL MEETING OF THE PENNSYLVANIA GEOGRAPHICAL SOCIETY  
SUMMARY OF PAPERS AND PRESENTATIONS**

<b>Friday, November 4th</b>	
	<b>Conference Room 6</b>
8:10-9:40 am  * student paper contest entrant	<b>Session 1 - Physical Geography I</b>  <u>Chair:</u> Joseph Bencloski  8:10 - Brock Saylor,* Adam Diltz and Tom Kerstetter - Bloomsburg University Tree Inventory  8:30 - Eric Beamesderfer* - Comparison of Estimated and Observed Storm Motions to Environmental Parameters  8:50 - Dustin Snare* - Error Analysis of SSM/I F08 Antenna Temperatures to Produce an Extended Record of Observations for Climate Applications  9:10 - Joseph Bencloski - Lake Effect Precipitation in the Vicinity of the U.S. Great Lakes: Characteristics and Causes  <b>9:30-9:40 Questions</b>
9:50-11:20 am  * student paper contest entrant	<b>Session 3 - Human Geography II</b>  <u>Chair:</u> Robert Sechrist  9:50 - Eugene Offerman - GIS Marketing Consultation  10:10 - Benjamin Ritter* - Assessing Urban Change on an Annual Basis with an Exploratory Data Set  10:30 - Christian Wells* - Moving Forward: Residential Stratification and Overcoming its Implications  10:50 - Robert Sechrist - Fishing Tournaments in North Central Pennsylvania 2004-2011  <b>11:10-11:20 Questions</b>
1:15 - 2:25 pm  * student paper contest entrant	<b>Session 4 - Environmental Geography</b>  <u>Chair:</u> Francis Galgano  1:15 - Joshua Steiner* - Marcellus Shale Exploration in Greene County, Pennsylvania: A study of the Cumulative Effects of Forest Fragmentation in Well Pad Site Selection  1:35 - Guillaume Turcotte - Determining Factors in the Siting of Undesirable Land Uses  1:55 - Francis Galgano - Environmental Security: Water and Conflict in the Middle East  <b>2:15-2:25 Questions</b>
2:35 - 4:05 pm  * student paper contest entrant	<b>Session 5 - Geography Education</b>  <u>Chair:</u> Ahmad Massasati  2:35 - Deborah Diehl* - Conservation Education of Acid Mine Drainage Treatment  2:55 - Gary Coutu - Working with At-Risk Students in Geoscience Education  3:15 - Ahmad Massasati - A Sundial, an Analamma, and a Locational Monument for the University of Pittsburgh at Johnstown  3:35 - Chad Kauffman and Eric R. Beamesderfer - Climate Change Pedagogy in an Applied Climate Course Infused with Social Media  <b>3:55-4:05 Questions</b>

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<b>Friday, November 4th</b>	
	<b>Conference Room 7</b>
8:30-9:40 am	<p align="center"><b>Session 2 - Human Geography I</b></p> <p><u>Chair:</u> John Benhart Jr.</p> <p>8:30 - Stacey Wicker "You can't go home again": The Place of Home in the Geographic Imagination of Edward Abbey</p> <p>8:50 - Wayne Brew - The Hole in the Map; Letterkenny Army Depot, Historic Preservation, and Base Realignment and Closure (BRAC)</p> <p>9:10 - John Benhart Jr. - Socio-spatial Structure of the 21st Century Post-Industrial City - Pittsburgh, Pennsylvania</p> <p><b>9:30-9:40 Questions</b></p>
9:50-11:20 am	<p align="center"><b>Special Session S1 - Energy Landscapes</b></p> <p><u>Chair:</u> Brian Okey</p> <p>9:50 - Robert Cerrato and Brian Okey - Indiana University of Pennsylvania and Westmoreland County Municipal Authority Water Quality Monitoring Partnership</p> <p>10:10 - Brian Okey and Amanda Poole - Wind Energy as Social Paradox: the Case of Prince Edward County, Ontario</p> <p>10:30 - Amy Salsgiver - The Changing Landscape: Discovering Social Networks through Ethnography in a Former Coal Mining Community</p> <p>10:50 - Robert Wilson - Building a Digital Repository of Abandoned Coal Mine Maps</p> <p><b>11:10-11:20 Questions</b></p>
1:15 - 2:25 pm	<p align="center"><b>Special Session S2 - GIS and Watershed Management/Planning</b></p> <p><u>Chair:</u> Richard Hoch</p> <p>1:15 - Richard Hoch - Mapping longwall mining activities for public knowledge: 'Seeing' under the ground of Greene and Washington Counties, Pennsylvania</p> <p>1:35 - Christopher Schaney - Understanding Flood Events in the Greater Nashville Metropolitan Area 1970 - 2010: Correlating Urban Growth with Analysis of Storm Water Discharge in the Cumberland River Watershed</p> <p>1:55 - Sam Lamont, Jerald Fletcher, Nick Schaer, and Thomas Galya - Cumulative Hydrologic Impact Assessments of Surface Coal Mining Using HSPF</p> <p><b>2:15-2:25 Questions</b></p>
2:35 - 4:05 pm	<p align="center"><b>Special Session S3 - Plans and the Planning Process: A Review of Planning Activities in Franklin County, Pennsylvania</b></p> <p><u>Chair:</u> George Pomeroy</p> <p>2:35 - John Benhart Sr. - An Assessment of the 1999 Franklin County, Pennsylvania Comprehensive Plan</p> <p>2:55 - George Pomeroy - A Review of the Proposed 2011-12 Update to the Franklin County, Pennsylvania Comprehensive Plan</p> <p>3:15 - Sherri Clayton - An Overview of Transportation and Solid Waste Planning Initiatives in Franklin County, Pennsylvania</p> <p>3:35 - Rochelle Barvinchack - A GIS Implementation Strategy for Franklin County, Pennsylvania</p> <p><b>3:55-4:05 Questions</b></p>

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## SUMMARY OF PAPERS AND PRESENTATIONS

	<b>Conference Room 6</b>
4:15-5:15 pm	<p style="text-align: center;"><b>Panel presentation - Terms of Engagement: Host Communities and Institutions of Higher Learning</b></p> <p style="text-align: center;">Whit Watts, Jeff Raykes, Michele Papkie and Dave Kirk, panelists</p> <p style="text-align: center;">This session examines planning and management challenges unique to college towns. Issues concerning transience, service provision and civic engagement in host municipalities will be discussed.</p>

<b>Saturday, November 5th</b>	
9:00-10:10 am	<p style="text-align: center;"><b>Special Session S5 - Transportation I</b></p> <p><u>Chair:</u> Donald Buckwalter</p> <p>9:00 - Sabina Deitrick and Christopher Briem - Vanpooling in Pennsylvania – Expanding Commuting Options across Rural and Exurban Regions</p> <p>9:20 - Stephanie Campbell - Commercial Drive Car-Free Festival: Reconstructing the livable neighborhood through protest</p> <p>9:40 - Robert Martin - Mapping the Journey to Work</p> <p><b>10:00-10:10 Questions</b></p>
10:20-11:30 am	<p style="text-align: center;"><b>Special Session S6 - Transportation II</b></p> <p><u>Chair:</u> Donald Buckwalter</p> <p>10:20 - Wesley Burket - Transportation and the Economic Geography of Blair County, PA: A Historical Perspective</p> <p>10:40 - Mary Graham and Richard Stone - Military Strategy in the Mississippi Valley, 1861-1864: Don't Forget About the Railroads</p> <p>11:00 - Donald Buckwalter - Multi-Centric Pittsburgh: Employment centers and transportation linkages</p> <p><b>11:20-11:30 Questions</b></p>
11:40-12:30 pm	<p style="text-align: center;"><b>Session 6 - Physical Geography II</b></p> <p><u>Chair:</u> Joseph Zume</p> <p>11:40 - Kameelah Temple and Joseph Zume - Analyzing the response of the Susquehanna River to Tropical Storm Lee</p> <p>12:00 - Neal Kerrigan, Stephanie Kieffer and Joseph Zume - Geoelectrical Investigation of Karst Features around Shippensburg, PA</p> <p><b>12:20-12:30 Questions</b></p>

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## SUMMARY OF PAPERS AND PRESENTATIONS

	<b>Conference Room 7</b>
4:15-5:25 pm	<p style="text-align: center;"><b>Special Session S4 - PASSHE GIS</b></p> <p><u>Chair:</u> Tom Mueller</p> <p>4:15 - Tim Dolney - Creation, Error, and Accuracy of Geospatial Data</p> <p>4:35 - Chuck Geiger - A Pennsylvania Geography Website</p> <p>4:55 - Mike Bialousz - GIS/GPS Collaboration with PA DCNR</p> <p><b>5:15-5:25 Questions</b></p>
5:25-6:15 pm	<b>PASSHE Board Meeting</b>
<b>Saturday, November 5th</b>	
8:30-11:45 am	<p><b>BEST PRACTICES TEACHING GEOGRAPHY</b></p> <p><b>FREE PROFESSIONAL WORKSHOP</b></p> <p><b>Sponsored by the Pennsylvania Alliance for Geographic Education</b></p>
8:30-8:45 am	Welcome and Overview to the Workshop
8:45-9:15 am	Roundtable I: Kristy Snider and Lisa Draper - Geography Awareness Week: "The Adventure in Your Community" (November 13-19) Lisa and Kristy, 2 of PA's GAW coordinators, share numerous ideas on how to integrate this year's theme in your school and community.
9:15-9:45 am	Roundtable II: Nicole Eshelman - Germany & Geography: How Europe Can Illustrate Your Curriculum: Nicole traveled to Germany during the summer of 2011 as part of the Goethe Institute's summer program for teachers. In this session, she will share materials appropriate for all grade levels and discuss the summer travel opportunity for teachers.
9:45-10:15 am	Roundtable III: Sara Jones - Web Resources for Engaging Students in Geography: There are countless websites available to support the teaching of geography at all levels. However, locating the "best" ones takes time. Sara's presentation will provide links, profiles of the websites, and engaging ways to integrate the resources into your teaching.
10:15-10:30 am	Coffee Break
10:30-11:00 am	Roundtable IV: Debra Frantz - Hands-On Learning-Latitude & Longitude: Gaining mastery over Earth coordinates is challenging at all grade levels. Deb introduces a hands-on approach which facilitates student success with latitude and longitude.
11:00-11:30 am	Roundtable V: Jerome Staniszewski - National Geographic Mapmaker Kits are materials which encourage students of all ages to think like a geographer. Join Jerome and learn how these large maps (both classroom size and student desk size) are a fun and interactive way for your students to think spatially.
11:30-11:45 am	Conclude Workshop

## **ABSTRACTS**

### **THE PGS DISTINGUISHED GEOGRAPHER LECTURE:**

Ted Muller, University of Pittsburgh – *2011 PGS Distinguished Geographer Award Winner*

#### *Planning Urban Blueways: Landscape Architecture, History, and Geography*

In the 1960s and 1970s nationally prominent landscape architect John Ormsbee Simonds undertook a number of contracts across the eastern U.S. to plan parks, pedestrian malls riverfronts, and residential communities. His recommendations spanned a range of spaces from metropolitan-wide networks of parks to individual parcels of property. Space, nature, and especially water in various forms were guiding components of his planning. Simonds' work affords the opportunity to consider the ageless questions for American geographers in this era when geography is flourishing but most Americans do not know what the discipline is: what is geography?, who is a geographer?, and does it matter?

### **THE PGS LUNCHEON ADDRESS:**

Kevin Patrick, Indiana University of Pennsylvania

#### *Iconography and the Ideal Shape of Place*

Designers have always strived to come up with the ideal shape for things at every scale, attempting to achieve a workable blend between symbolism, aesthetic beauty, and functionality. Iconography, the use of forms and shapes to represent ideas, is commonly employed. Highway signs, and cemeteries; public monuments, and movies; buildings and built environments are linked together in this exploration of landscape meaning that highlights how icons are used in the depiction of place, and how places are produced through the use of simple icons. Over the last 300 years, the design of Western places has been inspired by either the column-like formality of classicism with its implied conquest over nature, or by the sinuous and irregular forms of romanticism with its empathetic acquiescence to nature. Despite their attempt to break traditional molds, modernist places merely employed a new symbolism to classical ideas of dominance. Since the 1980s, this dominance has been challenged by de-industrialization, and non-conformist uprisings that have created postmodern spaces highlighting objects of the recently destroyed past. This includes recent memorials commemorating the 9-11 terrorist attacks, which frequently use "witness" relics as objects of veneration to help bring form and meaning to events that have yet to fully play out.

### **PAPER AND POSTER ABSTRACTS:**

\* *Student paper competition*

\*\* *Poster presentation*

† *Elaine Bosowski Student Map/Poster Contest entrant*

Nick A. Angelo, Indiana University of Pennsylvania

#### *White Township Road Sign Inventory†*

New federal laws state that by 2012 a plan must be in place for all traffic signs to conform to laws that require signs to meet minimum retro-reflectivity levels. Utilizing GPS and GIS technologies a township wide inventory of road signs was generated. This inventory also includes a digital image of each township road sign. The map and spatial database created throughout the sign inventory will be used by township personnel to observe, conduct analysis, and make decisions on road signs in relation to the required federal standards.

Rochelle L. Barvinchack, Franklin County Planning Department  
*A GIS Implementation Strategy for Franklin County, Pennsylvania*

As Franklin County, Pennsylvania, moves forward in completing the Comprehensive Plan and Solid Waste Management Plan updates as well as a Long Range Transportation Plan, the County is also proceeding with a countywide Geographic Information System (GIS) implementation plan. Franklin County's vision is to expand GIS capabilities to include not only additional departments at the county level, but to also include local municipalities and to make the information publicly available via the Internet.

Branden J. Belajac, The Pennsylvania State University  
*Pavement Management*

At the forefront of municipality responsibilities is the maintenance of public infrastructure. While this can include things from roadways, bridges, sewers, and dams, road resurfacing can require the most money and time. This summer I had an internship position with Peters Township Municipality in Washington County, Pennsylvania. My duties included a pavement management project in which I was to develop a three-year road resurfacing plan. It involved the traveling of all 110 miles of publicly owned roads in the township to survey their conditions. This data was entered into a software program called Road Surface Management System that calculated a pavement condition index value to rank the roads by their specific condition. I analyzed this data and created a map with the worst fifteen miles of roads. This map served as the new three-year plan, with an average of 5 miles of roads resurfaced a year.

Joseph W. Bencloski, Indiana University of Pennsylvania  
*A Landsat Digital Image Analysis of Urban Sprawl in Southern Butler County, Pennsylvania\*\**

Urban sprawl is the low density, highly consumptive use of land for urban purposes characterized by piecemeal extensions of basic urban infrastructure into more rural areas. This study uses Landsat Thematic Mapper digital imagery for 1986, 1993 and 2001 to assess the impact of urban sprawl on pre-existing land use types in an area centered on Cranberry Township in southern Butler County, Pennsylvania. Supervised image classification was used to create the following five land use types in the study area: commercial, residential, fields (i.e., open grassy areas and agricultural land), forest, and cleared (i.e., land that has been stripped of another cover type in preparation for future urban development). As expected, the study showed that commercial, residential, and cleared land increased from 1986 to 2001, while fields and forests declined.

Joseph W. Bencloski, Indiana University of Pennsylvania  
*Lake Effect Precipitation in the Vicinity of the U.S. Great Lakes: Characteristics and Causes*

Lake effect precipitation events (snow and rain) are highly localized phenomena that occur on the downwind side of large bodies of water such as the U.S. Great Lakes. This presentation examines the characteristics of lake effect precipitation as well as the causes of those atmospheric events. Specific lake effect precipitation events are examined through the use of synoptic maps, radar imagery, illustrations and photographs. The difference between "lake effect" and "lake enhanced" precipitation is explained. Other lake effect areas such as the Utah's Great Salt Lake are also considered.

John Benhart Jr., Indiana University of Pennsylvania  
*Socio-Spatial Structure of the 21st Century Post-Industrial City – Pittsburgh, Pennsylvania*

The restructuring of the national economy over the last forty years has produced wide-ranging impacts in U.S. urban areas. In particular, deindustrialization and the marked shift to the production of services and information in urban areas formerly dominated by industrial agglomeration economies has been documented as among the most significant results of the post-industrial era in the United States. Questions abound relating to the economic and socioeconomic results of formerly industrial urban economies turned on their heads, and the implications for localities and regions in the present and future. The focus of this paper is to use a U.S.

urban area with an economy historically dependent on industrial production – Pittsburgh, Pennsylvania – as a laboratory to investigate the spatial impacts of economic restructuring during the period 1980-2010. The factors that will be analyzed include the locations of job losses and job gains, spatial patterns of poverty, socioeconomic and racial stratification patterns, and differential patterns of capital reinvestment and redevelopment. One of the major goals of the research is to document and analyze overall urban spatial results of economic restructuring in the U.S., in an effort to increase understanding of the impacts of sectoral shifts for deindustrialized areas such as the Pittsburgh region.

John E. Benhart Sr., Shippensburg University

*An Assessment of the 1999 Franklin County, Pennsylvania Comprehensive Plan*

A new Comprehensive Plan was developed for Franklin County, Pennsylvania in 1999. The plan provided guidelines to promote growth and development in a manner that encouraged the high quality of life for residents of Franklin County. A presentation will be given to review and assess the stated goals of the Comprehensive Plan and how they developed into improvements in transportation, economic development, natural resources, and agriculture, as well as community facilities and cooperation across municipal borders.

Michael E. Bialousz, Pennsylvania Department of Conservation and Natural Resources

*GIS/GPS Collaboration with PA DCNR*

This presentation will cover the varied activities of the PA Department of Conservation and Natural Resources (DCNR) as they relate to GIS/GPS technologies. The Department includes PA's State Parks, State Forests, Geologic Survey, Natural Heritage Program and Recreation and Conservation Bureau, all of which are heavy users of GIS. In addition, there are a variety of Enterprise GIS initiatives at the Department level, including central database and data sharing focused interactive map developments. Particular emphasis of this talk will be on those facets of the Department where collaboration with students and volunteers would be most appropriate and beneficial. There are a variety of ways to become involved with DCNR, and these will also be highlighted during the talk.

Eric R Beamesderfer, California University of PA

*Comparison of Estimated and Observed Storm Motions to Environmental Parameters\**

This study explores current storm motion techniques and analyzes their accuracy with respect to different environmental parameters. Current motion estimates are compared to observed motions and different environmental parameters. The parameters investigated are the heights of the lifted condensation level (LCL) and the level of free convection (LFC), the mean relative humidity from the surface to 0°C and the storm relative helicity (SRH) from 0-3 km. Deviate estimates were seen by each storm motion estimator for the different environmental parameters. Also, it was evident that some storm motion estimators were superior to others.

Wayne W. 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.

Donald W. Buckwalter, Indiana University of Pennsylvania

*Multi-Centric Pittsburgh: Employment Centers and Transportation Linkages*

Allegheny County land use and transportation are analyzed at synoptic scale. The theoretical basis is the polycentric city and the methodological basis is graph theory. The purpose is to see if improvements in transportation strategy might alleviate economic, social, and technical problems associated with contemporary land use patterns. The Pittsburgh MSA includes several employment subcenters. Intra-metropolitan transportation is dominated by a mixed system of controlled access highways – turnpike, interstate, and other – although transit remains important to some subcenters. Alignments and articulation between links are awkward and incomplete because of history and physical barriers. The transportation network is analyzed in time series and by direct connectivity matrix. Ten interchange nodes can be ranked by degree. Mass transit maintains a CBD orientation with updated and efficient facilities but has a small overall market share. Direct connectivity is useful for an overview but detailed analysis requires precise data and concepts of complex topology.

Wesley Burket, Indiana University of Pennsylvania

*Transportation and the Economic Geography of Blair County, PA: A Historical Perspective*

Canals and railroads brought urban development to and created a strategic role for Blair County, Pennsylvania, and the City of Altoona during the U.S. Industrial Era. In the Post-industrial Era, however, development has been guided by the Appalachian Development Highway System, which has effected land use from its controlled access highways, the widening of Old U.S. Route 220 to four lanes and the increase in retail concentration. The conclusions are based on a thesis showing that Blair County rose in retail hierarchy among Pennsylvania's 67 counties from 1954-2002 because of the construction of the controlled access highways of U.S. Route 22 and Interstate 99 and the Old U.S. Route 220 corridor, which is morphologically conducive to modern commercial forms. Other variables are presented, such as rural counties with personal incomes above rural averages, in increase in personal income from transfer receipts, interest, dividends, and rent, steady employment growth and a relatively large number of in-commuters. The summary is that even though the Appalachian Development Highways are the likely top factor in Blair County's increase retail concentration, there are other contributing variables.

Stephanie A. Campbell, Indiana University of Pennsylvania

*Commercial Drive Car-Free Festival: Reconstructing the Livable Neighborhood through Protest*

Livability is a politically powerful concept that is increasingly invoked in contemporary urban planning. Often constructed beyond the neighborhood (such as through international institution ranking systems and municipal policy papers) and interrelated with broader socio-economic processes, livability discourse is often experienced, reinforced and reconstructed in the neighborhood. Though not formally identified in Vancouver livability policy papers as a "livable neighborhood," Commercial Drive (The Drive) is widely considered by both policy-makers and residents as a truly livable neighborhood. In this presentation, I will explore this reconstruction of livability discourse through the neighborhood activism against a provincial highway expansion project, The Gateway Program. Originating as an economic development project to relieve highway congestion in and out of the Port of Vancouver, this highway project involves an increase in commuter traffic through the "livable" neighborhood of Commercial Drive. Conceptualizing this increase traffic as a threat to the neighborhood's livability, the Commercial Drive Car-Free Festival was organized as a protest to The Gateway Program.

Robert J. Cerrato Jr. and Brian Okey, Indiana University of Pennsylvania  
*Indiana University of Pennsylvania and Westmoreland County Municipal Authority Water Quality Monitoring Partnership*

The Municipal Authority of Westmoreland County (MAWC) is responsible for providing a clean, safe and reliable water supply to the 150,000 residents of Greensburg. The source of this water, Beaver Run Reservoir, could potentially be compromised by Marcellus shale gas wells along its western edge. In response to the gas drilling, MAWC has contracted Indiana University of Pennsylvania to perform surface water quality monitoring in the vicinity of the gas drilling operations. Our method is to sample all streams and minor drainages that surround the gas well pad sites in order to monitor any runoff from the sites to the reservoir. This is done on a quarterly schedule overlapping multiple seasons and drilling stages. Field results (e.g., TDS, conductivity) from approximately 50 sites over the first two quarters will be discussed.

Sherri L. Clayton, Franklin County Planning Department  
*An Overview of Transportation and Solid Waste Planning Initiatives in Franklin County, Pennsylvania*  
Franklin County, Pennsylvania is currently in the process of preparing their initial Long Range Transportation Plan (LRTP). The plan comes in response to the county becoming a planning partner with the Pennsylvania Department of Transportation in May of 2009. The LRTP identifies goals and objectives that will span a twenty year time frame. This effort is being coordinated with the update to the Comprehensive Plan. An update to the Franklin County Municipal Solid Waste Management Plan is presently being coordinated. This plan will identify disposal needs for the various waste streams in the county and provide for capacity for the next ten years.

Emily Connor, The Pennsylvania State University  
*Raising Awareness in Water Scarcity: Undergraduate Study Abroad Experience Amman, Jordan*  
This paper takes a brief look at a study abroad experience in Amman, Jordan in a yearlong language and cultural immersion program. It examines the issue of water scarcity in the country and how it impacts daily living. Water resource allocation and use are discussed as part of a growing undergraduate geographic awareness of the water situation in the region. In addition, it outlines how this experience led to pursuing an undergraduate thesis on water policy and politics between Jordan, Israel, and Palestine.

Gary W. Coutu, West Chester University  
*Working with At-Risk Students in Geoscience Education*  
The National Science Foundation Critical Zone Observatories focus studies on the thin layer at the Earth's surface between the top of the vegetative canopy and the base of the soil profile. The Christina Basin Critical Zone Observatory (CBCZO) provides information on processes in the mid-Atlantic Piedmont and Coastal Plain, a region that has been highly disturbed by centuries of human activity. This presentation addresses the results of a pilot project that uses information from the CBCZO to develop and test educational materials introducing teachers and educationally at-risk youth to the principles and processes that combine to form the environment we experience on the Earth's surface. The Stroud Water Research Center and West Chester University of Pennsylvania have developed educational opportunities, activities and materials as part of a National Science Foundation's Geoscience Education program. CBCZO materials have been developed into a course to build stream sensors/data collectors and the integration of data into a geographic information system for watershed mapping and analysis.

Sabina E. Deitrick and Christopher Briem, University of Pittsburgh  
*Vanpooling in Pennsylvania – Expanding Commuting Options across Rural and Exurban Regions*  
Vanpooling is a commute mode for many workers where public transit options are limited and travel distances are long. It also offers congestion relief in many places. The primary focus of this paper is to assess existing commute patterns in Pennsylvania and relate them to current use and geographical opportunities for

vanpooling across regions in the state. The analysis compiles information to approximate vanpooling market demand, including data from the 2000 Census Transportation Planning Package tabulations showing extensive inter-county and inter-state commuting. Case studies on vanpooling programs across the state demonstrate that vanpooling in largely rural and exurban locations offers a needed and demanded commute mode for many long distance workers, but the state lags many other places in providing incentives and utilizing existing resources to enhance the competitiveness of vanpooling as a mode of commuting.

Deborah Diehl, Indiana University of Pennsylvania

*Conservation Education of Acid Mine Drainage Treatment\**

In the summer of 2011, I completed an internship with Evergreen Conservancy, a volunteer-based non-for-profit organization established in Indiana, Pennsylvania. Tanoma AMD (Acid Mine Drainage) site is a system of wetland ponds constructed by PA DEP (Department of Environmental Protection) in the 90's. It was handed off to Evergreen Conservancy by Southern Allegheny Conservancy in 2006, with continuous PA DEP maintenance. The purpose of the settling ponds is to collect iron and other chemical discharge in the wetlands and limit drainage from entering Crooked Creek. Evergreen Conservancy passes along environmental and conservancy practices by holding day events for young children at Tanoma. This on site application allows children to absorb information with hands on experiences like touring the system with renewable energy, making chalk and tie dyed t-shirts from the iron, and comparing water quality from a variety of sources.

Tim Dolney, Penn State Altoona

*Creation, Error, and Accuracy of Geospatial Data*

A GIS data-set representing abandoned mine lands (AMLs) in the state of Pennsylvania was utilized in the site selection process of the Seasonal Storage of Solar Heating (S3H). Further examination of the data-set through Light Detection and Ranging (LiDAR) aerial photographs and hillshade images revealed spatial inaccuracies related to the locations of AMLs. This research assesses the horizontal positional accuracy of AMLs classified as open storage pits. They were tested according to the Geospatial Positioning Accuracy Standards – National Standard for Spatial Data Accuracy (NSSDA) which uses root-mean square error (RMSE) to estimate positional accuracy. Results indicate larger than expected positional offset for a data-set that is crucial to funding the reclamation of AMLs.

Francis A. Galgano, Villanova University

*Environmental Security: Water and Conflict in the Middle East*

Environmental security refers to a range of security issues triggered by environmental and demographic factors. Water resources are problematical because it is an essential resource for which there is no substitute and it is not equitably distributed in a spatial sense. Furthermore, the world's largest river systems are shared by multiple states; and those upstream have an advantage in controlling water resources and downstream states generally remain vulnerable. International law and the method of determining sovereignty over trans-boundary rivers remain contentious. This paper will examine three case studies from the Middle East to highlight these points. The analysis suggests that developing states are more vulnerable to water-related conflict and the results indicate that we will witness a surge in three modes of conflict: ethnic warfare enabled by environmental stress; civil warfare prompted by environmental stress and economic collapse; and limited-scale interstate wars along an adjacent border.

Chuck Geiger, Millersville University

*A Pennsylvania Geography Website*

PASDA is an excellent website for geographic data. It is most suitable for geographers looking for GIS data, but not for easy access to maps. Here is a website that will present geographic data about Pennsylvania in map form.

Mary M. Graham, York College of Pennsylvania, and Richard D. Stone, Shippensburg University  
*Military Strategy in the Mississippi Valley, 1861-1864: Don't Forget About the Railroads*

Most of the history that has been written about the Civil War's Western Theater emphasizes the importance of controlling the waterways with particular attention given to the Mississippi River. While the railroad network was not well developed in the South at the War's outset, control of the railroads that existed and particularly the strategic railroad junctions had an important place in the Union's war efforts alongside control of the waterways. Lack of acknowledgement of the role of the railroads and their importance to Union strategy fighting the War can be seen in the lack of preservation efforts of events and places related to the railroad. The paucity of preservation efforts can be interpreted as a method by which the myth of the "Lost Cause" is upheld.

Brian M. Hall, The Pennsylvania State University  
*Prairie Restoration at the Iowa Lakeside Lab*

My internship at The Iowa Lakeside Laboratory was not just any old internship. It not only taught me a lot about the area of Iowa and about restoration, but just as much about my own life and how I want to live it someday. My range of duties while at the lab was quite varied but I enjoyed the day-by-day change of pace. It was very rare for me to do the same task for more than two days in a row. Before going out on this internship I wanted to learn two things. One, based on whether I enjoyed the internship or not, what I liked doing and what I couldn't stand doing. Secondly, I wanted to go there and absorb as much culture of the area and information about prairie restoration as I could.

Mallory R. Henig, The Pennsylvania State University  
*Geography 493: Environmental Issues across the Americas†*

Courses that include international travel are one way for students to understand multiple points of view on events reported in the media. This poster stems from a Penn State class studying environmental issues in the Peruvian Amazon. Alluvial gold mining has been a recent booming economic activity in Peru, igniting several political opinions among local citizens, government, and media. Gold mining in the Madre de Dios region of the Amazon rainforest is mostly illegal, causing social, health, and environmental problems within the country; however, it is also the most profitable sector in Peru. During the field experience, class members were able to discuss the issue with both government officials and local residents with firsthand experience related to mining. Collecting data from primary sources rather than from secondary media sources opened my mind and made me rethink personal opinions of the situation and understand geographic implications of the issues.

Richard J. Hoch, Indiana University of Pennsylvania  
*Mapping Longwall Mining Activities for Public Knowledge: "Seeing" Under the Ground of Greene and Washington Counties, Pennsylvania*

The longwall underground mining method of bituminous coal has been practiced in the United States since the 1950s. This method has been practiced in six Commonwealth of Pennsylvania counties. However, only two counties, Greene and Washington, continue to be undermined using this method. This method involves cutting the coal off the face of a long wall panel with machinery. As the machinery advances, the mine roof collapses behind it. This mine subsidence can be potentially damaging to structures and natural features on the surface. The goal of this research was to provide information about the locations of mining activities to the public in a format that was accessible and without the need for technical know-how. An atlas of paper maps was determined to be one way to meet this goal. This atlas is used by local groups and property owners to enhance the awareness of activities in their communities.

Michael W. Karalewich, The Pennsylvania State University

*Caloric Intake across the World*

I have circumnavigated the world and explored caloric intake across 12 different countries. By exploring what food people eat and where they got it had helped me understand how unsustainable the United States is. To explore the differences between cultures perspective of food I used people's opinions of McDonalds. Most American's will eat McDonalds because it's fast and cheap. Areas such as townships outside of Cape Town, South Africa have to save money to eat at McDonalds and it is some of the healthiest food they get. Understanding food cultures is important to becoming a globally aware citizen.

Chad M. Kauffman and Eric R. Beamesderfer, California University of Pennsylvania

*Climate Change Pedagogy in an Applied Climate Course Infused with Social Media*

A novel approach is taken to Climate Change education in a course on "Applied Climatology." This paper discusses the changing nature of Applied Climatology courses in Geography and describes the relative aptitude of upper-division post-secondary students in a Meteorology program for Climate Change concepts. Preliminary survey results are conveyed in the paper to elucidate students' prior knowledge of basic concepts in Global Climate Change. Course methods of instruction are presented herein, in addition to a unique manner by which Twitter is utilized in and out of the classroom for sharing of resources and collaboration.

Neal Kerrigan, Stephanie Kieffer and Joseph Zume, Shippensburg University

*Geoelectrical Investigation of Karst Features around Shippensburg, PA*

Karst features such as sinkholes, caves, and solution cavities pose environmental risks to human construction activities. Around Shippensburg, PA for example, several building projects, including some on the Shippensburg University campus, have been slowed down by the presence of sinkholes that are concealed beneath the surface. If undetected, sinkholes can have the unfortunate impacts of causing collapsed structures, including buildings and roads. Fortunately, geophysical imaging technology can detect these karst features from tens of feet below the surface. A recent National Science Foundation (NSF) grant has allowed the Geography/Earth Science faculty at Shippensburg University to acquire geophysical imaging equipment. This technology is being incorporated into the geoenvironmental undergraduate curriculum of the Geography and Earth Science Department. As part of the implementation several exploratory surveys were carried out over the summer. This study reports some of the findings. The results presented here are based specifically on the use of electrical resistivity (ER) and ground-penetrating radar (GPR) to image a residential park with known sinkholes. The results demonstrate the utility of the geophysical methods in delineating subsurface karst features.

Joshua M. Krug, Indiana University of Pennsylvania

*Marcellus Shale Development in PA: A Socio-Demographic and Economic Analysis*<sup>†</sup>

This study utilizes a geographic information system as well as available and retrievable data in helping to predict the potential and likely socio-demographic and socio-economic impacts of developing the natural gas industry throughout the Marcellus Shale Region in the state of Pennsylvania. The state was studied at the county, municipal, and also parcel scales. The counties of Westmoreland, Washington, and Tioga were selected for municipal analysis. Different analytical techniques were applied at different scales. Joining attribute information that was collected from multiple sources to spatial data in multiple layers allowed for high level statistical analysis in terms of where the state is at and where we may be headed in terms of unconventional gas drilling. The methodology and application of this study could be useful in other places or states that are facing a similar issue.

Sam J. Lamont, Jerald J. Fletcher, Nick A. Schaer, and Thomas A. Galya, West Virginia University  
*Cumulative Hydrologic Impact Assessments of Surface Coal Mining Using HSPF*

As defined by the Surface Mining Control and Reclamation Act (SMCRA), a Cumulative Hydrologic Impact Assessment (CHIA) is required for all proposed coal mine permits. The Natural Resource Analysis Center (NRAC) at West Virginia University, with support from the West Virginia Department of Environmental Protection (WVDEP) and the U.S. Office of Surface Mining, Reclamation and Enforcement (OSMRE), has applied the watershed model Hydrologic Simulation Program – Fortran (HSPF) to several mine-impacted watersheds in West Virginia to ultimately predict the potential impacts of proposed mine sites on surface hydrology. This study is the continuation of an earlier flow calibration analysis and focuses on water quality; specifically total dissolved solids (TDS) and total suspended solids (TSS). The focus water quality calibration watershed contains mountain top removal mining operations where the layers of rock and soil above the coal seam, or overburden, is removed and is placed into an adjacent valley. In this study, these valley fills are modeled as point sources of TDS and the remaining mine-impacted land surfaces are considered nonpoint sources of TDS and TSS. In addition, several pumps exist within the watershed which inject water from underground mine pools into receiving streams. These are also modeled as point sources of flow and TDS. The water quality calibration method utilizes several years of spatially non-uniform and temporally discontinuous field measurements and employs the automated calibration software PEST. Model pre-processing is performed using BASINS and post-processing uses custom tools built in MATLAB. While preliminary model results are hopeful, this study illustrates the difficulty of applying a complex watershed model to a heavily altered watershed.

Robert N. Martin, Kutztown University

*Mapping the Journey to Work*

In this paper I demonstrate the way in which I have students use the CTPP County to County data files to prepare datasets and maps of the journey to work by mode of transportation for the counties within Pennsylvania. The primary focus of this student exercise is on overcoming the data limitation problems of the original data sets for spatially based analysis.

Ahmad S. Massasati, University of Pittsburgh at Johnstown

*A Sundial, an Analemma, and a Locational Monument for the University of Pittsburgh at Johnstown*

Awareness of time and location are among the most important elements of any civilization. In modern times, Greenwich Time is used all over the globe to the extent that local solar time is almost forgotten. The most common tool used to measure time is the sundial. The Analemma were designed traditionally to measure the date of the year. Computer programs and Ground Positioning Systems (GPS) permits high accuracy in designing sundials and Analemmas. In addition, Differential GPS can be used to build locational monuments that can provide high accuracy reference to location. This paper presents a possible design for a monument that combine the sundial, Analemma, and locational reference monument for the University of Pittsburgh at Johnstown. The principles provided can be modified for any other proposed location. If constructed, the monument would be valuable for both educational and historical purposes.

Michael R. Muder and Ellen Lamont, Indiana University of Pennsylvania

*Assessing Horizontal Accuracy of Mine Maps Using GIS and GPS: The Rochester and Pittsburgh Underground Mine Map Collection†*

The Institute for Mine Mapping, Archival Procedures and Safety (IMAPS) at IUP has developed a center dedicated to archiving, digitizing, and georeferencing historical coal mine maps throughout southwestern Pennsylvania. The institute has primarily archived maps from the Rochester and Pittsburgh Coal Company and the Pennsylvania Department of Environmental Protection. The Institute has created a pilot georegistration project, which will relate digital mine map images and associated metadata to real world

coordinates. The pilot project has demonstrated functional applications of a mine map GIS complete with high resolution georeferenced imagery, feature classes, attribute data, and metadata. Additionally, an assessment to quantify the accuracy observed between georeferenced map coordinates and high-accuracy GPS data acquired with mapping-grade Trimble receivers will be conducted. The objective of this project is to evaluate the horizontal accuracy of the maps to better facilitate their use in emergency response, future planning and development, and government regulation.

Eugene A. Offerman

GIS Marketing Consultation

In the spring of 2011 I consulted on a marketing project with the Small Business Institute at the Indiana University of Pennsylvania. The project was commissioned by Tonic Grille Restaurant in Johnstown, PA. As a part of this project, the group was to administer phone surveys for potential customers in the area. My work was to identify the target population using census data and Reference USA. This paper illustrates my work as well as my experiences being the sole GIS professional on a marketing team.

George M. Pomeroy, Shippensburg University

A Review of the Proposed 2011-12 Update to the Franklin County, Pennsylvania Comprehensive Plan

Franklin County, Pennsylvania is currently in the process of updating its Comprehensive Plan. The plan update comes ten years subsequent to earlier comprehensive planning efforts and a nearly a decade of sustained, steady economic and population growth only recently punctuated by the recession. The proposed update to the new comprehensive plan includes new goals and objectives. Leading goals include aligning new growth with existing transportation infrastructure, revitalizing core communities, enhancing a new economic development strategy, greater pedestrian-bicycle connectivity, and fiscal management planning.

Brian W. Okey and Amanda B. Poole, Indiana University of Pennsylvania

Wind Energy as Social Paradox: The Case of Prince Edward County, Ontario

Prince Edward County, Ontario, is an island exposed to high winds crossing Lake Erie. Consequently, it has been courted by wind energy companies for several years as an ideal location to install wind turbines. However, conflicting attitudes among local residents exemplify what has been called a paradox of social perceptions regarding wind power: broad societal acceptance yet frequent local resistance to individual projects. Analysis of news articles and letters to the editor highlight conflicting views regarding local planning decisions by county officials in response to two proposed projects in 2002. For a variety of reasons, neither these, nor a more recent project to be developed in 2009, came to fruition. This has pleased advocates for tourism and county aesthetics and frustrated farmers and other landowners denied revenue from turbine leases. This presentation explores the multidimensional factors that have kept Prince Edward County free of wind turbines.

Benjamin J. Ritter, Shippensburg University

Assessing Urban Change on an Annual Basis with an Exploratory Data Set\*

Satellite derived data sets, such as those using Landsat, are continuing to be important tools for assessing land cover change. Recently, a pilot data set was released by the Chesapeake Bay Program and MDA that categorizes all land use change on an annual basis by using Landsat derived data to evaluate spectral changes in the imagery. For this research we focused on only the urban land cover change and extensively reviewed and explored this new data set. During our evaluation, an accuracy assessment, a patch analysis, as well as temporal rescaling were all performed on the data set to examine its usefulness for future research on urban land cover change. The overall hope is that, if proven valid and useful, this data set could be used on a larger project focused on urban dynamics in the Baltimore region, but that the data set would also be valuable to geographers and others performing similar research in different regions.

Amy Salsgiver, Indiana University of Pennsylvania

*The Changing Landscape: Discovering Social Networks through Ethnography in a Former Coal Mining Community*

This research focuses on the importance of social networking in historic rural Western Pennsylvania, specifically in the town of Glen Campbell. The rural coal company towns of this region were established over a century ago in isolated areas resulting in a unique landscape and distinct culture. Social networks were established in the harsh working environment of mining and have been passed down through the generations of families. As the mines closed and the communities lost population, the community of Glen Campbell survived through sustained networks and livelihood strategies. It was believed these communities would disappear with the closing of the mines, and although Glen Campbell is no longer the town it was once, it offers an example of how communities grew, faltered and ultimately found sustainability.

Stephanie J. Sanner, James V. Whitacre, and John W. Wenzel, Carnegie Museum of Natural History, Powdermill Nature Reserve

*Map Service Tool for Monitoring Water Quality on a Landscape Level\*\**

Monitoring programs for evaluating ecosystem structure and health are generally local in focus. We integrate separate sampling regimes and programs to provide a landscape-level perspective. The chemical characteristics of a stream are measured either by a portable water analysis device or by data loggers that have been placed in the stream. Biological assessment is done by the collection and identification of macro invertebrates. These invertebrates respond to changes in water quality and their presence or absence is critical to assessing accurately fresh water health. We integrate locality data, chemical characteristics, identity and number of macro invertebrates that were collected, and provide access to scientific literature based on the taxonomic name of the organism of interest. This information, along with historical data from past seasons and years, are available by clicking on a map. This format will allow us to observe and track changes in water quality across a broad landscape.

Brock J. Saylor, Adam Diltz and Tom Kerstetter, Bloomsburg University

*Bloomsburg University Tree Inventory\**

During the summer of 2011 a group of environmental planning majors from the Department of Geography and Geosciences at Bloomsburg University conducted a campus-wide tree inventory. The goal of the census was to develop an exact count of all the trees on campus and collect attribute information on the location, species, size, and health of each tree. The field data were collected using Trimble Juno SB Global Positioning System (GPS) units that were loaded with i-Tree, a program designed by the United States Department of Agriculture (USDA) Forest Service to manage the data collection and analysis of urban tree data. The results of this study were used for three primary purposes. First, the data were used to estimate the cost to replant trees and return the population to the level that is listed in the university's master plan. Second, an analysis was conducted to estimate the number of trees in forested regions on campus. Third, the i-Tree software was used to analyze the environmental benefits and monetary value of the campus trees. The results of the study will be used to develop a plan for managing existing trees on campus and for the selection of new tree locations. The inventory will also promote student awareness of campus trees and support green initiatives on campus. For example, we plan to create a series of plaques that include information such as the monetary value, species identification, and environmental benefits of each individual tree. In addition, the inventory will be linked with an inventory that was conducted for the Town of Bloomsburg's street tree population and the Bloomsburg Town Park during the summer of 2010. Together these projects will provide the community with detailed maps of the tree canopy in the Town of Bloomsburg.

Christopher Schaney, Middle Tennessee State University

*Understanding Flood Events in the Greater Nashville Metropolitan Area 1970 - 2010: Correlating Urban Growth with Analysis of Storm Water Discharge in the Cumberland River Watershed*

Growth of impervious surface in areas of rapid urban growth has serious implications with regard to increased incidence of flash flooding. Although numerous examples address impervious surface to water quality, this research is designed to uncover the relationship between flooding and increased impervious surface within the Cumberland River watershed, Nashville, Tennessee. This proposed research will encompass assessing water volume inputs from storm water management facilities, changes in pool level dynamics (Nashville District United States Army Corps of Engineers), and information collected from stream gages over the time period 1970 – 2010. Additionally, meteorological data will be incorporated to determine minimum rainfall events that illicit responses from water management facilities. The goal of this research is to provide a better understanding of the relationship the built environment has on incidences of flooding in the Nashville area, and give storm water managers another tool in offsetting future flooding events.

Erik Scrivener, Indiana University of Pennsylvania

*Improving Visibility and Awareness of Traffic Control Devices Using GIS in Binghamton, New York†*

Regulations for traffic control devices set forth by the U.S Department of Transportation-Federal Highway Administration (FHA) are established to determine the size, color, height, material, lettering, and other information associated with traffic assets in the FHA Manual on Uniform Traffic Control Devices. This manual mandates that signs constructed using older, engineering-grade material will need to be upgraded to high-intensity reflective materials by 2015. These new materials are necessary to improve the visibility and awareness of traffic control devices. The purpose of this study is to understand the spatial location and distribution of city traffic assets for the Binghamton, NY Department of Public Works. Cartegraph GIS was used in this study. Cartegraph is an efficient, management software that enables collected asset locations and attributes to be analyzed and displayed in order to provide a spatially driven cost-analysis database.

Robert P. Sechrist, Indiana University of Pennsylvania

*Fishing Tournaments in North Central Pennsylvania 2004-2011*

Each year thousands of people participate in the organized use of Pennsylvania Fish and Boat Commission (PFBC) property in north central Pennsylvania. Permission to use PFBC property and facilities is obtained by completion of the PFBC Special Permit form. This presentation summarizes an analysis of forms submitted between 2004 and 2011. The analysis determined that the vast majority of adult tournaments were directed at bass, while children's events focused on trout. On average there were 384 events held each year of the study. 169 groups held only a single event during the study period while the Lunker League held 222. Several large lakes experienced over 20 bass tournament events annually, while the vast majority saw no tournaments.

Susan Sibert

*Geography Curriculum: A Geo-Historical Perspective*

A group of educators led by the president of Harvard criticized the lack of rigor in high schools and found most geography a barren exercise in memorization. The comments came out of a national debate on standards. The year was 1893. Sound familiar? Textbook publishers have met the demands of changes and trends in teaching geography between the turn of the century and the present day standards' debates. Global politics also continue to play a part in shaping curriculum. If you are a baby boomer attending this session, you probably took your last geography class in seventh grade. Come prepared to confess that you can't locate Liberia on a map and to understand how this happened to generations of students.

Dustin Snare, California University of Pennsylvania

*Error Analysis of SSM/I F08 Antenna Temperatures to Produce an Extended Record of Observations for Climate Applications\**

The Special Sensor Microwave/Imager (SSM/I) was a conically scanning window channel microwave radiometer that was flown aboard the Defense Meteorological Satellite Program (DMSP) satellites. The series of satellites forms the longest record of microwave measurements starting in 1987 and continuing through to the present with the Special Sensor Microwave Imager/Sounder (SSMIS) with dual coverage for much of the record. The first sensor flew aboard the F08 satellite that was launched in June 1987 and flew until December of 1991. During this time, this was the only SSM/I flown making these data a crucial part of the climate record. However, many errors existed in this early data from F08 and correction of these errors is essential for the use of these data in long-term climate studies. Several Quality Control (QC) checks are already applied including checks against climatology and checks based on comparison of original and calculated geo-location. However, significant problems still exist and a further QC check is required to identify bad scans. In this study, we identified cases where additional QC is required and developed a new procedure that was added to existing procedures and makes F08 data a viable part of the climate record.

Joshua E. Steiner, Indiana University of Pennsylvania

*Marcellus Shale Exploration in Greene County, Pennsylvania: A Study of the Cumulative Effects of Forest Fragmentation in Well Pad Site Selection\**

The exploration and development of the Marcellus Shale geologic formation has increased greatly over the last decade. Of all the states that share this resource, Pennsylvania has the most land area within the formation. The development of this resource has caused environmental concerns due to the controversial hydraulic fracturing process along with water and air pollution. An issue that also deserves attention: the fragmentation of forested land. This research will examine the cumulative effects between forest fragmentation and the Marcellus Shale pad site selection. This research assumes that Marcellus Shale pad development is having an adverse impact on contiguous forest land-cover. By using spatial data of Marcellus Shale pad sites and satellite imagery from pre and post pad development, a calculation of edge effect on forest land cover can be developed to quantify the amount of forest-cover acreage that has been transformed from a forested use to an industrial use.

Kameelah N. Temple and Joseph Zume, Shippensburg University

*Analyzing the Response of the Susquehanna River to Tropical Storm Lee*

Tropical Storm Lee dumped more than 13 inches of rainfall on parts of Central and Eastern Pennsylvania over a period of 7 days (Sept 4th – 11th) causing one of the worst flooding episodes in recent history. How a river responds to storm input depends on such factors as storm size and duration, land use/land cover, geology/soils, and antecedent soil moisture conditions. Thus, even along the same river channel, response to storm input can vary from segment to segment. Using the storm inputs from Tropical Storm Lee, this study examines rainfall-runoff relationships for the Susquehanna River Basin. Daily precipitation data are used alongside hourly river discharge data at seven USGS gauging stations within Pennsylvania. A discharge hydrograph is presented for each gauging site and landuse/landcover coverages are used to obtain insight about the contributing factors to rainfall-runoff characteristics in the study area.

Guillaume Turcotte, Villanova University

*Determining Factors in the Siting of Undesirable Land Uses*

Environmental Justice (EJ) is an interdisciplinary study of the inequitable environmental burdens faced by minority groups. Early proponents of EJ argued that racial minorities were more likely to live near undesirable environmental sites and face greater environmental risks. However, later EJ supporters argue that socio-economic demographic is a more likely factor. A proper assessment of environmental justice requires

linking the sites of undesirable land uses and the surrounding demographics before and after its implementation. The scope of this project is limited to the state of Pennsylvania and aspires to develop a methodology applicable throughout the United States to properly evaluate the relation between the siting of undesirable land uses and the surrounding social and economic attributes. Data analysis by means of the Spatial Analyst and Spatial Statistics tools available with ESRI's ArcGIS desktop application suite will establish attribute and spatial associations.

Dana A. Turgeon and Robert Cerrato, Indiana University of Pennsylvania

*Indiana Borough Zoning Ordinance Restructuring Project*†

In the fall semester of 2010, Indiana Borough requested the students of Indiana University of Pennsylvania Department of Geography and Regional Planning to restructure the Borough's Zoning Ordinance. The project goal was to make the document a more user friendly mechanism for the general public. This goal was met through the generous use of tables, graphics, an innovative layout and a number system. The process involved stripping the ordinance down into its parts and rewriting it into complete sections that cover: development standards, lot development, signage, parking and definitions for each Zone District. Once completed in the summer of 2011, the document was delivered to the Indiana Borough Planning Commission for edits. Currently the document is in the editing stage and is slated for final acceptance into law in the spring 2012. The restructuring process, methods, and final product will be presented.

Christian Wells, Indiana University of Pennsylvania

*Moving Forward: Residential Stratification and Overcoming its Implications*\*

This research focuses on economic residential segregation in the Philadelphia metropolitan area. First, a review of economic segregation and residential segregation will be presented as a context for class stratification. Utilizing segregation indices and Ordinary Least Squares regression, this research analyzes the magnitude of income segregation within Philadelphia. This study is important to the welfare of many underprivileged households because it provides explicit proof of residential segregation. With this empirical evidence, policy makers can create and improve policies for the increased well being of segregated households. This analysis finds that the magnitude of segregation in Philadelphia increases greatly as economic segregation increases. In addition, the results find that numerous economic and social variables have a significant impact on economic segregation. These results underscore the importance of creating policies to reduce economic segregation within metropolitan areas.

John W. Wenzel and James V. Whitacre, Carnegie Museum of Natural History, Powdermill Nature Reserve

*Comparing Ground Surveys with Remotely Sensed Data to Measure Forest Succession*\*\*

We use Powdermill Nature Reserve, an extensively studied Appalachian forest, to evaluate different measures of forest succession. Ground surveys of 55,000 trees across 2,000 acres provide a baseline of information for comparison with historical aerial photography and modern remote sensing methods, such as LiDAR. We find rough measures compare favorably. Space-for-time substitution in studies of succession remain controversial, and future work will focus on how this difficulty relates to remotely sensed data.

James V. Whitacre and John W. Wenzel, Carnegie Museum of Natural History, Powdermill Nature Reserve

*Publicly Available Records Do Not Indicate Marcellus Wells Reliably*\*\*

Many questions have surfaced regarding issues of water quality and economic impact with the development of natural gas extraction from the Marcellus shale formation. Prospective answers have come in a myriad of responses from state and local governments, mining industry companies, citizen watchdog organizations, and conservation groups throughout Pennsylvania and the nation. This dynamic juxtaposition between environmental conservation and economic gain cannot be analyzed accurately without knowing precisely where Marcellus Shale gas wells exist and at what densities. The general consensus of how Marcellus Wells

are mapped is by using natural gas well permits issued by the Pennsylvania Department of Environmental Protection. Three PA DEP sources (permit, spud, and production reports) of Marcellus activity identify wells inconsistently in over 800 instances out of about 8,200 records. These inconsistencies can confuse the general public and researchers about which wells are Marcellus and which are not.

Stacey L. Wicker, Indiana University of Pennsylvania

*“You Can’t Go Home Again”: The Place of Home in the Geographic Imagination of Edward Abbey*

American writer Edward Abbey (1927-1989) is most widely associated with the desert landscapes of the American southwest. Acclaimed as a nature writer, environmentalist and defender of wilderness, Abbey’s writings reveal an individual with a highly developed sense of place. The idea of home as place was an especially captivating and compelling force in inspiring Abbey’s vast spatial imagination and his writings speak extensively to this ongoing fascination, highlighting the powerful influence and centrality of home in constituting the human experiences of self-identity, place, desire, belonging, alienation and even in notions of wilderness and nature. Through a critical analysis of the entire body of Abbey’s writings, this paper seeks to further understand the place of home in shaping the human experience. Abbey’s concept of home departs from normative notions of home as exclusively physical and material by virtue of his largely non-material and mostly large scale understandings of home. Through his never-ending engagement with the idea of home, Abbey’s writings speak to the power of the geographic imagination in both shaping an individual, as well as in shaping geographic knowledges through the literature produced by that individual. Additionally, Abbey’s extensive and often complex musings on home are a crucial component in centering his self-identity, especially as a means of expressing his profound love for the American southwest and also as a framework for articulating his deep commitment to wilderness defense, which affirms the intricate political interrelationships implicit in constructions of home, normative or otherwise.

Victoria Wilds, Pennsylvania Alliance for Geographic Education

*National Geographic Society Internship Experience*

This past spring semester I had the opportunity to be a geography intern at the National Geographic Society in Washington, DC. This experience provided me with professional development and countless learning opportunities. As an intern, I was provided a lot of opportunities to meet with past NGS interns, past and present NGS employees from various departments, and others whose work associated with NGS. I was assigned to work with the National Geographic Magazine creating, editing, and critiquing page maps. My daily duties changed day to day depending on the project I was assigned. These duties were a great taste of what it is like the working world. Not only did this internship provide me with many contacts for post graduation plans, but it also prepared me for the working world.

Robert E. Wilson, Indiana University of Pennsylvania

*Building a Digital Repository of Abandoned Coal Mine Maps*

The core mission of the IUP Institute for Mine Mapping, Archival Procedures and Safety (IMAPS) is to develop a locus of knowledge and expertise in archiving, digitally recording, and geographically referencing historical coal mine maps, as well as initiating new mine safety protocols based on the existence of digital map data products. In fulfilling this mission, IMAPS continues to pursue developing IUP’s Rochester and Pittsburgh Coal Company mine map collection to the fullest extent possible, provide valuable applied internship and employment experiences to students, work collaboratively with federal and state agencies to develop mine mapping data, and advance methodologies in preserving and processing mine maps that will serve as models for other organizations. This presentation will detail past, present and future initiatives of IMAPS in an effort to make abandoned mine mapping data available to the general public.

Evaluation form for the  
**2011 PENNSYLVANIA GEOGRAPHICAL SOCIETY  
 ANNUAL MEETING**  
**November 4-5, 2011, Indiana, PA**

Your input is most important for future annual meetings and other PGS programs.

Please complete this form and mail it to:

Brent Zaprowski, Department of Geography and Geosciences,  
 1101 Camden Ave, Salisbury University, Salisbury, MD 21801

<b>1. How would you rate this meeting?</b>	Poor		Neutral		Excellent
	1	2	3	4	5
a. Overall	()	()	()	()	()
b. Site/Location of Meeting	()	()	()	()	()
c. Meeting Program	()	()	()	()	()
d. Hotel Accommodations	()	()	()	()	()
e. Meeting Rooms	()	()	()	()	()

<b>2. Presentations:</b>	Poor		Neutral		Excellent
	1	2	3	4	5
a. Friday AM	()	()	()	()	()
b. Friday PM	()	()	()	()	()
c. Saturday AM	()	()	()	()	()
d. Maps and Posters	()	()	()	()	()
e. Special Sessions	()	()	()	()	()
f. Special Presentations/panels	()	()	()	()	()

<b>3. PGS Luncheon</b>	()	()	()	()	()
Luncheon Speaker	()	()	()	()	()

<b>4. PGS Annual Banquet</b>	()	()	()	()	()
Banquet Speaker	()	()	()	()	()

<b>5. My expectations of the meeting were:</b>	Unmet		Neutral		Met
	1	2	3	4	5
	()	()	()	()	()

Why?

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